

## Following the Evidence: Sensory Approaches in Mental Health

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### Introduction

Efficacy studies are slowly surfacing that support the use of sensory approaches in mental health treatment for adults and adolescents. Sensory modulation practices help people to regulate physiological and emotional arousal in ways that are self-directed and empowering; they support recovery oriented practice as well as trauma-informed care and may assist in the reduction of seclusion and restraint (Scanlan & Novak, 2015). According to Sutton and Nicholson (2011) sensory based treatment has been identified as an effective treatment approach for clients who are distressed, anxious, agitated, or potentially aggressive and as an alternative for more coercive actions; they also determined that sensory modulation approaches are particularly helpful for people with trauma histories, PTSD, and self-harming behaviors.

To help regulate emotions, sensory modulation practices include the use of sensory activities and equipment, behavioral strategies and modifications of the environment. Effective use of sensory modulation helps service users become more aware of their sensory preferences and sensitivities and more in tune with their own responses. Practices include sensory screening and assessment, exploration of sensory tools and equipment, development of individualized sensory diets, personalized sensory kits, modification of the environment and education of clients, families and care providers (Champagne, 2003, 2006; Champagne & Stromberg, 2004, LeBel et al, 2010, Lebel & Champagne, 2010; Sutton & Nicholson, 2011).

Champagne (2006) has found the “therapeutic use of self” to be the most important tool in sensory modulation. It includes elements of voice, approach, body language, body positioning and sincerity, creating trust and authenticity in the therapeutic alliance. Effective communication and relationship building are essential to successfully introduce sensory rooms (LeBel, 2005; O’Oria, 2007; Barton, 2009). According to Sutton & Nicholson (2011, p. 51) the relational aspect of sensory modulation approach should be emphasized. “The safe space that develops through the sensory experience also allows the verbal expression and exploration of underlying thoughts and emotions. “ They maintain, “Human body language, touch and tone of voice are sensory experiences which people are particularly sensitive to when highly agitated. Staff being present to the service users’ experience and available to assist and listen can amplify the sense of safety, soothing, stability and control.” Many of the studies cited in this paper mention that one of the most valued results of the use of sensory approaches was the improvement in therapeutic relationships and trust between service users and staff (Baillon, 2002; Lee, et al 2010; Smith & Jones, 2014; Scanlan & Novak; Sutton & Nicholson, 2011; TePou, 2010).

Sensory modulation approaches often include the use of sensory rooms, sometimes referred to as comfort rooms (Cummings et al, 2010; Sivak, 2012). Costa et al (2006) refer to these rooms as a “failure free” environment where people can relax and self-soothe. Rooms vary greatly but provide a safe place to go to learn to reduce strong emotions such as anger, fear, or feelings of being overwhelmed (Smith & Jones, 2014). Sensory rooms provide a place to destress, explore sensory tools, identify personalized coping tactics and to learn stress management strategies (Champagne, 2006 & 2003; Cummings et al 2010; Sivak, 2012). According to Sutton & Nicholson (2011) sensory rooms provide a place to centralize multidisciplinary sensory modulation treatment.

Sensory rooms are usually dedicated rooms away from the distractions and stress of the ward. They offer comfortable seating and a cozy atmosphere. Often there is a mural of a nature scene and sometimes a screen for relaxing videos. Some rooms have locked cabinets for sensory items, and others have the items available throughout the room, depending on the level of supervision required. Popular activities in the rooms include massage chairs, weighted blankets, soft blankets, aromatherapy items, music, stress balls and fidget tools, oral motor items, weighted lap pads, and weighted animals (Champagne, 2006; Cummings, et al 2010; Knight et al, 2010; Lloyd et al, 2014; MacDaniel et al, 2009; Sutton & Nicholson, 2011).

Sensory items for self-regulation are made available in a variety of ways besides being offered in sensory rooms. Sensory carts have been used effectively to make sensory tools readily accessible in the milieu (Martin & Suane, 2012). Sutton and Nicholson (2011) describe bringing needed tools directly to service users, sometimes providing them in their rooms. A mobile suitcase is another option for making sensory equipment available for exploration and use (Lindley & McDaniel, 2005).

Chalmers, Harrison, Mollison, Molloy, & Gray (2012) stressed the importance of involving a whole team including multidisciplinary staff in the implementation of sensory approaches. They point out that occupational therapists might be leaders in implementation, but they are usually only available during daytime shifts. Management of distress should be available twenty-four hours per day. Having staff from all disciplines gets everyone involved and supportive of sensory approaches (Martin & Suane, 2012; Sutton & Nicholson, 2011).

