CHAPTER - 4
A LOOK AT THE LITERATURE- MIRROR IMAGE OF THE TRUTH
4.1 Music Therapy works in India

Though there are efforts in employing Music Therapy in India, it is yet in the budding stage. There is no scientifically documented material available pertaining to the therapeutic effect which would stand as a guide to the present research. As the development of music therapy branch is at its very initial stage, a qualitative and systematic documentation of the data will be an added advantage for further studies and its implementation in this field. As such an extensive research is necessary to ensure the successful application of music as a therapy in practice. Now let’s just have a look at the historical and recent works done in music therapy in India:

**HISTORIC WORKS**

**RECENT WORKS**

**MUSIC THERAPY FOR DIFFERENT AILMENTS IN INDIA**
Historic Works

During the ancient times efforts were made in studying the sound and its effects as given below:

1. Immanent sound in the human body is grouped into 5 types on the basis of its quality of development from the root of the naval to the cerebrum and the buckle cavity of the mouth through the heart and the throat. Matang Muni and Pandit Sharangdev regard them as shown in the following table:

Table no: 09
Immanent sounds in the human body according to Matang Muni and Sharangdev

<table>
<thead>
<tr>
<th>S.NO</th>
<th>LOCUS</th>
<th>MATANG MUNI</th>
<th>SHARANGDEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>NAVAL (NABHI)</td>
<td>SUBTLE</td>
<td>VERY SUBTLE (ATISUKSHAM)</td>
</tr>
<tr>
<td>2.</td>
<td>HEART (HRIDAYA)</td>
<td>VERY SUBTLE</td>
<td>SUBTLE (SUKSHAM)</td>
</tr>
<tr>
<td>3.</td>
<td>THROAT (KANTHA)</td>
<td>MANIFEST (ATIVYAKTA)</td>
<td>GRAVE (PUSHTA)</td>
</tr>
<tr>
<td>4.</td>
<td>PALATE (MOORDHA)</td>
<td>UNMANIFEST (AVYAKTA)</td>
<td>SHRILL (APUSHTA)</td>
</tr>
<tr>
<td>5.</td>
<td>MOUTH (ASYA)</td>
<td>ARTIFICIAL</td>
<td>ARTIFICIAL</td>
</tr>
</tbody>
</table>
2. Pandit Sharangdeva (1896) in Sangeet- Ratnakar has given a chart which correlates 22 shrutis with the 22 nadi.

Table no: 10
Chart of 22 shrutis with the 22 nadi

<table>
<thead>
<tr>
<th>S.NO</th>
<th>PLACE OF PRONOUNCIATION</th>
<th>NO OF NADIS ATTACHED</th>
<th>NAME OF THE NOTE PRODUCED</th>
<th>NO OF SHRUTIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Throat</td>
<td>4</td>
<td>Shadja</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>Root of the Palate</td>
<td>3</td>
<td>Rishabh</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>Lips</td>
<td>2</td>
<td>Gandhara</td>
<td>2</td>
</tr>
<tr>
<td>4.</td>
<td>The centre of cerebrum</td>
<td>4</td>
<td>Madhyam</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>Teeth, throat, cerebrum, Palate and lips</td>
<td>4</td>
<td>Pancham</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>Throat and palate</td>
<td>3</td>
<td>Dhaivata</td>
<td>3</td>
</tr>
<tr>
<td>7.</td>
<td>Throat and lips</td>
<td>2</td>
<td>Nishadh</td>
<td>2</td>
</tr>
</tbody>
</table>

3. In Brihaddeshi, Pandit Ahobal has described the relationship of 22 shrutis of the Indian music to 22 veins of the human body. Similarly, the natures of vat, pitta and kafh have been assigned to various ragas. Since the ragas have different nature and because of this peculiarity in the nature they have been classified into 3 groups Vat,
Pitta and Kafh. The effects of these ragas on the human body are apparently noted. Thus a particular raga can be used as an antidote for the disease caused by Vat, Pitta and Kafh.

4. In ‘Sangeet Makarand’ Narad has quoted that Sampurna Ragas (having seven notes) should be sung for the benefit of long life, Dharma, strength, wisdom, wealth, good harvest, grains, profits, prosperity and children. Shadav Ragas (having six notes) are beneficial in conquering battles, attaining beauty, youth and charm. Audav Ragas (having five notes) are useful for curing diseases, winning over enemies, overcoming fears, ills, sickness and bad health. Audav Ragas are also powerful for observing ceremonies and for good-will and prosperity of the community.

