2021

Creating Sense of It: An In-service to Address Military Students Experiencing Sensory Deficits

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Creating Sense of It: An In-service to Address Military Students Experiencing Sensory Deficits

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A Scholarly Project

Submitted to the Occupational Therapy Department

of the

University of North Dakota

in partial fulfillment of the requirements

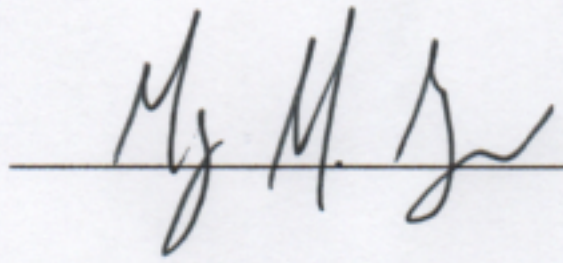
for the degree of

Master of Occupational Therapy

Casper, Wyoming

May 2021

This Scholarly Project Paper, submitted by Danielle Cox, MOTS and Katelyn Jennings, MOTS in partial fulfillment for the Degree of Master of Occupational Therapy from the University of North Dakota, has been read by the Faculty Advisor under whom the work has been done and is hereby approved.



Faculty Advisor

April 12, 2021

Date

Permission

Title: Creating Sense of It: An In-service to Address Military Students Experiencing Sensory Deficits

Department: Occupational Therapy

Degree: Master of Occupational Therapy

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Acknowledgements

The authors of this Scholarly Project would like to take time to express gratitude and appreciation for the individuals who made this project possible. Dr. Mandy Meyer for her continuous positivity, wisdom, and guidance throughout the creation of this project. Her passion and effort in helping with the creation of the project were highly appreciated and we could not have completed the project without her support. We would also like to extend a thank you to the University of North Dakota Occupational Therapy faculty and staff. Also, a huge thank you to Devon Olson for her unmatched knowledge and assistance throughout the creation of our project. The knowledge, experiences, and expertise of the faculty assisted us in creating our project and has prepared us to become confident occupational therapists. Finally, we would like to thank our family and friends for their love and support throughout our time in the University of North Dakota Occupational Therapy Program.

Abstract

Creating Sense of It: An In-service to Address Military Students Experiencing Sensory Deficits. Danielle Cox, MOTS, Katelyn Jennings, MOTS & Mandy Meyer, PhD. Department of Occupational Therapy, University of North Dakota School of Medicine and Health Sciences, 1301 N Columbia Rd, Grand Forks, ND 58203--2898.

Purpose: Life for military children is challenging as they are exposed to various experiences that may have adverse effects. There is an unprecedented need for additional resources regarding sensory deficits in military children to provide more insight into the challenges faced by this population as well as to increase awareness and support for the demands placed upon children in military families. The purpose of this project is to provide information to educators regarding added sensory challenges faced by military students as well as to increase awareness and support for the demands placed upon these children.

Methodology: The methodology used to develop this product included an extensive literature review of the research using databases on the University of North Dakota School of Medicine and Health Sciences Library Resources. The product was developed using multiple theories, including the Ecology of Human Performance Model, Ayres Sensory Integration Framework, and Andragogy. The content was based on the findings of reviewed research to promote sensory strategies for educators of military children experiencing sensory deficits.

Results/Conclusions: More effective behavioral outcomes may be enhanced by the development and implementation of programs such as sensory integration therapy for military children. This project fills a gap in the lack of professional development programs by providing a much-needed resource to educators of military students who may be experiencing sensory challenges in the form of an in-service.

Chapter I: Introduction

Life for military children is challenging as they are exposed to various experiences that may have adverse effects including deployment, prolonged family separation, frequent relocations, and traumatic experiences. Military students' transition and deployment-related academic and social-emotional needs are frequently attended to by teachers; however, little is known about the impact of sensory deficits on their occupational performance in the educational setting (Garner et al., 2014). In 2019 there were 1.2 million children and youth in military families (American Association of School Administrators, 2019). Given the stressors placed on these children academically, socially, and emotionally, the lack of awareness and resources provided to this population is concerning. It has been found that many educators believe that the military lifestyle is problematic, and more research is needed to assist early educators (Classen et al., 2019). This project attempts to fill this gap by providing the necessary resources to educators of military students who may be experiencing sensory challenges.

Military children are faced with unique stressors and challenges that non-military children may not experience; these may have implications for sensory deficits. Classen et al. (2019) conducted a study to understand the family professional partnerships from the families' perspective as they seek educational services for their child. One barrier educators identified was that their school district did not offer routine military-related professional development opportunities to staff (Classen et al., 2019). There is an

unprecedented need for additional resources regarding sensory deficits in military children to provide more insight into the challenges faced by this population as well as to increase awareness and support for the demands placed upon children in military families. It is known that sensory dysregulation in children often goes unnoticed and is often mistaken as a behavioral problem (Kranowitz, 2005). Military children may have a decreased ability to modulate sensory input due to the inconsistency in their environment and challenges they face associated with military life.

Occupational therapy practitioners, consistent with the Ecology of Human Performance Model, look at the relationship between the person, occupation (activity), and the context. Given the amount of time that they spend in the classroom, a child's primary occupation is their education. The environment of the military child changes frequently which can be exacerbated by the various stimuli found in the classroom setting. Occupational therapists can assist in addressing sensory deficits to allow military children to perform everyday activities functionally. Due to the demands placed upon these students by their environments, additional resources provided from an occupational therapist are warranted to address their needs. Communication between a student's teacher and the school occupational therapist is essential to provide effective strategies for addressing sensory challenges in the classroom. The purpose of this project is to provide information to educators regarding added sensory challenges faced by military students as well as to increase awareness and support for the demands placed upon these children.

Created with the intent to provide additional professional development to educators of military students, the product that is being presented within this work

includes a six-session in-service. The in-service will be offered by a registered occupational therapist with preferred experience in sensory integration. The first session of the in-service includes background information about military culture as well occupational therapy's role in sensory processing. The following sessions walk through each of the body's senses and relate each sense to a military child functioning in the classroom environment. Included in each session is a PowerPoint presentation for the occupational therapist to present the information to the educators. Also presented within each session is a case study and activities to help the educators practice the skills learned from the PowerPoint presentations. This product was created with the use of multiple theories as a framework for presenting the information to the educators of military students.

Some key terms that need to be defined include adaptive response, context, environment, military child(ren), sensory challenges, deficits, and issues, sensory integration, and stimulus.

- An adaptive response can be defined as an effective response or interaction with the environment (Parham & Mailloux, 2015).
- Context, as defined in the Occupational Therapy Practice Framework, refers to "elements within and surrounding a client that are often less tangible than physical and social environments but nonetheless exert a strong influence on performance" (American Occupational Therapy Association [AOTA], 2014). Contexts, as described in the Framework, are cultural, personal, temporal, and virtual (AOTA, 2014).

- Environment, as defined in the Occupational Therapy Practice Framework includes the social and physical environments situation within context (AOTA, 2014).
- Military child(ren) refers to any child of a parent who is currently serving or has previously served in one of the seven branches of the armed forces.
- Sensory challenges, deficits, and issues are used interchangeably throughout this project and can be defined as a situation when a child has a difficult time receiving, responding, organizing, and/or adapting to various stimuli in their environment.
- Sensory integration is a neurological process that organizes sensation from the body and the environment and makes it possible to use the body effectively within the environment (Parham & Mailloux, 2015). These terms are not used to refer to a child with a known sensory processing disorder, however they are meant to describe a child who has difficulty producing adaptive responses.
- Stimulus is defined as "verbal, sensory, or environmental input that prompts a behavior" (Helfrich, 2014, p. 590).

Concepts from the Ecology of Human Performance Model were utilized throughout this project to help guide and organize the information presented. The Ecology of Human Performance Model highlights the relationships between the person, task, and the context (Dunn, 2017). This model also offers different therapeutic approaches to intervention including establish/restore, alter, adapt/modify, prevent, and create to support the performance needs and interests of people (Dunn 2017). These concepts were embedded throughout the entire product to help both the occupational

therapist presenting the information and the educators increasing their professional knowledge. Ayres Sensory Integration theory was also used to guide the information provided in the in-service. The main goal of the framework is to work with individuals through a variety of sensory experiences in order to produce sensations that lead to adaptive responses (CLASI, n.d.). Concepts from this framework can be found throughout each of the sessions presentations as well as in the activities provided. Finally, concepts of Andragogy were used to help guide the teaching strategies that were presented in our product. Andragogical principles are applied in education, which is successful when learners have the right amount of practical and social experience, are aware of a life goal and of the applicability to their knowledge and skills and are trying to attain short-term educational goals (Chan, 2010). Adult learning principles were used throughout the in-service to provide the educators with appropriate activities in order to maximize their learning experience.

The following chapters will assist the reader in understanding the processes that were taken when developing the product. Chapter II contains findings from an extensive literature review that grounded and guided our product. Chapter III describes the methodology used in the development of the product. This chapter outlines the various databases and key terms that were searched in preparation for making our product. Chapter IV contains the product of the research, an in-service, which is intended for occupational therapists to present to educators of military students who are experiencing sensory challenges. Chapter V concludes the project with a summary, limitations of the product, implications for future research, and information about possible implementation of the in-service in the future.

Chapter II: Literature Review

Introduction

Life for military children is unique as they are exposed to various experiences that may have adverse effects including deployment, prolonged family separation, frequent relocations, and traumatic experiences. One in four military children has emotional-behavioral challenges associated with the deployment of a parent (Huebner, 2019). Sensory deficits relating to emotional-behavioral difficulties in military children need to be researched further to provide more insight into the challenges faced by this population as well as to increase awareness and support for the demands placed upon children in the military. Occupational therapy can assist in addressing sensory deficits to allow military children to perform everyday activities functionally. More effective behavioral outcomes can be enhanced by the development and implementation of programs such as sensory integration therapy for military children.

Military Culture

The culture of the military is unique and must be understood differently from the civilian world, given the diversity within this population (Hall, 2011). The United States of America is served by seven different branches of the armed forces, including the Army, Navy, Marine Corps, Air Force, Coast Guard, Space Force, and Air National Guard. In 2019, over 2.1 million people served in one of the seven armed forces (Bureau of Labor and Statistics, 2019). Each branch of the military has its own values; however, honor and integrity are a couple of core values within military service itself (Halvorson,

2010). Service members join the military for a variety of reasons, including the propensity to serve, educational benefits, and financial motivations (Huebner, 2019). Military members begin their careers by being fully immersed in military culture, which includes learning about the history of their service, military customs and courtesies, uniform attire, military bearing, discipline, and military values and ethics (Halvorson, 2010).

Understanding military culture means understanding the entire military family. In 2005, it was reported that 52% of service members were married (Halvorson, 2010). Furthermore, it was reported that in 2019 there were 1.2 million children and youth in military families (American Association of School Administrators, 2019). Children growing up in military families share everyday experiences with each other, such as living on base, attending Department of Defense schools, frequent relocations, and separations from a parent (Huebner, 2019). With this, it is essential to understand the sacrifices and consequences that the military has on the entire family. A top trend from a 2015 annual military family lifestyle survey indicated childcare challenges and concern for children's mental, physical, and educational well-being (Shiffer et al., 2015). Assistance to these children and families of our military is imperative to ensure that these children are receiving support given the difficulties they face.

Transient Military Children

Military children have unique experiences, including frequent relocations, prolonged separations from parents, and stressors relating to deployment and relocation (Huebner, 2019). The average military student attends nine different schools between kindergarten and 12th grade (Astor et al., 2013). The Department of Defense provides schools on military bases, called the Department of Defense Education Activity

(DODEA) schools in the United States and abroad (Engel et al., 2008). The DODEA school system consists of 223 schools in only seven U.S. states, 2 U.S. territories, and 13 foreign countries (Engel et al., 2008). DODEA schools are accredited by the Commission on Accreditation and School Improvement and follow the same standards and curriculum as civilian schools (Huebner, 2019). Only 13% of children with an active-duty parent attend a DODEA school, with the majority of military children attending civilian schools (Huebner, 2019). There is a lack of research on the role of supportive school environments on the social, emotional, and psychological development of military students (Astor et al., 2013). The lack of knowledge and education provided to these students as they adjust to new school environments may contribute to academic issues and social challenges (Astor et al., 2013). The stressors associated with frequent relocation include differences in achievement standards, school protocol, course offerings, extracurricular activities, and academic requirements (Department of Defense Education Activity, 2018). Because military children are widely recognized as a distinct culture within the civilian world, it is crucial to understand the impact of military connectedness on their education.

In order to bridge the gap in education disparities among military children attending school at civilian public schools, the Interstate Compact on Education Opportunity for Military Children was created (National Military Family Association, 2020). This piece of legislation was intended to make sure that military kids are immediately enrolled in their new school after a relocation, placed in appropriate academic programs, and can graduate on time (National Military Family Association, 2020). The compact is an agreement between states to provide consistent educational transitions in all areas relating to enrollment, placement, attendance, eligibility, and

graduation (Military Interstate Children's Compact Commission, n.d.). It covers all children of active-duty service members enrolled in kindergarten through 12th grade, children of fallen soldiers, and children of service members who are medically retired or discharged (National Military Family Association, 2020). It is not uncommon that teachers and administrators in the system are unfamiliar with the requirements of the compact, which can result in increased stressors posed to military children and their families (National Military Family Association, 2020).

While attempting to increase awareness surrounding challenges faced by military students, the Military Student Identifier (MSI) provides educators with critical information to personalize attention to military children (Military Child Education Coalition, 2020). Schools are required to ask about the MSI during their student enrollment procedure (Military Child Education Coalition, 2020). Data provided via this identifier helps educators recognize a group of unique individuals to consider their special needs in planning, programming, and curriculum design (Military Child Education Coalition, 2020). The MSI helps to improve and personalize academic and social/emotional responses for the unique military student population as they relocate to several different schools throughout their academic career (Military Child Education Coalition, 2020). While there are specific measures in place to ensure that military children are receiving the treatment necessary to address the stressors of military culture, there remain issues within the system that prevent them from getting the assistance they need.

Issues Faced by Military Children

It is not uncommonly recognized that the need to support military families is essential given the impact of deployment and related military stressors. However, what is

remarkably recognized is the effectiveness of sensory integration therapy on military children. Nelson et al. (2016) explained a concept known as the mother-infant dyad and its relationship to insecure and secure attachment styles. Insecure attachment styles predict difficulty with relationships, emotional self-regulation, and school adjustment and functioning (Nelson et al., 2016). Secure attachment styles, on the other hand, are developed from their parent's ability to provide emotional regulation and stability for a child (Nelson et al., 2016). While the spouse of the deployed service member is often the child's caregiver, they, too, experience stressors and depression that impacts their ability to teach emotional regulation skills to their children. Parenting stress in military families was associated with reports of increased child behavior problems (Nelson et al., 2016). It was reported that children whose parents deployed failed measures of social-emotional functioning at twice the rate of children whose parents did not deploy (Nelson et al., 2016). Additionally, in one study conducted on the effect of deployment on the behavior of children, results showed that children who had a deployed parent scored higher on the Child Behavior Checklist (Chartrand et al., 2008). This is an assessment that measures emotional reactivity, anxiousness/depression, somatic complaints and withdrawal, attention difficulties, and aggression (Chartrand et al., 2008).

Research has revealed various challenges associated with deployment, including a decline in academics, increased behavioral problems during deployment, increased emergency and specialist visits, and somatic symptoms (Huebner, 2019). Gorman et al. (2010) conducted a study to determine the effect of parental military deployment on the rate of outpatient visits for mental and behavioral health disorders in children aged three to eight years old. They found an 11% increase in health visits as well as a 19% increase in behavioral disorders (Gorman et al., 2010).

Military families, interprofessional healthcare practitioners, legislators, and educators all have a role in positively impacting a military child's health and well-being. Sensory deficits in military children need to be further researched to provide more insight into the challenges faced by this population as well as to increase awareness and support for the demands placed upon children in the military. More effective behavioral outcomes in military children can be enhanced by the development and implementation of programs such as sensory integration therapy (Lester et al., 2013).

Challenges in the Classroom

Military children must cope with parental deployment during a critical and rapid stage of social and emotional development, which can be challenging in even the most supportive environments (Chandra et al., 2010). This stress can manifest into academic, social, emotional, and behavioral challenges at school specifically (Chandra et al., 2010). It has been found that many educators believe that the military lifestyle is problematic, and more research is needed to assist early educators (Classen et al., 2019). Classen et al. (2019) state that professional development focused on providing appropriate support and quality educational opportunities that are critical to addressing the unique experiences of these children and their families is needed in order to overcome the bias that military lifestyle is problematic.

Chandra et al. (2010) conducted a study to understand the school staff's perspectives on how parental deployment affects the behavioral, social, and emotional outcomes of children in the school setting. They found that school personnel perceived many children and families to be coping well with the deployment (Chandra et al., 2010). However, they saw a significant number of children struggling with a range of deployment-related issues that were reportedly influencing the child's ability to function

in the classroom (Chandra et al., 2010). For example, staff reported that for many children, parental deployment led to sadness and anger, which disrupted classroom activities and affected peer relationships (Chandra et al., 2010).

In addition to these challenges is the challenge of reintegration, or when the service member returns home (Chandra et al., 2010). School staff reported that many students do not adjust well with the returns, which may be due to a disruption in routines at home (Chandra et al., 2010). Mobility of these transient students presents the problem of being exposed to different curriculums and instructional techniques, which puts military children at risk of gaps in knowledge and life skills (Garner et al., 2014). Another common concern for transitioning students is how well they establish new relationships with peers as they move from school to school (Garner et al., 2014). There are also emotions related to the absence of a deployed parent, which may affect their classroom behavior, including increased distractions, anxiousness, sadness, and anger (Garner et al., 2014).

Some studies have shown that military children have higher rates of behavioral problems compared to civilian children (Mmari et al., 2010). This may be because such problems are symptoms of the "military family syndrome," in which fathers are authoritarian, mothers are depressed or overprotective, and children often respond negatively to their parents' discipline (Mmari et al., 2010). With all of these challenges comes the belief of school staff that students rely on the school and school staff for social and emotional support at unprecedented levels (Chandra et al., 2010).