### **Sensory Approaches for Calming and Self-Regulation**

Difficulties with self-regulation, including suicidality, thoughts or attempts of self-harm, aggression, threatening behaviors, and inability to deal with extreme emotions are often the precipitants of a psychiatric admission or re-admission, as well as barriers for discharge ( Cleary et al, 2010; Zhang et al, 2011). Sensory treatment approaches are designed to assist service users in a state of emotional upheaval to effectively modulate their emotional and physiological arousal (Sutton et al, 2013). The following studies give testimony to the efficacy of sensory modulation approaches in helping consumers to calm down, to lower their levels of distress and to self-regulate.

Scanlan and Novak (2015) did a scoping review (summary of new research areas) regarding sensory approaches; a total of seventeen studies were included in the final review. A range of sensory approaches were evaluated. In general, service users reported they were useful for self-management of distress. Positive outcomes demonstrated that adopting sensory approaches may help reduce behavioral disturbances, empower staff and consumers to build positive relationships and provide simple positive and inexpensive strategies that can be used post discharge.

According to Scanlan and Novak (2015) it is essential to have a deep exploration of the experience of hospitalized consumers and staff in order to understand how sensory approaches impact treatment. According to their scoping review, only two studies used a qualitative approach exploring responses of consumers and staff: Smith & Jones, 2014 and Sutton et al, 2013. A common benefit of sensory approaches according to these two studies is that they improve the experience of consumers and minimize re-traumatization. Other themes emerging from these studies are that the use of sensory approaches creates a more positive relationship between consumers and staff, that they help facilitate a calm state and they help consumers to develop self-management strategies that can be carried over to the post discharge environment. Staff and consumers work together to develop strategies for de-escalation rather than staff being the “owners” of treatment through medication.

Novak, Scanlan, McCaul, MacDonald, & Clarke (2012) did a pilot study examining the use of a sensory room in acute inpatient psychiatry. They found the use of the room helped ameliorate distress and disturbed behavior and helped people self-soothe. They found weighted blankets were particularly helpful. They described the room as a less invasive early intervention option than the use of seclusion.

Martin & Suane (2012), in their study of the use of sensory rooms and sensory carts, emphasized the importance of staff education to support confidence and acceptance in the use of sensory approaches. According to the authors, as well as other investigators, education should focus on theory and evidence and how to identify early signs of distress, as well as opportunities to explore sensory items and to support consumers to use equipment safely and effectively (Chalmers et al, 2012; Lee et al, 2010; MacDaniel et al, 2009; Sutton et al, 2011; Te Pou o te Whakaaro Nui, 2010).

When analyzing data from consumer and clinician ratings regarding the use of a sensory room in a high-dependency mental health unit, Chalmers, Harrison, Mollison, Molloy, and Gray (2012) found significant reductions in patient distress levels.

Costa, Morra, Soloman, Sabino, & Call (2006) studied the use of a multisensory environment using the Adult Sensory Questionnaire pre-and post- intervention and the Brief Assessment of Tension Scale. The results were statistically positive for improvement in all areas, including tension reduction, decreases in sensory defensiveness, decreases in urges to use substances, and increases in active participation. This study also supported consumers experiencing an increased state of relaxation when using the sensory room.

Cummings, Grandfield & Coldwell (2010) concluded that their comfort room was effective in empowering the majority of patients to manage anxiety and stress. Authors maintain that time-out,

seclusion, or quiet rooms offer little or no opportunity for patients to regain self-control in a positive environment.

Lloyd, King and Machingura (2014) investigated the effectiveness of sensory modulation approaches at a major Queensland hospital. On the ward where sensory modulation practices were instituted, most patients reported a marked reduction in disturbance with a very large effect noted for the group as a whole. As soon as possible after admission, patients were administered a sensory screen (developed by Champagne and Stromberg, 2004) to identify the types of sensory input that would be most useful for calming. This information guided staff as well as patients in the choice of sensory tools and personalized modifications in the environment. Repeated measures showed a significant decline in emotional distress before and after the use of sensory strategies and the use of a sensory room. Authors suggest that the use of sensory modulation approaches has a positive effect on patient self-reported well-being.

