CHAPTER 3

RESEARCH METHODOLOGY

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Aim

Aim: 'To Study the Effect of Music in Persons Suffering from Emotional Problems'

Objectives

1. To study whether Music plays a therapeutic role in patients suffering from depression.

2. To document the effect of *Hindustani* Classical (vocal and instrumental) Music on the psychological state of patients suffering from depression.

3. To document the effect of *Bhakti-Sangeet* on the psychological state of patients suffering from depression.

4. To document the effect of Film Music on the psychological state of patients suffering from depression.

Hypothesis

1. Music has a soothing effect on people in emotional distress *viz.* depression, sadness, despair, worries, tensions, etc.

2. *Hindustani* Classical (vocal and instrumental) Music may bring about variable effects on mood states of normal people as well as persons in emotional distress.

3. Responses on account of *Bhakti-Sangeet* may be variable in normative population as well as in people in emotional distress.

4. Responses on account of Film Music may be variable in normative population as well as in people in emotional distress.
Method and Material

Introductory

Sciences, in general, lay greater emphasis on method than results. A method is the way of approaching a problem. In order to find out the truth involved in a problem, certain steps must be taken in a certain order and the ordered steps are called 'Method'.

A case study is an in-depth comprehensive study of a person, a social group, an episode, a process, a situation, a program, a community, an institute or any other social unit. The Case Study approach is also flexible in character as researchers have complete independence in approaching the problem from any angle that they consider as desirable and fruit bearing from their point of view. The Case Study method describes a case in terms of its peculiarities. It gives an insight into the typical or extreme cases whose unique features are not reflected by the usual statistical method.

The Case Study method as a research method, often employs more techniques than one. Thus, for tracing a developmental process, it uses historical method, it employs interviewing mail, questionnaires, check-lists, rating scales, etc. to gather data, and looks to statistics for testing hypotheses.

The Case Study Method is considered to be the most appropriate method for the present research. Each case being unique, and having its own peculiarities, was studied separately. Responses of the patients to each piece of music were recorded in verbatim and analyzed. Use of the Case Study method gives ample opportunity to study the problem in depth and in a wider context; it is adequately and appropriately applied in the present study.
Research Design

Pre-pilot

A prerequisite for the research to commence was to identify an institute that would enable the researcher to collect data. This proved to be a daunting task, and the researcher had to go to great lengths to identify an institute and obtain permission for data collection. The Researcher approached a number of Psychiatrists and Psychologists in private clinics as well as in Government Institutions. The response was lukewarm and not forthcoming; nobody was keen to work in the field of Music Therapy and showed mistrust in the therapeutic aspects of music. These experiences were discouraging for the researcher and stood in stark contrast to the attitudes prevailing in the West, where Music Therapy is a recognized profession and Music Therapists are consciously working in different modalities. This research has seen the light of the day due to the unstinted support and cooperation of the Head of Psychiatry Department of a Government Hospital, in India.

Initially, the researcher was told to attend to patients in the out-patient-clinic (‘OPD’) of the Psychiatry Department to familiarize herself with the functioning of the department and its patients. From January 1998 through March 1998, the researcher attended the OPD, three days a week to get a feel of the Psychiatry Department. It was under the keen guidance of the head of Psychiatry department of a Government Hospital, in India, that the researcher could understand the fundamental aspects of depression and could structure and conduct interactive interviews with the depressed patients. The researcher had to study about the illness i.e. Depression, the depressed patient i.e. History of the illness, Symptoms of the illness and Psychology of the patients.

Music is an integral part of our lives. In India, the therapeutic effects of music are recognized, but as a discipline, it is yet to find a place alongside other recognized therapies. Developing the research design was the most important and challenging task. The inter-disciplinary approach of the research work called for a high degree of interaction with the research guides and other experts in fields of Musicology, Psychology and Psychiatry. The large number of consultations with them provided valuable knowledge for the development of the research methodology.
Pilot Study

The pilot study was carried out from April 1998 through October 1998, in which ten (10) patients of depression were studied with all possible details. The objective of conducting the pilot study was to clarify the doubts in the mind of the researcher and to develop and test the research design for the present research work.

The doubts that were sought to be clarified were:

1) Will the patients be willing to listen to music?

2) Will patients maintain follow-ups and what would be the feasible number of planned follow-ups?

3) What will be the effect of the selected music pieces?

4) What should be the sequence and duration of the music pieces?

5) What tool should be used to record responses?

