



## Review

# The effects of multisensory therapy on behaviour of adult clients with developmental disabilities—A systematic review

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## ABSTRACT

**Background:** There is a growing use of multisensory therapy in enhancing sense of well-being and reducing challenging or stereotypic self-stimulating behaviour in people with a developmental disability.

**Objectives:** This review aimed to present the best available evidence on the effect of multisensory therapy in adult clients with developmental disabilities on the frequency of challenging behavior, stereotypic self-stimulating behavior, and positive behaviour; and changes of physiological measures.

**Design:** Systematic review.

**Data sources:** A search of electronic databases of published research studies (January 1985–December 2008) was conducted, using appropriate search terms. The reference lists and bibliographies of retrieved articles were reviewed to identify research not located through other search strategies.

**Review methods:** Studies that investigated the effects of multisensory environment in relation to outcomes were examined. Data were extracted independently by two reviewers. Methodological quality was also assessed by two reviewers against key quality criteria.

**Findings:** One hundred and thirty-two studies were identified from database search of which 17 met the inclusion criteria for review. The evidence supports that participants' had displayed more positive behaviour after multisensory therapy sessions. There is no strong evidence supporting that multisensory therapy could help in reducing challenging behaviour or stereotypic self-stimulating behaviour.

**Conclusions:** This systematic review demonstrates a beneficial effect of multisensory therapy in promoting participants' positive emotions. While the reviewers acknowledge the difficulty in carrying out randomized controlled trial in people with developmental disabilities and challenging behavior, the lack of trial-derived evidence makes it difficult to arrive at a conclusion of the effectiveness of the multisensory therapy. Future study should use well-designed randomised controlled trials to evaluate the short and long term effectiveness of multisensory therapy. There is also a need for qualitative studies which allow the clients to tell the stories of their experiences.

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## What is already known about the topic?

- People with a developmental disability can benefit from sensory input.

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- Multisensory therapy aims to induce leisure, enjoyment and relaxation in people who have a learning disability through enhancing their sensation and emotions.
- There is little evidence suggesting multisensory therapy could reduce challenging or stereotypic self-stimulating behaviour.

### What this paper adds

- The results of the systematic review revealed insufficient evidence supporting that multisensory therapy is effective as a treatment for challenging or stereotypic self-stimulating behaviour.
- This review supports the original philosophy behind the use of multisensory therapy, which was one of providing leisure for promoting clients' psychological well-being.
- There is a need for well-designed randomised controlled trials to evaluate the short and long term effectiveness of multisensory therapy. Qualitative studies are also needed which allow the clients to tell the stories of their experiences.

## 1. Introduction

Many people with a developmental disability are staying in mental hospitals/institutions because of personality problems and mental illnesses. Institutional life has typically been unstimulating (Hutchinson, 1994; Sharpton and West, 1992). People with a developmental disability, like all human beings, have a primary need for stimulation. Unfortunately, their disability often prevents them from expressing and fulfilling this need in an appropriate way. Without such psychologically stimulating and health-promoting therapy, people with a developmental disability often develop challenging or stereotypic self-stimulating behaviour (Chan et al., 2005).

In this systematic review, people with development disability refers to the group of clients diagnosed as having 'Mental Retardation', according to DSM-IV, by their attending psychiatrist, or those clients who have an intelligence quotient <70 (American Psychiatric Association, 2000). Many terms are used to describe this group of clients, such as learning disability, intellectual disabilities, or mental handicap. In this review, the term developmental disability is used unless it is a direct quote from a study.

There is a growing body of knowledge suggesting that many people with a developmental disability can benefit from sensory input (Hutchinson, 1994; Slevin and McClelland, 1999). A structured stimulating therapy can be established to promote psychological well-being and reduce problem behaviours. Multisensory therapy (or Snoezelen) is a therapy developed specially to meet the needs of those with a developmental disability (Kewin, 1994). It originated in Holland in the late 1980s and was first described in the United Kingdom by Hulsege and Verheul (1987). The word Snoezelen is derived from the Dutch word for sniff and doze. The approach aims to induce leisure, enjoyment and relaxation in people who have a developmental disability through enhancing their sensation and emotions.

Multisensory therapy, through various adapted environments, aims to provide sensory stimulation for people who due to their developmental disability would not spontaneously seek such stimulation. Thus it prompts sensorial and emotional exploration by the persons. This is achieved in a constructed environment, usually a purpose designed room equipped with dimmed lighting various colours, visual displays, fibre-optic lighting, projectors with wheels for wall displays, tactile objects, bubble tubes, olfactory stimulants, equipment for sound production and furnishing to relax on, such as floor cushions and water or air beds (Slevin and McClelland, 1999).

One of the therapeutic values of multisensory therapy is to induce a relaxation effect in people with developmental disabilities (Kewin, 1992). If multisensory therapy does induce relaxation, there is an expansive range of literature which suggests that relaxation can be of therapeutic value for people with developmental disabilities in relation to behavioural problems (Schilling and Poppen, 1983; Deakin, 1995). As it is assumed that relaxation would be incompatible with challenging behaviour or self-stimulating behaviour, a person cannot be relaxed and have these behaviours at the same time. Thus relaxation response could replace maladaptive behaviours. It is also assumed that the positive behavioural changes can be transferred or sustained from the multisensory therapy to other settings.

Many manufacturers now provide multisensory therapy equipment. Multisensory therapy includes visual, auditory, tactile and olfactory stimulation offered to clients in a specially designed room; or therapy using a variety of lights, gently stimulating music, aromas and tactile objects; non-sequential and unpatterned stimuli used. It creates an atmosphere of warmth, trust and relaxation and provides scope for exploration, discovery and learning (Cavet, 1994; Kwok et al., 2003). During the multisensory therapy, clients received more stimulation than normal and it may have allowed them to become more engaged and focused on the therapy around them thus promoting positive emotions (Chan et al., 2005). The multisensory environment relies on short-term memory to link them to previous events, and which present few specific intellectual demands on the client (Hutchinson, 1994; Sharpton and West, 1992). The importance of sensory experiences to people with developmental disabilities has been acknowledged and documented.

However, there is debate amongst health care professionals as to the benefits of multisensory therapy. Lancioni et al. (2002), in a review of research studies on Snoezelen with people with developmental disabilities concluded, although some studies reported within-session positive effects of Snoezelen, many of the studies had methodological issues, such as weak control conditions, limited number of sessions and use of qualitative/descriptive data. They suggested that the evidence obtained so far seems to suggest caution.

This indicates the need to synthesize the existing body of research evidence on the topic of multisensory therapy on whether it is clinically beneficial to adult clients with developmental disabilities.

The objective of this systematic review is to present the best available evidence on the effect of multisensory

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