Working with Military Children

We know that military children are at risk for an array of negative social, behavioral, emotional, and psychological outcomes. Each military family's strengths,

resources, and skills influence the ways that children react to the stressors of military life (Classen et al., 2019). The resources provided to these military families should include the support of educators of military students due to the impact that the school environment has on the social, emotional, and psychological aspects of military students. Astor et al. (2013) conducted a study to examine how supportive public-school environments can serve as a promotional context for the development of children and adolescents from military backgrounds. The authors state that a whole-school intervention approach holds the most significant promise for promoting positive outcomes among military students (Astor et al., 2013). A whole-school approach includes multiple components of a school's climate and context consisting of the principal, teacher, and peer awareness of military culture and issues (Astor et al., 2013).

Classen et al. (2019) conducted a study to understand the family professional partnerships from the families' perspective as they seek educational services for their child. One barrier educators identified was that their school district did not offer routine military-related professional development opportunities to staff (Classen et al., 2019). There were some differing views about a possible solution to this barrier. Some educators believed that training could be on an as-needed basis, while others conveyed the need for regular formal professional development training related to military culture (Classen et al., 2019). It is also recommended that communication and open sharing of resources and knowledge are vital to improving the success of young children and their parents who are a part of a military family (Classen et al., 2019). The literature on the perspectives of school staff and military parents has implications for the development of more professional training that targets a greater understanding of military culture and the challenges that military students face daily. The behavioral concerns seen by educators

and parents of military students elicit the need for future research and professional development within the scope of sensory integration.

Military Healthcare

The Military Health System is a single-payer umbrella system and consists of multiple different Tricare plans available to service members and their families (Huebner, 2019). Eligibility is dependent on the service members' status and enrollment in the Defense Enrollment Eligibility Reporting System, and all plans are compliant with the Affordable Care Act (Huebner, 2019). The Military Health System provides services within 54 inpatient hospitals and 377 ambulatory clinics throughout the world (Huebner, 2019). Huebner (2019) reports that approximately 220,000 active-duty service members have a family member with special needs, and 20% of those are military-connected children. Children with special needs often need services from outside providers, who are not usually familiar with the Military Health System (Huebner, 2019). In addition to this, military families of children with special needs are subject to relocating, which increases the challenge of navigating the demands of military life and coordinating disability services (Jagger & Lederer, 2014). Relocating means that parents and educators have to learn how to navigate special education service systems in another school district, often in another state, to reinstate previous services (Classen et al., 2019). Navigating these special education services is one challenge that military families have to overcome, but they also face the challenge of finding specialized therapies covered under their healthcare plans. Tricare excludes services that are not medically or psychologically necessary for the diagnosis or treatment of a covered illness, injury, or diagnosis of well-childcare (Defense Health Agency, 2019). Military children experiencing sensory difficulties will likely not receive treatment due to sensory integration therapy not being

covered by Tricare. Because of the challenges and stressors placed upon children in the military, sensory deficits should be addressed by the Department of Defense to improve well-being and participation in the educational setting.

The Individuals with Disabilities Education Act (IDEA) is a law that requires free appropriate public education to eligible children with disabilities and ensures special education and related services to those children (U.S. Department of Education, 2020). Under IDEA, children are eligible to receive an Individualized Education Plan (IEP), which specifies goals, objectives, and supports within the classroom setting (Jagger & Lederer, 2014). By the time that all of the services specified on an IEP are put into place, the family will likely be relocated to another base (Jagger & Lederer, 2014). Issues also arise within military families when school administrators and Tricare disagree on who is responsible for paying for services and equipment (Jagger & Lederer, 2014). This causes frustration within many different organizations as well as to the families already experiencing the stressors of military life. Military children experiencing sensory deficits will also not likely receive services within the school setting, leading to increased behavior and educational problems.

Sensory Systems

There are many aspects that go into the human sensory systems having to do with the nervous system receiving, interpreting, and organizing information as well as deciding how the body will respond to that information. The terms that need to be defined include sensory processing, sensory discrimination, sensory integration, sensory registration, sensory modulation, adaptive response, and sensory processing disorder.

- Sensory processing is defined as the way that the nervous system receives sensory information from the environment or from the body; the information is detected, modulated, and interpreted in order to turn that information into a response (STAR Institute, 2020).
- Sensory processing disorder is the result of a dysfunction in this process where the sensory information is detected, modulated, or interpreted poorly, resulting in an atypical response (STAR Institute, 2020).
- Sensory processing occurs when the observable behavior does not match demands or expectations of the environment and the task, therefore, is difficulty grading the response to degree, nature, or intensity of the information, and it can occur in any or all sensory systems with fluctuating reactions (Parham & Mailloux, 2015). Sensory processing disorder can affect anyone; studies indicate that 5% to 16% of children exhibit symptoms of sensory processing disorder (STAR Institute, 2020).
- Sensory discrimination is the ability to differentiate between spatial and temporal qualities of sensory information, as in where, what, or when input is being received (Parham & Mailloux, 2015).
- Sensory integration is the neurological process that organizes sensation from the body and the environment and makes it possible to use the body effectively within the environment (Parham & Mailloux, 2015).
- Sensory integration is also referred to as the organization of sensation for use, which is the process that the brain selects, enhances, inhibits, compares, and associates sensory information in a flexible and continually changing pattern (Parham & Mailloux, 2015).

- Sensory registration is the process by which sensory input is responded to or attended to within the environment (Parham & Mailloux, 2015). After sensory input is registered, the memory compares it to previous knowledge in order to attach meaning to the information it is receiving.
- Sensory modulation is the ability to respond adaptively to sensation over a broad range of intensity and duration, and the response is appropriate to the degree, nature, and intensity of the sensory information received (Parham & Mailloux, 2015). Sensory modulation allows for adequate attention and facilitates engagement in day-to-day occupations (Parham & Mailloux, 2015).
- An adaptive response is referred to as an effective response or interaction with the environment (Parham & Mailloux, 2015).

There are seven different recognized types of sensory information that are received and processed by the nervous system. Those systems include gustatory, olfactory, visual, auditory, tactile, vestibular, and proprioceptive.

- The gustatory or taste and olfactory or smell senses are referred to as chemical senses and have similar tasks, which are the detection of environmental chemicals (Bear et al. 2016). The gustation and olfaction senses have an unusually strong and direct connection with the most basic internal needs, including thirst, hunger, emotion, sex, and certain types of memory (Bear et al., 2016).
- The visual sensory system is remarkable and extremely complicated while it is able to detect objects of all shapes and sizes; it is also sensitive to light allowing individuals to make sense of the complex world around them (Bear et al., 2016).

- The auditory system is also known as the system that allows individuals to hear a variety of sounds at different intensities, frequencies, and pitches (Bear et al., 2016).
- The vestibular system monitors the position and movement of the head, giving individuals a sense of balance and equilibrium (Bear et al., 2016). It also helps coordinate movements of the head and eyes as well as adjustments to the posture of the body (Bear et al., 2016).
- The somatic sensory system is also known as the tactile system, which enables the body to feel, ache, and differentiate temperature (Bear et al., 2016). This system is sensitive to many kinds of stimuli, including pressure, temperature, and position of joints and muscles, the internal organs, and the brain itself (Bear et al., 2016).
- The proprioceptive system has to do with an individual's perception or awareness of the position and movement of the body (Bear et al., 2016). Proprioception is the process by which the body can control muscle contractions in response to sensory input and keep track of the joint position in the body (Bear et al., 2016).

Occupational Therapy's Role in Sensory Integration

Occupational therapy promotes health and well-being, independence, and participation in life through the engagement of meaningful everyday occupations (AOTA, 2014). When it comes to occupational therapy working with sensory processing disorder or individuals dealing with sensory issues, the goal is to enable individuals to accurately detect, interpret, and regulate sensations while establishing the ability to respond adaptively to sensory stimuli to be able to be functionally independent and successful in meaningful everyday occupations (STAR Institute, 2020). Therapy involving sensory integration typically is geared towards increased social participation,

self-esteem, and self-regulation by providing strategies for modulation and discrimination of sensory information to increase daily functioning at home, school, and in the community (STAR Institute, 2020). Occupational therapists have a responsibility to be client-centered and educate clients to understand how sensation is perceived and how those perceptions affect attention, learning, motor skills, as well as social and emotional abilities while teaching adaptive strategies for the clients' specific environments or contexts (STAR Institute, 2020). There are times that sensory dysregulation in children is not recognized by doctors, teachers, and parents and is misinterpreted as a behavioral problem. They may mistake poor behavior, low self-esteem, or reluctance to participate in ordinary activities as a learning disability, emotional problem, or as a child acting out (Kranowitz, 2005). This can be very detrimental to an individual because the sensory issues that they are experiencing could be avoided with simple strategies; however, they may be punished or judged for something that is out of their control.

Product

An in-service focused on the needs of educators in order to facilitate and shape successful futures for children in military families will be created in order to address these needs. This will be provided in order to educate teachers on the ways to provide services to military children experiencing sensory deficits. This in-service will include an overview of sensory processing, the seven senses, how deficits are presented with each sense, how they affect function, and how to differentiate between behavior and sensory deficits. The teachers will also be provided with strategies on how to address and manage these sensory deficits with their military students.

The anticipated outcome is to see an increase in adaptive responses in military students experiencing sensory deficits as a result of providing educators tools to address

this issue. The teachers will be able to identify various sensory deficits as well as implement strategies to address these deficits in order to facilitate functional performance in the classroom. We hope to see an improvement in the teachers' ability to differentiate between behavioral and sensory deficits in order to maximize occupational performance in the educational setting.

Theory

This project was created to provide professional development to educators of military children on the basis of multiple theories, including andragogy, Ayres Sensory Integration, and the Ecology of Human Performance. Andragogy is based on adult learning, which was utilized during the creation of the product in order to facilitate educational principles. The Ecology of Human Performance was used in order to bridge the gap between the occupational therapist and the educators of military children because of its ability to facilitate interdisciplinary collaboration. Finally, because the purpose of this project is to help educators facilitate effective adaptive responses in military children in the classroom setting, Ayres Sensory Integration was used to guide the creation of the product.

Andragogy

Andragogy was used as a theory to guide the creation of our project and is defined as the art and science of helping adults learn (Chan, 2010). Andragogy was further developed from Eduard Lindeman's work on andragogy by Malcolm Knowles, who discussed six main assumptions: self-concept, the role of experience, readiness to learn, orientation to learning, internal motivation, and need to know (Chan, 2010). Andragogical principles are applied in education and have been used in training, which is successful when learners have the right amount of practical and social experience, are

aware of a life goal and of the applicability to their knowledge and skills and are trying to attain short-term educational goals (Chan, 2010). These principles were considered during the development of an in-service for educators of military students with hopes of promoting an inclusive sensory classroom for the needs of those students. It is evident that the current educational needs of teachers include further research and education regarding military students, which includes the use of andragogical strategies to create a more engaging and practical learning environment.

Ecology of Human Performance Model (EHP)

The Ecology of Human Performance identifies four main constructs, including person, task, context, and performance, or the interactions between person, task, and context (Cole & Tufano, 2008). The emphasis on the person within this model makes this framework person-centered, as it recognizes the person as a unique set of variables including past experiences, personal values and interests, and sensorimotor, cognitive, and psychosocial skills (Dunn, 2017). Tasks, as defined in EHP, are objective sets of observable behaviors necessary to accomplish a goal (Cole & Tufano, 2008; Dunn, 2017). This terminology aids in interdisciplinary collaboration as it is a universal term understood by all. Context refers to the set of interrelated conditions that surround the person and may include temporal aspects as well as physical, social, and cultural environmental aspects (Cole & Tufano, 2008; Dunn, 2017). The primary purpose of EHP is to "provide a framework that emphasizes both the essential role of context in participation and the critical nature of the relationships among person, context, and task to our understanding of performance" (Dunn, 2017, p. 210). EHP asserts that the interaction between the person and the context affects human behavior and performance (Dunn, 2017). Therefore, this model was utilized to guide the product as an attempt to

intervene at the levels of the person, task, and context in order to elicit more effective adaptive responses in military children.

Unique to the Ecology of Human Performance is its inclusion of different intervention options within the occupational therapy scope of practice (Dunn, 2017). Establish/restore, alter, adapt/modify, prevent, and create are used as therapeutic approaches to intervention that support the performance needs and interests of people (Dunn 2017). The establish/restore approach focuses on the person factors and aims to improve the person's skills by establishing a new skill or restoring skills that may have been lost (Dunn, 2017). While using the alter approach, the focus is on the context in which the person performs, and the aim of the therapist is to help find the best match between the person's interests and the demands of particular contexts (Dunn, 2017). The adapt/modify intervention approach requires a change in the aspects of the context in order to support the person's performance (Dunn, 2017). While using the preventative approach, the purpose is to preclude the development of performance issues by changing person, context, or task variables (Dunn, 2017). Finally, the create intervention approach focuses on creating circumstances that support optimal performance but does not assume that a problem exists (Dunn, 2017). These intervention approaches were used to guide the creation of specific interventions for an in-service for educators of military children.

Another difference within this model is that it is designed as a framework intended for use by interprofessional teams as a means to support collaboration (Dunn, 2017). This model is geared toward the collaboration of multiple disciplines such as occupational therapy and a school-based team, including teachers, principals, special educators, and parents. The language, specifically with the use of the term "task," is general in promoting dialogue regarding these different professions. In a study aimed at

designing effective supports for adult basic education, welfare-to-work, and community college programs, EHP was critical to understand interventions for persons with learning disabilities (Dunn, 2017). Teachers were used as a part of this research team, and they identified that teachers used whatever adaptations they know about to help someone, with no regard to the specific challenges they faced (Dunn, 2017). Using EHP to guide research enabled teachers to see the relationships among the accommodations so that they could identify the success of strategies for future situations that students might encounter (Dunn, 2017). This provides evidence that The Ecology of Human Performance can be successful when addressing specific learning problems with interdisciplinary teams and in the natural context of the person.

The Ecology of Human Performance intervention process uses patterns of sensory processing because "contexts and activities contain sensory qualities that affect a person's way of being and illustrate the continuous interaction among person factors, context features, and task demands" (Dunn, 2017, p.232). The interpretations of our sensation within our own nervous system involve the context and tasks that contribute to those sensory experiences (Dunn, 2017). The different intervention approaches can be utilized to educate interdisciplinary teams who are working with military children experiencing such sensory deficits. Various studies have led to the hypothesis that a "person's patterns are not functional or dysfunctional by nature, but rather it may be the interaction between the person's sensory processing patterns and the task and context variables in their lives that determines whether they are doing well or poorly" (Dunn, 2017, p.232). Because EHP does not assume disability, this model is effective for occupational therapists to advocate for populations of people who may or may not be at risk for occupational performance problems. The Ecology of Human Performance was

used as a theoretical guide outlining the sensory patterns that might affect military children and aid educators of military children to produce adaptive responses with the use of the different intervention approaches.

Ayres Sensory Integration

The Ayres Sensory Integration Framework was developed by Jean Ayres, an occupational therapist, neuroscientist, and psychologist (CLASI, n.d.). It is a well-established and growing area in practice. Ayers believed that the therapeutic use of appropriate, client-driven activities was the most effective way to promote sensory integration and thereby occupational performance and participation (Lane et al., 2014). The framework can be applied in a variety of settings, including the home, school, and the community with a wide range of individuals of various disabilities and ages (CLASI, n.d.). Originally this framework was found to be effective with children experiencing learning and behavior difficulties and has since developed a stronger evidence-base and can be applied across a broader scope (CLASI, n.d.). This framework provides evidence on how the human sensory systems work and allows for an effective way to identify where a sensory issue or deficit is occurring. Sensory integration deficits are found in individuals across the lifespan with and without an identified diagnosis (CLASI, n.d.). This therapy approach has been found effective when applied to problems such as learning disabilities, attention deficits, and other sensory issues (CLASI, n.d.). The main goal of the framework is to work with individuals through a variety of sensory experiences in order to produce sensations that lead to adaptive responses (CLASI, n.d.). An adaptive response is defined as “the ability to adjust to one’s action on environmental demand” (Lane et al., 2014, p.818). This provides individuals with the skills and tools in

order to cope with their sensory deficits and have the ability to participate more effectively and engage in occupations that are meaningful to them.

Summary

Military children are faced with many stressors and challenges that lead to sensory processing deficits, which affect overall educational performance. There is a lack of research that links military children and sensory deficits; however, it is known that sensory dysregulation in children often goes unnoticed and is often mistaken as a behavioral problem (Kranowitz, 2005). It has also been identified that educators working with military children have noticed problems in the classroom that can be a result of military culture. Military children's ability to modulate sensory input may be decreased due to the inconsistency in their education, challenges that they face in life, and the lack of support that they receive in school systems (Parham & Mailloux, 2015). Additional resources, including professional development, are recommended to address the impact of military culture on sensory deficits in students; therefore, an in-service was created for educators of military children experiencing sensory deficits in order to address this need.

Chapter III: Methodology

The methodology used to develop this product included an extensive literature review of the research base. The purpose of the literature review was to gain a deeper understanding of how sensory deficits impact military children in the school system and current sensory-based strategies that would be helpful for educators. The literature review served as a precursor to help create professional development in the form of an in-service to provide support to educators of military students and their families.

The review of the literature was completed utilizing multiple databases on the School of Medicine and Health Sciences Library Resources, including CINAHL, PubMed, ERIC, PsycINFO, Google Scholar, Academic Search Premier, EBSCO, and AJOT. Key terms used to conduct research are included in Table 1, outlining specific terms. Textbooks were also utilized in the methodology of this product. The in-service was developed through the utilization of multiple theories, including the EHP Model, Ayres Sensory Integration Framework, and Andragogy. The content was based on the findings of research in order to promote sensory strategies for educators of military children experiencing sensory deficits.

Current research suggests that military families need the support of educators of military students due to the impact that the school environment has on the social, emotional, and psychological aspects of military students (Classen et al., 2019). It was found that one in four military children have emotional-behavioral challenges associated with deployment (Huebner, 2019). The unique life of military children and the stressors

that are placed upon them leads to sensory deficits that affect their ability to function in various environments, including the classroom setting. Occupational therapy assists in addressing sensory deficits to allow military children to perform everyday activities in a functional manner. More effective behavioral outcomes can be enhanced by the development and implementation of programs such as sensory integration therapy for military children. Therefore, an in-service was created for educators of military children with hopes to optimize occupational performance in the educational setting.

