

Sensory Integration Dysfunction: Implications for

Counselors Working with Children

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Abstract

Sensory Integration Dysfunction (SID), a sensory processing problem that afflicts about 15% of children, sets many children on a developmental trajectory of emotional and social problems. Children with SID often unintentionally alienate parents, peers, and teachers in their efforts to modify the amounts of sensory stimulation they receive. They then miss out on the social and cognitive interactions needed for healthy development, and develop secondary mental health problems such as fear, loneliness, and low self-esteem. Counselors who understand SID can intervene to help these children get “back on track” with normative social and cognitive development.

Sensory Integration Dysfunction: Implications for Counselors Working with Children

The typical pre-school classroom is awash with sensory experiences. Children sink their hands into play dough, sandboxes, rice boxes, or water, stimulating their tactile sense. They listen to music, sing, beat on instruments, clap and shout, engaging their auditory sense. They dance, play with puppets, and put on their own coats, all of which require the proprioceptive sense, the one that tells us where parts of our body are in relation to one another. On the playground they run, jump, swing, twirl, and hang upside down, stimulating their vestibular sense, the one that senses gravitational pull. Most preschoolers love, crave, and even demand these activities, which feed their developing sensory systems, and provide them information about the world and their place in it. But not the child with sensory integration dysfunction. The inability to integrate sensory stimuli can prevent a child from joining in the life of his or her peers. This article is about counseling that child.

Since Dr. A. Jean Ayres first coined the term Sensory Integration (Ayres, 1972), the theory has become a widely used framework for helping parents, teachers, and practitioners understand the world of learning differences from a child's perspective. Dr. Ayres, an occupational therapist, conceptualized many childhood troubles as originating in problems related to processing, integrating, and organizing sensory stimuli from the environment. Sensory Integration Dysfunction (SID) not only helps clarify many learning differences, but also illuminates certain aspects of autism, schizophrenia (King, 1996), attention deficit hyperactivity disorder, childhood social problems, childhood fears, anxiety, depression, and a variety of other mental health issues in children.

SID is not yet listed in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR), but concerned clinicians are lobbying to have it included in the next revision (Miller, Cermak, Lane, Anzalone, & Koomar, 2004). Pollack (2006) explains that debate about the existence of SID stems from lack of evidence of treatment efficacy. She briefly reviews the efficacy research on SID treatments, stating that due to small sample sizes and large variance among therapist approaches and treatment protocols, it is difficult to interpret studies conducted over the past ten years. She suggests that therapists who decide to use SID treatment with parents and children should help families understand the questions surround the efficacy research, help parents approach treatment as a trial, and help establish guidelines for measuring improvement in the individual case of the child.

Although SID is not listed in the DSM, it is listed under the term “Regulation disorders of sensory processing” in the Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood, Revised (DC: 0-3R, 1994), a supplement to the DSM-IV-TR that focuses on the mental health and developmental disorders occurring during the first four years of life. Maldonado-Duran, Mandler, Katz, and Saucedo-Garcia (2007) criticize the fact that the DC-03-R classification describes hyper- and hypo- sensitivities to sensory stimuli, without defining threshold levels at which sensory issues become dysfunctional. However, despite the debates about treatment efficacy, and problems in the classification system of regulatory dysfunctions, children who have SID are clearly distinguishable from those who do not, in their behaviors, emotions, and central nervous system reactions to sensory stimuli (Miller et al., 1999; Schaaf, Miller, Seawell, & O’Keefe, 2003).

Though most people experience some sort of sensory integrative problems at some point in life, between 5% and 15% of children experience SID to such an extent that it impairs daily functioning (Miller et al., 2004; Schaaf, et al., 2003; Stepp-Gilbert, 1988). Most SID children are of normal or above normal intelligence (Miller et al.), but because of the “wiring” of their brains, they don’t interact very well in their environments, which can give the appearance that they are less able than they actually are (Greenspan & Wieder, 1998). Dysfunctions are often recognized early, as early as the first day of life, and in most (80%) cases, parents are the first to notice. The causes of SID are as yet unknown (Stepp-Gilbert, 1988a).