The following were the findings of the pilot study:

1) Patients were agreeable to attend music therapy sessions;

2) Patients could maintain follow-ups once a week and 4-6 follow-up sessions would be feasible;

3) Classical music selected in Vilambit-Laya was not found suitable for the patients;

4) Bhakti-Sangeet was found to be the most effective type of music for the patients;

5) In case of Hindusthani Classical Music, both vocal and instrumental music pieces were found acceptable;

6) Some of the patients found film music undesirable; and

7) Interactive interviews with the patients proved to be an essential part of the research process.
In the pilot study, of a total of 20 patients that were enrolled, 10 patients chose to either discontinue, or were not regular in follow-ups. Of the remaining 10, 6 were given 10 music sessions each, 3 patients attended 4 sessions and 1 patient was given 15 music sessions. In the pilot study, patients were asked to attend music sessions twice a week.

After the pilot study was successfully conducted, the Research Design was developed. The Research design was subject to the approval of the Ethical Committee of the Medical College, hence the Research Design was submitted for their perusal. Permission was granted in November 1999 and the research work commenced in December 1999 and continued till December 2000.

The Study Proper

Method

Patients attending the out-patient-clinics (OPDs) of the Department of Psychiatry of a Government Hospital, in India constituted the universe. Annually, the OPD attends to approximately 4,000 new cases and 40,000 old or follow-up cases. Out of the total patients that attend, approximately 30% suffer from mood disorder of various categories.

At the Psychiatry Department, 2 units (known as units ‘A’ and ‘B’) run out-patient-clinics 3 days a week from 9 a.m. to 2 p.m. For the purpose of feasibility at various stages of data gathering, the researcher decided to work with the B unit.

In order to ensure adequate registration of subjects, the researcher attended all 3 OPD’s. At the OPD, 3 to 4 qualified psychiatrists acted as case identifiers. Inclusion & exclusion criteria were explained to them through personal discussions. The researcher used to meet them on every clinic day in the morning to serve as a reminder and to ensure steady referrals. Inclusion and exclusion criteria were as follows:
Inclusion Criteria

1. Patients of both genders >=18 years of age.

2. Patients suffering from clinically significant depression as assessed by trained psychiatrists.

Exclusion Criteria

1. Patients suffering from any other psychiatric disorder along with depression.

2. Patients whose depression is severe enough to warrant suicide prevention measures or whom the treating psychiatrist declares unfit to undertake treatments other than medical treatment.

3. Patients who report their non-preference to music as the therapeutic agent.

The patients satisfying all inclusion and exclusion criteria were enrolled in the research sample. Once the subjects were enrolled, the schedule of follow-up for Music Sessions was as given below: -

On Day ‘0’ each patient was informed about the nature of the sessions. The patient was allowed to familiarize with the sound proof room and to help gain an assurance about the safety in attending the sessions, a small piece of music was played on day ‘0’ to initiate the subject into the subsequent treatment program.

On Day ‘0’ the tools used were –

1. Background-Information-Proforma;

2. Check-list, and


Each enrolled patient was asked to attend at least 4 follow-up sessions from the schedule of 6 follow-up sessions. The schedule of music sessions is given in the Appendix.
Individual music sessions were conducted. Each patient was asked to sit in a chair in the sound proof room. Patients were given a set of headphones to listen to pre-recorded music pieces as per the schedule. At the same time, the researcher would sit and listen to the music pieces using a second set of headphones. In every session, after each piece of music, the responses of the patient were recorded in verbatim using semi-structured interview tool. The duration of each music session was of 40 minutes. Each music session was structured to include 10 minutes of vocal/instrumental Classical Music, followed by 5 minutes of Bhakti-Sangeet, and then by 5 minutes of Film Music. The balance time was spent in the patient’s interview and recording of the responses.

Sample

Subjects allotted by the qualified psychiatrists, as per the Inclusion and Exclusion criteria were enrolled. The subjects enrolled for the project were persons suffering from emotional problems and were categorized clinically as patients suffering from depression. All enrolled subjects showed clinically significant depression. Depression of the subjects was rated by using Hamilton Psychiatric Depression Rating Scale (HAM-D).

Depression

The word ‘depression’ is used in many ways to describe a mood, a symptom, a syndrome (or a collection of signs and symptoms) as well as a specific group of illnesses.

Reactive Depression is a term widely used to describe a depressive condition that arises in association with stressful experiences in a predisposed individual. Gutheil (1959), defines reactive depression as ‘an acute feeling of despondency and dysphoria of varying intensity and duration’.

Most of the enrolled patients in the present research were showing the ‘Reactive’ type of depression. It was observed that the life events and environmental stressors are relevant to the development of clinically significant depression. Some investigators have postulated that early childhood losses or separations actually sensitize neural receptor sites in the brain, thereby producing vulnerability to mood...
disorders in adulthood. Persons who grow up with that enhanced vulnerability may be highly sensitive to images or ideas linked to depressive states, so that an episode of depression may be precipitated without requiring a catastrophic external loss.