Table 1. Search Strategy for Research

Category	Key Search Terms
Military guard, coast	Military, army, navy, airforce, marine, deploy, national guard, compact, student identifier, transient, moving, deployment, trauma, military dependents, military family, military personnel, military recruits, armed forces, veteran, military culture, military student
Children	Children, kids, youth, elementary, kindergarten, children of impaired parents
Parents biological	Parents of disabled children, parents, parental attitudes, parents
Sensory issues,	Sensory, deficit, issues, processing, integration, behavioral stress, sensory motor integration, sensory integration, sensory training, disability, sensory processing, behavior
Intervention progress,	Individualized education plan, intervention, treatment, occupational therapy, documentation, case file, tracking
Educators teacher	Teachers, paraprofessional, educator, teacher attitudes, behavior, teacher collaboration, teacher competencies, teacher developed materials, teacher education, teacher

education programs, teacher educator education, teacher effectiveness, teacher expectations of students, teacher guidance, teacher influence, teacher motivation, teacher participation, teacher response, teacher student relationship

Chapter IV: Product

CREATING SENSE OF IT

AN IN-SERVICE TO ADDRESS MILITARY STUDENTS EXPERIENCING SENSORY DEFICITS

By Danielle Cox, MOTS and Katelyn Jennings, MOTS

University of North Dakota Occupational Therapy Department

Purpose and Rationale for Product

Life for military children is unique as they are exposed to various different experiences that may have negative effects including deployment, prolonged family separation, frequent relocations, and traumatic experiences. One in four military children have emotional-behavioral challenges associated with deployment (Huebner, 2019). Sensory deficits relating to emotional-behavioral difficulties in military children need to be further researched in order to provide more insight into the challenges faced by this population as well as to increase awareness and support for the demands placed upon children in the military. Occupational therapists can assist in addressing sensory deficits to allow military children to perform everyday activities in a functional manner. More effective behavioral outcomes can be enhanced by the development and implementation of programs such as sensory integration therapy for military children.

The intent of this product is to provide information to educators regarding the added challenges faced by military students as well as to increase awareness and support for the demands placed upon these children. The product is focused on the needs of educators to facilitate and shape successful futures for children in military families. A six-session in-service was developed to provide information to educators regarding sensory strategies for military children experiencing sensory deficits. The first session includes education about military culture, occupational therapy's role in sensory integration, as well as how military students may be affected by sensory deficits. Sessions two through five are focused heavily on each bodily sense and how those may present in military children. Session six serves as a conclusion to the in-service and provides the educators with a chance to practice their newly learned skills. Because there is a lack of

resources provided to educators of military students, this in-service helps fill that gap in order to increase adaptive responses in military students experiencing sensory deficits.

Information for the Facilitator

In order to effectively and efficiently present this information to educators of military students, it is essential to be aware of the literature regarding the need for this in-service. In 2019 there were 1.2 million children and youth in military families (American Association of School Administrators, 2019). That is 1.2 million children who may be at risk for a decline in educational performance as a result of falling through the cracks of receiving the treatment that they need. Research revealed various challenges associated with deployment, including a decline in academics, increased behavioral problems during deployment, increased emergency and specialist visits, and somatic symptoms (Huebner, 2019). Additionally, a significant number of children struggling with a range of deployment-related issues that were reportedly having an effect on their ability to function in the classroom (Chandra et al., 2010). Classen et al. (2019) conducted a study to understand the family professional partnerships from the families' perspective as they seek educational services for their child. One barrier educators identified was that their school district did not offer routine military-related professional development opportunities to staff (Classen et al., 2019). This in-service serves as a guide to fill this gap in professional development opportunities for educators of military students that may be experiencing sensory deficits. Due to the occupational therapist's expertise in sensory processing, it is necessary that an occupational therapist facilitate each session.

To increase the ability for this information to reach a larger audience across the United States, this in-service can be adapted to meet the needs of individual school

districts. This in-service is estimated to take approximately one hour per session for a total of six hours. Although there are six sessions included in this in-service, they can either be provided in a one-day professional development day or across the span of six weeks, implementing one session per week. Any other variation in the timing of sessions is acceptable and the facilitator is encouraged to communicate with the school district to determine what works best for the school. This in-service is intended to be used with educators of military children in grades K-5. It is up to the school district to determine whether they would like to mix educators of different grades or provide the in-service specifically to educators of a certain grade. Ideally, this in-service would work best to implement with a group of 10-30 educators, however, it can be adapted to serve more or less.

Included in the product is a PowerPoint presentation for the facilitator for each session. The PowerPoints provided with the product are intended to support the educator's learning needs. These sets of slides also include notes that supplement the information provided. It is highly recommended that the facilitator utilizes the provided notes as well as any additional experiences or examples that the occupational therapist has to offer. The notes are not all inclusive and are intended to spark communication as there is no one right strategy when addressing the sensory needs of a variety of military students. Various teaching strategies were utilized throughout the in-service as well as Ecology of Human Performance (EHP) concepts in order to organize and structure the content for both the facilitator and the educators.

Cole's seven steps were utilized in the development of these sessions in order to meet the needs of the educators that they will be presented to. The seven steps are as

follows: introduction, activity, sharing, processing, generalizing, application, and summary. The introduction step is utilized to introduce the topic of the group, set the expectations, clearly explain the purpose, and provide a brief outline of the session (Cole, 2018). The second step is the activity where timing is an important factor as well as considering the physical and mental capacities of the members in the group (Cole, 2018). Sharing is the third step where group members are encouraged to share experiences and ideas related to the group topic in a safe environment (Cole, 2018). Processing is the fourth and most difficult step. This step expands on sharing and emphasizes the groups feelings associated with the information or activity (Cole, 2018). The fifth step is generalizing where learning throughout the previous steps is summarized as well as related to general principles (Cole, 2018). The group leader should be sure to follow up on issues that surfaced during discussion as well as recognize goal accomplishment and other benefits. Application is the sixth step which expands on generalizing and allows group members to describe ideas to apply the information they learned into their everyday lives (Cole, 2018). The final step is the summary which should be clear and concise. The group leader should summarize the important aspects of the group, thank the members for their participation, and end the group on time (Cole, 2018). These steps can be adapted to meet the needs and objectives of groups at any level and they are typically chosen for maximum integration of learning by the members participating in the group.

Theory

The use of multiple theories was emphasized throughout the creation and implementation of the product in order to provide the educators with the most effective experience. Andragogical principles were applied in the creation of the product with the

educators as adult learners in mind. Provided that the audience has practical and social experience in teaching, this theory was utilized to facilitate an engaging learning environment for a group of motivated, independent individuals. Each session includes a lecture portion of the learning experience that is followed by matching and application activities. Embedded in these teaching strategies is the use of the EHP Model. This model is an ideal fit for this population given the inclusive terminology that is understandable for both occupational therapists as well as educators. This model also provides structure for allowing the educators to apply various strategies for the sensory needs of the military students. Lastly, Ayres Sensory Integration theory was used in the creation of the educational content regarding the different senses as well as helping the educators facilitate adaptive responses in each military student who may be experiencing sensory deficits.

INTRODUCTION AND MILITARY LIFE

Session #1: Introduction and Military Life

Introduction

Physical Environment (Room Set-Up):

- Auditorium or Conference Room
- Ideally with tables and chairs in a circle or half circle to facilitate discussion

Supplies:

- Introductory PowerPoint presentation handout
- Intervention Type Definition Matching Worksheet
- Intervention Types Handout
- Ecology of Human Performance (EHP) Venn Diagram Handout
- Pens/pencils

Expectations of Group:

- Welcome, everyone! My name is _____ and I am an occupational therapist. I am so excited that you are here for this series of educational sessions on creating a successful classroom for military students who may be experiencing sensory processing deficits. This is session one of six where we will orient you to the sessions to follow and provide some introductory information. In this session we will also describe military culture and explain how/why military students may benefit from sensory integration techniques in the classroom.
- The purpose of this session is to orient you to the topic as well as to increase your understanding of occupational therapy's role in sensory integration and processing for military students as well as why we would like to focus on military children.
- Before we begin, I would like to set some expectations for this group. The expectations are as follows:
    - Always respect each other
    - Be open to others' ideas and suggestions

    - Everything said in this group is confidential and should not be discussed outside of the group
- The objectives of this session are as follows…
    - Read objectives listed below

Objectives:

- By the end of the session, group members will be able to describe what occupational therapy is and explain its relation to sensory integration.
- By the end of this session, group members will increase their understanding of the Ecology of Human Performance framework and apply the intervention strategies to real life scenarios.
- By the end of the session, group members will identify reasons why military students may experience sensory deficits more than the non-military student.
- By the end of the session, group members will have a greater understanding of military culture and the challenges that they face.

Warm-Up:

- Please go around the room and introduce yourself including your name, what grade you teach, and how many military children are in your class.

Activity

- Go through the introduction and military life PowerPoint and then have participants complete the matching activity for intervention types and their definitions.

Sharing

- Have group members share their answers to the activity and explain why they matched the definitions with the intervention types.

Processing

- What is one reason that we might automatically resort to thinking that a child is misbehaving rather than thinking of their behavior as a result of a sensory processing deficit?
- What services have you experienced occupational therapists providing to students in your school?
- Do you feel that military students experience sensory processing difficulties in different ways than non-military students, explain?

Generalizing

- How do the sensory needs of military students in your class differ from non-military children?
- How are the sensory needs of military students in your class the same as non-military students?

Application

- How can you use this information with the military students in your classroom?

Summary

- Have a group leader summarize:
    - What was done for the warm-up
    - Discussed an overview of Occupational Therapy and their role in sensory processing, what sensory processing is, and the seven senses
    - Discussed why we are focusing our attention on military students that may be experiencing sensory processing deficits
    - Discussed an overview of the Ecology of Human Performance Model and how that will be used throughout the rest of the sessions
    - Completed a matching activity of the intervention types and their definitions
    - Shared experiences related to occupational therapy services provided to students

    - Discussed feelings related to the difference between behaviors and sensory processing deficits
    - Discussed how each member will apply the information learned with the military students in their classroom
- Thank the group for participating and sharing
- End the group on time

Session #1 PowerPoint *Facilitator Copy*

Creating Sense of It: An In-service to Address Military Students Experiencing Sensory Challenges

By Danielle Cox, MOTS and Katelyn Jennings, MOTS

Objectives

- By the end of the session, group members will be able to describe what occupational therapy is and explain its relation to sensory integration.
- By the end of this session, group members will increase their understanding of the Ecology of Human Performance framework and apply the intervention strategies to real life scenarios.
- By the end of the session, group members will identify reasons why military students may experience sensory deficits more than the non-military student.
- By the end of the session, group members will have a greater understanding of military culture and the challenges that they face.

Warm-Up

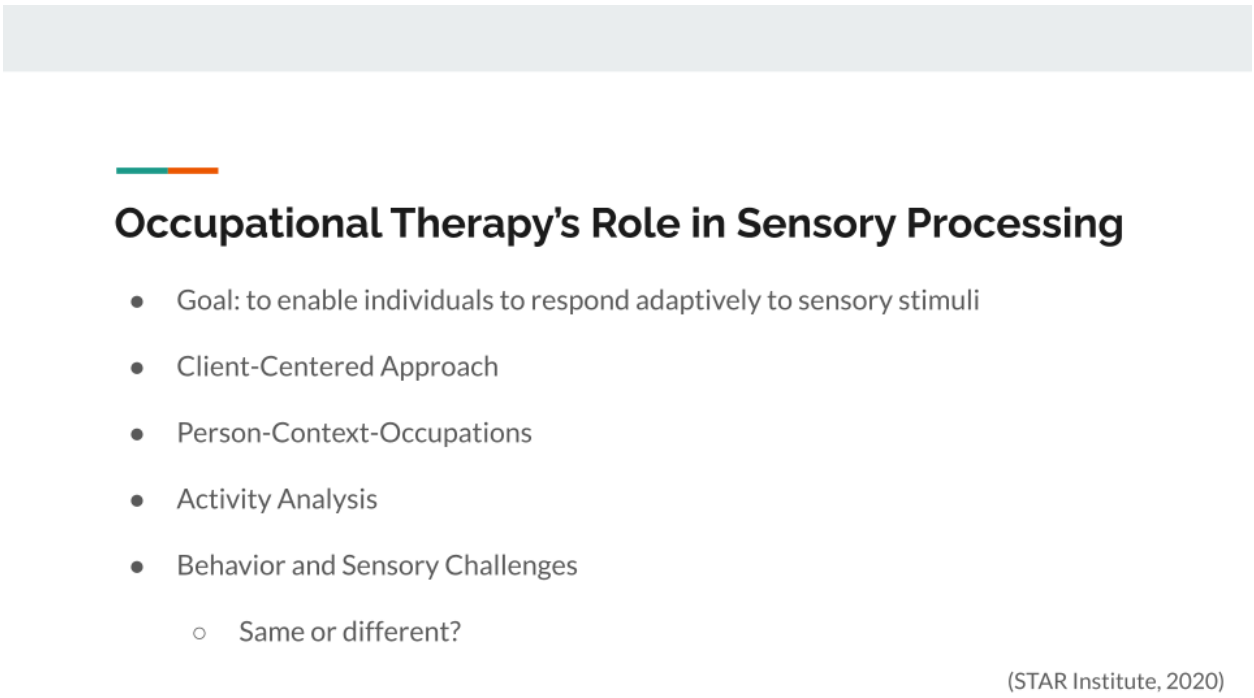
- Please go around the room and introduce yourself including your name, what grade you teach, and how many military students you have in your class.

What is Occupational Therapy?

- Within the Occupational Therapy Practice Framework, AOTA defines occupational therapy as "the therapeutic use of everyday life activities (occupations) with individuals or groups for the purpose of enhancing or enabling participation in roles, habits, and routines in home, school, workplace, community, and other settings" (p.S1).

Presenter Notes:

- In other words, we help individuals with physical, emotional, and psychological impairments increase participation in the occupations that they need to do, want to do, and are expected to do.
- Occupational therapists are concerned with the end result of participation and thus enable engagement through adaptations and modifications to the environment or objects within the environment when needed (AOTA, 2014).



Presenter Notes:

- First bullet: This allows individuals to function independently and successfully in meaningful everyday occupations (STAR Institute, 2020).
- Second bullet: Focus on increasing the number of tasks military students participate in that are meaningful to them. For example, we focus on areas such as increased social participation, self-esteem, and self-regulation by providing strategies for modulation and discrimination of sensory information to increase daily functioning at home, school, and in the community
- Third bullet: focus on the transactional relationship between these three concepts in order to increase engagement in meaningful occupations. "All aspects of the domain, including occupations, client factors, performance skills, performance patterns, and context and environment, are of equal value, and together they interact to affect the client's occupational identity, health, well-being, and participation in life. Occupational therapists are skilled in evaluating all aspects of the domain, their interrelationships, and the client within his or her contexts and environments" (AOTA, 2014, p.S4).
- Fourth Bullet: "Occupational therapy practitioners analyze the demands of an activity or occupation to understand the specific body structures, body functions, performance skills, and performance patterns that are required and to determine the generic demands the activity or occupation makes on the client" (AOTA, 2014, p.S12).
- Fifth Bullet: Our goal here is not to differentiate between behaviors and sensory deficits. A child from a military background may demonstrate challenging behaviors because of their sensory deficits, so our goal is to understand WHY the child may be behaving the way they are. Sensory dysregulation in children may not be recognized by doctors, teachers, and parents and is misinterpreted as "just a

behavioral problem." They may mistake poor behavior, low self-esteem, or reluctance to participate in ordinary activities as a learning disability, emotional problem, or as a child acting out (Kranowitz, 2005). This can be very detrimental to an individual because the sensory issues that they are experiencing could be replaced with an adaptive response; but instead, they may be punished or judged for something that is out of their control.

7 Senses

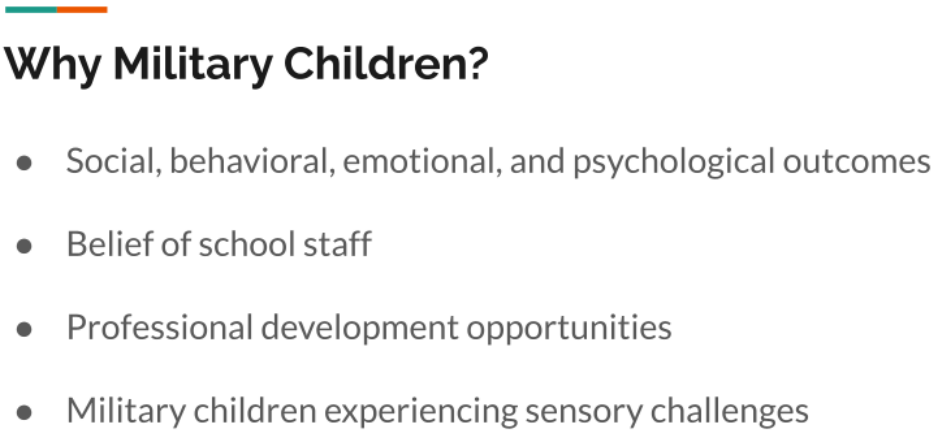
- Auditory
- Visual
- Olfactory
- Tactile
- Gustatory
- Proprioception
- Vestibular

Military Culture

- U.S. is served by 7 branches
- Military child population
- Unique experiences
- Challenges associated with deployment

Presenter Notes:

- First bullet: Army, Navy, Marine Corps, Air Force, Coast Guard, Space Force, and Air National Guard
- Second bullet: There were 1.2 million children and youth in military families in 2019 (American Association of School Administrators, 2019). A top trend from a 2015 annual military family lifestyle survey indicated childcare challenges and concern for children's mental, physical, and educational well-being (Shiffer et al., 2015).
- Third bullet: frequent relocations, prolonged separations from parents, and stressors relating to deployment and relocation
- Fourth bullet: Research has revealed various challenges associated with deployment, including a decline in academics, increased behavioral problems during deployment, increased emergency and specialist visits, and somatic symptoms (Huebner, 2019).



Presenter Notes:

- First bullet: significant number of children struggling with a range of deployment-related issues that were reportedly having an effect on the child's ability to function in the classroom (Chandra et al., 2010). Parental deployment led to sadness and anger, which disrupted classroom activities and affected peer relationships (Chandra et al., 2010). There are also emotions related to the absence of a deployed parent, which may affect their classroom behavior, including increased distractions, anxiousness, sadness, and anger (Garner et al., 2014).
- Second bullet: Students rely on the school and school staff for social and

emotional support at unprecedented levels (Chandra et al., 2010). The resources provided to these military families should include the support of educators of military students due to the impact that the school environment has on the social, emotional, and psychological aspects of military students.

