Effectiveness of Music Therapy on the Level of Anxiety during First Stage of Labour among Pregnant Woman in Selected Hospitals

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Abstract: *Aim of the study: The study aims to find out theeffectiveness of music therapy on the level of anxiety during first stage of labour among pregnant woman. Problem statement: Effectiveness of music therapy on the level of anxiety during first stage of labour among pregnant woman in selected hospitals. Primary objective: Primary objective of study was to find out the effectiveness of music therapy on the level of anxiety during first stage of labour among pregnant woman in selected hospitals. Secondary objective: 1) To assess the level of anxiety in control group during first stage of labour among pregnant women in selected hospitals. 2) To assess the level of anxiety in experimental group during first stage of labour among pregnant women in selected hospitals. 3) To assess the effectiveness of music therapy on the level of anxiety in experimental group during first stage of labour among pregnant women in selected hospitals. 4) To compare the level of anxiety among control group and experimental group. 5) To find out the association between study findings with selected demographic variables. Method: The research methodology adopted for the study was exploratory descriptive research approach. The investigator used quantitative quasi experimental control group research method. The study was conducted in the selected hospitals. Accessible population was all women in labour during first stage from selected hospitals. 60 women in labour during first stage were selected with the help of non probability convenient sampling as per the inclusion criteria from the selected hospitals. Semi structured questionnaire was developed and observational checklist for assessment of effectiveness of music therapy on the level of anxiety during first stage of labour among pregnant women. Results: Analysis shows that the levels of anxiety during the pretest and posttest are compared to prove the effectiveness of music therapy. Significance of difference of level of anxiety at 5% level of significance is tested with paired `t` test. Also the calculated `p` values are compared with acceptable `p` value, i.e. 0.05. Mean pre test level of anxiety score was 1.56±0.50 in experimental group and 2.3±0.87 in control group, at post test in 1st three hours it was 3.36±0.71 in experimental group and 1.80±0.76 in control group, at post test in 2nd three hours it was 5.36±0.71 in experimental group and 1.46±0.57 in control group and at post test in 3rd three hours it was 6.63±0.71 in experimental group and 1.20±0.76 in control group. By using student's paired t test statistically significant difference was found in experimental group at post test in 1st three hours (t=13.80,p=0.0001), at post test in 2nd three hours (t=25.85,p-value=0.0001) and at post test in 3rd three hours (t=30.59,p-value=0.0001) which is highly significant and significant difference found in Control Group. Hence Music therapy is an effective for reducing the level of anxiety among pregnant women. Mean pre test level of anxiety score was 1.56±0.50 in experimental group and 2.3±0.87 in control group, at post test in 1st three hours it was 3.36±0.71 in experimental group and 1.80±0.76 in control group, at post test in 2nd three hours it was 5.36±0.71 in experimental group and 1.46±0.57 in control group and at post test in 3rd three hours it was 6.63±0.71 in experimental group and 1.20±0.76 in control group. Hence it interpreted that in experimental group in post test after administration of music therapy to pregnant women the level of anxiety reducing subsequent. Result shows there is association of level of anxiety with age, education, types of family, income per month. Interpretation and conclusion: The result of this study reveled that the most of the pregnant women had moderate anxiety before music therapy. After administration of music therapy there is reduction in anxiety level among pregnant women's. There was no association of anxiety score with their selected demographic variables.*

Keywords: asses, effectiveness, level of anxiety, music therapy, first stage of labour

1. Introduction

"One good thing about music when it hits feel no pain"-
Bob Marley

Labour is hard work but the work is not physical but also emotional. As woman birth their babies they are journeying through life changing right of passage into motherhood. At this time women is at her most powerful and her most vulnerable. However most of women experience a point in their labour where they feel out of control, frightened and overwhelmed.[1]

The patients in the Music group reported significantly lower anxiety levels as compared with the Control group. That was, the post intervention anxiety level of patients in the Music group decreased by 16% as compared with the pre intervention level, whereas the anxiety level of the Control group did not change significantly. The study was concluded; under the conditions of this study patients who listened to music before surgery were reported lower levels of state anxiety.[2]

The music therapy was significantly contributed for maternal and child health by facilitating the birth process during labour and delivery.

