

Down syndrome

Chapter 5

The use of the Snoezelen Approach. Theoretical Reasoning with two case Studies

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1. Introduction

Snoezelen, or the multi-sensory environment (MSE) is a sensorial method that was initiated at the end of the 70's and was originally predestined for individuals with severe intellectual and developmental disabilities (IDD). It is based on the concept of an individually adapted environment along with an enabling therapist. A specific methodology termed Therapeutic Snoezelen Intervention (TSI) clinically employed and evaluated for over 10 years, allows measuring of the intervention results. This method is more structured in nature than the original Snoezelen approach, yet it does not harm the original concepts of individually adapted environment and the enabling therapist.

This chapter describes theoretical possibilities of using the Snoezelen approach for individuals with Down syndrome (DS), as well as presents two case studies suggesting a novel possibility were the MSE was used in an active beneficial intervention for DS.

2. What is the Snoezelen?

The Snoezelen, also known as the multi-sensory environment (MSE), is a concept constructed and developed by Ad Verheul and Jan Hulsegge during the 70's of the previous decade. The first Snoezelen room was established at the de HarteBerg Institution in Ede, Holland.

The basic concept of the Snoezelen is to establish pleasurable sensory experiences arranged to stimulate the primary senses in an atmosphere of trust and relaxation without challenging activities [1]. Another way of putting it is: "nothing is demanded of the client and

everything is allowed” as suggested by Ad Verheul [2].

The name Snoezelen itself represents the original concept of the room. It is a merger of two Dutch verbs: Snoezel = to sniff like a dog and explore and Doezen = to sleep or doze. The sniffing part of the word relates to a dynamic sensorial aspect, eventually leading to relaxation and therefore the word "doze" which indicates the restful results involving the desired state of relaxation by the client [3].

The Snoezelen philosophy emphasizes both the importance of a physical environment (an individually adapted sensory environment) and the attitude of the caretaker (i.e. the “enabler”). The basic concept is that the "world" is misunderstood by the person with IDD, thereby leading to anxiety, withdrawal and therefore unavailability to learn and develop. Therefore, the original concept suggests that when we change the environment to suit our client’s needs, he/she becomes less stressed, more communicative and open to learning and development [3].

A MSE intended to achieve maximal results must establish the following conditions:

1. The correct atmosphere

Generally, we feel good and function better in an environment, which holds a positive ambience. The following factors will enhance positive ambience: ventilation, physical comfort, soft lighting, pleasant music, and the attitude of the therapist. The presence of the therapist provides a critical human touch to the already adapted environment (a smile, a gentle touch, a bear hug, an opportunity for interaction – this point will be further discussed in regards to the enabling therapist).

2. The privilege of choice

In many cases the therapist builds a therapeutic program and "decides" for the client. The enabling therapist will allow the client to lead the way and help him achieve his own goals, to "choose" for himself, to dictate his own experiences, thereby empowering himself.

3. Taking the time to set his own individual environment

The client should be given the time to absorb, perceive and experience the stimuli at his/her own pace. Most of our clients with IDD may need long periods of time to fully experience their environment. Allowing the client to set his own pace will result in optimal function level. The time taken by each client may vary according to client cognitive level and character.

4. The optimal duration of each session

Optimal duration for a session in the multi-sensory environment has been found to be about 20 minutes for children. Yet as the sensitive care-giver is aware of his client’s body

language and other non-linguistic communication, the duration of the session can be regularly changed in accordance with the client's needs and non-verbal messages.

5. Gradual transitions

Transitions in and out of the MSE should be gradual, calm and relaxing. During primary encounters with the MSE, regular lighting might be appropriate and additional elements should be slowly introduced to the client. As the client becomes more familiar with the room, this may not be necessary.

An opening ritual for the session is strongly advised.

During first sessions, the behavior of the client should be closely watched. The therapeutic intervention should be gradually adapted. Ending each meeting abruptly should be avoided. An ending ritual for the session is strongly advised.

6. Repetition/consistency

Our clients may need repetition in order to absorb and experience each stimulus. Repetition and consistency can create a sense of safety, enhancing the client's relaxation. Observing the client's behavior can be used to identify indications as to the right amount of repetition for him/her.

7. A variety of stimuli

The regular environment may look chaotic and threatening for individuals who have severe disabilities. The MSE offers a variety of stimuli which should be presented in the optimal manner and intensity for each client.

8. The proper fundamental attitude

The MSE is made up of shiny exciting equipment, yet it is mere equipment which regretfully, sometimes, takes the emphasis of the therapeutic process [4,5]. Without the right approach of the therapist, no positive change will occur. A good session is one which encompasses an optimal combination of the correct individual stimuli and the mutual experience with the therapist.