Recent Works

1. In 1933, when the Italian dictator Mussolini was terribly suffering from Insomnia, no medicine or therapeutic mode could help him get sleep. Pt Omkarnath Thakur, a great musician was visiting Europe around that time. When he heard of Mussolini’s affliction, he agreed to perform remedial musical programme to allay the latter’s suffering. His performance of the Raga puriya indeed worked magically and Mussolini went into deep sleep within half an hour.

2. According to B.C.Deva (1967) rhythm plays an important role in the human life. Regularity is the order of the nature. The planets move around the sun in regularity. They also move around their own axis in regularity. Rhythm patterns affect the
human mind. The slow motion of the rhythm and tempo creates calmness and balanced attitude of mind, whereas fast motions can instill the feelings of bravery, excitement and courage etc.

3. Pandit Nasiruddin Khan Saheb sang raga Lalit for many months to a TB patient in Indore in the early 50’s and finally cured him. Since then, he has been a firm believer in music therapy and has prescribed ragas Todi, Bhatiyar, Bhairav and Bhairavi, for treating chronic diseases.

4. The scientific work of Jagdish Chandra Bose on the effect of music on the growth of plants seems to have had a recent sequel in the researches of Shri Pandurang Shastri Deshpande in Pune who exposed plants to the music of 6 maestros and found that those plants exposed to Pandit Abdul Karim Khan’s Raga Bhairavi showed maximum growth.

5. It has been reported by Tiwari (1980) that Pandit Omkarnath Thakur studied the effect of music by rendering of the Raga Bhairavi on violin on a fierce lion in a zoo. It was found that the lion lost his fiercefulness and became normal as a result of the effect of the Raga Bhairavi. He also states that Horses and Camels when moving in a column in the army or elsewhere have been found to be more disciplined while the music is being played.
6. Dr Trina Purohit Roy, whose 14-year-old son was an invalid for years, Roy tried all kinds of treatment in Germany and when the doctors there and here had given up on him, she turned to Ustad Aminuddin Dagar. He sang Bhairavi at a stretch for a month and the boy would remain absolutely still during the recital. There was almost a spiritual quality to these sessions and it was astonishing for doctors to find that he slowly regained the movement of his limbs and started moving. So impressed was Roy with the results that she set up an institute of music therapy in Bonn and Shantiniketan.

7. The late sitar maestro Pt. Nikhil Bandhopadhyay during his stay with Acharya Baba Alauddin Khan, awoke one night to the sound of the Acharya's riyaz and was astounded to find the courtyard filled with venomous serpents calmly enjoying the vibrations of the music. Along came deer and other animals drawn to the hypnotic serenity of the music, and Bandhopadhyay later thought: `If Hindustani classical music can tame the wildest of animals, it can definitely tame our minds.'

8. Dr. Balaji Tambe (1994) had used music therapy as an integral treatment of the holistic health therapy with a combination of Ayurveda, Yoga and spiritualism, along with a simple food and living style. Research was carried out by playing specific ragas from Hindustani classical music for certain diseases and they proved effective in curing the ailments ranging from ordinary stomach ache to menstrual disorders and serious maladies like schizophrenia and epilepsy. According to him, music worked quickly on the hormone system and cured the disease.
9. Dr. Poornima Patwardhan (2000) reports that Psychologist Ghanshyamdas has described the therapeutic effect of music in his book ‘Bhartiya Sangeet Vigyan’. He has described prakrutis for each swara on the principle of Ayurveda, as were described in the ‘Sangeet Parijat’. According to the vadi swara of a raga he has prescribed a raga for a specific ailment. In his book he has said that Raga Bibhas is useful in lowering the strength and the Raga pilu is useful to increase the strength of an individual.

Music therapy for different Ailments in India

Music Therapy for Mentally Retarded:

1. Dr. Bhattacharya (1970) of the M.S. University, Baroda used various Ragas like the Bihag, Lalit and the rags Jaijaivanti for the cure of mentally retarded and mentally ill. Institutionalized 50 persons who were aggressive, depressed, worried, slow-learners etc. and he found that these ragas had beneficial effect on the experimental subjects.

2. Dr. Bagga reported a study made in Ratnagiri in (1979). Using the instruments found in the hospital, bhajans were conducted every thursday. About 60 to 70 patients participated and their behavior was observed by 4-5 attendants. Among the bhajan singers there was a marked fall in the length of hospitalization. Withdrawn and asocial patients began to attend voluntarily; mute patients joined in the chorus after 4 or 5 sessions. Aggressive sang or kept time loudly but post bhajan they became less aggressive and anxious patients reported significant reduction in anxiety level.
Overall all the patients, even chronic ones seemed to enjoy the sessions. A positive change in concentration and attention span was also noted in the patients.