- Third bullet: Some educators believed that training could be on an as-needed basis, while others conveyed the need for regular formal professional development training related to military culture (Classen et al., 2019). Implications for the development of more professional training that targets a greater understanding of military culture and the challenges that military students face daily.
- Fourth bullet: Sensory processing is defined as the way that the nervous system receives sensory information from the environment or from the body; the information is detected, modulated, and interpreted in order to turn that information into a response (STAR Institute, 2020). Sensory processing disorder is the result of a dysfunction in this process where the sensory information is detected, modulated, or interpreted poorly, resulting in an atypical response (STAR Institute, 2020). Sensory processing disorder can affect anyone; studies indicate that 5% to 16% of children exhibit symptoms of sensory processing disorder (STAR Institute, 2020).
- Military children may experience increased sensory processing difficulties due to their mobility and the frequent changes in their environments. There are certain stressors that are placed on military children that could increase the likelihood of military students experiencing sensory deficits given that the stimuli is coming directly from their environment. Not only might they be experiencing sensory processing difficulties, but when they do, it often goes unnoticed and untreated. Military children are covered by Tricare insurance, which does not reimburse for sensory integration treatment. The goal is to enable individuals to accurately detect, interpret, and regulate sensations while establishing the ability to respond adaptively to sensory stimuli to be able to be functionally independent and successful in meaningful everyday occupations (STAR Institute, 2020).

Ecology of Human Performance (EHP)

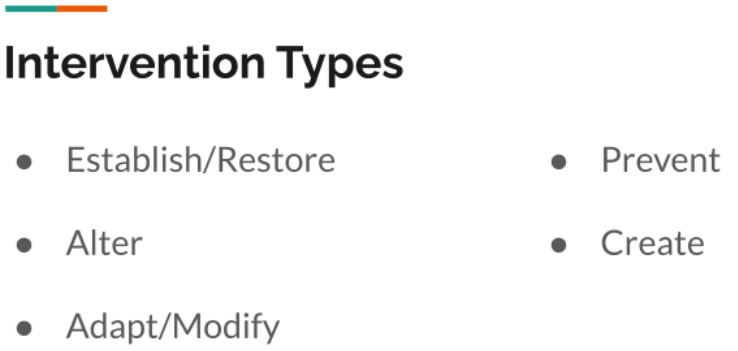
Four Main Constructs

1. Person
2. Task
3. Context
4. Performance

Presenter Notes:

- Person: Includes past experiences, personal values and interests, and sensorimotor, cognitive, and psychosocial skills (Dunn, 2017).
    - Examples include: values, beliefs, spirituality, attention, memory, visual, tactile, gustatory, vestibular, proprioceptive, olfactory, and auditory functions, etc.
- Tasks: objective sets of observable behaviors necessary to accomplish a goal (Cole & Tufano, 2008; Dunn, 2017).
    - Examples include: motor skill requirements, visual requirements, attention requirements, process skills such as sequencing attending, etc. These are specific to the requirements of the task, not the person's skills
- Context: refers to the set of interrelated conditions that surround the person and may include temporal aspects as well as physical, social, and cultural environmental aspects (Cole & Tufano, 2008; Dunn, 2017).
    - Examples: Noises, lights, amount of space available, time of day or age/stage of life, classmates, friends, school environment vs home environment. Temporal aspects- chronological age, developmental age or stage, when a task takes place, or how long and often it occurs. Physical- includes building, objects, tools, and equipment. Social- norms, role expectations, social routines. Cultural- includes customs, beliefs, activity patterns, behavioral standards (Cole & Tufano, 2008).
- Performance: attempt to intervene at the levels of the person, task, and context in order to elicit more effective adaptive responses in military children (ie this is the interaction between the person, task, and context). Performance occurs when a person acts to engage in tasks within a context (Cole & Tufano, 2008).
    - Example: this is how they are performing as a result of the person, task,

and context. Consider if the person factors match the task requirements. Does the person perform well in a quiet context vs a loud context?



(Dunn, 2017)

Presenter Notes:

- Prior to presenting this slide it is essential to define intervention.
    - Intervention: treatment or strategies used to target sensory needs.
- Establish/Restore: focuses on the person factors and aims to improve the person's skills by establishing a new skill or restoring skills that may have been lost (Dunn, 2017).
    - Example: Restore a structured schedule when faced with too many responsibilities of daily life roles; establish a sensory diet for a child who is overwhelmed by too much stimuli in his/her environment.
- Alter: the focus is on the context in which the person performs, and the aim of the therapist is to help find the best match between the person's interests and the demands of particular contexts (Dunn, 2017).
    - Example: Moving a child who becomes distracted easily by movement to the front of the classroom.
- Adapt/Modify: requires a change in the aspects of the context in order to support the person's performance (Dunn, 2017).
    - Example: Re-arranging the desks in the classroom to facilitate.
- Prevent: the purpose is to preclude the development of performance issues by changing person, context, or task variables (Dunn, 2017).
    - Example: Prevent aversive responses/behaviors by modifying the environment to meet the needs of the students.
- Create: focuses on creating circumstances that support optimal performance but does not assume that a problem exists (Dunn, 2017).

- Example: Installing dimmable lights in a classroom for optimal performance during various different classroom tasks.

References

American Association of School Administrators. (2019). *Fact sheet on the military child.* https://www.aasa.org/content.aspx?id=8998.

American Occupational Therapy Association [AOTA]. (2014). Occupational therapy practice framework: Domain & Process (3rd ed.). *American Journal of Occupational Therapy, 68* (Suppl.1), S1-S48.

Chandra, A., Martin, L. T., Hawkins, S. A., & Richardson, A. (2010). The impact of parental deployment on child social and emotional functioning: Perspectives of school staff. *Journal of Adolescent Health, 46*(3), 218–223.

Classen, A. I., Horn, E., & Palmer, S. (2019). Needs of military families: Family and educator perspective. *Journal of Early Intervention, 41*(3), 233–255.

Cole, M. B. & Tufano, R. (2008). Ecology of Human Performance. In Cole, M. B. & Tufano, R. *Applied theories in occupational therapy: A practical approach* (pp.117-124). Thorofare, NJ: Slack Inc.

References

Dunn, W. (2017). The Ecological Model of Occupation. In Hinojosa, J., Kramer, P., & Brasic Royeen, C. *Perspectives on Human Occupation* (pp. 207-235). Philadelphia: FA Davis.

Garner, J. K., Arnold, P. L., & Nunnery, J. (2014). Schoolwide impact of military-connected student enrollment: Educators' perceptions. *Children & Schools, 36*(1), 31–39.

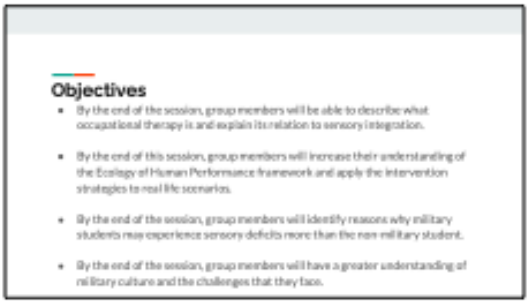
Huebner, C.R. (2019). Health and mental health needs of children in US military families. *Pediatrics, 143*(1), 1–13.

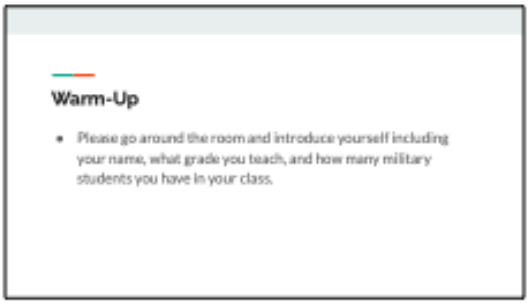
Kranowitz, Carol Stock (2005). *The Out-of-Sync Child: Recognizing and Coping with Sensory Processing Disorder.* New York: Skylight Press.

Shiffer, C. O., Maruy, R. V., DeGraff, A. N., Sonethavilay, H., Mehta, M. S., Wilcox, S. L., Bassett, G., & Linsner, R. K. (2015). Blue Star Families 2015 annual military family lifestyle survey: Comprehensive Report. Washington, DC.

STAR Institute. (2020). *About SPD.* https://www.spdstar.org/basic/about-spd.

Session #1 PowerPoint Handout





What is Occupational Therapy?

- Within the Occupational Therapy Practice Framework, AOTA defines occupational therapy as "the therapeutic use of everyday life activities (occupations) with individuals or groups for the purpose of enhancing or enabling participation in roles, habits, and routines in home, school, workplace, community, and other settings" (p.51).

Occupational Therapy's Role in Sensory Processing

- Goal: to enable individuals to respond adaptively to sensory stimuli
- Client-Centered Approach
- Person-Context-Occupations
- Activity Analysis
- Behavior and Sensory Challenges
  - Same or different?

(STAR Institute, 2020)

7 Senses

- Auditory
- Visual
- Olfactory
- Tactile
- Gustatory
- Proprioception
- Vestibular

Military Culture

- U.S. is served by 7 branches
- Military child population
- Unique experiences
- Challenges associated with deployment

Why Military Children?

- Social, behavioral, emotional, and psychological outcomes
- Belief of school staff
- Professional development opportunities
- Military children experiencing sensory challenges

Ecology of Human Performance (EHP)

Four Main Constructs

1. Person
2. Task
3. Context
4. Performance

Intervention Types

- Establish/Restore
- Alter
- Adapt/Modify
- Prevent
- Create

[Dunn, 2017]

References

American Association of School Administrators. (2013). Fact sheet on the military child. https://www.aasa.org/content.aspx?id=6998.

American Occupational Therapy Association [AOTA]. (2014). Occupational therapy practice framework: Domain & Process (3rd ed.). American Journal of Occupational Therapy, 68 (Suppl.1), S1-S48.

Chandra, A., Martin, L. T., Hawkins, S. A., & Richardson, A. (2010). The impact of parental deployment on child social and emotional functioning: Perspectives of school staff. Journal of Adolescent Health, 46(3), 218–223.

Cozaart, A. L., Horn, E., & Palmer, S. (2019). Needs of military families: Family and educator perspective. Journal of Early Intervention, 41(3), 222–231.

Cole, M. B. & Tufano, R. (2008). Ecology of Human Performance. In Cole, M. B. & Tufano, R. Applied theories in occupational therapy: a practical approach (pp.117-124). Thorofare, N.J: Slack Inc.

References

Dunn, W. (2017). The Ecological Model of Occupation. In Hinojosa, J., Kramer, P. & Brown-Boyaert, C. Perspectives on Human Occupation (pp. 207-233). Philadelphia: FA Davis.

Gumar, J. H., Arnold, P. L., & Kuhanary, J. (2014). Schedule impact of military connected student enrollment: Educators' perceptions. Children & Schools, 36(1), 51–59.

Huebner, C. E. (2013). Health and mental health needs of children in US military families. Pediatrics, 131(3), 1–10.

Ilsemenda, Carol Buck (2005). The Out of Sync Child Recognizing and Coping with Sensory Processing Disorder. New York: Skylight Press.

Miller, C. G., Marcy, B. V., DeGraff, A. S., Kennedy, S., Mehta, M. G., Milnes, S. L., Ruscetti, G. S., & Gromer, B. H. (2019). Blue Star Families 2018 annual military family lifestyle survey: Comprehensive Report. Washington, DC.

USAA Institute. (2020). About KFO. https://www.operationkfo.org/basic/about-kfo/

Intervention Types & Definition Matching

Match the intervention type with its definition.

Intervention Type	Definition
Establish Restore_____	a) Requires a change in the aspects of the context in order to support the person's performance (Dunn, 2017).
Alter_____	b) Focuses on creating circumstances that support optimal performance but does not assume that a problem exists (Dunn, 2017).
Adapt/Modify_____	c) Focuses on the person factors and aims to improve the person's skills by establishing a new skill or restoring skills that may have been lost (Dunn, 2017).
Prevent_____	d) The focus is on the context in which the person performs, and the aim of the therapist is to help find the best match between the person's interests and the demands of particular contexts (Dunn, 2017).
Create_____	e) The purpose is to preclude the development of performance issues by changing person, context, or task variables (Dunn, 2017).

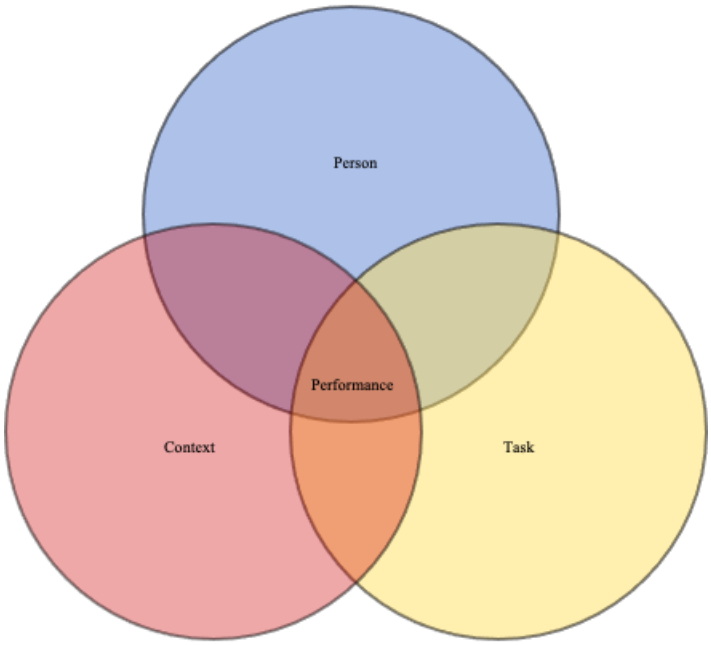
EHP Handout

Person: Includes past experiences, personal values and interests, and sensorimotor, cognitive, and psychosocial skills (Dunn, 2017).

Tasks: objective sets of observable behaviors necessary to accomplish a goal (Cole & Tufano, 2008; Dunn, 2017).

Context: refers to the set of interrelated conditions that surround the person and may include temporal aspects as well as physical, social, and cultural environmental aspects (Cole & Tufano, 2008; Dunn, 2017).

Performance: attempt to intervene at the levels of the person, task, and context in order to elicit more effective adaptive responses in military children (ie this is the interaction between the person, task, and context). Performance occurs when a person acts to engage in tasks within a context (Cole & Tufano, 2008).



Intervention Types

Establish/Restore: focuses on the person factors and aims to improve the person's skills by establishing a new skill or restoring skills that may have been lost (Dunn, 2017).

Alter: the focus is on the context in which the person performs, and the aim of the therapist is to help find the best match between the person's interests and the demands of particular contexts (Dunn, 2017).

Adapt/Modify: requires a change in the aspects of the context in order to support the person's performance (Dunn, 2017).

Prevent: the purpose is to preclude the development of performance issues by changing person, context, or task variables (Dunn, 2017).

Create: focuses on creating circumstances that support optimal performance but does not assume that a problem exists (Dunn, 2017).

AUDITORY AND VESTIBULAR

Session #2: Auditory and Vestibular

Introduction

Physical Environment (Room Set-Up):

- Auditorium or Conference Room
- Ideally with tables and chairs in a circle or half circle to facilitate discussion

Supplies:

- Auditory and Vestibular PowerPoint Presentation Handout
- Auditory and Vestibular Case Study Worksheet
- Pens/pencils

Expectations of Group:

- Welcome back, everyone. This is session two of six with the focus of this session being on the auditory and vestibular systems and their relation to military children functioning in the classroom.
- The purpose of this session is to familiarize you all with the auditory and vestibular systems in order to help you understand any adaptive and maladaptive responses that may be seen in your military students.
- As mentioned during the first session, the expectations of this group include:
    - Always respect each other
    - Be open to others' ideas and suggestions
    - Everything said in this group is confidential and should not be discussed outside of the group
- Last time we oriented you to sensory processing and discussed why we are focusing on military children. Today we will help you develop the skills to identify and develop strategies for military children who may experience auditory and vestibular dysregulation.
- The objectives of this session are as follows…
    - Read objectives listed below

Objectives:

- By the end of the session, group members will be able to identify how auditory and vestibular sensory processing deficits present in military children.
- By the end of the session, group members will be able to develop strategies that can be used in the classroom to target auditory and vestibular deficits through the use of EHP.

Warm-Up:

- Playing the game of telephone…
  (1) Have a volunteer pick a phrase
  (2) The volunteer spins around in circles for 10 seconds
  (3)The volunteer whispers the phrase to the person to their right
  (4) The person who receives the phrase spins and spreads the phrase to the next person
  (5) This continues until it gets back to the person who created the phrase

Activity

- Go through the auditory and vestibular PowerPoint and then have participants complete the auditory and vestibular case study worksheet.

Sharing

- Choose one person from your group and share the strategies that you came up with for each intervention method.
- Please provide examples of observations from your classroom that might be a result of your military students experiencing auditory processing challenges.
- What are some other behaviors that you may see in a child with auditory processing difficulties?
- Please provide examples of observations from your classroom that might be a result of your military students experiencing vestibular processing challenges.
- What are some other behaviors that you may see in a child with vestibular processing difficulties?

Processing

- Possible questions to ask include:
    - Why did you choose the strategies that you did to address either auditory or vestibular dysregulation?
    - Would you have chosen different strategies if you were not provided with examples, if so, explain?
    - Are there strategies that you think you would be more comfortable using over other strategies, if so, explain?
    - Do you think that the strategies you chose are realistic for you to apply in the classroom with military students, why or why not?

Generalizing

- Ask the group to:
    - Discuss similarities between groups regarding strategies to utilize to address auditory processing difficulties.
    - Did the group notice any differences in strategies shared to utilize to address auditory processing difficulties?
    - Discuss feelings associated with identifying auditory processing difficulties in military students.
    - Compare and contrast comfort utilizing various strategies to address auditory processing difficulties.
    - Discuss similarities between groups regarding strategies to utilize to address vestibular processing difficulties.
    - Did the group notice any differences in strategies shared to utilize to address vestibular processing difficulties?
    - Discuss feelings associated with identifying vestibular processing difficulties in military students.
    - Compare and contrast comfort utilizing various strategies to address vestibular processing difficulties.
- Address 1-2 principles learned after comparing and contrasting.

Application

- How can you apply this information with military students in your classroom?

Summary

- Have a group leader summarize:
    - What was done for the warm-up
    - Learned more information about auditory and vestibular processing difficulties
    - Completed an activity addressing strategies to utilize for auditory and vestibular processing difficulties
    - Shared strategies that groups came up with to address auditory and vestibular processing difficulties
    - Discussed feelings related to identifying auditory and vestibular processing difficulties as well as utilizing strategies to address those difficulties
    - Discussed how each member will apply the information learned with the military students in their classroom
- Thank the group for participating and sharing
- End the group on time

Session #2 PowerPoint *Facilitator Copy*

Sensory Processing Difficulties in Military Students: Auditory and Vestibular

By Danielle Cox, MOTS and Katelyn Jennings, MOTS

Objectives

- By the end of the session, group members will be able to identify how auditory and vestibular sensory processing deficits present in military children.