Although children diagnosed with SID need to be referred to an occupational therapist trained in sensory integration therapy (Miller et al., 2004; Stepp-Gilbert, 1988b), it is important that counselors working with children understand how SID can set children on less than optimal developmental trajectories. Counselors need to understand how to interpret behaviors of the child diagnosed with SID, develop an awareness of the behavioral, emotional, and relational challenges faced by children with this disorder, and understand the processes by which secondary issues such as mental health problems and dysfunctional family dynamics develop in families with SID children. Counselors, parents, and teachers can modify certain aspects of a child’s environment (King, 1996), as well as their own interactions with that child, to help him or her work around the dysfunction and create the meaningful interactions needed for healthy development (Greenspan & Wieder). Most teachers and school counselors, however, are unfamiliar with the disorder (McBride, 2004). The intent of this article is to

help counselors understand the interplay between SID, basically a physiological problem, and some of its mental health consequences.

This article will briefly explain the theory and manifestations of SID, and offer implications for mental health counselors working with children with SID. Most publications on SID are targeted at medical personnel, occupational therapists, or parents, who treat the disorder directly. This article, targeted at counselors, will focus on the mental health “fall-out” that often occurs as a result of family and peer reactions to SID symptoms, and a child’s adaptation to these reactions.

What is Sensory Integration Dysfunction?

Sensory integration is the brain’s ability to process, analyze, organize, and respond to environmental stimuli (Stephens, 1997). It is this ability, in essence, that allows us to interact with our environment, and that lays the groundwork for cognitive and emotional development (Greenspan & Wieder, 1998). Sensory integration dysfunction occurs when the brain cannot do one or more of those things, with one or more types of sensory input (Kranowitz, 1998; Stepp-Gilbert, 1988a). For example, if a child has auditory SID, he or she may not be able to process sounds, organize them into meaning, or figure out how to respond. Parents and teachers may be baffled by test results showing perfect hearing. The child *receives* the auditory input, but the brain does not *integrate* it in a way that is functional. This lack of integration can manifest as an over-sensitivity (or hypersensitivity), under-sensitivity (sometimes called sensory defensiveness, or hyposensitivity), or disorganized approach to the sensory input (Kranowitz; Miller et al., 2004).

Oversensitive children pick up *too much* sensory stimuli, and are unable to screen out what the rest of us might consider irrelevant information (such as the sound of the air conditioner hum). All stimuli trigger “fight or flight” responses, and the child can’t distinguish between threatening and non-threatening input (Stephens, 1997). Undersensitive children, on the other hand, need a great deal of stimuli in order to respond (Stephens).

Sensory integration dysfunction can take the form of over or under sensitivities, and also can occur in response to various types of sensory stimuli. Children can experience SID with any of the five senses (touch, taste, smell, hearing, sight), as well as vestibular and proprioceptive senses. In fact, the most common types of SID occur within the vestibular, proprioceptive, and tactile sensory systems (Kranowitz, 1998; Stephens, 1997; Stepp-Gilbert, 1988a). Visual and auditory SID are closely connected to vestibular SID, and oral SID is related to tactile SID. Most people are less familiar with the vestibular and proprioceptive senses than with the “five senses” traditionally learned in school. The vestibular sensors are located in the inner ear, and provide information about balance and gravity. The proprioceptive sensors are located in the muscles, joints, and tendons, and provide information about what the body is doing, and where parts of the body are located in relation to each other (Kranowitz; Stepp-Gilbert, 1988b).

Children may have sensory processing problems in more than one sensory system, and they can be both over and under sensitive within the same system (for example, a child might under-react to high pitched noises, but over react to low tones). Alternately, a child might be oversensitive to one type of sensory input, but

undersensitive to another; most children, however, display a predominant pattern of over- or undersensitivity (Greenspan & Wieder, 1998).