In study on effectiveness of child birth class in terms of anxiety response during first stage of labor and outcome of labor in terms of maternal and neonate. The finding of the study was breathing exercises, relaxation techniques and added knowledge of child birth shortened the duration of labour in experimental group. The study was concluded that child birth classes prepared primigravida women for the process of labour and conditioned them to relax and cope with anxiety.[10]

Need for the study

The birth environment affects woman's experience of pain and her ability to cope with anxiety during labour. A fearful woman can become tense often without her realization. Getting frightened or threatened during labour may adversely affects the child birth process.[1]

Music is a part of ayurveda holistic Indian science that promotes happy and healthy life styles. Music can touch the mother deeply and may reduce her anxiety, stress, and perception of pain. Music therapy assisted labour and delivery may also be included in this category since pregnancy is regarded as normal part of woman's life cycles. Therefore, nursing research in this area shed light on effective management of anxiety of mothers in labour and may hasten healthy maternal and fetal outcomes.[2]

The study was conducted on investigating effects of music therapy on anxiety during latent phase of labour. The finding of the study was showed that music helps to relieved anxiety in latent phase of labour among experimental group compared to control group. The study was concluded that music therapy was anxiolytic effect in the latent stage of labour.[13]

2. Review of Literature

Review of literature was carried out on recent and ongoing research relevant to the present study.

Written literature reviews are the critical summaries of what is known about a particular topic. The review serves as an integrative function and facilitates the accumulation of knowledge. Hence review of literature is important to a research in order to know what has been established and documented.[21]

It helps in the formulation of a specific problem, acquaints the investigator with what is already known in relation to the problem under review and provides a basis for assessing the feasibility of conducting research.

In the present study, the review of literature is organized under the following headings: -
1) Review of literature related to music therapy
2) Review of literature related to effect of music therapy on anxiety.

Hypothesis:

H_0: Music therapy will not have any effect on the level of anxiety during first stage of labour among pregnant women.
H_1: Music therapy will reduce the level of anxiety during first stage of labour among pregnant women

3. Methodology

Research approach: Quantitative research approach was used for the study

Research design: quasi experimental control group research design.

Variables under study:
- **Independent variable:** effectiveness of music therapy
- **Dependent variable:** level of anxiety

Accessible population- all women in labour during first stage from selected hospitals.

Sample and sampling technique
Sample: women in labour during first stage in selected hospitals.
Sample size: In present study sample size will be 60 samples.

Sampling technique: The sampling technique used in this study was non probability convenient sampling.

Inclusion criteria
1) Clients who understand, interpret and write Marathi and English.
2) Clients who is willing to participate.
3) Mothers who is primigravida.

Exclusion criteria
1) Mother who is having age of above 40 years.
2) Mother who is having the history of hysterical attack

Tool Preparation

Development of tool:
The investigator develops the tool after updating theoretical knowledge by reviewing relevant literature on women in labour during first stage.

Investigator had developed the tool with her own experience, theoretical knowledge and guidance from the expert along with the review of literature helped in the developing the necessary tool for the present study.

Observation checklist was developed for the study.

A observation checklist is used to effectiveness of music therapy on the level of anxiety during first stage of labour among pregnant women.

Description of Tools:
1) **Section A:** written consent
2) **Section B:** demographic data of mothers including age, education, type of family, income per month, types of hospital admitted.
3) **Section C:** Observational check list to assess the effectiveness of music therapy on the level of anxiety during first stage of labour among pregnant women. This is observation checklist which contains 10 items.

Tool Validity
Validity of tool will be done by 11 experts that are psychiatrist-1, psychologist-1, nursing faculty M.Sc. nursing in mental health nursing (psychiatric)-1, obstetrician-2, nursing faculty M.Sc. nursing in obstetric and gynecology -6.

After the primary validation of tool from 11 experts, final validation of tool is done by one senior nursing faculty M.Sc. nursing in obstetric and gynecology department.

Tool Reliability
Reliability will be done with split half method and calculating 'r' value by Cronbach's alpha formula and result of is Reliability = 0.89.

Pilot Study
A pilot study is a research study conducted before the intended study. Pilot studies are usually executed as planned for the intended study, but on a smaller scale. Although a pilot study cannot eliminate all systematic errors or unexpected problems, it reduces the likelihood of making a Type I or Type II error. Both types of errors make the main study a waste of effort, time, and money.

Plan for Data Analysis
Analysis is a process of organizing and synthesizing data in such a way that research questions can be answered and hypothesis tested"

4. Results

Section–I: Description of the pregnant women according to their demographic

Variables in Control and experimental Group.

Table 1: Percentage wise distribution of pregnant women according to their age, N = 30

Age in years	Control Group		Experimental Group	
	F	%	F	%
20 to 25 year	18	60	19	63.3
25 to 30year	12	40	10	33.3
30 to 35 year	00	00	01	3.3
35 to 40 year	00	00	00	00

The table 1 depicts that age wise distribution shows that 63.3% of the pregnant women in control group and 60% in experimental group were in the age of 20 - 25 years, 33.3% in control group and 40% in experimental group were in the age of 25 - 30 years respectively.