- By the end of the session, group members will be able to develop strategies that can be used in the classroom to target auditory and vestibular deficits through the use of EHP.

Warm-Up

- Playing the game of telephone

  (1) Have a volunteer pick a phrase

  (2) The volunteer spins around in circles for 10 seconds

  (3)The volunteer whispers the phrase to the person to their right

  (4) The person who receives the phrase spins and spreads the phrase to the next person

  (5) This continues until it gets back to the person who created the phrase

Presenter Notes:

- What is one reason that the phrase could have changed from beginning to end?
  - Because we all hear at different thresholds.
  - Some might be sensitive to a whispering tone while others may not be.

The Auditory System

- System that allows individuals to hear a variety of sounds at different intensities, frequencies, and pitches (Bear et al., 2016).
- Processes sounds by detecting distance, direction, and sound quality (Lane et al., 2014).
- Informs our brain with information that allows us to process and understand sound (SIGN, 2005).
  - Where it's coming from
  - Filtering sounds for discrimination
  - How far away the sound is
- Contributes to how we function in everyday life

Presenter Notes:

- First bullet: this allows us to orient within the environment
- Second bullet: all of these examples can be very important for our safety (ie be able to recognize where a car is when crossing the street)
- Third bullet: Can affect balance, flexibility, bilateral coordination, breathing, speaking, self-esteem, social relations, vision, and academic learning (Kranowitz, 2005).

The Vestibular System

- Gravity and movement detector (Lane et al., 2014).
- Monitors the position and movement of the head, giving individuals a sense of balance and equilibrium (Bear et al., 2016).
- Coordinates movements of the head and eyes as well as adjustments to the posture of the body (Bear et al., 2016).

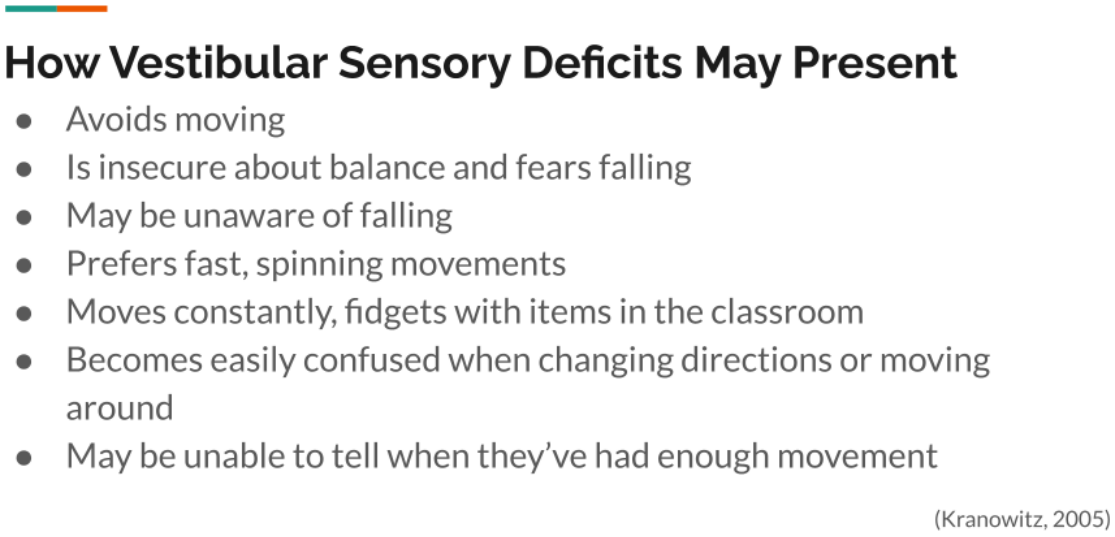
How Auditory Sensory Deficits May Present

- Covers ears to block out loud noises
- Complains about specific sounds
- May get overly excited about extremely loud sounds
- Seeks out environments with loud noises
- Speaks in a loud, shouting tone
- Has a hard time understanding differences in tones
- Easily distracted by sounds coming from several locations
- Appears withdrawn during lesson

(Kranowitz, 2005)

Presenter Notes:

- Have to consider how these behaviors may be interpreted by others (ie some may find these behaviors rude or inappropriate)
    - This is why it's important to increase awareness of sensory processing deficits



Facilitating Adaptive Responses

"The ability to adjust one's action on environmental demand" (Lane et al., 2014, p. 818).

- Step #1: Determine the cause of behavior
- Step #2: Identify and prioritize the child's wants and needs
- Step #3: Choose an appropriate intervention type
- Step #4: Implement intervention strategy
- Step #5: Adjust or choose different intervention strategy

(Dunn, 2017)

Presenter Notes:

- Steps 1 and 2: Determine if the child is seeking out more or less input, evaluate the environment, look for patterns in responses to certain auditory stimulus, consider what may be going on at home
- Step 3: establish/restore, alter, adapt/modify, create, prevent

References

Bear, M. F., Connors, B. W., & Paradiso, M. A. (2016). *Neuroscience: Exploring the brain (4th ed).* Philadelphia, PA: Wolters Kluwer.

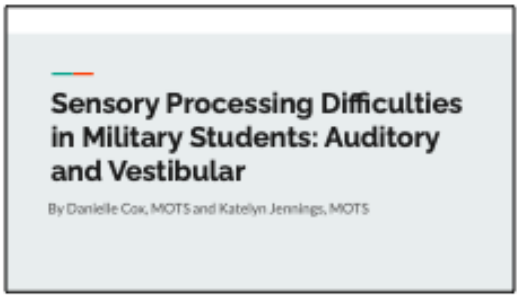
Dunn, W. (2017). The Ecological Model of Occupation. In Hinojosa, J., Kramer, P., & Brasic Royeen, C. *Perspectives on Human Occupation* (pp. 207-235). Philadelphia: FA Davis.

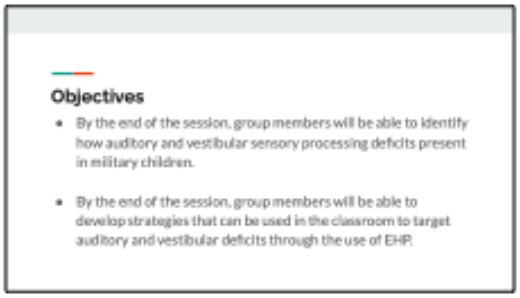
Kranowitz, C.S. (2005). *The Out-of-Sync Child: Recognizing and Coping with Sensory Processing Disorder.* New York: Skylight Press.

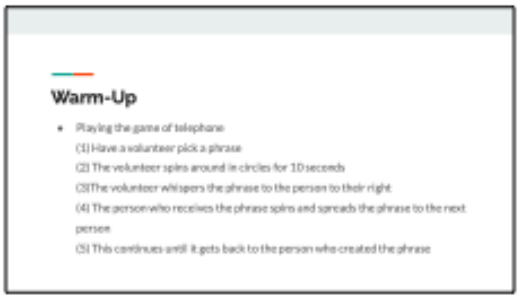
Lane, S.J., Roley, S.S., & Champagne, T. (2014). Sensory integration and processing. In Schell, B.A.B, Gillen, G., & Scaffa, M.E. *Willard & Spackman's occupational therapy.* (pp. 816-868). Baltimore: Lippincott Williams & Wilkins, a Wolters Kluwer business.

Sensory Integration Global Network [SIGN]. (2005). *Resources.* https://www.siglobalnetwork.org/resources.

Session #2 PowerPoint Handout







The Auditory System

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- Processes sounds by detecting distance, direction, and sound quality (Lane et al., 2014).
- Informs our brain with information that allows us to process and understand sound (SAGN, 2015).
  - Where it's coming from
  - Filtering sounds for discrimination
  - How far away the sound is
- Contributes to how we function in everyday life

The Vestibular System

- Gravity and movement detector (Lane et al., 2014).
- Monitors the position and movement of the head, giving individuals a sense of balance and equilibrium (Bear et al., 2016).
- Coordinates movements of the head and eyes as well as adjustments to the posture of the body (Bear et al., 2016).

How Auditory Sensory Deficits May Present

- Covers ears to block out loud noises
- Complains about specific sounds
- May get overly excited about extremely loud sounds
- Seeks out environments with loud noises
- Speaks in a loud, shouting tone
- Has a hard time understanding differences in tones
- Easily distracted by sounds coming from several locations
- Appears withdrawn during lesson

(Kranowitz, 2005)

How Vestibular Sensory Deficits May Present

- Avoids moving
- Is insecure about balance and fears falling
- May be unaware of falling
- Prefers fast, spinning movements
- Moves constantly, fidgets with items in the classroom
- Becomes easily confused when changing directions or moving around
- May be unable to tell when they've had enough movement

(Kranowitz, 2005)

Facilitating Adaptive Responses

"The ability to adjust one's action on environmental demand" (Lane et al., 2014, p. 8181

- Step #1: Determine the cause of behavior
- Step #2: Identify and prioritize the child's wants and needs
- Step #3: Choose an appropriate intervention type
- Step #4: Implement intervention strategy
- Step #5: Adjust or choose different intervention strategy

(Dunn, 2017)

References

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Dunn, W. (2017). The Ecological Model of Occupation. In Hinojosa, J., Kramer, P., & Brown Royeen, C. Perspectives on Human Occupation (pp. 207-235). Philadelphia: Fa Davis.

Kranowitz, C.S. (2005). The Out-of-Sync Child: Recognizing and Coping with Sensory Processing Disorder. New York: Skylight Press.

Lane, S. J., Reisy, S.S., & Champagne, T. (2014). Sensory integration and processing. In Schell, B. A. B., Gillen, G., & Scaffa, M.E. Willard & Spackman's occupational therapy (pp. 8161-8182). Baltimore: Lippincott Williams & Wilkins, a Wolters Kluwer business.

Sensory Integration Global Network (SIGN). (2020). Resources. https://sensoryglobalnetwork.org/resources

Auditory and Vestibular Case Study

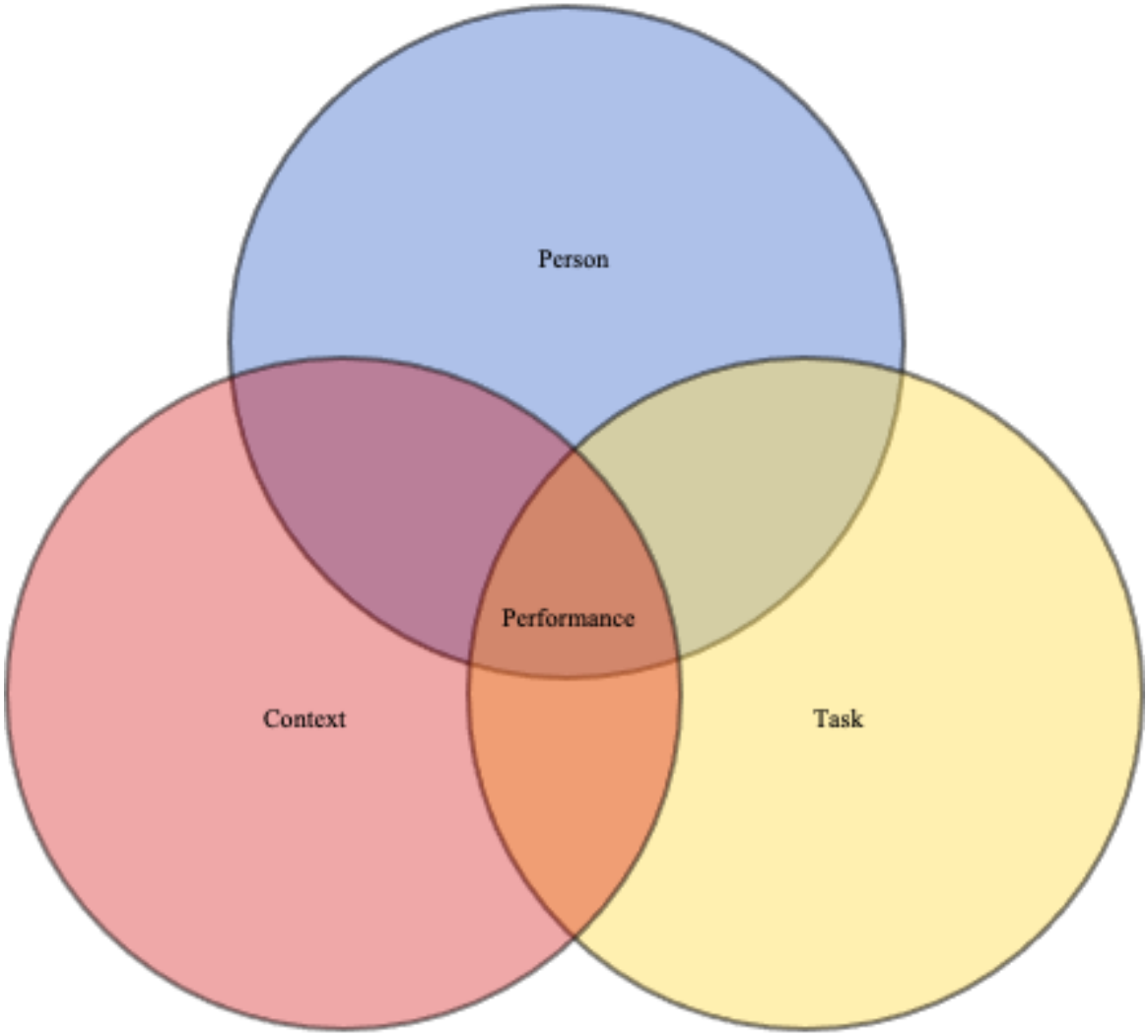
Joey is working on a spelling test during class when he hears jets flying outside. He becomes startled and covers his ears with his hands. When approached by his teacher, he reported feeling dizzy and like he was going to fall. Joey refuses to leave his desk to put supplies away stating that he is afraid he will fall and doesn't want to. He also avoids the swings during recess and becomes defensive when he is asked by his friends to swing. His teacher has been noticing that he becomes disruptive to the class and is easily distracted by noises and fast movement.

Match the strategy with the intervention type.

Intervention Type	Strategy
Establish Restore_____	a) Playing background music during tasks.
Alter_____	b) Finding a coping skill that Joey can use to calm himself down when he hears a jet flying outside.
Adapt/Modify_____	c) Having Joey wear noise cancelling headphones while completing assignments and tasks in the classroom.
Prevent_____	d) Placing school supplies at arm level to decrease the amount of movement needed to gather and put away supplies.
Create_____	e) Encouraging participation in a game he is interested in such as duck, duck, goose to slowly introduce new activities with a variety of different movements into his daily routine in the classroom.

Pick one strategy and identify aspects of person, context, and task:

Strategy _____



How do these aspects facilitate adaptive responses to increase their performance?

Auditory and Vestibular Matching Answer Key

Intervention Type	Strategy
Establish/Restore B	Finding a coping skill that Joey can use to calm himself down when he hears a jet flying outside.
Alter E	Encouraging participation in a game he is interested in such as duck, duck, goose to slowly introduce new activities with a variety of different movements into his daily routine in the classroom.
Adapt/Modify D	Placing school supplies at arm level to decrease the amount of movement needed to gather and put away supplies.
Prevent C	Having Joey wear noise cancelling headphones while completing assignments and tasks in the classroom.
Create A	Playing background music during tasks.

OLFACTORY AND GUSTATORY

Session #3: Olfactory and Gustatory

Introduction

Physical Environment (Room Set-Up):

- Auditorium or Conference Room
- Ideally with tables and chairs in a circle or half circle to facilitate discussion

Supplies:

- Olfactory and gustatory PowerPoint Presentation Handout
- Olfactory and Gustatory Intervention Type and Venn Diagram Worksheet
- Pens/pencils
- Blueberry muffins, chocolate chip cookies, bananas, and oranges
- Brown paper bags labeled 1-4 to put the food items in

Expectations of Group:

- Welcome back, everyone. This is session three of six with the focus of this session being on the olfactory and gustatory systems and their relation to military children functioning in the classroom.
- The purpose of this session is to familiarize you all with the olfactory and gustatory systems in order to help you understand any adaptive and maladaptive responses that may be seen in your military children.
- As mentioned during the first session, the expectations of this group include:
    - Always respect each other
    - Be open to others' ideas and suggestions
    - Everything said in this group is confidential and should not be discussed outside of the group
- Last time we discussed auditory and vestibular processing difficulties and strategies to utilize to address those difficulties. Today we will help you develop the skills to identify and develop strategies for military children who may experience olfactory and gustatory dysregulation.

- The objectives of this session are as follows…
    - Read objectives listed below

Objectives:

- By the end of the session, group members will be able to identify how olfactory and gustatory sensory processing deficits present in military children.
- By the end of the session, group members will be able to develop strategies that can be used in the classroom to target olfactory and gustatory deficits through the use of EHP.

Warm-Up:

- Guess/describe the smell and taste of something with eyes closed

  (1) Partner up

  (2) While one partner is blindfolded, the other partner has them smell the food item labeled #1, and have their partner guess what it is

  (3) Staying blindfolded and now plugging their nose, the other partner has them taste the food item labeled #2, and have their partner guess what it is

  (4) Switch partners

  (5) While one partner is blindfolded, the other partner has them smell the food item labeled #3, and have their partner guess what it is

  (6) Staying blindfolded and now plugging their nose, the other partner has them taste the food item labeled #4, and have their partner guess what it is

Activity

- Go through the olfactory and gustatory PowerPoint and then have participants complete the olfactory and gustatory case study worksheet.

Sharing

- Choose one person from your group and share the strategies that you came up with for each intervention method.
- Please provide examples of observations from your classroom that might be a result of your military students experiencing olfactory processing challenges.

- What are some other behaviors that you may see in a child with olfactory processing difficulties?
- Please provide examples of observations from your classroom that might be a result of your military students experiencing gustatory processing challenges.
- What are some other behaviors that you may see in a child with gustatory processing difficulties?

Processing

- Possible questions to ask include:
    - Why did you choose the strategies that you did to address either olfactory or gustatory dysregulation?
    - Would you have chosen different strategies if you were not provided with examples, if so, explain?
    - Are there strategies that you think you would be more comfortable using over other strategies, if so, explain?
    - Do you think that the strategies you chose are realistic for you to apply in the classroom with military students, why or why not?

