

CLINICAL STUDY ON EFFECT OF MUSIC WITH CREATIVE VISUALIZATION ON MATERNAL PSYCHOLOGY

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ABSTRACT

Objective: In today's era, due to changing lifestyle and increasing workload, human's psychosomatic systems seem to be under pressure. It leads to stress, depression, hypertension etc., with increased chances to worsen during pregnancy. Music and creative visualization Present as good remedial and preventive measures. The study was done to evaluate the effect of music with creative visualization on psychological health of the pregnant woman by using assessment Scale PSS-10. **Methods:** It was an open randomized control clinical study where 30 singleton pregnant women diagnosed with normal pregnancy were subjected and divided into trial and control group. Subjects of trial group were exposed to music and visualization daily for ½ hour after 20 weeks of gestation up to delivery with routine antenatal care. PSS-10 was evaluated on first visit followed by after 2 month. **Resul:** PSS-10 score was found significantly reduced in trial group ($t = -14.52$, $P < 0.0001$). **Conclusion:** Prenatal music and creative visualization exposure can considerably reduce maternal stress level and improvise psychological health of to be mother.

Keywords: *Music, Creative visualization, Pregnancy, PSS-10, Mental health*

INTRODUCTION

Pregnancy is the period of a woman's life where she undergoes through various physiological changes that have the potential of to produce psychological disturbance including mood swings and anxiety. This is the period where she requires extensive care, rest, guidance and assurance. In present scenario due to changes in

the lifestyle, professional workload; psychological hazardous effects such as stress, anxiety, depression etc. have increased for pregnant women. It may affect pregnancy and its outcome negatively¹. High pregnancy anxiety levels have been associated with preterm birth and low birth weight². Moreover maternal stress

and anxiety can also lead to adverse childhood outcome such as negative emotionality³, developmental delays⁴ and attention deficit hyperactivity disorder⁵.

The interventional protocols of *Samhita kala* insisted upon *Nada* and *Drushya* which potentiates the *Garbhachaitanya* to reform the foetus into the '*Shreyasi praja*'. *Nada* in form of music provides a spiritual experience to communicate with the foetus-in-utero. Acharya Charaka has advised to listen music during pregnancy⁶. Music loaded with positive thoughts (*Brahmaghosh*⁷ etc.) in soothing tunes act as anti-depressant and mood stabilizer. Certain Indian classical ragas are known to reduce stress by calming the mind as they create peaceful environment.

Drushya has strong impact on *Jeevachaitanya* of the foetus conveyed by maternal visual perception. Acharya Sushruta has recommended that *Garbhini* should not be subjected to "*Durdarshana*"⁸. Acharya Vagbhatta has supported same view by "*Apriyavlokanashravanadya*"⁹. In other way it can be understood that '*Sudarshana*' i.e. good and positive visual exposure during pregnancy could be beneficial. *Drushya* in form of creative visualization is an intellectual exercise by which mind can be dragged towards good thoughts and pleasant atmosphere which can increase power of positivity.

When music and creative visualization are conjoined with each other, it may prove to be more beneficial for reduction of maternal stress and to sustain enlightenment, tranquilisation and creativity, which can ultimately play a pivotal role in the development of healthy progeny.

AIMS & OBJECTIVES

- To evaluate psychological stress of expectant mother during pregnancy.
- To study the effect of music with creative visualization on psychological health of the pregnant woman by using assessment Scale PSS-10.

MATERIALS AND METHODS

It was an open randomized control clinical study carried out at Prasutitantra & Streeroga Department, S.D.M. Ayurvedic Hospital, Udupi.

Study design:

A group of 30 singleton pregnant women, diagnosed as normal pregnancy of 20 weeks to 32 weeks of gestation were selected and categorized into 2 groups – Group A (Control group) and Group B (Trial Group), Where mothers of group B were subjected to music with creative visualization for half an hour in evening daily from first visit up to delivery. Mothers randomized to trial group were given a pre-recorded music audio CD and posters for visualization and demonstration on first visit. Study was carried out until term. Minimum period of study was 2 months. All the mothers received standard antenatal care. PSS-10 test was evaluated on the 1st sitting followed by after 2 months in both Control group and trial group.

Interventions

Music: Certain Indian Classical Ragas like *Raga Kalyana*, *Raga Kedara*, and *Raga Bhoopali* with antidepressant property were selected in instrumental form and '*Atmashatakam*' – a composition consisting of 6 fold Shlokas written by Aadi Shankaracharya.

Atmashatakam reminds the soul its true nature i.e. truth (*Sat*), knowledge (*Chit*), internal joy (*Anand*).

Visualization: For selection of creative visualization, pictures with positive thoughts like blossoms, natural sceneries and cute babies were used. Patients were provided guidance to create a visual imagery with the help of the pictures and concentrate upon positive thoughts. Pictures were given with the predominance of colours specifically green and blue which gives joy and relaxing effect to the mind.

Inclusion criteria

- Primi and multigravida who were undergoing simple antenatal care with normal course of pregnancy.
- Age groups between 18-35 years were selected.
- Pregnant women with gestational age of 20 weeks to 32 weeks.