Lindley and McDaniel (2005) found positive effects in the use of a sensory room and mobile sensory suitcase at a treatment facility for adolescents with dual mental health diagnoses. The teens were encouraged to use the sensory room when agitated or to experiment with items in the sensory suitcase. Upon admission, about eighty percent of the adolescents demonstrated sensory processing difficulties based on the Adolescent/Adult Sensory Profile. After using the room and sensory items in the suitcase, eighty-four percent of the residents reported improvements in adaptive function, including alertness and motor skills using a pre/post- test self-report questionnaire. Other improvements included a decrease in the use of PRN medications, less time spent in seclusion and restraint and less self-stimulating behaviors, as well as improved interpersonal skills and ability to manage distress.

Sivak (2012) was the only study to report mixed results in terms of the effectiveness of sensory strategies; eight out of thirteen consumers reported a decrease in distress, five reported an increase; however, those reporting an increase still saw the room as being helpful.

Sutton and Nicholson (2011) did a qualitative study of staff and service user perspectives on the use of sensory modulation in acute mental health. The sensory modulation approach used on the four units studied included sensory based equipment, strategies, and environments to help people optimize emotional levels. The study was piloted on one young person's and three adult inpatient units. A dedicated sensory room was created and equipped at each site, and clinicians were trained in the theory and practice of sensory modulation. It was a requirement that service users be accompanied by staff while in the room, and it was the staff's job to orient people to the sensory modulation approach and items and to facilitate proper use and good choices. It was determined that the use of the room was most effective when used for active discovery and not just passive de-escalation. According to the executive summary the major outcomes for service users were that:

- "Sensory modulation was perceived as an effective tool for inducing a calm state in the majority of the people who used it (p.3)."
- "Sensory modulation supported the rapid building of trust and rapport for both service users and staff members (p. 3)."

- “Sensory modulation facilitated the development of service users’ self-management, increasing their awareness and ability to regulate their own emotional levels (p.3).”

Participants in the Sutton & Nicholson (2011) study commented that the use of the sensory room and sensory approaches helped them to calm and to feel more grounded, and it changed their experience of being on the ward in a positive way. Participants in the study related the positive impact it had on relationships with staff, developing trust and ability to feel supported. Specific examples in the study were given for the way sensory approaches helped with flashbacks, elevated mood, hearing voices, low mood, anxiety, dissociation and disorientation. Some service users were able to use the sensory room as a preventative measure before stressful procedures or events. Service users also related how they integrated sensory modulation strategies into their everyday lives, for example, using a stress ball and deep breathing. One person described making her own sensory room in a shed at home and admitted that she only had one short admission since she created the room; she was able to use her makeshift sensory room as an alternative to drinking. An important theme in the study was a critical shift of control away from the external control of staff to internal control and independent self-regulation. “The experience of both staff and service users provided practice-based evidence for the efficacy and acceptability of sensory modulation (p. 50).”

Sutton, Wilson, Van Kessel, & Vanderpyl (2013) used the same pilot study described by Sutton & Nicholson (2011) on four mental health units in New Zealand to explore the use of sensory modulation to optimize arousal and manage aggression. Authors made an argument that recent advances in neurophysiology explain why “top down” cognitive strategies and verbal de-escalation have been shown to have limited effectiveness (Porges, 2001). In the study the General Aggression Model (GAM) was described as a framework for conceptualizing the effectiveness of sensory modulation practices. According to this model, sensory interventions allow emotional experiences to be contained so that adaptive behaviors can emerge, and that this de-escalation pathway could provide tools for preventing distress and also aggression. Sensory tools seemed to help in several ways, including soothing and grounding, distraction, shifting attention to the present through strong sensory input, experiencing a sense of safety and an increased sense of control. Sensory modulation approaches and use of the sensory room enhanced engagement and a meaningful connection between staff and service users and created an opportunity for developing trust. Authors believed that deliberate use of sensory input promoted a regulation of arousal and experience of safety by accessing evolutionarily advanced neural pathways that promote adaptive social behavior ( Porges, 1995; Porges, 2008.) A conclusion of the study was that the polyvagal theory of Porges provides a suitable framework to integrate sensory modulation approaches with aggression management models. Findings of this study align with other research that found sensory interventions to have a calming effect in people experiencing distress (Chalmers et al, 2012; Novak et al, 2012).

There has been very little data following physiological responses to sensory input, but Reddon, Hoang, Sehga, & Marjanovic (2004) reported that heart rate and other physical signs of arousal reduced following sensory intervention.