Generalizing

- Ask the group to:
    - Discuss similarities between groups regarding strategies to utilize to address olfactory processing difficulties.
    - Did the group notice any differences in strategies shared to utilize to address olfactory processing difficulties?
    - Discuss feelings associated with identifying olfactory processing difficulties in military students.
    - Compare and contrast comfort utilizing various strategies to address olfactory processing difficulties.
    - Discuss similarities between groups regarding strategies to utilize to address gustatory processing difficulties.

    - Did the group notice any differences in strategies shared to utilize to address gustatory processing difficulties?
    - Discuss feelings associated with identifying gustatory processing difficulties in military students.
    - Compare and contrast comfort utilizing various strategies to address gustatory processing difficulties.
- Address 1-2 principles learned after comparing and contrasting.

Application

- How can you apply this information with military students in your classroom?

Summary

- Have a group leader summarize:
    - What was done for the warm-up
    - Learned more information about olfactory and gustatory processing difficulties
    - Completed an activity addressing strategies to utilize for olfactory and gustatory processing difficulties
    - Shared strategies that groups came up with to address olfactory and gustatory processing difficulties
    - Discussed feelings related to identifying olfactory and gustatory processing difficulties as well as utilizing strategies to address those difficulties
    - Discussed how each member will apply the information learned with the military students in their classroom
- Thank the group for participating and sharing
- End the group on time

Session #3 PowerPoint *Facilitator Copy*

Sensory Processing Difficulties in Military Students: Olfactory and Gustatory

By Danielle Cox, MOTS and Katelyn Jennings, MOTS

Objectives

- By the end of the session, group members will be able to identify how olfactory and gustatory sensory processing deficits present in military children.
- By the end of the session, group members will be able to develop strategies that can be used in the classroom to target olfactory and gustatory deficits through the use of EHP.

Warm-Up

- Guess/describe the smell and taste of something with eyes closed

  (1) Partner up.

  (2) While one partner is blindfolded, the other partner has them smell the food item labeled #1, and have their partner guess what it is.

  (3) Staying blindfolded and now plugging their nose, the other partner has them taste the food item labeled #2, and have their partner guess what it is.

  (4) Switch partners.

  (5) While one partner is blindfolded, the other partner has them smell the food item labeled #3, and have their partner guess what it is.

  (6) Staying blindfolded and now plugging their nose, the other partner has them taste the food item labeled #4, and have their partner guess what it is.

The Olfactory and Gustatory Systems

- Chemical senses and have similar tasks, which are the detection of environmental chemicals (Bear et al. 2016).

- Unusually strong and direct connection with the most basic internal needs, including thirst, hunger, emotion, sex, and certain types of memory (Bear et al., 2016).

How Olfactory Sensory Deficits May Present

- Demonstrates challenging behaviors to odors that others may not notice
- May be unaware of unpleasant odors
- Seeks out odors and sniffs food, people, or objects
- May not be able to differentiate between distinct smells

(Kranowitz, 2005)

How Gustatory Sensory Deficits May Present

- Has strong reactions to distinct textures or temperatures
- May gag while eating
- May reject food by the way that it looks
- Has challenging behaviors in the cafeteria when other students bring certain foods for lunch

(Kranowitz, 2005)

Facilitating Adaptive Responses

"The ability to adjust one's action on environmental demand" (Lane et al., 2014, p. 818).

- Step #1: Determine the cause of behavior
- Step #2: Identify and prioritize the child's wants and needs
- Step #3: Choose an appropriate intervention type
- Step #4: Implement intervention strategy
- Step #5: Adjust or choose different intervention strategy

(Dunn, 2017)

Presenter Notes:

- Steps 1 and 2: Determine if the child is seeking out more or less input, evaluate the environment, look for patterns in responses to certain auditory stimulus, consider what may be going on at home
- Step 3: establish/restore, alter, adapt/modify, create, prevent

References

Bear, M. F., Connors, B. W., & Paradiso, M. A. (2016). *Neuroscience: Exploring the brain (4th ed).* Philadelphia, PA: Wolters Kluwer.

Dunn, W. (2017). The Ecological Model of Occupation. In Hinojosa, J., Kramer, P., & Brasic Royeen, C. *Perspectives on Human Occupation* (pp. 207-235). Philadelphia: FA Davis.

Kranowitz, C.S. (2005). *The Out-of-Sync Child: Recognizing and Coping with Sensory Processing Disorder.* New York: Skylight Press.

Lane, S.J., Roley, S.S., & Champagne, T. (2014). Sensory integration and processing. In Schell, B.A.B, Gillen, G., & Scaffa, M.E. *Willard & Spackman's occupational therapy.* (pp. 816-868). Baltimore: Lippincott Williams & Wilkins, a Wolters Kluwer business.

Session #3 PowerPoint Handout

Sensory Processing Difficulties in Military Students: Olfactory and Gustatory

By Danielle Cox, MOTS and Katelyn Jennings, MOTS

Objectives

- By the end of the session, group members will be able to identify how olfactory and gustatory sensory processing deficits present in military children.
- By the end of the session, group members will be able to develop strategies that can be used in the classroom to target olfactory and gustatory deficits through the use of EHP.

Warm-Up

- Guess/describe the smell and taste of something with eyes closed
  (1) Partner up.
  (2) While one partner is blindfolded, the other partner has them smell the food item labeled #1, and have their partner guess what it is.
  (3) Staying blindfolded and now plugging their nose, the other partner has them taste the food item labeled #2, and have their partner guess what it is.
  (4) Switch partners.
  (5) While one partner is blindfolded, the other partner has them smell the food item labeled #3, and have their partner guess what it is.
  (6) Staying blindfolded and now plugging their nose, the other partner has them taste the food item labeled #4, and have their partner guess what it is.

The Olfactory and Gustatory Systems

- Chemical senses and have similar tasks, which are the detection of environmental chemicals (Bear et al. 2016).
- Unusually strong and direct connection with the most basic internal needs, including thirst, hunger, emotion, sex, and certain types of memory (Bear et al., 2016).

How Olfactory Sensory Deficits May Present

- Demonstrates challenging behaviors to odors that others may not notice
- May be unaware of unpleasant odors
- Seeks out odors and sniffs food, people, or objects
- May not be able to differentiate between distinct smells

(Knarowitz, 2009)

How Gustatory Sensory Deficits May Present

- Has strong reactions to distinct textures or temperatures
- May gag while eating
- May reject food by the way that it looks
- Has challenging behaviors in the cafeteria when other students bring certain foods for lunch

(Knarowitz, 2009)

Facilitating Adaptive Responses

"The ability to adjust one's action on environmental demand" (Lane et al., 2014, p. 818).

- Step #1: Determine the cause of behavior
- Step #2: Identify and prioritize the child's wants and needs
- Step #3: Choose an appropriate intervention type
- Step #4: Implement intervention strategy
- Step #5: Adjust or choose different intervention strategy

(Dunn, 2017)

References

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Olfactory and Gustatory Case Study

One day for lunch in the cafeteria lasagna was being served. As soon as Lily walked into the cafeteria and could smell the lasagna she became upset and tried to run back to the classroom to escape the smell. There are other instances at lunch and snack time that Lily fixates on certain foods such as fruit snacks or trail mix and will throw a fit if those foods are not an option. Lily tends to seek attention from female teachers and will inappropriately follow them around to smell their clothing or hair. Lily's teacher reached out to her parents after noticing how she reacted in these situations and was told that these tastes and smells may remind Lily of her mom who is currently deployed.

Match the strategy with the intervention type.

Intervention Type	Strategy
Establish Restore_____	a) Allow Lily to bring her own trail mix or other snack from home.
Alter_____	b) Share the menu for lunch at the beginning of the day so Lily knows what to expect; have Lily point out any specific foods that she may be sensitive to and identify how she can handle the smell or taste in a positive way.
Adapt/Modify_____	c) Encourage Lily to share/talk about positive memories about her mom related to a variety of tastes and smells.
Prevent_____	d) Have Lily bring an object from home that has a familiar scent that will help her to remain calm and focused in the classroom.
Create_____	e) Collaborate with the parents more frequently to identify smells and tastes that Lily may be sensitive to.

Pick one strategy and identify aspects of person, context, and task:

Strategy _____

How do these aspects facilitate adaptive responses to increase their performance?

Olfactory and Gustatory Matching Answer Key

Intervention Type	Strategy
Establish/Restore B	Share the menu for lunch at the beginning of the day so Lily knows what to expect. Have Lily point out any specific foods that she may be sensitive too and identify how she can handle the smell or taste in a positive way.
Alter D	Have Lily bring an object from home that has a familiar scent that will help her to remain calm and focused in the classroom.
Adapt/Modify A	Allow Lily to bring her own trail mix or other snack from home.
Prevent E	Collaborate with the parents more frequently to identify smells and tastes that Lily may be sensitive to.
Create C	Encourage Lily to share/talk about positive memories about her mom related to a variety of tastes and smells.

PROPRIOCEPTION AND VISUAL

Session #4: Proprioception and Visual

Introduction

Physical Environment (Room Set-Up):

- Auditorium or Conference Room
- Ideally with tables and chairs in a circle or half circle to facilitate discussion

Supplies:

- Proprioception and visual PowerPoint Presentation Handout
- Proprioception and Visual Intervention Type and Venn Diagram Worksheet
- Pens/pencils

Expectations of Group:

- Welcome back, everyone. This is session four of six with the focus of this session being on the proprioceptive and visual systems and its relation to military children functioning in the classroom.
- The purpose of this session is to familiarize you all with the proprioceptive and visual systems in order to help you understand any adaptive and maladaptive responses that may be seen in your military children.
- As mentioned during the first session, the expectations of this group include:
    - Always respect each other
    - Be open to others' ideas and suggestions
    - Everything said in this group is confidential and should not be discussed outside of the group
- Last time we discussed gustatory and olfactory processing difficulties and strategies to utilize to address those difficulties. Today we will help you develop the skills to identify and develop strategies for military children who may experience proprioception and visual dysregulation.
- The objectives of this session are as follows…
    - Read objectives listed below

Objectives:

- By the end of the session, group members will be able to identify how proprioception and visual sensory processing deficits present in military children.
- By the end of the session, group members will be able to develop strategies that can be used in the classroom to target proprioception and visual deficits through the use of EHP.

Warm-Up:

- Close your eyes and touch your finger to your nose. Now stand up on one foot, close your eyes and touch your finger to your nose.

Activity

- Go through the proprioception and visual PowerPoint and then have participants complete the proprioception and visual case study worksheet.

Sharing

- Choose one person from your group and share the strategies that you came up with for each intervention method.
- Please provide examples of observations from your classroom that might be a result of your military students experiencing proprioception processing challenges.
- What are some other behaviors that you may see in a child with proprioception processing difficulties?
- Please provide examples of observations from your classroom that might be a result of your military students experiencing visual processing challenges.
- What are some other behaviors that you may see in a child with visual processing difficulties?

Processing

- Possible questions to ask include:

- Why did you choose the strategies that you did to address either proprioception or visual dysregulation?
- Would you have chosen different strategies if you were not provided with examples, if so, explain?
- Are there strategies that you think you would be more comfortable using over other strategies, if so, explain?
- Do you think that the strategies you chose are realistic for you to apply in the classroom with military students, why or why not?

Generalizing

- Ask the group to:
  - Discuss similarities between groups regarding strategies to utilize to address proprioception processing difficulties.
  - Did the group notice any differences in strategies shared to utilize to address proprioception processing difficulties?
  - Discuss feelings associated with identifying proprioception processing difficulties in military students.
  - Compare and contrast comfort utilizing various strategies to address proprioception processing difficulties.
  - Discuss similarities between groups regarding strategies to utilize to address visual processing difficulties.
  - Did the group notice any differences in strategies shared to utilize to address visual processing difficulties?
  - Discuss feelings associated with identifying visual processing difficulties in military students.
  - Compare and contrast comfort utilizing various strategies to address visual processing difficulties.
- Address 1-2 principles learned after comparing and contrasting.

Application

- How can you apply this information with military students in your classroom?

Summary

- Have a group leader summarize:
    - What was done for the warm-up
    - Learned more information about proprioception and visual processing difficulties
    - Completed an activity addressing strategies to utilize for proprioception and visual processing difficulties
    - Shared strategies that groups came up with to address proprioception and visual processing difficulties
    - Discussed feelings related to identifying proprioception and visual processing difficulties as well as utilizing strategies to address those difficulties
    - Discussed how each member will apply the information learned with the military students in their classroom
- Thank the group for participating and sharing
- End the group on time

Session #4 PowerPoint *Facilitator Copy*

Sensory Processing Difficulties in Military Students: Proprioception and Visual

By Danielle Cox, MOTS and Katelyn Jennings, MOTS

Objectives

- By the end of the session, group members will be able to identify how proprioception and visual sensory processing deficits present in military children.
- By the end of the session, group members will be able to develop strategies that can be used in the classroom to target proprioception and visual deficits through the use of EHP.

Warm-Up

- Close your eyes and touch your finger to your nose. Now stand up on one foot, close your eyes, and touch your finger to your nose.

The Visual System

- Detect objects of all shapes and sizes (Bear et al., 2016).
- Sensitive to light allowing individuals to make sense of the complex world around them (Bear et al., 2016).
- Provides high acuity for recognizing different colors and contours (Lane et al., 2014).
- Movement detection is a basic visual function (Lane et al., 2014).

The Proprioception System

- Individual's perception or awareness of the position and movement of the body (Bear et al., 2016).
- Process by which the body can control muscle contractions in response to sensory input and keep track of the joint position in the body (Bear et al., 2016).
- The absence of input makes it nearly impossible to interact with the environment (Lane et al., 2014).

How Visual Sensory Deficits May Present

- Gets over excited with too much to look at
- Inattentive to desk work
- Has a hard time making eye contact
- Ignores novel visual stimuli (ie objects in their path)
- Has difficulty with visual tasks
- May confuse likeness and differences in pictures, written words, objects, and faces
- Seeks visually stimulating scenes and screens for lengthy times

(Kranowitz, 2005)

How Proprioception Sensory Deficits May Present

- Avoids playground activities
- Seeks heavy work and activities with more vigorous movements
- Lacks inner drive to move during play activities
- Enjoys bear hugs and to be squeezed
- Has difficulty grading movements, such as pushing with too much pressure when writing with a pencil
- May bump into objects or other people

(Kranowitz, 2005)

Facilitating Adaptive Responses

"The ability to adjust one's action on environmental demand" (Lane et al., 2014, p. 818).

- Step #1: Determine the cause of behavior
- Step #2: Identify and prioritize the child's wants and needs
- Step #3: Choose an appropriate intervention type
- Step #4: Implement intervention strategy
- Step #5: Adjust or choose different intervention strategy

(Dunn, 2017)

Presenter Notes:

- Steps 1 and 2: Determine if the child is seeking out more or less input, evaluate the environment, look for patterns in responses to certain auditory stimulus, consider what may be going on at home
- Step 3: establish/restore, alter, adapt/modify, create, prevent

References

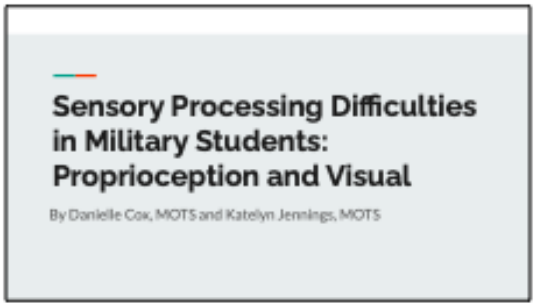
Bear, M. F., Connors, B. W., & Paradiso, M. A. (2016). *Neuroscience: Exploring the brain (4th ed).* Philadelphia, PA: Wolters Kluwer.

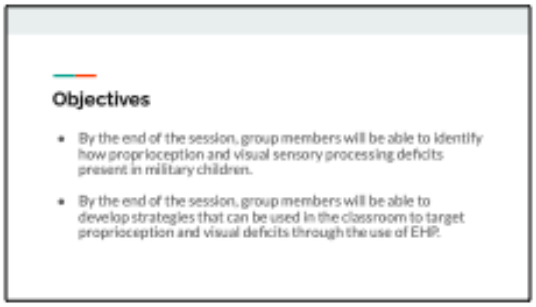
Dunn, W. (2017). The Ecological Model of Occupation. In Hinojosa, J., Kramer, P., & Brasic Royeen, C. *Perspectives on Human Occupation* (pp. 207-235). Philadelphia: FA Davis.

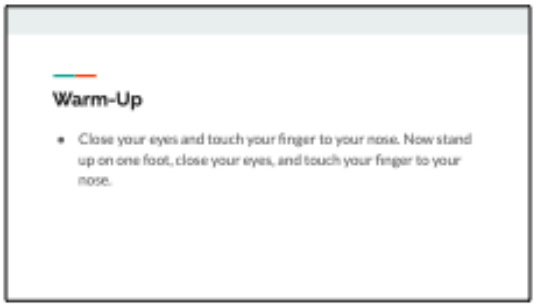
Kranowitz, C.S. (2005). *The Out-of-Sync Child: Recognizing and Coping with Sensory Processing Disorder.* New York: Skylight Press.

Lane, S.J., Roley, S.S., & Champagne, T. (2014). Sensory integration and processing. In Schell, B.A.B, Gillen, G., & Scaffa, M.E. *Willard & Spackman's occupational therapy.* (pp. 816-868). Baltimore: Lippincott Williams & Wilkins, a Wolters Kluwer business.

Session #4 PowerPoint Handout







The Visual System

- Detect objects of all shapes and sizes (Bear et al., 2016).
- Sensitive to light allowing individuals to make sense of the complex world around them (Bear et al., 2016).
- Provides high acuity for recognizing different colors and contours (Lane et al., 2014).
- Movement detection is a basic visual function (Lane et al., 2014).

The Proprioception System

- Individual's perception or awareness of the position and movement of the body (Bear et al., 2016).
- Process by which the body can control muscle contractions in response to sensory input and keep track of the joint position in the body (Bear et al., 2016).
- The absence of input makes it nearly impossible to interact with the environment (Lane et al., 2014).

How Visual Sensory Deficits May Present

- Gets over excited with too much to look at
- Inattentive to desk work
- Has a hard time making eye contact
- Ignores novel visual stimuli (ie objects in their path)
- Has difficulty with visual tasks
- May confuse likeness and differences in pictures, written words, objects, and faces
- Seeks visually stimulating scenes and screens for lengthy times

(Kranowitz, 2005)

How Proprioception Sensory Deficits May Present

- Avoids playground activities
- Seeks heavy work and activities with more vigorous movements
- Lacks inner drive to move during play activities
- Enjoys bear hugs and to be squeezed
- Has difficulty grading movements, such as pushing with too much pressure when writing with a pencil
- May bump into objects or other people

(Kranowitz, 2005)

Facilitating Adaptive Responses

"The ability to adjust one's action on environmental demand" (Lane et al., 2014, p. 818).