Manifestations and Related Mental Health Concerns of SID

SID can interfere with social skills, self-esteem, and many areas of skill development (Schaaf, Miller, Seawell, & O'Keefe, 2003). Particular manifestations of the disorder can set children up for interactions with others that deny them needed opportunities and pave the way for poor emotional, cognitive, and relational development. This section will describe the manifestations of integration and disintegration in each of these seven sensory areas. A brief discussion of potential social and mental health consequences will follow each explanation.

Vestibular

The vestibular sensors receive input about gravity and movement, and where the body is in relation to the earth. Vestibular input is information about whether the body is moving or still, or right side up or upside down (King, 1996). It tells us what direction we are moving, and how fast. Successful integration of this sense is responsible for movement and balance, muscle tone, bilateral coordination, auditory-language processing, and visual-spatial processing (Greenspan & Wieder, 1998). The vestibular receptors, which develop at about 9-11 weeks of gestation (Stepp-Gilbert, 1988) are located in the inner ear and work like a level (Kranowitz, 1998).

Vestibular dysfunction occurs when children are either oversensitive or undersensitive to movement. Oversensitive children, sometimes referred to as "gravitationally insecure," dislike fast movements, uneven (like sand or grass) or unstable (like escalators or boats) surfaces and frequently get car-sick (Sensory

Processing Disorder Resource Center, 2007). They live in constant fear of falling, and due to low muscle tone, they tend to tire easily (Kranowitz, 1998; Stephens, 1997). As a result, these children begin to feel vulnerable around others, especially peers with whom they can't keep up. They often develop strong verbal skills, and hide their movement discomforts from adults (Stephens). They may become bossy or controlling around peers, while they hide their lack of participation in games (Kranowitz). Often these children give up easily, avoid novel situations, and avoid taking even minor physical risks. Playing with other children becomes a source of dread, and the resulting lack of social interaction can lead to emotional insecurity or defensiveness.

Undersensitive children are the opposite. These children crave a sensation of gravity, but lack an accompanying awareness of danger. Spinning, swinging, rocking, and being upside down all provide vestibular input, of which they need more than most people. These children love climbing, jumping, and being tossed in the air, but because they receive little information from their vestibular sensors, they are often unaware of gravitational danger. They may be oblivious to heights, for example, or fail to exhibit a normal fear of falling (King, 1996). These children love roller coasters, or any other kind of physical thrill. Typically, they communicate with gestures more than words, and their verbal delay in relation to other children can become a source of low self esteem for them as well (Kranowitz, 1998; Stephens, 1997).

Visual

The visual-spatial sense is related to the vestibular sense, and children with SID in one area often have SID in both. These children are usually either oversensitive to visual stimuli, or visually disorganized. The oversensitive child may avoid light,

overwhelming visual stimulation (such as many shapes, colors, or details) or frequently, the faces or gazes of other humans (Greenspan & Wieder, 1998; Kranowitz, 1998; Stephens, 1997). Given the importance of parent-baby gazing in the process of bonding, visual defensiveness can lay the groundwork for later emotional and familial problems. Parents whose babies avoid looking at them may feel rejected or confused and might (unconsciously) decrease attempts at interaction with their babies (Greenspan & Wieder, 1998). This can set the stage for attachment problems, which may continue with peers as children grow older.

The problems of children with visual processing problems are very apparent in school. The child who is overwhelmed by visual details may have a hard time seeing the “big picture” whereas the child who is not stimulated enough by such details can *only* see the big picture (Greenspan & Wieder, 1998). Visually disorganized children exhibit poor eye-hand coordination, mix up words and symbols, write words and characters backwards, and experience difficulties learning to read. Because of the close relationship of the visual and vestibular sensory systems, these children often have poor depth perception, and may frequently break things. Spatially disadvantaged, they also get lost easily. Because of their academic problems and apparent clumsiness, they often are teased by peers (Kranowitz, 1998).