3. Manorama Sharma (1996) studied the effects of music on mentally handicapped students. The study titled ‘Effect of music education on school achievement and adjustment of mentally handicapped children in Himachal Pradesh’ was undertaken in Shimla, Himachal Pradesh. Music was administered in the form of either classical music or folk music to the mentally handicapped students under the experiment. The students having music education exhibited better performance than the students who did not have music education. It was observed under the study that the students receiving music education showed significant improvement in their behavior to their classmates as compared to those students who had no music education. Students having music education exhibited better sociability, co-operation and group awareness.

**Music Therapy for Cancer:**

1. Dr. Sundar. Gujral reported a focused study on terminally ill patients in a hospice. Her sample at Delhi’s Shanti Avedhna Ashram of Cancer Patients awaiting death totaled 5. Cassettes chosen by the patients were played for 15 minutes stretches at twice during the day at times chosen by the each patient. 3 of the patients had been showing greater disturbance about their approaching end than the other 2, but all the 5 patients wanted music to be played. Caregivers at the hospice and the family reported
that the disturbed patients became more calm and co-operative and the rest also stayed calm, peaceful and co-operative.

4.2 Music Therapy works in Western Countries

At present in the west Music Therapy is at its advance state and is being employed successfully in medical profession. So study of the evolution of Music Therapy in west is I, Feel, will be more helpful for my research work.

The idea of music as a healing influence which could affect health and behavior is as least as old as the writings of Aristotle and Plato. The 20th century discipline began after World War I and World War II when community musicians of all types, both amateur and professional, went to veterans hospitals around the country to play for the thousands of veterans suffering both physical and emotional trauma from the wars. The patient’s notable physical and emotional responses to music led the doctors and the nurses to request the hiring of musicians by the hospitals. It was soon evident that the hospital musicians needed some prior training before the facility and so the demand grew for a college curriculum.

The ‘AMERICAN MUSIC THERAPY ASSOCIATION’ was founded in 1998 as a union of the National Association for Music Therapy founded in 1950 and The American Association for Music Therapy founded in 1971. Numerous other national and international organizations exist, such as the Nordoff-Robbins Center for Music Therapy and The Bonny Institute for Music Therapy etc. In the United States, a music therapist is
most commonly designated by MT-BC (Music Therapist, Board-Certified). A music therapist with only this designation has a bachelor's in music therapy and is trained in the specific use of music therapy techniques as an adjunctive/augmentative therapy, complementing the work of other practitioners from different disciplines such as social work, speech/language, medicine, nursing, education, and so forth.

A music therapist may have different credentials or professional licenses and may also have a master's degree in music therapy or in another clinical field (social work, mental health counseling, or the like). Some practicing music therapists have held Ph.D.s in non-music-therapy (but related) areas, but more recently Temple University founded a true music therapy Ph.D. programme. A music therapist will typically practice in a manner that incorporates music therapy techniques with broader clinical practices such as assessment, diagnosis, psychotherapy, rehabilitation, and other practices. Music therapy services rendered within the context of a social service, educational, or healthcare agency are reimbursable by insurance and sources of funding for individuals with certain needs. Music therapy services have been identified as reimbursable under Medicaid, Medicare, Private insurance plans and other services such as state departments and government programmes.

The first Music Therapy degree programme in the world was founded at the ‘MICHIGAN STATE UNIVERSITY’ in 1944.
Since 1994, Music Therapy has been identified as a reimbursable service under benefits for ‘PARTIAL HOSPITALIZATION PROGRAMMES (PHP).

Falling under the heading of Activity Therapy, the interventions cannot be purely recreational or diversionary in nature and must be individualized and based on goals specified in the treatment plan.

A deep study of the step by step development of Music Therapy in Western countries is necessary to get guidelines for my finding out potentials in Indian Music.

Music therapy for different Ailments in Western Countries

Music Therapy for Blood-Pressure:

1. An experimental study was conducted in Italy to examine the anti-high BP impact of music listening on ambulatory BP. Subjects (n=48) were assigned into experimental group and control group and 30 minute music therapy (classic, Celtic, raga music) were given to experimental group. The results revealed a significant reduction in systolic BP in those patients who had been listening to music daily.

2. A prospective, quasi-experimental study was conducted in Orlando to investigate the effect of music intervention on BP, heart rate and noise annoyance. 40 subjects were assigned and music was played intermittently to the members of experimental group for 15 minutes during the first postoperative day. The results showed that the
subjects’ systolic BP, heart rate and noise annoyance decreased during the music intervention than at baseline and diastolic BP decreased during time two. It supports the fact that music intervention decrease heart rate and BP.