- Step #1: Determine the cause of behavior
- Step #2: Identify and prioritize the child's wants and needs
- Step #3: Choose an appropriate intervention type
- Step #4: Implement intervention strategy
- Step #5: Adjust or choose different intervention strategy

(Dunn, 2017)

References

Bear, M. F., Connors, B. W., & Paradiso, M. A. (2016). *Neuroscience: Exploring the brain* (4th ed). Philadelphia, PA: Wolters Kluwer.

Dunn, W. (2017). The Ecological Model of Occupation. In Kinsella, E., Kramer, P., & Brown Rogers, C. *Perspectives on Human Occupation* (pp. 207-235). Philadelphia PA: Davis.

Kranowitz, C.S. (2005). *The Out-of-Sync Child: Recognizing and Coping with Sensory Processing Disorder*. New York: Skylight Press.

Lane, S. J., Reisy, S.S., & Champagne, T. (2014). Sensory integration and processing. In Schell, B. A. B., Gillen, G., & Scaffa, M.E. Willard & Spackman's occupational therapy (pp. 813-868). Baltimore: Lippincott Williams & Wilkins, a Wolters Kluwer business.

Proprioception and Visual Case Study

Zeke loves bear hugs because his dad who is currently deployed would give him one every single day. He seeks deep pressure and is often found trying to give anyone and everyone a hug. His teacher notices that on his written assignments, his handwriting is dark and often smudged. He breaks pencils frequently and gets frustrated when this happens, throwing them across the classroom. When classmates or teachers wear clothing or have objects that are camouflage Zeke gravitates towards them and doesn't want to look away from the pattern.

Match the strategy with the intervention type.

Intervention Type	Strategy
Establish Restore_____	a) Develop a morning routine so that as children come into the classroom they have the option to choose to get a hug, a high five, or a smile from their teacher to start their day.
Alter_____	b) Identify social boundaries and teach Zeke to ask the person if he can have a hug before just running up to them and embracing them.
Adapt/Modify_____	c) Encourage Zeke to do joint compression exercises specifically with his arms (i.e. pushing palms of hands together or pressing hands on desk) before completing written assignments or tasks.
Prevent_____	d) Have Zeke wear a weighted or compression vest while completing seated classroom tasks to give him increased feedback and satisfy his need for deep pressure.
Create_____	e) Give Zeke a pencil that has a camouflage pattern on it to complete assignments to provide him with his own visual pattern that he enjoys.

Pick one strategy and identify aspects of person, context, and task:

Strategy _____

How do these aspects facilitate adaptive responses to increase their performance?

Proprioception and Visual Matching Answer Key

Intervention Type	Strategy
Establish/Restore B	Identify social boundaries and teach Zeke to ask the person if he can have a hug before just running up to them and embracing them.
Alter D	Have Zeke wear a weighted or compression vest while completing seated classroom tasks to give him increased feedback and satisfy his need for deep pressure.
Adapt/Modify E	Give Zeke a pencil that has a camouflage pattern on it to complete assignments to provide him with his own visual pattern that he enjoys.
Prevent C	Encourage Zeke to do joint compression exercises specifically with his arms (ie pushing palms of hands together or pressing hands on desk) before completing written assignments or tasks.
Create A	Develop a morning routine so that as children come into the classroom they have the option to choose to get a hug, a high five, or a smile from their teacher to start their day.

TACTILE

Session #5: Tactile

Introduction

Physical Environment (Room Set-Up):

- Auditorium or Conference Room
- Ideally with tables and chairs in a circle or half circle to facilitate discussion

Supplies:

- Tactile PowerPoint Presentation Handout
- Tactile Intervention Type and Venn Diagram Worksheet
- Pens/pencils

Expectations of Group:

- Welcome back, everyone. This is session five of six with the focus of this session being on the tactile system and its relation to military children functioning in the classroom.
- The purpose of this session is to familiarize you all with the tactile system in order to help you understand any adaptive and maladaptive responses that may be seen in your military children.
- As mentioned during the first session, the expectations of this group include:
    - Always respect each other
    - Be open to others' ideas and suggestions
    - Everything said in this group is confidential and should not be discussed outside of the group
- Last time we discussed proprioception and visual processing difficulties and strategies to utilize to address those difficulties. Today we will help you develop the skills to identify and develop strategies for military children who may experience tactile dysregulation.
- The objectives of this session are as follows…
    - Read objectives listed below

Objectives:

- By the end of the session, group members will be able to identify how tactile sensory processing deficits present in military children.
- By the end of the session, group members will be able to develop strategies that can be used in the classroom to target tactile deficits through the use of EHP.

Warm-Up:

- Touch discrimination:
  (1) Partner up
  (2) Have partner #1 close their eyes
  (3) Using two pens/pencils partner #2 will touch the pen/pencil to partner #1's forearm at about 6 inches apart (at the same time) and have them tell partner #2 if they were touched with one or two points
  (4) Slowly touch the pens/pencils at a smaller distance apart (at the same time) and continue to have partner #1 identify if they were touched with one or two points
  (5) Switch partners and repeat

Activity

- Go through the tactile PowerPoint and then have participants complete the tactile case study worksheet.

Sharing

- Choose one person from your group and share the strategies that you came up with for each intervention method.
- Please provide examples of observations from your classroom that might be a result of your military students experiencing tactile processing challenges.
- What are some other behaviors that you may see in a child with tactile processing difficulties?

Processing

- Possible questions to ask include:
    - Why did you choose the strategies that you did to address tactile dysregulation?
    - Would you have chosen different strategies if you were not provided with examples, if so, explain?
    - Are there strategies that you think you would be more comfortable using over other strategies, if so, explain?
    - Do you think that the strategies you chose are realistic for you to apply in the classroom with military students, why or why not?

Generalizing

- Ask the group to:
    - Discuss similarities between groups regarding strategies to utilize to address tactile processing difficulties.
    - Did the group notice any differences in strategies shared to utilize to address tactile processing difficulties?
    - Discuss feelings associated with identifying tactile processing difficulties in military students.
    - Compare and contrast comfort utilizing various strategies to address tactile processing difficulties.
- Address 1-2 principles learned after comparing and contrasting.

Application

- How can you apply this information with military students in your classroom?

Summary

- Have a group leader summarize:
    - What was done for the warm-up
    - Learned more information about tactile processing difficulties

    - Completed an activity addressing strategies to utilize for tactile processing difficulties
    - Shared strategies that groups came up with to address tactile processing difficulties
    - Discussed feelings related to identifying tactile processing difficulties as well as utilizing strategies to address those difficulties
    - Discussed how each member will apply the information learned with the military students in their classroom
- Thank the group for participating and sharing
- End the group on time

Session #5 PowerPoint *Facilitator Copy*

Sensory Processing Difficulties in Military Students: Tactile

By Danielle Cox, MOTS and Katelyn Jennings, MOTS

Objectives

- By the end of the session, group members will be able to identify how tactile sensory processing deficits present in military children.
- By the end of the session, group members will be able to develop strategies that can be used in the classroom to target tactile deficits through the use of EHP.

Warm-Up

- Touch discrimination:
  (1) Partner up
  (2) Have partner #1 close their eyes
  (3) Using two pens/pencils partner #2 will touch the pen/pencil to partner #1's forearm at about 6 inches apart (at the same time) and have them tell partner #2 if they were touched with one or two points
  (4) Slowly touch the pens/pencils at a smaller distance apart (at the same time) and continue to have partner #1 identify if they were touched with one or two points
  (5) Switch partners and repeat

The Tactile System

- Enables the body to feel, ache, and differentiate temperature (Bear et al., 2016).
- Sensitive to many kinds of stimuli, including pressure, temperature, and position of joints and muscles, the internal organs, and the brain itself (Bear et al., 2016).
- Receptors both superficial (closer to skin or outside) and deep in the layers of the skin (Lane et al., 2014).

Presenter Notes:

- First bullet: Allows us to feel pain, sharp and dull touch, and various temperatures
- Second bullet: This system is therefore linked closely to the proprioceptive system because of the fact that our skin is the receptor for both touch and proprioception
- Third bullet: This puts into perspective the differences between feeling deep

pressure and light touch.

How Tactile Sensory Deficits May Present

- Avoids touching or being touched by objects and people
- Gets overly upset in response to getting dirty or to certain textures
- Is unaware of messy face or clothes
- Often drops items
- Can not feel when being touched or can not discriminate where they are being touched
- Handles classroom utensils inefficiently
- May have difficulty processing pain or temperature

(Kranowitz, 2005)

Facilitating Adaptive Responses

"The ability to adjust one's action on environmental demand" (Lane et al., 2014, p. 818).

- Step #1: Determine the cause of behavior
- Step #2: Identify and prioritize the child's wants and needs
- Step #3: Choose an appropriate intervention type
- Step #4: Implement intervention strategy
- Step #5: Adjust or choose different intervention strategy

(Dunn, 2017)

Presenter Notes:

- Steps 1 and 2: Determine if the child is seeking out more or less input, evaluate the environment, look for patterns in responses to certain auditory stimulus, consider what may be going on at home
- Step 3: establish/restore, alter, adapt/modify, create, prevent

References

Bear, M. F., Connors, B. W., & Paradiso, M. A. (2016). *Neuroscience: Exploring the brain (4th ed).* Philadelphia, PA: Wolters Kluwer.

Dunn, W. (2017). The Ecological Model of Occupation. In Hinojosa, J., Kramer, P., & Brasic Royeen, C. *Perspectives on Human Occupation* (pp. 207-235). Philadelphia: FA Davis.

Kranowitz, C.S. (2005). *The Out-of-Sync Child: Recognizing and Coping with Sensory Processing Disorder.* New York: Skylight Press.

Lane, S.J., Roley, S.S., & Champagne, T. (2014). Sensory integration and processing. In Schell, B.A.B, Gillen, G., & Scaffa, M.E. *Willard & Spackman's occupational therapy.* (pp. 816-868). Baltimore: Lippincott Williams & Wilkins, a Wolters Kluwer business.

Session #5 PowerPoint Handout

Sensory Processing Difficulties in Military Students: Tactile

By Danielle Cox, MOTS and Katelyn Jennings, MOTS

Objectives

- By the end of the session, group members will be able to identify how tactile sensory processing deficits present in military children.
- By the end of the session, group members will be able to develop strategies that can be used in the classroom to target tactile deficits through the use of EHP.

Warm-Up

- Touch discrimination:
  (1) Partner up
  (2) Have partner #1 close their eyes
  (3) Using two pens/pencils partner #2 will touch the pen/pencil to partner #1's forearm at about 6 inches apart (at the same time) and have them tell partner #2 if they were touched with one or two points
  (4) Slowly touch the pens/pencils at a smaller distance apart (at the same time) and continue to have partner #1 identify if they were touched with one or two points
  (5) Switch partners and repeat

The Tactile System

- Enables the body to feel, ache, and differentiate temperature (Bear et al., 2016).
- Sensitive to many kinds of stimuli, including pressure, temperature, and position of joints and muscles, the internal organs, and the brain itself (Bear et al., 2016).
- Receptors both superficial (closer to skin or outside) and deep in the layers of the skin (Lane et al., 2014).

How Tactile Sensory Deficits May Present

- Avoids touching or being touched by objects and people
- Gets overly upset in response to getting dirty or to certain textures
- Is unaware of messy face or clothes
- Often drops items
- Can not feel when being touched or can not discriminate where they are being touched
- Handles classroom utensils inefficiently
- May have difficulty processing pain or temperature

(Kranowitz, 2005)

Facilitating Adaptive Responses

"The ability to adjust one's action on environmental demand" (Lane et al., 2014, p. 818).

- Step #1: Determine the cause of behavior
- Step #2: Identify and prioritize the child's wants and needs
- Step #3: Choose an appropriate intervention type
- Step #4: Implement intervention strategy
- Step #5: Adjust or choose different intervention strategy

(Dunn, 2017)

References

Bear, M. F., Connors, B. W., & Paradiso, M. A. (2016). Neuroscience: Exploring the brain (4th ed). Philadelphia, PA: Wolters Kluwer.

Dunn, W. (2007). The Ecological Model of Occupation. In Hinojosa, J., Kramer, P., & Brasic Royeen, C. Perspectives on human Occupation (pp. 207-225). Philadelphia: Fa Davis.

Kranowitz, C.S. (2006). The Out of Sync Child: Recognizing and Coping with Sensory Processing Disorder. New York: Skylight Press.

Lane, S. J., Reisy, S.S., & Champagne, T. (2014). Sensory integration and processing. In Schell, B.A.B. Gillen, G., & Scaffa, M.E. Willard & Spackman's occupational therapy. (pp. 87-96). Baltimore: Lippincott Williams & Wilkins, a Wolters Kluwer business.

Tactile Case Study

Bella's teacher has noticed a change in her behavior in the classroom lately. She has been becoming overly upset when touched by others. She avoids being close to her classmates or teachers and often screams "get away from me, don't touch me." During arts and crafts activities, she refuses to participate and interact with various supplies required for the craft such as finger paints, glue, etc. because she doesn't like her hands being dirty. When asked by the teacher, her mom reported that her dad just returned home from a deployment recently and has been noticing the same patterns from Bella at home when she is around her dad.

Match the strategy with the intervention type.

Intervention Type	Strategy
Establish Restore_____	a) Placing Bella's desk in a corner of the room (while not secluding her or singling her out) and evenly spacing the desks further apart.
Alter_____	b) Encourage Bella to explain her need/want for personal distance in a calm and appropriate way with classmates, teachers, and parents.
Adapt/Modify_____	c) Selecting activities or supplies that match Bella's current sensory preferences such as activities with decreased contact or crafts that do not require hands to get dirty.
Prevent_____	d) Host a bring your parent to school event that includes activities such as crafts, dancing, and food/drink; providing everyone with the opportunity to participate in activities that require close contact with others.
Create_____	e) Slowly introducing a variety of new textures to decrease Bella's sensitivity to them both at home with her dad and in the classroom.

Pick one strategy and identify aspects of person, context, and task:

Strategy _____

How do these aspects facilitate adaptive responses to increase their performance?

Tactile Matching Answer Key

Intervention Type	Strategy
Establish/Restore E	Slowly introducing a variety of new textures to decrease Bella's sensitivity to them both at home with her dad and in the classroom.
Alter C	Selecting activities or supplies that match Bella's current sensory preferences such as activities with decreased contact or crafts that do not require hands to get dirty.
Adapt/Modify A	Placing Bella's desk in a corner of the room (while not secluding her or singling her out) and evenly spacing the desks further apart.
Prevent B	Encourage Bella to explain her need/want for personal distance in a calm and appropriate way with classmates, teachers, and parents.
Create D	Host a bring your parent to school event that includes activities such as crafts, dancing, and food/drink; providing everyone with the opportunity to participate in activities that require close contact with others.

CONCLUSION

Session #6: Conclusion

Introduction

Physical Environment (Room Set-Up):

- Auditorium or Conference Room
- Ideally with tables and chairs in a circle or half circle to facilitate discussion

Supplies:

- Conclusion PowerPoint Presentation Handout
- Venn Diagram and Strategy/Intervention Worksheet
- Pens/pencils

Expectations of Group:

- Welcome back, everyone. This is the final session with the focus of this session being on questions or examples that you have regarding military children experiencing sensory processing deficits in the classroom.
- The purpose of this session is to provide you the opportunity to work through examples of situations that you have dealt with or are familiar with related to military children in your classroom experiencing sensory processing deficits.
- Before we begin, I would like to set some expectations for this group. The expectations are as follows:
    - Always respect each other
    - Be open to others' ideas and suggestions
    - Everything said in this group is confidential and should not be discussed outside of the group
- Last time we discussed tactile processing difficulties and strategies to utilize to address those difficulties. Today we are going to wrap things up and send you off to apply the information with the military students in your classrooms.
- The objectives of this session are as follows…
    - Read objectives listed below

Objectives:

- By the end of the session, group members will identify two ways in which they will implement a learned strategy with their students.
- By the end of the session, group members will demonstrate the ability to use EHP concepts to create strategies for their military students experiencing sensory challenges.

Warm-Up:

- Go around the room and share your biggest take-away from these sessions?

Activity

- Go through the conclusion PowerPoint and then have participants complete the Venn diagram and strategy/intervention worksheet.

Sharing

- Share one of the most important things that you will take away from these sessions.
- Have participants share their experiences from their worksheets and ask questions.

Processing

- Possible questions to ask include:
    - Why did you choose the strategies that you did to address the dysregulation you identified?
    - Would you have chosen different strategies if you had not attended these sessions, if so, explain?
    - Are there strategies that you think you would be more comfortable using over other strategies, if so, explain?
    - Do you think that the strategies you chose are realistic for you to apply in the classroom with military students, why or why not?

Generalizing

- Ask the group to:
    - Discuss similarities of strategies to utilize to address a variety of sensory processing difficulties.
    - Discuss differences in strategies shared to utilize to address a variety of sensory processing difficulties.
    - Discuss feelings associated with identifying sensory processing difficulties in military students.
    - Compare and contrast comfort utilizing various strategies to address sensory processing difficulties.
- Address 1-2 principles learned after comparing and contrasting.

Application

- How will you apply the information learned throughout these sessions with the military students in your classroom that are experiencing sensory processing deficits?

Summary

- Have a group leader summarize:
    - What was done for the warm-up
    - Learned more information about sensory processing deficits related to the seven senses
    - Completed an activity addressing experiences of military students experiencing sensory deficits
    - Shared strategies to address a variety of processing difficulties
    - Discussed feelings related to identifying processing difficulties as well as utilizing strategies to address those difficulties
    - Discussed how each member will apply the information learned with the military students in their classroom
- Thank the group for participating and sharing
- End the group on time

Session #6 PowerPoint *Facilitator Copy*

Sensory Processing Difficulties in Military Students: Conclusion

By Danielle Cox, MOTS and Katelyn Jennings, MOTS

Objectives

- By the end of the session, group members will identify two ways in which they will implement a learned strategy with their students.
- By the end of the session, group members will demonstrate the ability to use EHP concepts to create strategies for their military students experiencing sensory challenges.

Warm-Up

- Go around the room and share your biggest take-away from these sessions?

Occupational Therapy's Role in Sensory Processing

- What is occupational therapy?
- What is occupational therapy's role in sensory processing?