Anxiety and depression are inextricably linked. Depression has the anxiety embedded within it, anxiety is one of the most frequently occurring symptoms of depression and also among the most sensitive to improvement or deterioration of the depressive syndrome.

The duration of the core depressive symptoms is the key to diagnosis. If the individual has symptoms of depression, which persists for two weeks or more, the individual is likely to be suffering from depression, which fulfills the criteria to qualify as major depression.

**Symptoms of Depression - (Clinical Features)**

<table>
<thead>
<tr>
<th>#</th>
<th>Parameters</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mood</td>
<td>Sad, Unhappy, Blue, and Crying.</td>
</tr>
<tr>
<td>2</td>
<td>Thoughts</td>
<td>Pessimism, Ideas of guilt, Self-denigration, Loss of interest and motivation, Decrease in efficiency and concentration.</td>
</tr>
<tr>
<td>3</td>
<td>Behavior and Appearance</td>
<td>Neglect of personal appearance, Psychomotor retardation, Agitation.</td>
</tr>
<tr>
<td>4</td>
<td>Somatic</td>
<td>Loss of appetite, Loss of weight, Constipation, Poor sleep, Aches and pains, Menstrual changes, Loss of libido.</td>
</tr>
<tr>
<td>5</td>
<td>Anxiety Features</td>
<td>Tension, Uncertainty, Vague and non-specific fears, and a multitude concerns.</td>
</tr>
<tr>
<td>6</td>
<td>Suicidal behavior</td>
<td>Thoughts, Treats, and Attempts.</td>
</tr>
</tbody>
</table>

**Neuro-biological manifestations of depression**

Evidence indicates that regardless of initial triggers, the ‘final common pathway’ to depression involves a variety of changes in brain activity. Researchers have found that these changes in brain activity ultimately give rise to the symptoms of
depression, while they may vary among individuals (e.g., decreased activity of a specific neurotransmitter may lead to depression in one patient, just as overactivity of a hormonal system may lead to depression in another).

To understand the mechanisms behind clinical depression, it is important to know how neurotransmitters in the brain operate. The gaps between adjacent nerve cells are called synapses. Neurotransmitters, such as the Monoamines, Serotonin and Norepinephrine, control the transmission of biochemical signals from one neuron (the presynaptic cell) across the synapse to receptor molecules on the second neuron (the postsynaptic cell). The effect of a neurotransmitter is contingent upon the amount that is released by neurons, the amount of time the neurotransmitter spends in synapse, and the nature and strength of the receptor. The binding of the neurotransmitter to the postsynaptic cell elicits intracellular changes that stimulate or inhibit firing of "messages," which can relate to mood and other physical functions, to the rest of the brain.

**Therapeutic Agent**

The therapeutic agent used in the present research was Music. The types of Music that were used are:

1) *Hindustani* Classical Music; Vocal and Instrumental

2) *Bhakti-Sangeet*

3) Film Music

**Hindustani Classical Music**

*Ragas* selected in vocal and instrumental *Hindustani* Classical Music are:

1) *Lalat*

2) *Hausadhwani*
**Raga Lalat**

This is an early morning raga. *Raga Lalat* is a very pleasing and is also a very popular raga. *Lalat* belongs to Marava That. *Lalat* is a pre-dawn melody with both 'Madhyams' and soft-Komal 'Re' and 'Dha'. Traditionally, the mood of the raga is described as 'Lalitya', full of delicate romance and Bhakti.

**Raga Hansadhvani**

This is a delightful pentatonic raga, from the Carnatic (South Indian) Music System. *Hansadhvani* has become immensely popular among musicians of the North as well. *Hansadhvani* is played under Bilaval That. All swaras are shudha. This raga is sung during the first prahara of the night. Traditionally, the mood of the raga is described as 'Shringara' and this feeling signifies a desire to merge with the ultimate.

Bandishies (compositions) sets in Madhya Laya were selected for both the ragas. Bandishies composed in ragas Lalat and Hansadhvani rendered by renowned artists in vocal and instrumental Hindustani Classical Music were selected.

In vocal music, a renowned male and female artist each were selected. The instruments selected were Flute and Sitar. Instrumental music rendered on Flute and on Sitar by accomplished artists was selected.

**Criteria used for the selection of Ragas are as given below:**

1. Mood of the Ragas described traditionally and accepted by Musicologists.

2. Ragas well-known in normative population.

3. Availability of the cassettes for the same Ragas rendered by renowned male and a female artist in vocal Hindustani Classical Music and in instrumental Hindustani Classical Music on Flute and Sitar rendered by renowned artists.

