Autism spectrum disorders (ASD) : A rationale for the use of seclusion vs. restraints

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ASD Diagnostic and Associated Features
The presence of core social-communication and behavior impairments unique to the population of children with an autism spectrum disorder (ASD) complicates their behavioral, psychiatric, and medical management in a variety of settings. The Center for Disease Control (CDC) recently reported that 1 in 150 children are now being identified with an ASD (CDC, 2000). In addition to this, there are reports of an increase in the hospitalization rates of ASD patients, particularly those ages 7-12 years (Mandel, Thompson, Weintraub, DeStefano, & Blank, 2005).

Individuals with an ASD display great variability in the range and severity of the core ASD diagnostic symptoms in the areas of social, communication, and behavior. For example, one individual with an ASD may have limited to no expressive language ability while others may have a large expressive vocabulary, yet still have difficulty expressing their internal states or lack an understanding of the thoughts and feelings of others. Individuals with an ASD can also differ widely in their social presentation. For example some may isolate themselves due to their focus on engaging in their restricted interests or odd repetitive behaviors while others may appear social, but are odd or inappropriate in their social approaches to others and unaware of the impact of their behaviors on others. Behaviorally they vary as well. Individuals with an ASD may engage in stereotyped and repetitive body movements, manipulation of object parts, or self-injurious behaviors, while others are preoccupied with compulsive or ritualized behaviors have a rigid insistence on sameness of the environment, or engage in circumscribed interests. Individuals with an ASD also display a variety of associated symptom impairments such as intelligence and adaptive abilities, co-morbid medical and psychiatric diagnoses, and sensory sensitivities, (e.g. Bolte & Poustka, 2002; Gabriels, Cuccaro, Hill, Ivers, & Goldson, 2005; Klin et al., 2007; Leekam, Nieto, Libby, Wing, & Gould, 2006; Leyfer et al., 2006; Mottron & Burack, 2001; Tuchman & Rapin, 2002).

Abnormal response to sensory input (e.g., over-and/or under responsiveness) in individuals with an ASD has been reported in numerous studies (e.g., Baranek, Foster & Berkson, 1997; Gabriels et al., 2008; Hirstein, Iversen & Ramachandran, 2001; Tecchio, F., et al. 2003). Individuals with an ASD tend to be very distractible (Dawson & Levy, 1989) and can be abnormally aroused or distracted by sensory input such as sound, touch, smell, taste, or movement (Baranek, David, Poe, Stone, & Watson, 2005; Greenspan & Wieder, 1997; Hirstein, Iversen, & Ramachandran, 2001; Tomchek & Dunn, 2007). These abnormal sensory responses to stimuli such as light, sound, touch, and smell can make some experiences in unfamiliar settings (e.g., hospital settings) intolerable to the child with an ASD, causing them to display tantrums or other symptoms of distress (e.g., self-injury or aggression).

Given the fact that individuals with an ASD can be extremely sensitive to environmental stimuli, chaos, and unpredictability, these individuals are dependent on routines and continuity and may respond best to having a place to retreat and isolate as opposed to being further agitated by being touched by others. Unfamiliar settings (e.g., hospitals) or procedures can cause anxiety, which they may express through disruptive or aggressive behaviors due to their social-communication skill limitations. Intellectual impairments can contribute to these individuals’ inability to understand expectations. They also may lack the cognitive capacity necessary to report internal physical or emotional experiences, skills often expected of children and adolescents by psychiatric or medical personnel to complete successful psychiatric assessments or medical examinations. Given these impairments, children and adolescents with and ASD are not likely to respond positively to intervention strategies (e.g., verbal reassurance, coaxing or explanations) that are typically used by psychiatric personnel with children who have a capacity for insight and reciprocal social-communication exchanges.
The Neuropsychiatric Special Care (NSC) intensive day treatment and inpatient program at The Children’s Hospital

The NSC was designed to address the specific developmental needs (e.g., cognitive, communication, sensory, and motor coordination) of the patient who is dually-diagnosed with a developmental disability and psychiatric disorder. The NSC program environment and interventions are adapted to patients’ chronological age, developmental phase, and level of functioning and they reflect the TEACCH (Treatment and Education of Autistic and Related Communication Handicapped Children) philosophy. The TEACCH approach is in operation in many countries around the world (Mesibov, 1997; Schopler et al., 1995). The TEACCH philosophy involves structuring the environment so as to maximize patients’ understanding and independent functioning and decrease their undesirable behaviors. An additional goal of this adapted environment is to decrease patients’ behavior problems due to developmental issues so that their psychiatric needs can be more accurately assessed and addressed. Studies of individuals with autism spectrum disorders have demonstrated that the introduction of external structure (i.e., TEACCH methods) can help increase on-task behaviors and reduce challenging behaviors (Hume, 2005; Liptak et al., 2006; MacDuff, Krantz, & McClannahan, 1993).