When in the MSE the client should feel secure. In order for such a feeling to be achieved, the therapist working in the Snoezelen must become the enabling therapist. [3].

9. The "enabling" therapist

According to the Snoezelen approach, the therapist is called an "enabling therapist". The enabling therapist, as opposed to the directive therapist, which demands the client to perform,

to cope, to overcome his difficulties.

In many circumstances involving individuals with IDD, decisions are made for them and they might become more dependent/passive and less active/independent. The multi-sensory philosophy focuses on a client-orientated approach. The therapist observes the client's behavior and follows his lead. The enabling therapist supports the client and is in-tune with him/her. According to the multi-sensory approach, the therapist must adapt to the client's needs. In other words, the client in the MSE gets the opportunity to make choices, such as which activity/experience to start first, what music shall be played and at what volume, the depth of the massage he/she is getting, and the body part the client wants it to be applied on.

An enabling therapist is sensitive to what a client really enjoys, even if it's "just" feeling the vibration of the bubbles in the bubble unit [3], or just laying down without anyone touching him on the water bed.

The enabling therapist creates an ambience of serenity. Experiencing such an environment on a regular basis can get the client to open up and present developmental gains.



Description of a "typical" Multi-sensory room

MSE vary in appearance and in the equipment it holds, particularly if it is designed to suit the needs of a specific client group. Commonly, the room is painted white or a light pastel shade, which optimizes the effects of the projected lights, and has blacked-out windows that exclude extraneous light. The seating and flooring in particular will depend on the type of individuals who will be using the room. Seating may include beanbags or specialized chairs or beds. The floor-covering may be cushioned or textured, or even have lights or pressure-sensitive pads incorporated into it [6].

The MSE should be a well ventilated, partially lit room [7]. The dominant feeling in the room is that of a magical wonderland with special lighting effects, soft music, and gentle vibrating equipment. The soft mattresses lend themselves to the feeling of comfort. These rooms are designed to create a feeling of coziness and safety where the individual can relax, explore and enjoy his/her surroundings [6].

The environment offers a variety of stimuli. These stimuli can be provided by an array of instruments, giving an abundance of sensory possibilities such as:

Tactile: massage, reflexology, vibration, brushing technique, touching.

Vestibular: therapy ball, water bed, a therapeutic roll, swings, hammocks.

Proprioceptive: deep pressure on joints, Pulling through pushing, heavy lifting, lying under beanbags, vibro-acoustic cushions or beds, rough and tumble play.

Visual: bubble pole, optic fibers, different projectors, mirror balls

Auditory: endless possibilities of music are available by using the audio system or just by singing.

Smell: aromator.



Which populations can benefit from using the MSE?

The original concept was established following work with people who were diagnosed at a profound level of intellectual disability [3]. Since then this approach has been implemented on different client groups and for different medical and emotional situations.

Today, anecdotal experiences of the possibilities of this approach have been published, as well as research carried out to prove the efficiency of the Snoezelen as a therapeutic tool. This part of the chapter mainly presents a selection of reports regarding different populations

and therapeutic intervention. A more informative account regarding the successes and failures of these interventions can be found in the thorough work of Hogg and Lancioni and their associates [8,9].

The positive reports regarding the MSE intervention can be summarized in the following **Table**

Author	Population	Results
Children		
Shapiro, Parush, Green, Roth, 1997 [10]	IDD	Reduction in maladaptive behaviors and improving adaptive behaviors.
Houghton, Douglas, Brigg, Langford, Powell, West, 1998 [11]	Learning disability	Increase in general abilities
Withers, & Ensum, 1995 [12]		Mild positive outcomes
Meijs-Roos, 1990 [13]		Mild positive outcomes
Henning, 1994 [14]		Reduction in challenging behaviors
Korsten, 1994 [15]	Young children (age 3-9)	Improve relaxation, coordination and concentration
Ashby at al., 1995 [16]	Developmental disabilities	Improve task concentration
Lindsay et al., 1997 [17]	Developmental disabilities	Improve task concentration
DeBunsen, 1994 [18]	Learning disability	Reduction of challenging behaviors
Slevin, & McClelland, 1999 [19]	Learning disability	Improve relaxation
Hutchinson, & Hagger, 1991 [20]	IDD	Positive behavioral changes
Hutchinson, & Hagger, 1994 [21]	IDD	Positive behavioral changes
Long & Haig, 1992[22]	DD	Positive behavioral changes
Glenn, et al., 1996 [23]	Profound level of IDD	Effects on object manipulation
Adults with IDD		
Author	Population	Results
Martin, et al., 1998 [24]	Severe-profound IDD	Reduction in stereotypical movements and challenging behaviors
Meijs-Roos, 1990 [13]	Severe-profound IDD	Reduction in stereotypical movements and challenging behaviors
Thomson, & Martin, 1994 [25]	Moderate IDD	Improvement in choice and preference
Lotan, Burshtein, Cahana, & Shapiro, 2004 [26]	IDD	Long term reduction in challenging behaviors
Lotan, Burshtein, & Cahana, 2003 [27]	IDD	Long term improvements in motor/functional abilities
Scholfield, & davis, 2000 [28]	Adults	Reduction in the level of pain and depression

