The Effects of Multi Sensory Behavior Therapy (Snoezelen) on pregnant women with depression and anxiety: A single case design.

Jason A. Staal, Elena Shteyhfeld, Robert Matheis, Andrew Lopez

ABSTRACT

Objectives: The first study to assess the efficacy of Snoezelen Behavior Therapy to reduce the symptoms of depression and anxiety/stress among pregnant women.

Design: Single case study AB design.

Setting: The study was conducted at a hospital in New York City.

Participants: One pregnant woman with depression referred from the outpatient OB/GYN clinic at Beth Israel Medical Center.

Intervention: The subject was assessed in a multi sensory environment to match her sensory preferences with visual, auditory, tactile and olfactory, individualizing the treatment and then she received six Snoezelen treatment sessions, twice weekly, 30 minutes per session.

Measurements: The Edinburg Postnatal Depression Scale (EPDS), The State Trait Anxiety Inventory (STAI), and The Profile of Mood States (POMS) were used to measure changes in depression and stress.

Results: After six SBT treatment sessions the participant demonstrated a significant decrease in the kevel of depression and anxiety/stress compared to baseline measurements. She also reported that it was an enjoyable intervention to experience and a wish that it would continue for the rest of her pregnancy.

Conclusion: These data provide evidence that Snoezelen may have an antidepressant and anti-anxiety effect during pregnancy. A randomized controlled trial is warranted to further test this alternative treatment.

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It is well established that there are clinical challenges in treating women for depression during pregnancy. The focus of inquiry is the perinatal phase of pregnancy and depression and anxiety, left untreated can result in negative outcomes which can deleteriously impact mother and child [1].

A major impediment to addressing depression and stress during pregnancy is the challenges of using psychiatric interventions due to adverse effects on the fetus. Selective serotonin reuptake inhibitors, serotonin noradrenaline reuptake inhibiotors and norepinephrine dopamine reuptake inhibitors can cause teratogenicity, neonatal syndromes especially in the third trimester and may affect new born children adversely [2].

Benzodiazepines are associated with negative effects, especially in the third trimester, on the fetus and the infant, withdrawal, during breast feeding, and possible developmental delays [3].

Electroconvulsive therapy has been approved by the American Psychiatric Association for use during all three trimesters, however, there are risks with this intervention [4].

Snoezelen was assessed qualitatively [5] yielding positive results with woman in the first stages of labor and first stages of breast feeding. This is the first single case design to assess the effects of multi sensory behavior therapy (MSBT) to reduce the symptoms of depression and anxiety/stress. In this paper the term MSBT is used to distinguish this use of sensory stimulation based on the use of behavioral theory (operant) to understand the within session effects of the treatment and its generalization and in sensory room assessment, matching stimuli used in the sensory treatment room to the preferences of the

participant based on reward value. The multi sensory behavior therapy incorporates assessing the preferences of the participant to light, music, aromatherapy and tactile stimulation in a therapy room which is the environment which contains sensory stimulation equipment such as fiber optics, solar projectors and bubble tubes which are used to stimulate the visual system, a stereo sound system for the auditory system, massages and hand held objects for tactile stimulation and aromatherapy scent equipment for the olfactory system, targets the four main senses of vision, touch and smell [6]. The active mechanism of change is hypothesized to be non-contingent, automatic sensory reinforcement [7,8] which produces reward and evokes the relaxation response [9]. In this paper we report on the use of multi sensory behavior therapy with a pregnant woman with a diagnosis of depression which began with her pregnancy. We predicted that depression would decrease compared to baseline measures. Our second hypothesis the person in our study would report a decrease in anxiety. Our third aim to assess the participant's level of satisfaction with the intervention and allow her to offer suggestions about future use.