3. An experimental study was conducted in Germany to examine the effect of music therapy on heart rate variability in hypertensive patients. The intervention was specially made music for 4 weeks, 5 days per week, once daily for 30 minutes for subjects (n=32) aged 30-78 years. Result showed significant effect (size=1.3 SD) of receptive music therapy on the hypertensive patients.

Music Therapy for premature Babies:

1. Janel Caine (1991), Florida state Hospital studied the effects of music on selected stress behaviors, weigh, caloric and formula intake and length of hospital stay of premature and low birth weight in a newborn intensive care unit. Subjects were 11 male and 15 females’ preterm and low birth weight newborns and matched controls in a newborn intensive care unit (NBICU) who were in stable condition and restricted to isolates. Controls received routine auditory stimulation consisting of approximately 60 minutes of tape recorded vocal music including lullabies and children’s music and routine auditory stimulation. 30 minutes of segments of the recording were played alternatively with 30 minutes of routine auditory stimulation, 3 times daily. Music stimulation may have significantly reduced initial weight loss, length of the NBICU and total hospital stays and daily group mean of stress behaviors for the experimental subjects.
Music Therapy for Stress Relief:

1. One recent study conducted at the Day Surgery Unit of St. Mary’s Hospital, Mequon, Wisconsin, USA (2007) on the response of the adrenal cortex to the stress of receiving information about a surgery to be performed the following day was studied in 34 patients by monitoring changes in their salivary cortisol levels. 18 of those patients were subjected to an individually selected one hour musical programme, applied immediately following receipt of the information and the remaining 16 patients formed a reference group. Another 10 patients, not awaiting surgery served as the control group. Saliva was sampled before the stress and 5 more samples were collected at 15 minutes intervals. The stress produced a 50% rise in salivary cortisol within 15 minutes. Whilst the cortisol levels of those patients not exposed to music gradually decreased, after one hour they were still markedly higher than the initial level. However those patients in the music group showed a marked reduction in the salivary cortisol level and after one hour the relative decrease was similar to that observed in the control group. The results therefore show that music therapy can have a significant beneficial effect on alleviating stress levels for patients who are given distressing information about imminently required surgery. The study suggests that those in authority should consider introducing relaxing music into the cold, silent corridors and waiting rooms of hospitals and health clinics.

Music Therapy for Alzheimer’s disease:

1. Dr Ardash Kumar and his colleagues at the University of Miami School of medicine (Florida) 1999, reported that the Alzheimer’s patients underwent music therapy for
30-40 minutes, five days a week for a month. Their blood samples were taken before the first session, at the end of the four weeks of therapy, and six weeks after the study’s conclusion. The levels of melatonin, norepinephrine, epinephrine, serotonin and prolactin were checked. These brain chemicals are known to affect the mental state of human beings. They found that melatonin, epinephrine and norepinephrine blood levels had raised significantly by the end of the 4th week therapy programme. Moreover, melatonin levels remained high six weeks after the therapy programme had stopped. Epinephrine and norepinephrine levels, by that time, had returned to their original readings. Serotonin and prolactin were not affected by the music therapy. In addition to the hormonal changes, the patients in the study also became more active and co-operative and slept better.

**Music Therapy for Depression:**

1. One research at the Stanford University School of Medicine indicates that for 20 men and women whose ages ranged between 61 to 86, mood rose and depression fell when they listened to familiar music they selected while practicing various stress reduction technique on their own or with the help of a music therapist. On the other hand a control group who missed out on the music and the exercises saw no improvement during the 8-week study period.

2. Researchers at the Stanford University School of medicine, USA monitored 30 old adults who had been diagnosed with major and minor depressive disorder.
participants were randomly assigned to one of three 8 week conditions: a) a home-based programme where participants learned music listening stress reduction techniques at weekly home visits by a music therapist. b) a self administered programme where the participants applied these same techniques with moderate therapist intervention involving a weekly telephonic call. c) those put on a waiting list and used as a control. The results showed that the participants in both music conditions performed significantly better than the controls on standardized tests of depression, distress, self-esteem and mood. These improvements were clinically significant and the researchers noted that these benefits were maintained over a 9 month follow up period. Therefore they concluded that there was a great potential for music therapy as a beneficial intervention especially for homebound elderly people and others who have limited access to health care professionals.