Aging and Dementia		
Van Lakveld, 1992 [29]	----	Improved affect, communicative expression and mood
Terry, & Hong, 1998 [30]	----	Improved affect, communicative expression and mood
Barker, at al., 1997 [31]	Alzheimer & dementia	Reduction in mall adaptive social behavior, improved communication and memory recall
Moffat, et al., 1993 [32]	Dementia	Improved happiness, Relaxation and reduction in sadness, fear, boredom. Increased attentiveness communication and concentration.
Baker at al., 1998 [33]	Dementia	Improved happiness, Relaxation and communication and reduction in sadness, fear, boredom. Increased attentiveness.
Pinkney, 1997 [34]	Senility & dementia	Improved mood and behavior
van Diepen, et al., 2002 [35]	Dementia	Short term reduction in agitation
Holtkamp, 1998 [36]	Dementia	Improved happiness, Relaxation and interpersonal interactions, interactive visual connections, reduction in sadness, fear, boredom. Increased attentiveness communication and concentration.
Spaul, et al., 1998 [37]	Dementia	

How is the Snoezelen approach applicable for individuals with DS?

The lively character of individuals with DS is usually observed by social competence, and a less challenging behavior than others with developmental disabilities [38]. Their “natural” tendency is to show more affect [39] and humor [40] than that which their peers with IDD present, making them lesser candidates for an approach, such as the multi-sensory intervention, which has mainly been associated with treating those with challenging behaviors.

Nevertheless, individuals with Down syndrome show a variety of traits that have been shown to react favorably to intervention in the MSE. Some of these challenging aspects of DS will be reviewed.

Individuals with Down syndrome show a significant delay in nonverbal cognitive development accompanied by additional deficits in short-term memory in infancy and childhood [41]. Such problems may be reduced as described above, with a multi-sensory intervention, that presenting encouraging results in areas such as: improved task concentration [16,17], coordination and concentration [15].

Adults with Down's syndrome (DS) are known to be at risk of dementia of the Alzheimer type [42,43]. Research findings reveal that Alzheimer type regression in DS can increase depression, and indifference [44]. Since the multi-sensory approach has been found highly effective in treating individuals with dementia without DS, as described above [9,33,45], there is no prevention to address such difficulties through the MSE approach with individuals with DS.

Another distinct characteristic of DS is their low physical competence and their tendency

to avoid physical activity [46,47]. This chapter will describe two novel programs that deal with this avoidance behavior of physical activity programs through a fun and exciting ambiance constructed within the MSE.

Case Studies

Case 1 - A DS person recovery after stroke using the MSE

The client

M.P. A 23 year old male with DS showing behavioral problems, functioning at a severe cognitive level, with complete independence in Activities Of daily Living (ADL), without expressive verbal communication abilities, has underwent a right Cerebro-Vascular Accident (CVA). At the acute stage of his illness, he was admitted to the hospital but was returned to his residential setting without a rehabilitation period due to “lack of cooperation” (as was mentioned in the discharge documents).

On his return, he showed a complete loss of function of the left side of his body, a deterioration of his walking abilities obligating him into assisted walking and even the use of a wheelchairs when exiting his dormitory. He tended to remain in bed and refused participation in most ADL activities.

M.P. has been very consistent in effectively avoiding any cooperation in numerous attempts of conventional physical therapy intervention by an experienced physical therapist (working with individuals with IDD for over 18 years).

Due to his regressive state to the fact that no progression has been observed by his caregivers, weeks after returning from hospitalization, it was decided to attempt to integrate M.P. into the Snoezelen intervention.

The treatment

The intervention was held in the MSE in the form of two half an hour sessions per week, and was introduced by a caregiver known to M.P. The lights were kept on and lively music was played on the loud speakers.