Exclusion criteria

- Previous caesarean section.
- Patients with multiple pregnancy & IUGR.
- Patients with history of ante partum haemorrhage or placenta previa.
- Systemic disorder like hypertension, Diabetes mellitus, tuberculosis etc.
- Grand multigravida.
- Patients with incompetent cervix.
- Patients with previous history of contracted pelvis.
- Severe anaemia, eclampsia, pre-eclampsia.

Assessment criteria

Psychological evaluation of the pregnant women was done by using PSS-10 scale.

Investigations

Routine Antenatal investigation like Hb%, Blood grouping with Rh type, BT, CT, RBS, Platelet count, HIV, HBsAG, VDRL, Urine routine

Statistical analysis

The statistical analysis was carried out by using IBM SPSS (version 20). Baseline variables were compared using T test and Paired *t* test with 95% confidence intervals (CI).

RESULT

A total of 30 pregnant woman including primigravida and multigravida attending antenatal clinic at a gestation of 20 weeks to 32 were the subject of the study. The females of trial group were randomized to receive exposure of music and creative visualization in addition to standard antenatal care (intervention arm, $n = 15$) and female of control group received standard care alone (control arm, $n = 15$). Analysis was done on the basis PSS-10 score between the groups and within the groups (i.e. comparison of score before and after the intervention).

In the study, statistical analysis of PSS-10 test between the group A and group B revealed highly significant result (95% CI, $T = -11.266$, $P < 0.001$) shown in Table no. 1. The statistical analysis of PSS-10 test before and after the intervention of music and visualization revealed highly significant result in the trial group (95% CI, $t = -14.522$, $P < 0.001$) whereas no significant result in control group (95% CI, $t = 1.540$, $P > 0.05$) as per shown in table 2.

Baseline comparisons of maternal variables before and after intervention (Table 3) depicted maximal beneficial effects in trial group

including parameters - Frequency of getting upset (95% CI, $t = -6.959$, $P < 0.001$), Frequency of loss of control (95% CI, $t = -4.525$, $P < 0.001$), Frequency of nervousness and stress (95% CI, $t = -8.876$, $P < 0.001$), Inability to cope with situation (95% CI, $t = -4.675$, $P < 0.001$) and Frequency of getting angry (95% CI, $t = -4.090$, $P = 0.001$). In control group without intervention of music with creative visualization there were no significant result found in any of above parameters before and after 2 months.

DISCUSSION

Music is an energy form which leads to spiritual experience and enlightening which affects a person's physical as well as psychological physiology and emotions. Soothing music such as Indian classical music induces pleasure with a surge in intense emotional arousal, including changes in heart rate, pulse, breathing rate and release of a feel good chemical i.e. dopamine.¹⁰ Creative visualization is the cognitive process of purposefully generating visual mental imagery with intent to experience a subsequent beneficial psychological and physiological effect. The process involves intentional sustaining or maintaining of imagery, participation of direct attention across and around the image and increased degree of mental aptitude and physical ability.¹¹

The limbic system in the core of brain houses a lot of mood-active structures. Amygdala, in the limbic system, is the centre for emotionally charged memories and persistent negative thoughts. It is active during stress, anxiety and depression. It sits conveniently beside the hippocampus, the part of the brain that serves long-term memory. The hippocampus is tightly connected to the hypothalamus, an important area in all sorts of body regulations. When one

is stressed, anxious, or depressed, the hypothalamus makes pituitary to release ACTH. This hypothalamus-pituitary-adrenal (HPA) axis is therefore a highway for the stress response as well as for depression and anxiety. Music with creative visualization provides a path of positivity, encouragement, self-esteem and intellectual foetal and maternal bonding. Thus event of Dopamine release occurs while listening music and finally when music combined with creative visualization, it diverts the mother's mind towards contentment, bestow ability to handle personal problems and cope with situation, reduces frequency of getting upset, nervous, stressed, irritated and angry. It ultimately provides control of mind which indicates intensification of "Dhruvi" i.e. self-command in *Garbhini*.

CONCLUSION

The study indicates that Music with creative visualization provides beneficial effect on maternal psychology. Music with creative visualization gives pacification & emotional stability. Thus provides effective intervention for increased positivity and acts as mood stabilizer during pregnancy.