Table 2: Percentage wise distribution of pregnant women according to their Education, N = 30

Demographic Variables	Control Group		Experimental Group	
Education				
Primary	00	00	00	00
Secondary	3	10	04	13.4
Higher Secondary	13	43.3	13	43.3
Graduates	14	46.7	13	43.3
Any other specify	00	00	00	00

The table 2 depicts that Distribution of pregnant women according to their educational status reveals that 43.3% in experimental group and 43.3% in control group were higher secondary, whereas 46.7% in experimental group and 43.3 in control group were educated up to graduation.

Table 3: Percentage wise distribution of pregnant women according to their type of family

Demographic Variables	Control Group		Experimental Group	
Type of family				
Nuclear	20	66.7	18	60
Joint	10	33.3	12	40

The table 3 depicts that Distribution of pregnant women according to their type of family shows that 66.7% in experimental group and 60% in control group were belongs to nuclear family and 33.3% in experimental group and 40% in control group were belongs to joint family.

Table 4: Percentage wise distribution of pregnant women according to their Income per month

Demographic Variables	Control Group		Experimental Group	
Income per month in Rs.				
Below 5000 /-	1	3.3	00	00
5000-10,000/-	23	76.7	09	30
10000-15,000/-	6	20	21	70
15,000 and above/-	00	00	00	00

The table 4 depicts that Distribution of pregnant women according to their income per month shows that 76.7% in experimental group and 30% in control group were belongs to 5000 – 10000 /- per month income group and 20% in experimental group and 70% in control group were belongs to 10000 – 15000 /- per month income group.

Section II: Assessment of the Level of Anxiety among Pregnant Women in Control and Experimental Group

Table 5: Assessment of the level of anxiety among pregnant women in control and experimental group, n=30

Overall	Experimental Group			Control Group		
	Mean	SD	Mean Percentage	Mean	SD	Mean Percentage
Pre Test	1.56	0.50	15.66	2.3	0.87	23

Table no 5 shows that Mean and standard deviation in pre test level of anxiety score in experimental group was 1.56±0.50 and 2.3±0.87 in control group. Hence it is interpreted that in both group pregnant women was having anxiety.

Section III: Evaluation of the effect of music therapy on level of anxiety among pregnant women in experimental and control group

Table 6: Evaluate the effect of Music therapy on level of anxiety among pregnant women in Experimental and Control group
n=30

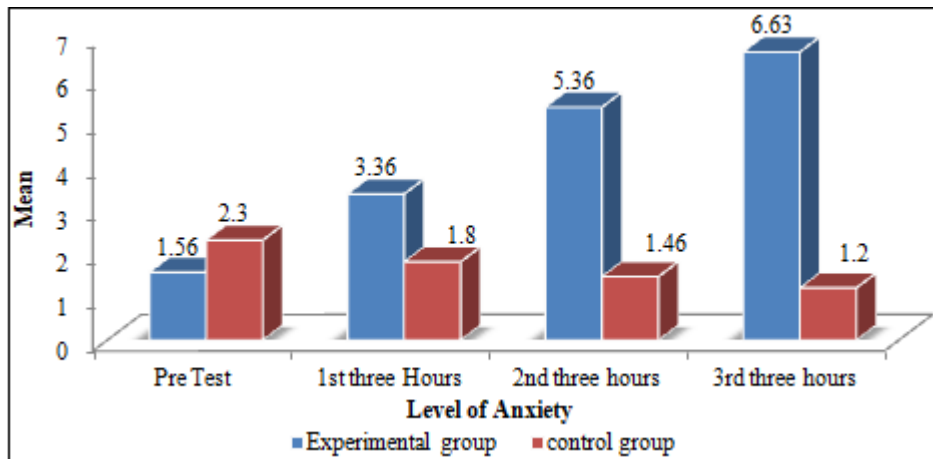| Overall	Experimental Group			Control Group		
	Mean	SD	t-value	Mean	SD	t-value
Pre Test	1.56	0.50	-	2.3	0.87	
1st three Hours	3.36	0.71	13.80 0.0001,HS	1.80	0.76	3.74 0.0001,S
2nd three hours	5.36	0.71	25.85 0.0001,HS	1.46	0.57	5.76 0.0001,S
3rd three hours	6.63	0.71	30.59 0.0001,HS	1.20	0.76	6.05 0.0001,S

*HS- Highly Significant, *S –Significant

Figure 5: Bar graph showing distribution of pregnant women with regards to mean of level of anxiety in pre and post test

Table no 6 depict that Mean pre test level of anxiety score was 1.56±0.50 in experimental group and 2.3±0.87 in control group, at post test in 1st three hours it was 3.36±0.71 in experimental group and 1.80±0.76 in control group, at post test in 2nd three hours it was 5.36±0.71 in experimental group and 1.46±0.57 in control group and at post test in 3rd three hours it was 6.63±0.71 in experimental group and 1.20±0.76 in control group.