Auditory

The sense of hearing is also related to the vestibular sense, perhaps because the receptors for both are located in the ear. Hearing develops at about 18-25 weeks gestation, and the fetus in utero becomes accustomed to the frequency of the mother's

voice. At birth, babies' brains tend to get more excited by sounds of higher frequencies (Stepp-Gilbert, 1988).

The child with auditory dysfunction can hear well, but has trouble processing sound into meaning. Children may be oversensitive or undersensitive to sound stimuli. Oversensitive children, who have what is also known as auditory defensiveness, find many normal sounds aversive or frightening. They may find routine sounds such as vacuum cleaners, flushing toilets, televisions, or clapping to be as painful as many of us find fingernails on a chalkboard (Greenspan & Wieder, 1998). Many times they turn away from certain types of voices, such as loud, deep and booming voices, or high-pitched sounds. Parents of the auditory defensive baby can be encouraged to experiment with voice pitch when talking with their child. Consider, however, the consequences of oversensitivity to sound in the family where the loving father speaks in a loud, booming voice, and the sensitive baby cringes every time he speaks. If the reason for the behavior remains unknown, the father may feel unliked by the baby, and begin to withdraw his attention (Greenspan & Wieder, 1998; Stephens, 1997). Likewise, auditory defensiveness in school might manifest in ear-covering during class singing, or when others are talking. The child, in an attempt at self-protection, risks unintentionally insulting peers or teachers, and becoming the source of class jokes. Misunderstanding the problem makes its consequences worse.

The undersensitive child, on the other hand, who is unable to register much auditory input, may not respond when his or her name is called. Parents and teachers, disliking the feeling that they are being ignored, might unconsciously start calling on the child less frequently (Kranowitz, 1998; Stephens, 1997), or adopt an aloof or chilly

stance toward the child. Because the child can hear well, he or she may develop a reputation for unsociability or uncommunicativeness, and opportunities for important human interactions are lost.

Proprioceptive

Proprioception, also referred to as the “position sense” provides information about where parts of our bodies are in relation to each other. The receptors are located in the joints, muscles, and tendons. An integrated sense of proprioception provides body awareness, motor control, motor planning, grading of movement, postural stability, and emotional security (Kranowitz, 1998). This sense enables us to gauge how far back we have moved a foot to kick a ball, or how far we have pushed an arm through a shirt sleeve (King, 1996). Proprioception begins to function at about 10 weeks of gestation (Stepp-Gilbert, 1988b), and when well integrated, helps us coordinate our movements. The body receives proprioceptive feedback almost constantly (King).

When disorganized, however, a person may suffer from poor body image (or no body awareness). For example, a child may not be able to do things he or she can't see with the eyes. Getting dressed becomes a complex and frustrating task (Kranowitz, 1998). The child moves awkwardly, can't integrate fine and gross motor skills, tends to over or under-grip, and frequently drops or breaks objects (Kranowitz). The child with a disorganized sense of proprioception earns the nickname “klutz” at school, and develops low self-confidence as a result of low faith in his or her body. Like the hypersensitive vestibular child, this child also becomes timid in new situations, and develops a fear of trying new things (Kranowitz).

Tactile

Also known as the sense of touch, tactile sensors are located in the skin, and the sense has usually developed by about 7 weeks of gestation (Stepp-Gilbert, 1988b). The sense of touch is a key component in the development of emotional security of infants, because of its role in communicating love, affection, and protection from care-givers. The tactile sense detects heat, cold, pain, light touch, (all of which help us organize responses to danger), and discriminative touch (which aids in the identification of an object through touch) (King, 1996). Children with a poorly integrated tactile sense may be oversensitive or undersensitive to touch.

Oversensitive babies dislike light touch, stiffen when held or cuddled, over react to pain, and are irritable when others are close by. The baby's resistance to touch can easily lead to attachment problems. Parents who experiment with different levels of pressure and duration can sometimes find forms of touch that are pleasurable to the baby, which can help them as a family create attachment bonds (Greenspan & Wieder, 1998). As children they become fussy about their clothing, often shedding things that rub against the skin. They also resist daily routines, such as hair-brushing or bathing, because of the touch sensations they have to endure (King, 1996).