The environmental structure of the NSC program includes providing schedules that alternate preferred and less preferred activities to increase patient on-task behaviors, teaching proactive coping/self-regulation strategies such as use of a quiet area (see description of procedure below), and brief time outs or seclusions (as necessary) to manage and contain aggressive behaviors without unnecessarily agitating or escalating the child that may have an aversive response to sensory input (e.g., touch). Brief time-outs are used because individuals with ASD tend to focus on details at the expense of seeing things in context or getting the “big picture”. This difficulty with integrating ideas affects their ability to generalize information across situations or over long periods of time and has been described by the Weak Central Coherence Theory (Frith, 2003).

NSC Quiet Area Procedure
1. The Quiet Area is a place where the patient can request to go on a regular basis throughout their scheduled day to get away from stimulation.
2. A 5-minute time limit is set for this area so that the patient does not begin to use this area to isolate indefinitely.
3. The patient can have a fidget toy and/or beanbag chair or gym mat in the quiet room.
4. The patient should return to the regular activity schedule when the timer has gone off.

NSC Time-Out Procedure
1. *Set Timer for 1 minute while patient is in quiet/seclusion room with door open whenever possible.
2. After timer beeps, check if patient is calm and able to follow a simple direction (e.g., show safe hands=hands clasped together
3. If patient is not calm, repeat the above procedure.
4. When patient is calm, engage them in a conversation using a visual road map of consequences outside the time-out room, depending on patient’s ability level.
   * For young children or very out-of-control patients, instead of timer, listen for first signs of their being quiet and then immediately check to see if patient can follow a simple direction. If they can, then follow procedure 3 & 4.

Treatment Indications: Seclusion vs. Restraints?
A variety of approaches have been used to reduce self-injurious behaviors in autism including time-outs, providing alternative forms of stimulation, seclusion/sensory deprivation, physical restraints (including holding), and environmental modifications (Howlin, 1993). However, there are very few studies that survey the use of seclusion (including time-outs) and restraints (including holding, physical and chemical restraints) in pediatric psychiatric populations, including those with autism. Additionally, there are no known studies that compare the efficacy of these different management techniques for aggression in child and adolescent psychiatric in-patient settings. One of the few studies that examined the practices of seclusion and restraints was
conducted in Finland with 504 child and adolescent psychiatric in-patients in the year 2000 (Sourander, Ellila, Valimaki, & Piha, 2002). This study defined the various management strategies as follows:

*Mechanical restraints:* “four- or five-point restraints, designed to secure the arms and legs in a natural position to the bed”

*Therapeutic holding:* “a treatment technique in which the violent patient is physically restrained by members of staff. Trained staff hold the patient in a sitting position or hold the patient down when then patient is on the floor in a sitting position, while verbal reassurance and comfort are offered”

*Seclusion:* “the practice of removing a patient from the living environment to an isolation room for the purposes of behavioural control, usually in the presence of a staff member or keeping the door open”

*Time-Out:* “the practice of removing a patient from a living room to his/her own ward room for purposes of behavioural control. (Sourander, Ellila, Valimaki, & Piha, 2002, p. 163).

Results from this study indicated that overall, the use of holding (26%) and time-out (28%) were the most common practices and seclusion was used (8%) over restraints (4%). Holding or time-out were more likely to be used for acts of aggression in younger children, with holding more commonly associated with children who had autism and children <13 years of age. Seclusion was more commonly used for acts of aggression by older patients and those with very low general functioning levels (Sourander, Ellila, Valimaki, & Piha, 2002).

In another study of five to 15 year-olds, older patients were more likely to have mechanical restraints than younger patients. Additionally, seclusion was more likely to be used in patients aged five to 12 years with an assault history prior to hospitalization. (Millstein & Cotton, 1990).

Finally, seclusions or restraints were more likely to be used in adult psychiatric patients diagnosed with an intellectual disability in a survey of 23 adult psychiatric New York hospitals (Way & Banks 1990).

There is some suggestion from the findings of this limited number of published studies that time out, seclusion and holding are more commonly used for aggressive patients who are younger, are diagnosed with autism, have lower general functioning levels, or have intellectual disabilities. This raises the question if the use of these strategies is preferred because they are more understandable to this less able patient population.

**Conclusion**

The lack of researched-based information of these techniques, including holding, limits the understanding of the impact of these practices on children and adolescents. Given these factors, it is important to consider the impact of these approaches based on a well-researched understanding of a target population, in this case autism spectrum disorders. The specific learning styles (e.g., difficulty with generalization and understanding the “big picture” or effects of their behaviors) along with the social, communication and sensory processing difficulties of the ASD population, makes it reasonable to consider use of brief time outs or seclusions (as necessary) to manage and contain aggressive or self-injurious behaviors without unnecessarily agitating or escalating a child that may have an aversive response to sensory input (e.g., touch).