The benefits of sensory integration for psychotherapy

Utilizing neural integration and sensory integration concepts in psychotherapy can significantly enhance personal development outcomes.

Sensory integration refers to the organization of incoming sensory information in the brain, i.e. sensory inputs must be sent to the right cortical location, then sensory information from all five senses is synthesized, leading ultimately to meaningful interpretation of experience.

Sensory stimulation improves sensory integration and improved sensory organization has several benefits for personality function, on cognitive, social-emotional and motor levels. In addition, sensory stimulation can also help the brain complete sensory and motor neurological milestones.

The use of sensory integration to improve motor and cognitive functions and to mature neural organization has been researched by a wide range of clinicians in varied fields, including psychology, developmental physiotherapy, occupational therapy, optometry, ophthalmology, ENT specialists. The impetus for this field of investigation has been conditions such as learning difficulties, sensory-perceptual disorders, cognitive deficit conditions and neuro-developmental delays.

Recent research in neuro-science has lead to the view that psychotherapy is a psychological and also a neurological growth process, and that psychotherapy improves wiring up of the brain in several dimensions. For example, psychotherapy is thought to improve top and bottom wiring up, i.e. neo-cortical control over brain stem function, as well as left and right brain hemisphere wiring up. Both these circuits of neural organisation will strengthen inhibition of affect arousal.

Sensory training therapies, using sensory stimulation through vision, hearing, balance or movement, have the similar aims and effects as psychotherapy. These therapies aim to mature neural organization, i.e install better neo-cortical control over brain stem operations and better left and right brain hemisphere connection. These more mature neural operations can optimize many personality functions. For example cognitive functions, such as attention, concentration, abstract reasoning, working memory, and processing speed are optimized by sensory stimulation therapies. More mature neural organisation will also lower baseline stress levels, by calming the reflex stress responses of the brainstem with better cortical controls.

Neural organization is a whole person, body and mind operation. Neural immaturity affects not only cognitive development, but also leads to psychological immaturity. Neurological milestones refers to how the brain wires up for psychological milestones, for movement skills (like crawling, walking and running), for thinking and reasoning skills, for language skills (like talking and reading), for social skills and for processing information from the five senses.
When the child is born the brain stem (the base of the brain) is fully developed, enabling the child to survive through reflexes. Initially the child reacts only through reflexes, like breathing, sucking, blinking, grasping, gazing, turning to the breast, avoidance responses. These are referred to as primitive reflexes and start up bonding and attachment to the mother (the first psychological milestone) and also develop into movement and postural reflexes. As the neo-cortex (the upper crust of the brain) gradually develops, the child can start to use conscious choice rather than rely on reflex responses. For example, to grasp and to let go, to hold my breath and to let go of the breath, to suck or to spit out.

The first task of the neo-cortex after birth is grow nerve fibres down to brain stem level in order to start this process of conscious control over brain stem reflexes. As the brain wires up more and more areas, the child is able to perform more sophisticated skills, eventually talking, reasoning and remembering events. The area for reflex reaction to threat, the amygdala, is already active in its most primitive form only a few weeks after conception and is already wired up at midbrain level by birth. The hippocampus, an area specializing in conscious recall and an important regulator of the amygdala, only wires up in the 2nd and third year of life. The corpus callosum, an area for connecting left and right brain only wires up fully after age 8. As the brain wires more and more areas, the child can perform more sophisticated skills, eventually talking, reasoning and remembering events. The area for reflex reaction to threat, the amygdala, is already active in its most primitive form only a few weeks after conception and is already wired up at midbrain level by birth. The hippocampus, an area specializing in conscious recall and an important regulator of the amygdala, only wires up in the 2nd and third year of life. The corpus callosum, an area for connecting left and right brain only wires up fully after age 8. To develop an even more conscious choice about how to respond to threats, we have to wire up with an even higher level of the brain, the cingulated. Later on, at about 25 years, the frontal lobes are finally fully wired up. Only now can we use good judgment and common sense.

Factors affecting optimal neural wiring up of the abovementioned areas, include good attachment and bonding with mother and a stimulating sensory environment. As regards attachment and bonding up, the mother initially provides executive functions for the child and acts as the extended neo-cortex of the child, but gradually the child can assume these functions independently. Interestingly, children with neural deficits will display better control over reflexes if the mother is present, and a more regressed neural state if she is absent. Clearly, bonding stimulates and improves neo-cortical controls. One of the treatment principles of psychotherapy is that it is a re-parenting process. The therapist acts as surrogate parent and models more mature adaptive traits and teaches good psychological coping skills to clients. This supportive relationship, simulating parenting, is thought to improve the neo-cortex control over the brain stem and to get the brain to wire up and connect more areas, resulting in a more mature and adaptive personality.

A stimulating sensory environment is another important factor in stimulating neural wiring up. For example good left and right connection requires the baby to crawl for a total of 4 to 5 months. This milestone is essential for cognitive tasks, such as speech, reading and writing. Developmental delays in this area will show up as under-achievement in cognitive tasks and typically also as immaturity in affect regulation. The treatment principles followed in developmental physiotherapy and occupational therapy are that repeated stimulation with bilateral movements will complete the left and right brain balance milestone, which will improve cognitive function.

In psychotherapy the client is maturing neural organisation by completing psychological milestones. In sensory training therapies the client is maturing neural organization by completing sensori-motor milestones. By introducing sensory integration interventions into the psychotherapy repertoire, a concurrent psychological and sensori-motor neural maturation can be induced. These two approaches to personality development are
complementary and can expand the range of impacts of psychotherapy on the personality.

Psychologists in clinical practice can benefit from a sound knowledge of neural development the impacts of stress on neural organization and suitable corrective strategies. Incorporating more varied interventions for maturing neural organization into existing psychotherapy protocols can be done easily and seamlessly. This will have significant benefits for clients.

‘The human brain is capable of building in ever more sophisticated resilience for us throughout our lifespan. It achieves this by repeating our developmental sequences and maturing us.’

References

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