Attachment problems, parental frustration and, later, social and behavioral problems with peers are some of the emotional risks faced by this child. By the time school starts, this child has learned the threat inherent in being near others, and wants to avoid sitting or standing too close, or having others behind them in line (Kranowitz, 1998). Behavior problems related to the desire to avoid accidental and intentional touch from others develop. The child may become paranoid, begin avoiding social situations

which require uncomfortable physical closeness, or even lash out at others in reaction to unexpected touch.

The undersensitive child, on the other hand, needs excessive tactile stimulation, and constantly touches things and people. The child who barely registers the feel of a hug may crash into things or people, or engage in self-injury (such as head-banging) simply to obtain sensory input. These children often fail to recognize pain, and may sustain injury without noticing. They tend to anger and frustrate teachers, parents, and other kids, who believe the child's behavior to be aggressive and related to interpersonal conflicts. Interpersonal problems may, in fact, develop out of tactile undersensitivity. Because the child's own pain threshold is very high, he or she has a hard time imagining the pain of others, and can be very slow to develop empathy for people or animals.

Oral

Oral, or gustatory function is closely related to the tactile sense. Though not one of the major dysfunctions cited by most SID practitioners, problematic oral integration can manifest as an avoidance of food or liquid, or certain types of consistencies, textures, temperatures, or flavors of food or liquid (Stephens, 1997). As babies, they may simply spit it out, and as children they tend to be extremely picky eaters. Although there does not appear to be any direct evidence linking oral dysfunction to eating disorders, it can certainly foster the right environment for eating disorders to flourish. Parents of the non-eating baby might become fearful and controlling of the child's eating behaviors, and eating can become associated with negative emotional experiences for

the child. Olfactory dysfunction, though it exists, is relatively rare, and will not be discussed here.

Implications for Counseling

Sensory integration dysfunction is diagnosed and treated by pediatricians and occupational therapists (Stephens, 1997). Treatment is far more complex than a simple offering of corrective sensory experiences, and often entails activating one sensory system to support changes in another (King, 1996; Miller et al., 2004). Although counselors do not treat the primary symptoms of SID, they need to be able to treat the secondary emotional and relational symptoms that often arise. This disorder does not have emotional roots, but it *does* have emotional consequences. As explained in the previous section, what starts out as a physiological problem quickly sparks a chain of interactions that can lead to mental health difficulties, including anxiety, depression, aggression, low self esteem, and behavioral problems (Greenspan & Wieder, 1998; Kranowitz, 1998; Miller et. al., 2004). Counselors can redirect a child's mental health trajectory through family and individual therapy aimed at increasing understanding of the disorder, correcting dysfunctional interactions, increasing a child's sense of mastery, and improving self-esteem. Counselors may also find themselves advocating for increased understanding and environmental modifications for these children.

Children's behavior always carries a message. The rest of the world, however, does not always hear it. SID can be misinterpreted as laziness, stubbornness, being spoiled (Stephens, 1997), rejection of others, resistance to therapy, obstinance, severe introversion, pickiness, obsessive fear, or antisocial behavior. What begins as a real sense of pain and fear in reaction to sensory stimuli (King, 1996) can rapidly take on

social meanings, and children often struggle in their relationships with others (Stephens). Counselors can assist parents, teachers, and even peers in reframing and trouble-shooting the child's behavior, and helping him or her interact in a more normative and facilitative way. Families of children with SID are hit hard by the disorder (Miller, 2003), and family therapy can be used to change dysfunctional patterns that were laid on the basis of misinterpretation. Parents may also benefit from participation in a support network such as Sensory Processing Dysfunction (SPD) Parent Connections (www.spdnetwork.org).