**Music Therapy for Insomnia:**

1. A research at the University of Louisville School of Nursing, Kentucky indicates that 24 out of 25 people with sleeping problems nod off more quickly, snooze for longer period of time or get back to sleep more easily after a middle-of-the-night awakening after listening to classical music.

**Music Therapy for anxiety:**

1. Researchers at the Bryan Memorial Hospital, Lincoln, USA recently investigated the influence of music therapy on mood and anxiety of patients undergoing heart surgery. 96 patients who underwent elective, heart bypass surgery at the cardiovascular
intensive care and progressive care units participated in the study. The mean age of the patients was 67 years, with an age range of 37 to 84 years. 68% of the patients were men and 32% were women. Physiological data relating to anxiety and mood was obtained through blood pressure and heart rate and through the patient’s own verbal ratings of their moods and anxiety levels was taken using a numeric rating scale. The patients were randomly assigned to one of three groups. a) music therapy b) music-video therapy c) scheduled rest group. The study revealed that the patients mood rating showed significant improvement in mood among those patients who were in the music therapy group after the second intervention. However no significant differences were reported for anxiety ratings as measured by the NRS and state anxiety instruments. Reduced anxiety and improved mood were observed in all the three groups and the researchers noted that all of the interventions demonstrated a generalized relaxation.

**Music Therapy for post-operative pain:**

1. In USA, a study conducted on 150 nervous anxiety patients revealed interesting conclusions. The group had been divided into three of which 50 were on medication and professional help, 50 were exposed to medication and music and the remaining 50 received neither medication nor music. What emerged in the initial stage (first three months), was that the first group responded most positively to the treatment, while the second group's progress was slower. However, over a period of time, the first group's progress stabilized and they didn't make any significant improvement
thereafter. The second group continued to make regular, sustained progress and showed greater overall improvement. For, besides having a curative effect, music also has a preventive effect in terms of relaxing patients and keeping psychological problems at bay.

2. An experimental study conducted at the Case Western Reserve University, Cleveland, compared the effects of jaw relaxation and music, individually and combined, on sensory and affective pain following surgery. Eighty four patients who had undergone abdominal surgery were randomly assigned to four groups: relaxation, music, a combination of relaxation and music, and control. Interventions were taught to the patients before their operations and used by them as soon as they were awake and able to move following surgery. Indicators of the sensory component of pain were sensation and the patients’ requirement for analgesic medications over a twenty four hour period. Whilst the researchers observed that none of the interventions were effective at reducing pain, during the first movement following surgery, after keeping the taped interventions for two postoperative days, 89% of the patients reported them helpful for alleviation of the sensation and distress of pain.

3. One study conducted at the Day Surgery Unit of St Mary’s Hospital, Mequon, Wisconsin, USA investigated the role that music therapy might play in a postoperative setting for ambulatory patients. Forty two ambulatory surgery patients were assigned to either an experimental group to receive music therapy along with the
standard preoperative instructions or a control group to receive the standard preoperative instruction alone. Heart rate, blood pressure and respiratory rates were used as measurements of anxiety and physical stress. The only difference in the two groups was that the patients in the experimental group were allowed to listen to the music of their choice prior to surgery. The results revealed that the patients in the experimental group showed significantly lower heart rates compared to the patients in the control group. The experimental group also showed greater improvements in blood pressure and respiration rate. The researchers concluded that music therapy offers demonstrable benefits for ambulatory surgery patients and they recommend that the patients should be offered music as an effective option to help alleviate postoperative anxiety.

4. One study by Nilsson, Unosson and Rawal, 75 patients undergoing open hernia repair as day care surgery were randomly allocated to 3 groups: intra-operative music, post-operative and silence (control group). Anesthesia and postoperative analgesia were standardized and the same surgeon performed all the operations. Stress response was assessed during and after surgery by determining the plasma cortical and blood glucose levels. Immune function was evaluated by studying immunoglobulin-A (IgA) levels. Patient’s postoperative pain, anxiety, blood-pressure (BP), heart rate (HR) and oxygen saturation were also studied as stress markers. The results indicated that there was a significantly greater decrease in the level of cortisol in the post-operative music group vs. the control group. The post operative music group had less anxiety and pain
and required less morphine after 1 hour compared with the control group. In the postoperative music group the total requirement of morphine was significantly lower than in the control group. The intra operative music group reported less pain after 1 hour in the post anesthesia care unit. There was no difference in immunoglobulin-A, Blood glucose, BP, HR and oxygen saturation between the 2 groups. This study strongly suggested that the intra operative music may decrease post operative pain and that post operative music therapy may reduce anxiety, pain and morphine consumption.