METHODS

Participant

A 29 year old Caucasian woman in 29 weeks of gestation of her first pregnancy was referred from OB/GYN clinic. The participant had no prior history of depression. The participant at the start of the study met the DSM IV TR criteria for Major Depressive Disorder (MDD) with no co-morbid diagnoses. No medications were used for depression prior to and during the investigation. Informed written consent and a HIPAA form (Health Insurance Portability and Accountability Act of 1996) was obtained and the study was approved by the Institutional Review Board where the study was conducted.

Intervention

The treatment began with a behavioral/sensory pre-test to determine the sensory preferences of the participant [6].

Experimental Design

When testing a novel therapy for use with a clinical population a single case design is recommended [10]. An A-B design was used in this study. The participant was treated twice a week for thirty minutes per week for three weeks.

Clinical Measures

Assessment of the independent variable, which is the multi sensory treatment and three dependant variables which were the scores on: The Edinburg Postnatal Depression Scale (EPDS) [11], The State Trait Anxiety Inventory (STAI) [12], and The Profile of Mood States (POMS) [13]. Baseline measures were obtained prior to the first treatment with the multi sensory therapy. No attempt was made to counter-balance the measures across the study in order to accommodate the participants ability to travel to the hospital were the study was conducted, the intervention sessions occurred in the mid mornings and early afternoons. Assessment of the dependent variables took place within sessions (pre post) and across the six session protocol and analyzed using visual graphs.

RESULTS

Given this was a single case design, results are limited to descriptive analysis of data collected, both pre and post study and at completion of each of the six sessions.

Our first aim of the study was achieved, to determine if there is a decrease in depression in a pregnant woman receiving MSBT compared to baseline measurements. There appears to be a decrease in the participant's level of depression (EPDS) throughout the six-session protocol as units of depression reduced from the upper threshold of the scale

to a sub threshold score suggesting the cessation of low mood. Baseline assessment on the EPDS is clinically significant for depression and drops below the cut off for depression by the end of the 6 session protocol. The POMS subscale for depression and dejection corroborates the findings of the EPDS with a decline in depressive mood from baseline to the studies conclusion. Upon conclusion of the intervention (post session six) the participant's level of depression was a seven, which is under the ten point threshold for depression on the EPDS.

The second aim of our study was achieved, to assess if there is decrease in anxiety and stress in a pregnant woman receiving MSBT compared to baseline measurements. The participant's lower scores on STAI-X1 hints at the participant experiencing less anxiety and therefore stress after each session. A decline in anxiety was noted for the first five sessions and an increase in STAI-X2 occurred only in session six, at the end of intervention, which could be explained by the participant feeling anxious about termination of the study. Subtests and the overall mood score on the POMS reveal positive trends in reduction of stress related sequelae; lack of vigor and activity, fatigue and inertia, anger and hostility, and confusion and bewilderment, throughout the study. The total mood disturbance decreased throughout all sessions, meaning that the participant apparently left sessions in a less disturbed state.

The third aim of the study was achieved, to determine if there is a level of enjoyment and satisfaction with the MSBT treatment itself. On the post study satisfaction questionnaire the participant reported that the multi sensory environment improved her mood; lasting for more then two hours after the treatment, she wanted to continue the treatment, the treatment took her mind off negative thoughts, she would like to have this at home, and on her own she started to use aromatherapy and relaxation music at home.

The major limitations of this study are the small sample size (single case design) and lack of control group. A randomized controlled trial comparing active comparator treatments with the multi sensory room is warranted to ascertain that improvement is specific to

MSBT in antepartum depression and anxiety and not to a placebo effect of an open trial. Other limitations of the study include the reliance on subjective self-reports.

Further investigations may benefit by measuring the participant's blood pressure, pulse, and urinary stress hormones, such as norepinephrine would provide biological measurements. Also, what is not known is for how long the reduction in the levels of depression and anxiety are maintained after the termination of the intervention and what phases of pregnancy and in the deliver room itself would be most beneficial. It would be useful to know if the effect of MSBT changes the course of labor and delivery, as well as whether women who received therapy are more likely to carry pregnancy to full term. A randomized controlled study with a between groups design is needed to further research in this area.

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