Dynamics in a child's peer group are also problematic for many children with SID. Through mastery-building activities, the therapist can help the child (and help family members help the child) gain skills needed to re-integrate with the peer group. Certain kinds of play (discussed in the next section) can be employed to gradually increase oversensitive children's tolerance of touch, motion, sound, etc., and decrease undersensitive children's need for dangerous, disruptive, or inappropriate sensation, so that children can begin to play in the normal activities of their peers.

Counselors may also take advocacy roles with this population, especially given the relative lack of knowledge about SID in the school setting. Oversensitive children often develop what looks to others like irrational fears of "normal" stimuli. Children inherently want to integrate their brains, but will fail to do so when stimuli are overwhelmingly out of their reach. They will seek out (or seek to shut out) the kinds of stimuli as needed, and parents should pay attention to what helps children feel secure (Stepp-Gilbert, 1988b). Certain kinds of stimuli may need to be reduced or changed, and others may need to be provided in safer ways. Parents work closely with

occupational therapists to modify (enrich or simplify, as needed) home environments to accommodate the child's needs (Miller et al., 2004). Counselors can help parents advocate for needed modifications at school. Oversensitive children may need more personal space, a quiet environment, or a reduction in visual stimulation. In the classroom, this could mean some sort of boundary for the child that others are taught to respect. It could mean allowing the use of earphones at certain times of the day, or, for the visually defensive child, the chance to retreat to a less cluttered area of the room. Undersensitive children may need plenty of safe and non-intrusive opportunities to move around, touch things, and take in large amounts of visual and auditory information.

One of the main mental health consequences of SID is low self-esteem. Children experience personal failure when they see their peers succeed; anger and frustration when others misinterpret their behavior; and rejection and loneliness when they are left behind by more normatively-developing peers or ostracized for being different. Play therapy offers an opportunity to build some mastery in areas of greatest insecurity. Garry Landreth (2002) suggests that toys that can be easily mastered (such as crayons, play-dough and blocks) can help build feelings of success in a child. The therapist who takes the concept of mastery-building a step further for the SID child will be attentive to the level of sensory input the child tolerates, and can help the child expand bit by bit.

Mastery-building Activities for the Child with SID

Sensory integration treatment operates on three assumptions. First, developing and organizing brains need exposure to all kinds of stimuli. Second, children must organize their own brains. The child needs to be able to explore an environment that is

safe, stimulating, and frequently changing. Third, the brain is innately driven to organize, given the right stimulus (Stepp-Gilbert, 1988b). A child will let adults know when a stimulus has become upsetting (by cringing or withdrawing), or when more stimulus is needed (by exhibiting cravings for more) (Kranowitz, 1998). The attentive adults can learn to recognize child cues for sensory needs, and help change or modify environments as needed (Stepp-Gilbert).

The mastery-building activities discussed below should be offered to children with these three principles in mind. The goal of all the activities is to help the child integrate (organize, analyze, and respond to) sensory input. Through play and appropriate sensory activity, children can also gradually try new behaviors and break out of rigid patterns (Boucher, 1999). King (1996) states that small improvements in sensory integration can lead to large improvements in behavior, such as increased eye contact, communication, calmness, and decreased tantrums, fears, and panic reactions. Such behavioral changes are likely to be associated with more positive interactions with others and, thus, increased opportunities for learning and improved self-esteem.

Vestibular

The child who needs vestibular integration needs plenty of access to moving and balancing activities (King, 1996). Calming activities might include swinging or rocking. The undersensitive child, who literally climbs the walls, hangs upside down, and ignores danger, needs access to *safe* methods of gravity testing. This child craves the vestibular sensory input offered by jungle gyms and merry-go-rounds, but should be closely monitored to ensure safety. Because of the close association of the vestibular sense with language processing, undersensitive children often speak or write better after or

during appropriate amounts of movement (Stepp-Gilbert, 1988). Counselors or teachers may want to experiment with letting kids swing, walk, or even balance on a beach ball while engaging in verbal activities (King, 1996). Oversensitive, or gravitationally insecure children, on the other hand, need to be allowed to make smaller steps toward activities that involve balance. Walking on a balance beam, or hanging upside down from the monkey bars may be too threatening all at once, but walking through a sandbox or learning to do a somersault may be more manageable first steps.