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Table 1: Evaluation of PSS-10 in Group A and B

GROUP	N	AT-BT MEAN	SD	SE	T test		
					t	P	Intervention
Group A	15	0.600	1.502	0.387	-11.226	0.000	HS
Group B	15	-5.466	1.457	0.376			

Graph 1: PSS-10 in Group A and B

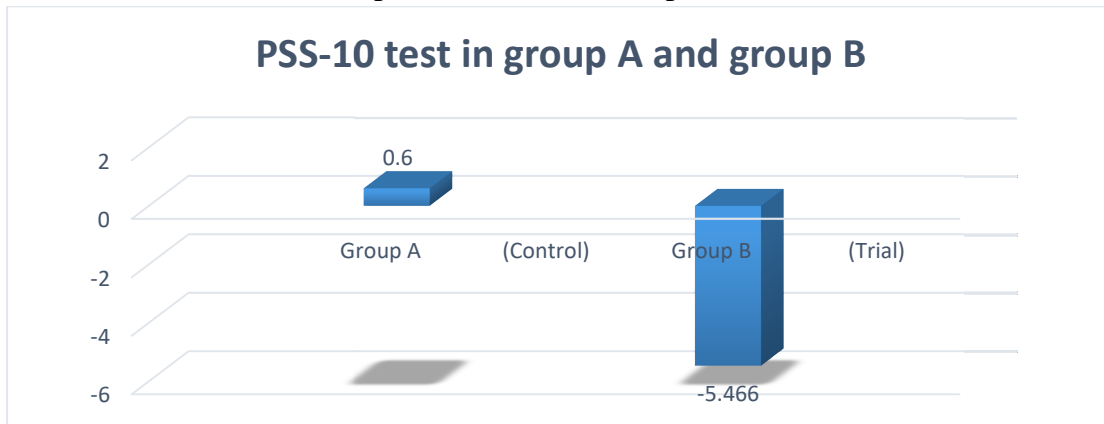


Table 2: Evaluation of PSS-10 Before and After Music and Visualization

GROUP	N	BT-MEAN	AT-MEAN	DIFF D	Paired t test			
					SD	SE	t	P
Group A (Control)	15	16.066	16.666	0.6000	1.502	0.387	1.54	0.144
Group B (Trial)	15	15.866	10.400	-5.466	1.457	0.376	-14.52	0.000

Graph 2: PSS-10 before and after Music and Visualization

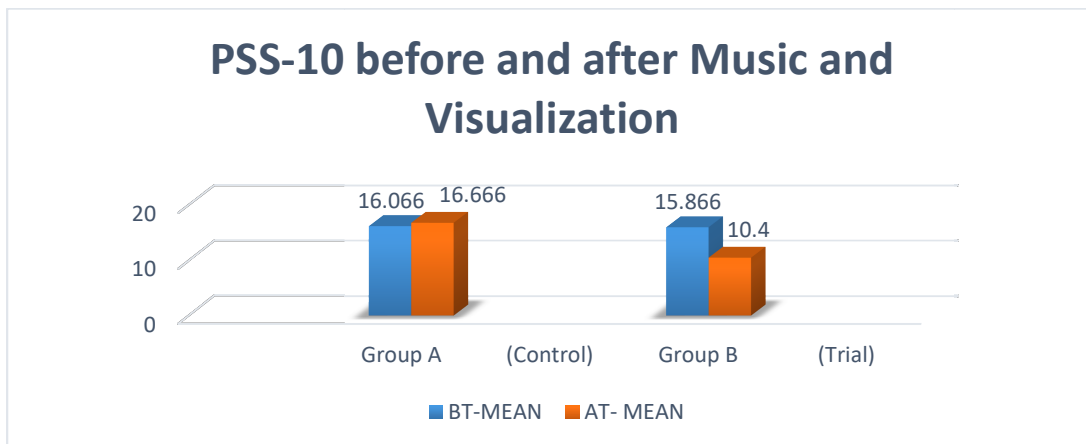


Table 3: Baseline comparisons of relevant maternal variables before and after with or without intervention

VARIABLE	GROUP	N	BT-MEAN	AT-MEAN	DIFF D	Paired t test			
						SD	SE	T	P
Frequency of getting upset	Group A	15	1.6000	1.866	0.266	0.703	0.181	1.468	0.167
	Group B	15	1.733	0.667	-1.066	0.593	0.153	-6.959	0.000
Frequency of loss of control	Group A	15	1.666	1.600	-0.066	0.593	0.153	-0.435	0.670
	Group B	15	2.000	1.066	-0.933	0.798	0.206	-4.525	0.000
Frequency of nervousness and stress	Group A	15	1.933	1.800	-0.133	0.833	0.215	-0.619	0.546
	Group B	15	2.466	1.000	-1.466	0.639	0.165	-8.876	0.000
Ability to handle personal problems	Group A	15	2.266	2.066	-0.200	0.676	0.174	-1.146	0.271
	Group B	15	2.733	2.666	-0.066	0.703	0.181	-0.367	0.719
Inability to cope with situation	Group A	15	2.066	2.000	-0.066	0.798	0.206	-0.323	0.751
	Group B	15	1.933	0.866	-1.066	0.883	0.228	-4.675	0.000
Ability to Control Irritation	Group A	15	2.533	2.466	-0.666	0.703	0.181	-0.367	0.719
	Group B	15	2.800	2.866	0.066	0.258	0.066	1.000	0.334
Frequency of getting angry	Group A	15	1.266	1.400	0.133	0.351	0.090	1.468	0.164
	Group B	15	1.733	0.800	-0.933	0.883	0.228	-4.090	0.001

Group A- Control group, Group B- Trial group, BT- before treatment, AT- After treatment.

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