The intervention included mainly vigorous activities such as dancing to the music, crawling around the room, and jumping on a physio-ball, intended to create a lively atmosphere while raising M.P.'s muscle tone. Balancing across the room (carpeted with thick mattresses) and on the water bed, intended for improving balance, and deep tissue massage intended for increasing body awareness as well as provide a motivational factor for the whole session. The difficulty level of the exercises was gradually raised as M.P.'s abilities improved as well as his active involvement in the sessions.

It should be noticed that M.P. gladly cooperated with the caretaker/facilitator (contrary to his previous behavior during conventional physical therapy sessions) and the level of activity was always kept within his physical capabilities and willingness to cooperate.

In order for a session-by-session follow-up, each session began by requesting M.P. to take off his shoes and socks and ended by requesting him to put his shoes and socks back again. The facilitator was instructed to gradually reduce her assistance to the required minimum and enhance independent performance. At the beginning of the therapeutic MSE sessions M.P. requested full assistance from the caregiver during initial meetings, which gradually turned to assisted intervention, and later to independence performance with continuous intervention.

Outcome measures

FIM (Functional Independence Measure), a reliable and valid tool for measuring the functional abilities as a result of a rehabilitation program [48,49], which was used in the past to evaluate functional abilities of individuals with DS [50] was used by a physical therapist with pre and post measurements in order to evaluate the effectiveness of the intervention.

Results

Pre-therapeutic FIM measurement was recorded at 62 while post measurement recorded at 77 at the end of the intervention, six month after its initiation. The items which reflected the major change where: dressing, independent bathing and walking.

M.P. returned to his pre CVA abilities, though a slight limp may be observed when commuting (see picture) and the use of his left arm is mainly apparent when all means to perform with the right hand have been exhausted.



Case 2 - Enhancing level of activity in DS through the MSE

The client

E.S. is a 40 year old male with DS, functioning independently in ADL activities, but always extremely slow and in need of constant external encouragement from his caregivers and usually presenting an exceptionally passive behavior. Without external facilitation, E.S. could stay in one position without moving for hours.

E.S. has been assigned for regular physical exercise programs but successfully avoided active participation in many of the sessions. Due to the lack of participation in activity programs, his progressing age, and the accelerated aging that is known to accompany many senior adults with DS [51,52], a MSE program was suggested for E.S.

The treatment

The intervention was held in the MSE, in the form of twice a week half an hour long sessions, and was introduced by a caregiver known to E.S. The lights were kept on, and lively music was played on the loud speakers.

The intervention included mainly vigorous activities such as dancing to the music, playing and jumping on a physio-ball, singing in a loud voice intended at raising muscle tone and elevating levels of activity.

It should be noted that E.S. gladly cooperated with the caretaker/facilitator and the level of activity was always kept within his physical capabilities and willingness to cooperate.

Outcome measures

Heart rate measurements were taken a few months before beginning the intervention as a baseline, and during any consecutive month thereafter. A slight reduction was found in his heart rate, suggesting a mild improvement in his physical fitness level but this change was not statistically significant.

Results

E.S. kept a regular routine of coming to the room for a period of three years.

Conclusions

The Multi-sensory environment was developed as a leisure activity for individuals with intellectual disability and was designed to be both a relaxing and a stimulating environment which is failure-free and in which individuals can choose, control and explore the stimuli around them.

It has also been suggested that the experience of doing something positive and spending ‘quality time’ with a patient serves to raise staff morale and reduce staff burn-out [53].

In addition to the potential benefits for the mood and behavior of patients, many authors have also reported that multi-sensory therapy promotes a close therapeutic relationship and rapport between the patient and the caregiver or staff member who participates in the sessions. It is often beneficial for the caregiver to share the experience of a non-dependent, non-care giving activity with the patient. Spending time in a different arena, the familiar care-giver-patient creates conditions similar to those of the multi-sensory environment which can help the caregiver or staff member to further expand their knowledge regarding how the patient is feeling or thinking (as some clients open up and talk freely within the MSE) and what his or her preferences are. This knowledge can assist care of the patient outside the MSE [6].

This chapter has described an experience with two individuals with DS in the MSE. Its novelty thrives from the fact that no prior mention of this population (DS) can be found in the existing literature regarding the MSE and from the fact that the results which were achieved were long-lasting.

The possibilities that such an environment presents to all individuals with disabilities both cognitive and physical are infinite. Behavioral and physical characteristics of individuals with DS make them appropriate candidates for intervention in the MSE.

The stress free, yet exciting environment can expose and enhance positive traits of individuals with DS. Worst case scenario, such an environment can provide a safe haven where one can set aside his daily struggles with the outer, demanding world and recharge his energy.

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