**Bhakti- Sangeet and Film Music**

Both, Hindi and Marathi compositions were selected using identical criteria, with patients given the choice to opt for either Hindi or Marathi compositions.
Criteria used for selection of Bhakti-Sangeet and Film Music

1. Compositions based on Hindustani Raga-Sangeet.

2. Well-known compositions in normative population rendered by renowned male and female artists.

3. Compositions evoking different emotive components, viz. - Bhakti, Happiness, Love, and Despair.

In the present research work, 15 patients of depression were studied by using the Case-Study-Method. Each subject was called once a week for the session. To maintain consistency, and avoid bias, a fixed schedule for the sessions was devised.

The patients were enrolled as per the Inclusion and Exclusion criteria of the research study mentioned before. Based on the experiences and results of the pilot study, the research tools initially designed were restructured and fine tuned for use in the research work.

Tools that were used in the study are:

1. Check-List;

2. Background Information-Proforma;

3. Hamilton Psychiatric Rating Scale for Depression (HAM-D), and

4. Semi-structured interview.

The sample size of the study was forced to be restricted to a small number, mainly because of the requirement of continuous follow-ups; consistent and continuous follow ups were a prerequisite for the research to yield results. Though as many as 30 patients were initially enrolled for the study, about 50% dropped out; it was noticed that the significant factors that led to the drop-out rate were:
Patients were given medicines for a month, and there was therefore no need for them to visit the hospital until the medicines were exhausted.

Some of the patients could not afford the cost of commuting to the hospital or missing work to attend the sessions.

In the research work, out of these 15 subjects, 13 could maintain 4 follow-ups, one could maintain 3 follow-ups and one could maintain 2 follow-ups.

Tools
The tools that were used in the present research, are described as below:

1. **Background Information Proforma**
   
   This tool was used to gather demographic details, brief case history, diagnostic, and medical-prescription details of the patients. Tool was given on day '0' i.e. the day of registration or recruitment in the sample.

2. **Check-list**
   
   This tool was used to elicit preferences and proficiencies pertaining to music. The Check-list provided series of well-known factors related to prior exposure to music, which may have bearing on patient's response to music therapy that was enlisted. Simple Y/N dichotomous response was recorded. This tool was given on day '0'.

3. **Hamilton Psychiatric Rating Scale for Depression (HAM-D)**
   
   Depression of each patient was assessed with the help of HAM-D prior to the 1st session and at the time of each follow-up.

   HAM-D is one of the most widely used inventories for clinical research since the past few deeds. In the present research, this tool was used only for the selection of the subjects and the HAM-D score was not included for the analysis purpose.
4. Semi-structured Interview

The tool was used to elicit the effects of music on psychological state of the depressed patients. On the basis of the parameters of music and psychology, specific domains were devised to record the responses of the depressed patients to music.

A list of probes was pre-selected as a part of pre-pilot and pilot testing. Short and open-ended questions were included. Documentation was done in verbatim to ensure preservation of original data and codification at a later date at the time of analysis.

This tool was used at every session after each piece of music was played.

The tools used in the present research are given in the Appendix.

Comparison Groups:

In the present research two Comparison Groups were studied, are:

1) *Non-depressed Group* – Persons from normal population, not suffering from any type of illness.

2) *Depressed Group* - Depressed patients, on medication and not on any other supportive therapy including Music Therapy.

The recruitment of the subjects for both the Comparison Groups was done on the basis of age and gender criteria with respect to the subjects from the Study Group.

*The objectives behind the sample of the Comparison Groups were:*

1) Comparative study of the responses of the subjects from the Comparison Groups with the Study Group.

2) To study whether the responses of the normal people and of the depressed patients are variable to the music.
Tools given for Non-depressed group

1) Check-List

The subjects were called for the Music-Sessions once in a week. Schedule for the Music-Sessions was exactly the same as that was used for the subjects from the Study Group. Responses for each music piece were recorded for each subject.

From 15 subjects, 14 could maintain 4 follow-ups each and 1 could maintain 2 follow-ups.

Tools given for Depressed-Group

1) Check-List

2) Hamilton Psychiatric Depression Rating Scale (HAM-D)

Subjects from the group were interviewed once in a week. Subjective responses of the patients were recorded in order to study the psychological state of the patient.

Out of 20 enrolled subjects, 5 subjects could not maintain follow-ups. Of the remaining 15, 5 subjects could maintain 4 follow-ups, 2 could maintain 3 follow-ups and 3 could maintain 3 follow-ups each.

As the dropout rate of the depressed patients was about 50%, subjects for the Depressed-Group could not be recruited at the time of the recruitment of the subjects for the Study Group.