By using student's paired t test statistically significant difference was found in experimental group at post test in 1st three hours (t=13.80,p=0.0001), at post test in 2nd three hours (t=25.85,p-value=0.0001) and at post test in 3rd three hours (t=30.59,p-value=0.0001) which is highly significant and significant difference found in Control Group. Hence Music therapy is an effective for reducing the level of anxiety among pregnant women.

Hence Null Hypothesis H_0 is rejected and H_1 is accepted.

Section IV: Compare the Level of Anxiety among Control Group and Experimental Group

Testing of hypothesis

Table 7: Compare the level of anxiety among control group and experimental group, N=30

Overall	Experimental Group		Control Group	
	Mean	SD	Mean	SD
Pre Test	1.56	0.50	2.3	0.87
1st three Hours	3.36	0.71	1.80	0.76
2nd three hours	5.36	0.71	1.46	0.57
3rd three hours	6.63	0.71	1.20	0.76

Table no 7 depict that Mean pre test level of anxiety score was 1.56±0.50 in experimental group and 2.3±0.87 in control group, at post test in 1st three hours it was 3.36±0.71 in experimental group and 1.80±0.76 in control group, at post test in 2nd three hours it was 5.36±0.71 in experimental group and 1.46±0.57 in control group and at post test in 3rd three hours it was 6.63±0.71 in experimental group and 1.20±0.76 in control group.

Hence it interpreted that in experimental group in post test after administration of music therapy to pregnant women the level of anxiety reducing subsequently. **Hence H_1 is Accepted**.

Section V: Association of Findings of Experimental Group with Selected Demographic Variables

Table 8: Association of Level of anxiety in relation to age, n=30

Age in years	Pregnant Women	Mean score	F-value	p-value
20 to 25 year	19	6.47±0.77		
25 to 30year	10	6.59±0.56	1.31	0.28 NS,p>0.05
30 to 35 year	01	7.00±0.00		
35 to 40 year	00	0.00±0.00		

This table shows the association of findings with age in years of pregnant women. The tabulated 'F' values was 1.31 which is much higher than the calculated 'F' i.e. 0.610 at 5% level of significance. Also the calculated 'p'=0.28 which was much higher than the acceptable level of significance i.e. 'p'=0.05. Hence it is interpreted that is not statistically associated with post test score.

Table 9: Association of Level of anxiety in relation to Education, n=10

Education	Pregnant Women	Mean score	f-value	p-value
Primary	00	0.00±0.00		
Secondary	04	6.75±0.50		
Higher Secondary	13	6.53±0.77	0.198	0.82 NS,p>0.05
Graduates	13	6.53±0.77		
Any other specify	00	0.00±0.00		

This table shows the association of findings with education. The tabulated 'f values was 0.198 and 'p'=0.82 which was much higher than the acceptable level of significance i.e. 'p'=0.05. Hence it is interpreted that education is not statistically associated with post test score

Table 10: Association of Level of anxiety in relation to Type of Family, n=30

Type of Family	Pregnant Women	Mean score	t-value	p-value
Nuclear	18	6.66±0.84	0.94	0.76 NS,p>0.05
Joint	12	6.58±0.51		

This table shows the association of findings with type of family. The tabulated 't' values was 0.94 and 'p'=0.76 which was much higher than the acceptable level of significance i.e. 'p'=0.05. Hence it is interpreted that type of

family of pregnant women is not statistically associated with post test score

Table 11: Association of Level of anxiety in relation to Income per month, n=30

Income per month	Pregnant Women	Mean score	F-value	p-value
Below 5000 /-	00	0.00±0.00		
5000-10,000/-	09	6.55±0.88	0.14	0.70 NS,p>0.05
10000-15,000/-	21	6.36±0.65		
15,000 and above/-	00	0.00±0.00		

This table shows the association of findings with income per month. The tabulated 'F' values was 0.14 and 'p'=0.70 which was much higher than the acceptable level of significance i.e. 'p'=0.05. Hence it is interpreted that income per month is not statistically associated with post test knowledge score.

5. Conclusion

The study was done to assess the Effectiveness of music therapy on the level of anxiety during first stage of labour among pregnant women in selected hospitals. The result of this study reveled that the most of the pregnant women had moderate anxiety before music therapy. After administration of music therapy there is reduction in anxiety level among pregnant women's. There was no association of anxiety score with their selected demographic variables.

6. Recommendations

The present study recommends the following.
1) A comparative study can be done in large sample between two different hospitals to evaluate the anxiety level of pregnant women.
2) A similar study can be replicated on a larger population.
3) A survey to assess the knowledge, belief and practices can be undertaken.
4) A study to find out the effect of nursing interventions.
5) A study to find out the effect of different teaching methods in reducing the anxiety in pregnant women.

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