(STAR Institute, 2020)

Military Children and Culture

- How does the military child's environment differ from that of a non-military child?
- What challenges to military students face that non-military students may not?
- How might those challenges affect their sensory processing and behavior?
- How might those challenges affect how they function in a classroom socially, emotionally, and psychologically?

7 Senses

- Auditory
- Visual
- Olfactory
- Tactile
- Gustatory
- Proprioception
- Vestibular

Ecology of Human Performance (EHP)

Four Main Constructs

1. Person
2. Task
3. Context
4. Performance

Presenter Notes:

- Have the group come up with an example of each of the constructs of EHP.

Intervention Types

- Establish/Restore
- Alter
- Adapt/Modify
- Prevent
- Create

(Dunn, 2017)

Presenter Notes:

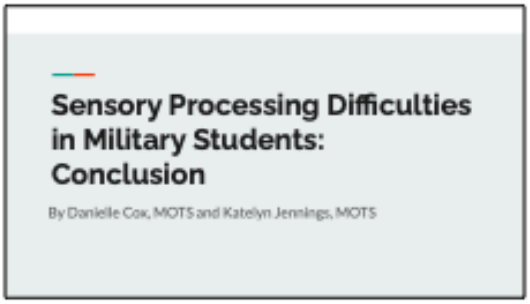
- Have the group come up with an example for each intervention type.

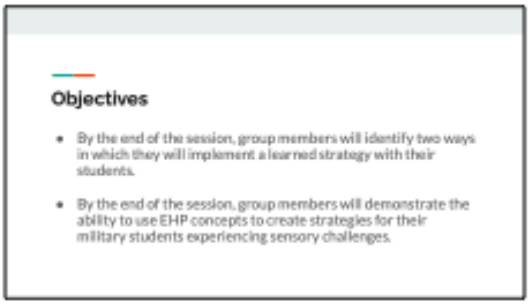
References

Cole, M. B. & Tufano, R. (2008). Ecology of Human Performance. In Cole, M. B. & Tufano, R. *Applied theories in occupational therapy: A practical approach* (pp.117-124). Thorofare, NJ: Slack Inc.

Dunn, W. (2017). The Ecological Model of Occupation. In Hinojosa, J., Kramer, P., & Brasic Royeen, C. *Perspectives on Human Occupation* (pp. 207-235). Philadelphia: FA Davis.

Session #6 PowerPoint Handout





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Intervention Types

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- Alter
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- Create

[Dunn, 2017]

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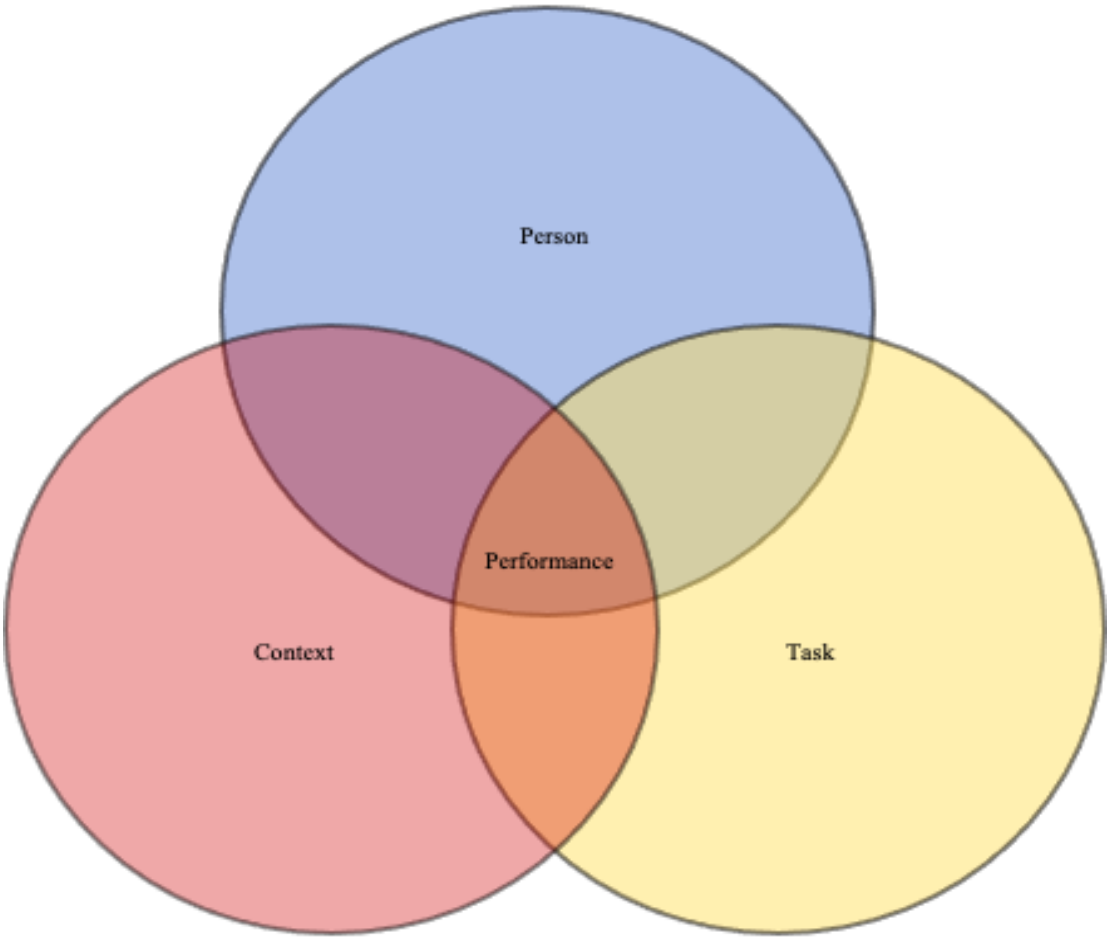
Cole, M. B. & Tufano, R. (2008). Ecology of Human Performance. In Cole, M. B. & Tufano, R. Applied theories in occupational therapy: a practical approach (pp. 117-124). Thorofare, NJ: Slack Inc.

Dunn, W. (2017). The Ecological Model of Occupation. In Hinojosa, J., Kramer, P. & Brasic Royeen, C. Perspectives on Human Occupation (pp. 207-233). Philadelphia PA: Davis.

Venn Diagram and Strategy/Intervention Worksheet

Think of a military child in your classroom. What sensory deficit is the student experiencing?

Fill out the Ecology of Human Performance Venn diagram with aspects of the person, context, and task that may be affecting this students' performance due to the sensory deficit he/she is experiencing.



Performance

How is the student performing as a result of each transaction?

What are some ways that deficit has presented?

What are some strategies that you can/will utilize to address these deficits using a variety of intervention types?

- Establish/Restore:

- Alter:

- Adapt/Modify:

- Prevent:

- Create:

Are there any other questions you have?

References

American Association of School Administrators. (2019). *Fact sheet on the military child.* https://www.aasa.org/content.aspx?id=8998.

American Occupational Therapy Association [AOTA]. (2014). Occupational therapy practice framework: Domain & Process (3rd ed.). *American Journal of Occupational Therapy, 68* (Suppl.1), S1-S48.

Bear, M. F., Connors, B. W., & Paradiso, M. A. (2016). *Neuroscience: Exploring the brain (4th ed).* Philadelphia, PA: Wolters Kluwer.

Chandra, A., Martin, L. T., Hawkins, S. A., & Richardson, A. (2010). The impact of parental deployment on child social and emotional functioning: Perspectives of school staff. *Journal of Adolescent Health, 46*(3), 218–223.

Classen, A. I., Horn, E., & Palmer, S. (2019). Needs of military families: Family and educator perspective. *Journal of Early Intervention, 41*(3), 233–255.

Cole, M. B. & Tufano, R. (2008). Ecology of Human Performance. In Cole, M. B. & Tufano, R. *Applied theories in occupational therapy: A practical approach* (pp. 117-124). Thorofare, NJ: Slack Inc.

Dunn, W. (2017). The Ecological Model of Occupation. In Hinojosa, J., Kramer, P., & Brasic Royeen, C. *Perspectives on Human Occupation* (pp. 207-235). Philadelphia: FA Davis.

Garner, J. K., Arnold, P. L., & Nunnery, J. (2014). Schoolwide impact of military-connected student enrollment: Educators' perceptions. *Children & Schools, 36*(1), 31–39.

Huebner, C.R. (2019). Health and mental health needs of children in US military families. *Pediatrics, 143*(1), 1–13.

Kranowitz, C.S. (2005). *The Out-of-Sync Child: Recognizing and Coping with Sensory Processing Disorder.* New York: Skylight Press.

Lane, S.J., Roley, S.S., & Champagne, T. (2014). Sensory integration and processing. In Schell, B.A.B, Gillen, G., & Scaffa, M.E. *Willard & Spackman's occupational therapy.* (pp. 816-868). Baltimore: Lippincott Williams & Wilkins, a Wolters Kluwer business.

Shiffer, C. O., Maruy, R. V., DeGraff, A. N., Sonethavilay, H., Mehta, M. S., Wilcox, S. L., Bassett, G., & Linsner, R. K. (2015). Blue Star Families 2015 annual military family lifestyle survey: Comprehensive Report. Washington, DC.

Sensory Integration Global Network [SIGN]. (2005). *Resources.* https://www.siglobal network.org/resources.

STAR Institute. (2020). *About SPD.* https://www.spdstar.org/basic/about-spd.

The End

Chapter V: Conclusion

Military students' transition and deployment-related academic and social-emotional needs are frequently attended to by teachers; however, little is known about the impact of sensory deficits on their occupational performance in the educational setting (Garner et al., 2014). There is an unprecedented need for additional resources regarding sensory deficits in military children to provide more insight into the challenges faced by this population as well as to increase awareness and support for the demands placed upon children in military families. The purpose of this project is to provide information to educators regarding the added challenges faced by military students as well as to increase awareness and support for the demands placed upon these children. The product includes a six-session in-service which attempts to inform educators about military culture, the different senses of the body and apply learned strategies to military students experiencing sensory challenges using the EHP Model.

The limitations of this project include a lack of concrete evidence supporting the assumption that military students are at an increased risk for experiencing sensory challenges. This project was based on an extensive literature review in which the authors found that military students face many stressors related to their culture which can contribute to sensory challenges. Further research is warranted to provide statistics and factual information on sensory challenges faced by military children. Additionally, due to inconsistencies in different therapists providing the in-service to different groups of

educators, it is not guaranteed to be presented the same way each time. Further development of the project could include a training provided to the occupational therapists who will be presenting the in-service in order to promote consistency in how the information is provided. It is recommended that this in-service training reach as many educators as possible to facilitate increased occupational performance for military students in the classroom. In order to do so, future action should be taken to study the effects that military-related stressors have on children of military families. Another future action for further development of this project may include upcoming occupational therapy students implementing this in-service in a school district for educators of military children.

This in-service serves as a guide to fill this gap in professional development opportunities for educators of military students that may be experiencing sensory deficits. Due to the occupational therapists' expertise in sensory processing, it is necessary that an occupational therapist facilitate each session. To increase the ability for this information to reach a larger audience across the United States, this in-service can be adapted to meet the needs of individual school districts. It can be implemented across all school districts that serve military students through an occupational therapist in that district. The occupational therapist should consult with school administrators within the district in which it is to be implemented in order to schedule the in-service at a convenient time(s). This in-service is estimated to take approximately one hour per session for a total of six hours. Although there are six sessions included in this in-service, they can either be provided in a one-day professional development day or across the span of six weeks, implementing one session per week.

Military children are exposed to various situations that may have adverse effects including deployment, prolonged family separation, frequent relocations, and other traumatic experiences. Given the stressors placed on military children academically, socially and emotionally, the lack of awareness and resources provided to this population is concerning. It has been found that many educators believe that the military lifestyle is problematic, and more research is needed to assist early educators (Classen et al., 2019). This project fills this gap by providing the necessary resources to educators of military students who may be experiencing sensory challenges.

References

American Association of School Administrators. (2019). *Fact sheet on the military child.* https://www.aasa.org/content.aspx?id=8998.

American Occupational Therapy Association [AOTA]. (2014). Occupational therapy practice framework: Domain & Process (3rd ed.). *American Journal of Occupational Therapy, 68* (Suppl.1), S1-S48.

Astor R.A., De Pedro K.T., Gilreath T.D., Esqueda M.C., & Benbenishty R. (2013). The promotional role of school and community contexts for military students. *Clin Child Fam Psychol Rev. 2013;16*(3):233–244.

Bear, M. F., Connors, B. W., & Paradiso, M. A. (2016). *Neuroscience: Exploring the brain (4th ed).* Philadelphia, PA: Wolters Kluwer.

Bureau of Labor and Statistics, U.S. Department of Labor (2019). *Occupational Outlook Handbook.* https://www.bls.gov/ooh/military/military-careers.htm#tab-3.

Chan, S. (2010). Applications of andragogy in multi-disciplined teaching and learning. *Journal of Adult Education, 39*(2), 25–35.

Chandra, A., Martin, L. T., Hawkins, S. A., & Richardson, A. (2010). The impact of parental deployment on child social and emotional functioning: Perspectives of school staff. *Journal of Adolescent Health, 46*(3), 218–223.

Chartrand M.M., Frank D.A., White L.F., & Shope T.R. (2008). Effect of parents' wartime deployment on the behavior of young children in military families. *Archives of Pediatrics & Adolescent Medicine, 162*(11), 1009–1014.

CLASI (n.d.). *About Ayres Sensory Integration.* https://www.cl-asi.org/about-ayres-sensory-integration.

Classen, A. I., Horn, E., & Palmer, S. (2019). Needs of military families: Family and educator perspective. *Journal of Early Intervention, 41*(3), 233–255.

Cole, M. B. (2018). Group leadership: Cole's seven steps. In Cole, M. B. *Group dynamics in occupational therapy* (5th ed.). (pp. 3-28) Thorofare NJ: SLACK, Inc.

Cole, M. B. & Tufano, R. (2008). Ecology of Human Performance. In Cole, M. B. & Tufano, R. *Applied theories in occupational therapy: A practical approach* (pp. 117-124). Thorofare, NJ: Slack Inc.

Department of Defense Education Activity. (2018). All about DODEA educational partnership. https://www.dodea.edu/partnership/about.cfm.

Defense Health Agency. (2019). *Tricare exclusions.* https://www.tricare.mil/CoveredServices/IsIt Covered/Exclusions.

Dunn, W. (2017). The Ecological Model of Occupation. In Hinojosa, J., Kramer, P., Brasic Royeen, C. *Perspectives on Human Occupation* (pp. 207-235). Philadelphia: FA Davis.

Dunn, W. (2017). The Ecological Model of Occupation. In Hinojosa, J., Kramer, P., & Brasic Royeen, C. *Perspectives on Human Occupation* (pp. 207-235). Philadelphia: FA Davis.

Engel, R.C., Gallagher L.B., & Lyle, D.S. (2008). Military deployments and children's academic achievement: Evidence from Department of Defense education activity schools. *Economics of Education Review, 29*(1), 73–82.

Garner, J. K., Arnold, P. L., & Nunnery, J. (2014). Schoolwide impact of military-connected student enrollment: Educators' perceptions. *Children & Schools, 36*(1), 31–39.

Gorman, G.H., Eide, M., Hisle-Gorman, E. (2010). Wartime military deployment and increased pediatric mental and behavioral health complaints. *Pediatrics, 126*(6), 1058-1066.

Hall L.K. (2011). The importance of understanding military culture. *Social Work in Health Care, 50*(1), 4–18.

Halvorson, A. (2010). *Understanding the military: The institution, the people, and the culture.* https://www.samhsa.gov/sites/default/files/military_white_paper_final.pdf.

Helfrich, C.A. (2014). Principles of learning and behavior change. In Schell, B.A.B, Gillen, G., & Scaffa, M.E. *Willard & Spackman's occupational therapy.* (pp. 588-603). Baltimore: Lippincott Williams & Wilkins, a Wolters Kluwer business.

Huebner, C.R. (2019). Health and mental health needs of children in US military families. *Pediatrics, 143*(1), 1–13.

Jagger, J. C., & Lederer, S. (2014). Impact of geographic mobility on military children's access to special education services. *Children & Schools, 36*(1), 15–22.

Kranowitz, C.S. (2005). *The Out-of-Sync Child: Recognizing and Coping with Sensory Processing Disorder.* New York: Skylight Press.

Lane, S.J., Roley, S.S., & Champagne, T. (2014). Sensory integration and processing. In Schell, B.A.B, Gillen, G., & Scaffa, M.E. *Willard & Spackman's occupational therapy.* (pp. 816-868). Baltimore: Lippincott Williams & Wilkins, a Wolters Kluwer business.

Lester, P., Stein, J. A., Saltzman, W., Woodward, K., Macdermid, S. W., Milburn, N., & Beardslee, W. (2013). Psychological health of military children: longitudinal evaluation of a family-centered prevention program to enhance family resilience. *Military Medicine, 178*(8), 838–845.

Military Child Education Coalition. (2020). *Frequently asked questions and suggested use for military student identifier code.* https://www.militarychild.org/upload/files/ resources/FAQs_on_MSI.pdf.

Military Interstate Children's Compact Commission. (n.d.). *Background.* http://www.mic3.net/ background.html.

Mmari, K. N., Bradshaw, C. P., Sudhinaraset, M., & Blum, R. (2010). Exploring the role of social connectedness among military youth: Perceptions from youth, parents, and school personnel. *Child & Youth Care Forum, 39*(5), 351–366.

National Military Family Association. (2020). *The Interstate Compact.* https://www.military family.org/info-resources/education/.

Nelson, S., Baker, M., & Weston, C. (2016). Impact of military deployment on the development and behavior of children. *Pediatric Clinics of North America, 63*(5), 795-811.

Parham, L. & Mailloux, Z. (2015). Sensory integration. In Case-Smith, J. & O'Brien, J. (7th Ed.), *Occupational therapy for children and adolescents, seventh edition* (pp. 258-303). St. Louis, Missouri: Mosby Inc.

Shiffer, C. O., Maruy, R. V., DeGraff, A. N., Sonethavilay, H., Mehta, M. S., Wilcox, S. L., Bassett, G., & Linsner, R. K. (2015). Blue Star Families 2015 annual military family lifestyle survey: Comprehensive Report. Washington, DC.

Sensory Integration Global Network [SIGN]. (2005). *Resources.* https://www.siglobal network.org/resources.

STAR Institute. (2020). *About SPD.* https://www.spdstar.org/basic/about-spd.

U.S. Department of Education. (2020). *Individuals with Disabilities Act.* https://sites.ed.gov /idea/about-idea/.