### **Seclusion and Restraint Initiatives**

Sensory modulation is a promising approach which can contribute to reduction of seclusion and restraint but it must be seen as just one component in the process of organizational change. Successful implementation of sensory approaches requires strong leadership for change, using data to inform practice, workforce development, consumer and family involvement and the use of debriefing techniques (Huckshorn, 2004a; Huckshorn, 2004b, Huckshorn, 2006; Scanlon, 2010; Sutton & Nicholson, 2011; Te Pou o te Whakaaro Nui, 2010).

Best practice guidelines for reduction of seclusion and restraint recommend the use of sensory approaches as part of comprehensive program for the reduction of restraint and seclusion (MacDaniel et al, 2009; O'Hagan, Davis & Long, 2008; Scanlan & Novak, 2015).

The use of "safety tools" and other methods of identifying signs of escalation and triggers as well as helpful coping strategies and preferred crisis management approaches have proven to be key to successful seclusion and restraint initiatives (D'Orio et al, 2004; Jonikas, 2004; Huckshorn 2004b).

Champagne and Stomberg (2004) reported a fifty-four percent reduction in seclusion with the implementation of their room. They also reported eighty-nine percent of consumers experienced a decrease in distress.

LeBel and Champagne (2010) did a survey of thirty-nine psychiatric wards in the state of Massachusetts that were using sensory rooms and sensory interventions and found all wards reported a reduction of seclusion rates.

Barton, Johnson and Price (2009) describe an initiative on a behavioral health unit that resulted in the unit being restraint free for two years at the time of publication. A restraint-free reduction team was trained through the National Executive Training Institute of the National Association of State Mental Health Program Directors. The action plan included a culture change focused on the Mental Health Recovery Model, principles of trauma-informed care and an emphasis on person-centered care. In addition to the elimination of restraints, the study found a decrease in PRN medications.

The Scanlan and Novak (2015) scoping review determined that there was mixed evidence for sensory approaches alone to be effective in reductions of seclusion and restraint. Of the nine studies reporting on changes in seclusion or restraint rates, five studies reported a decrease (Barton et al, 2009; Champagne & Stromberg, 2004; Lloyd et al, 2014; Maguire et al, 2012; Sivak, 2012). No change was reported in three studies (Chalmers et al, 2012; Cummings et al, 2010; Novak et al, 2012). One study reported an increase (Smith & Jones, 2014).

As noted previously, all studies included in the scoping review reported that sensory modulation strategies resulted in a decrease in consumer distress; however, Scanlan and Novak (2015) conclude that simply a reduction in consumers' levels of distress does not necessarily translate to reductions in restraint or seclusion in the absence of a workplace shift in culture and external pressure to change practice. They suggest that sensory approaches to reduce restraint and seclusion reductions were most likely achieved when sensory approaches were coupled with other strategies (Barton et al, 2009;

Maguire et al 2012) and used as part of a larger strategy incorporating Huckshorn's (2004a, 2004b, 2006) six core strategies.

Smith & Jones (2014) did a study on the use of a sensory room on an ICU; interviews with staff and patients showed that they saw the sensory room as a therapeutic intervention that improved staff and patient communication and the overall experience in the ICU. Authors concluded that the sensory room provided a place of refuge as well as de-escalation, relaxation, socialization, and the ability to enjoy sensory activities, especially music. In this study they did not find an overall reduced rate of seclusion or aggression on the unit.

Lee, Cox, Whitecross, Williams, & Hollander (2010) did a six month pilot study involving forty-three intensive care service users identified as being at high risk for aggression. They used the Alfred Psychiatry Safety Tool adapted from Mass DMH (LeBel et al 2004). Sixty-five percent of participants had been secluded on previous admits or in current admission before completing Safety Tool. Only twenty-six percent were secluded after use of tool stress triggers, warning signs and preferred calming strategies were identified. Time constraints that limited opportunities for staff to engage therapeutically using sensory resources were a major barrier, along with time required for documentation, and also lack of confidence and understanding on the use of sensory resources with no clear protocols. Seventy-one percent of staff had participated in at least one training session. Seventy-six percent of staff felt it was worthwhile to include the use of safety tools in managing potentially aggressive service users. Talking with staff was identified as helpful to service users.

Teitelbaum, Volpo, Paran, Zislin, Drumer, Raskin, Katz, Shlafman, Gaber, & Durst (2007) examined effects of a "Snoezelen" room (multisensory environment) on agitated clients in a closed men's psychiatric ward. Findings showed that after thirty to forty minutes of "Snoezelen" distressed clients reported substantially lower levels of distress. They showed less agitation, aggression and hostile behavior. Seclusion and restraint incidents decreased and were statistically significant when compared to the closed female unit where "Snoezelen" had not been introduced. They concluded that "Snoezelen" is a useful preventative measure and alternative to seclusion and restraint.