Visual

Visual defensive children need to be taught to watch things for sustained periods of time. They need to be allowed to begin with gentle visual stimuli, such as candle flames, fish tanks, or even a feather dangling from a string. Pastel colors, rather than the bright colors usually targeted at children, can encourage them to look, and should be included in their art supplies. Blowing bubbles, and catching and popping them is also a fun way to encourage visual activities (Peterson-DeGroff, 2005).

Auditory

Various types of sound and pitch should be tried with the child with auditory SID (Greenspan & Wieder, 1998; Stepp-Gilbert, 1988b). Tracking during the child's play can also help accustom the child to the sounds of human voice (Stepp-Gilbert, 1988b) and encourage interaction. Undersensitive children need louder, more rhythmic music to get their attention (Greenspan & Wieder). Auditory defensive children, on the other hand, dislike music, and are sometimes more willing to engage in musical activities that are repetitive and formulaic. A very gradual decrease in the amount of predictability should be accompanied by a gradual increase in the amount of interaction (Wimpory & Nash,

1999). Many oversensitive children need to get away to a quiet place occasionally. Quiet “time-out” corners are calming rewards to some children; they should not have to act out in order to be able to sit in a quiet area, but should have a space to which they can retreat as needed (King, 1996).

Proprioceptive

The play needs of the child with proprioceptive dysfunction also involve active play, but this child may need the chance to push or pull objects like wagons or toy lawnmowers (Stepp-Gilbert, 1988b). This child also needs to build the skill of knowing where things are without seeing them, and so feely-boxes, toys hidden in the sand, or other types of guessing games could be used.

Tactile

Children with tactile dysfunction need help tolerating or recognizing a variety of forms of touch, including different textures, pressures, and temperatures. Digging toys out of various substances (rice, dry beans, sand, water, etc), finger painting (with foods like Cool Whip or pudding, or with different kinds of glues or paints), kneading (play-dough or bread), walking barefoot through sand or grass, all help the tactile defensive child become used to different kinds of touch (Brick & Shatako, 2005; Stepp-Gilbert, 1988). The undersensitive child needs help identifying tactile sensations. Guessing games that involve touch are helpful. In addition, counselors can model labeling their own sensations with tactile stimuli, encouraging children to do the same. Oral SID is closely related to tactile SID, and the same basic ideas can be applied here, although these will be more the responsibility of the parents and the teacher than of the counselor. A variety of food textures (creamy, crunchy, lumpy, smooth, dense, etc)

should be offered. Feeding experts suggest starting with a food the child likes, and offering it in different forms to increase child's tolerance for difference. Liquids should also be offered in different forms: hot, cold, fizzy, thick, thin, etc. Positive reinforcement should be given for all eating and drinking (Brick & Shatako, 2005).

Areas for Future Research

Pollack (2006) suggests that further research into the efficacy of SID treatments needs to employ more rigorous research methodologies and larger sample sizes. Given that the majority of the research studies on SID have been conducted within the field of occupational therapy, it is this author's suggestion that mental health researchers further investigate the social and emotional fall-out of SID, and the effectiveness of mental health interventions with children, families, teachers and peers.

Conclusion

A sizable number of children (5-15%) are estimated to suffer from one form or another of SID. Primary symptoms of SID include impaired ability to process and organize an effective response to sensory stimuli in the environment. But this impairment in one's ability to respond to the environment leads to secondary consequences in the form of relational and mental health challenges for the child with SID. Just as the child's work involves recognizing, integrating, and responding to environmental stimuli, the counselor's work involves recognizing client problems, integrating them into a meaningful framework, and developing an effective response. Counselors who work with children need to become familiar with SID and associated mental health risks, and prepare themselves to help SID children and their families combat loneliness, build self-esteem, and begin creating a sense of life mastery.

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