Sensory Interventions: Integrating Recovery Principles in an Acute Care Setting

Mary Ann Nihart, MA, RN, PMHNP-BC, PMHNP-BC
Nurse Manager, Outpatient Mental Health Services
San Francisco Veterans Administration Health System

Lincoln Warner, RN, BSN
Nurse Manager, Acute Care Mental Health Services
San Francisco Veterans Administration Medical Center

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Objectives

Identify the frequency and extent of sensory deficits present in psychiatric disorders.

Describe the neurobiological basis supporting the effectiveness of sensory intervention.

Analyze available sensory interventions for use in acute care psychiatric settings.

Disclosures

Neither presenter has any financial interest in products mentioned in this presentation.

Neither presenter will be discussing off-label use of medications.

Selected Recovery Principles

- Instill hope
- Self esteem
- Independence
- Self determination
- Empowerment

Hierarchical Regulation

Cortex
Cognitive Memory

Limbic
Emotional Memory

Midbrain/Cerebellum
Motor-Vestibular Memory

Brain Stem
State Memory

Adapted from Perry, B (2010). Childtrauma.org

Sensation & Perception

Sensation

- Central nervous system receives input from the environment via sensory neurons

- Bottom-up processing

Perception

- The process by which the brain interprets and organizes sensory information

- Top-down processing
**The psychophysics of sensation**

- **Absolute threshold** ➔ the minimum stimulation needed to detect a stimulus with 50% accuracy
- **Subliminal stimulation** ➔ below the absolute threshold for conscious awareness
  - May affect behavior without conscious awareness
- **Sensory adaptation/habituation** ➔ diminished sensitivity to an unchanged stimulus

**Sensory deficits**

- Difficulties, limitations or loss in the ability to:
  - Recognize
  - Comprehend
  - Integrate
  - Analyze, and
  - Respond to Sensory information

**The five major senses**

- **Vision** – electromagnetic
  - Occipital lobe
- **Hearing** – mechanical
  - Temporal lobe
- **Touch** – mechanical
  - Sensory cortex
- **Taste** – chemical
  - Gustatory insular cortex
- **Smell** – chemical
  - Olfactory bulb
  - Orbitofrontal cortex
  - Vomeronasal organ?

**Schizophrenia**

- **Information processing disorder**
  - **Auditory processes**: difficulty with discrimination, inflection, and activation of higher cortical functions
  - **Visual Processes**: difficulty with visual threshold, discrimination, integration of the whole
  - **Somatosensory**: impaired two-point discrimination, elevated pain threshold
  - **Olfactory**: impaired threshold and discrimination, also impairs taste

**The sixth sense**

- **And the seventh…and eighth…and ninth…**

- **Vestibular** ➔ balance and motion
  - Inner ear
- **Proprioceptive** ➔ relative position of body parts
  - Parietal lobe
- **Temperature** ➔ heat
  - Thermoreceptors throughout the body, sensory cortex
- **Nociception** ➔ pain
  - Nociceptors throughout the body, sensory cortex

**Calls for Bottom-Up Remediation**

- **Consider social cognition**
  - Depends on the ability to infer another person’s internal emotional state
  - Requires the ability to interpret facial expressions and
  - Discriminate inflections in tone of voice
Anxiety Disorders

- Internal feelings and stimulation overwhelm cognition
- Sensory information does not get through or is misunderstood
- Self-regulation is lost
- External sensory inputs can mask internal inputs

MultiSensory Intervention

- Relaxation, movement, de-escalation, choice, self-nurturance and empowerment are among the primary purposes and goals for the use of the sensory room within mental health settings (Champagne, 2005).

The Scene

Consider sensory experiences we take for granted.

Many inpatient psychiatric settings have become prison-like.

- Elimination of potential environmental threats.
- This can set the tone for adversarial relationships between staff and patients.
- Staff can inadvertently perpetuate this problem.

What is it?

An artificially created space (temporary or dedicated) using multi-sensory equipment to stimulate the senses.

Multi-sensory therapy was initially called ‘Snoezelen’, Dutch for Sniff and Doze.

The concept originated in the United States in the 1960s as you might have guessed. (Cleland and Clarke, “Sensory Cafeteria”, 1966).

Additional Problems

Physical, sensory and cognitive impairments can worsen in un-stimulating environments.

Sensory Deprivation leads to:
- anxiety
- stress
- depression
- withdrawal
- decreased motivation
- agitation

How does it work?

By stimulating multiple sensory pathways simultaneously.

This bombardment of senses can lead to an increased sense of relaxation.
Sensory Rooms have a self-reported effectiveness (Champagne & Stromberg, 2004). Multi-sensory Rooms can reduce seclusion and restraint use (Champagne & Stromberg, 2004).

**Benefits**

Increased staff-patient interaction time (Di et al. 2010).
Engender feelings of well-being in both patients and staff (Reps, 1996).
Improved staff-patient relationship building (Mount & Cavan, 1995).
Targeted sensory stimulation can enhance perception & interpretation of sensations.
Stimulation can be adapted according to the individual.

**Benefits (continued)**

Sensory Rooms have a self-reported positive effect on the majority of those who use them. The greater the self-reported distress, the greater the self-reported effectiveness (Champagne & Stromberg, 2004).
Multi-sensory Rooms can reduce seclusion and restraint use (Champagne & Stromberg, 2004).

**Things to consider...**

Staff who accompany patients in a multi-sensory environment must be familiar with the patient.
Staff should arrange the session in a way that is appropriate for the individual.
Planning and equipping a multi-sensory environment is geared toward the specific patient set.
Health and safety issues.
Staff training of the equipment.
Staff training on how to facilitate a session.

**References for Sensory Deficits in Psychiatric Disorders**

Kandinsky; Synesthesia, Early 1900.

References for Sensory Deficits in Psychiatric Disorders (continued)


References for Sensory Deficits in Psychiatric Disorders (continued)


References for Sensory Interventions


References for Sensory Interventions (continued)