Cummings, Grandfield & Coldwell (2010) determined that although the staff reported the use of the sensory room helpful, there were no significant changes in the rates of seclusion in a ward with a sensory room versus one without. Authors felt that their finding may be influenced by "high utilizer patients" and that a sensory room may not be effective as an intervention for highly acute and hard to manage patients, but they still recommend it for use in acute psychiatric facilities as a means to reduce the use of restraint and seclusion. Concern for safety was determined to be a significant barrier to the use of sensory modalities for acute and aggressive patients.

Maguire, Young & Martin (2012) examined the use of seclusion in a forensic mental health setting. According to the authors, forensic medicine produces unique challenges due to patient characteristics, prison culture and ensuring safety. During the project (which included the use of the six core strategies) the frequency and duration of seclusion events were reduced, but there was less reduction in the actual number of patients requiring seclusion. Authors believed that challenges early on in admissions,

including the volatility of the patients, often necessitated the use of seclusion. Increased occurrences of inpatient aggression in a forensic setting may be a significant factor. Reasons include being admitted against their will, substance use, negative attitude, antisocial behavior and established patterns of aggression. Acts of violence are often precursors to admission.

### **Trauma Informed Care**

Researchers and leaders in treatment for trauma, including Beth Caldwell, Kevin Huckshorn, Janice LeBell, Robert Macy, Richard Mollica, Pat Ogden, Bessel Van Der Kolk, and Stephen Porges, are affirming the necessity of body oriented therapies.

Scanlan and Novak (2015) suggest that sensory approaches are thought to be non-invasive, self-directing and empowering interventions that may support recovery-oriented and trauma-informed care.

Kaiser et al (2010) Small study used an SI program using vestibular and auditory input as a “bottom up” approach with adults with complex trauma. They found positive changes in scores in Total Scores of Self-perception, Affect/Impulse Regulation and Alteration in Meaning on the Structured Interview for Disorders of Extreme Stress (SIDES).

The Sutton and Nicholson (2011) study found sensory modulation approaches helpful for people with anxiety and mood disorders but particularly helpful for people with trauma histories, PTSD and self-harming behaviors, as did LeBel and Champagne(2010).

Warner, Koomar, Lary & Cook (2011) in their study entitled, *Can the Body Change the Score? Application of Sensory Modulation Principles in the Treatment of Traumatized Adolescents in Residential Settings*, described three clinically supported approaches to the use of sensory modulation in adolescent residential treatment sites. Approaches included sensory rooms, sensory integration occupational therapy and a trauma psychotherapy that utilizes sensory motor strategies to improve self-regulation and trauma processing. At an all-girls locked residential unit that implemented these sensory approaches including a sensory room and also a second “comfort” room feedback from residents and their families indicated that the sensory spaces where they could practice and rehearse sensory strategies that could be replicated in the home was one of their most successful treatment interventions. There was also a significant reduction in the use of restraints. One clinical conclusion of the study was that sensory modulation tools were effective in the treatment of adolescents and gave them more control over their behavior and emotions. Restraint reduction in the sites studied gave additional validity to the use of sensory approaches.

### **Weighted Blankets**

Weighted blankets and weighted items were very often mentioned in the reviewed studies as being frequently used and effective tools in mental health settings using sensory approaches. (Champagne 2010b; Cummings et al, 2010; Dorman, 2009; Knight et al, 2010; LeBel and Champagne, 2010; Lee & Cox et al, 2010)



Novak et al (2012) looked at different items in the sensory room. People who used the weighted blanket reported greater reductions in distress than those who did not.

Mullen & Champagne et al (2008) explored the effectiveness of a thirty pound weighted blanket on thirty-two adults. Vital sign metrics showed that using the weighted blanket in a lying down position was safe. Thirty-three percent of participants experienced a lowering of electro-thermal activity, sixty-three percent reported lower anxiety and seventy eight percent preferred the weighted blanket as a calming modality. A second study (Champagne & Mullen, 2007) was done on an inpatient behavioral unit, and use of the weighted blankets was again shown to be safe by vital sign metrics. Forty-three percent of participants had a significant reduction in skin conductance, fifty-one percent reported a reduction in anxiety and seventy-seven percent reported a preference for the weighted blanket when using a self-determined amount of weight. None of the participants in this second study required the use of seclusion or restraint during the admission. Several of them had histories of restraint during previous admissions. In both studies the blankets were found to be relaxing and calming.

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