Review of Literature Relating to Music Therapy Studies in India and in the West
CHAPTER 3

REVIEW OF LITERATURE RELATING TO MUSIC THERAPY STUDIES IN INDIA AND WEST

3.1 JOURNEY THROUGH AN UNEXPLORED JUNGLE

MT being still an unexplored area in Indian context, the pathway to the broad area at the initial stage of the research "Music therapy with cancer patients" the researcher chose was like an unexplored jungle expedition and was highly challenging. Review of literature became difficult, as literally no scientific work had been done so far in the oncology area on music therapy and only very few systematic studies scientifically validated the therapeutic effects of music in clinical arena in the Indian context. There was no direction in any way as far as the procedures or methods and specific tools to assess the benefits, with which studies could be conducted. There were lots of CDs, articles and books available in the commercial market advocating specific raga-s for specific ailments without any theoretical background upon which, such categorizations could be explained. However, the researcher resorted to searching the literature in a wider perspective and review whatever clinical work was available in Indian context and not restricting only to literature relating to oncology and MT. With regard to cross-cultural studies, only relevant studies were taken for review.
3.2 LITERATURE SEARCH STRATEGY

Research evidence from the years 1964 – 2003 from CD-ROM, Second Edition of Music Therapy Research, Quantitative and Qualitative Foundations of three American journals namely, Journal of Music Therapy, Music Therapy and Music Therapy Perspectives published by the American Music Therapy Association, Inc., on line e journal, musictherapytoday published by musictherapyworld.net from University Witten, Germany and “Voices” – an e journal, published by GAMUT (The Grieg Academy Music Therapy Research Centre)/University of Bergen in affiliation with Nordic Journal of Music Therapy and in collaboration with World Federation of Music Therapy were used as major references for cross cultural studies. Articles were searched by computerized search of data base of musictherapytoday journal and also using MEDLINE data base by using search word like

1) Cancer pain
2) Cancer pain and symptom management
3) Cancer pain and QOL
4) Cancer pain and fatigue
5) Cancer pain and anxiety
6) Cancer pain and sleep quality
7) Music therapy and cancer
8) Music therapy and/in oncology and
9) Music therapy and cancer pain
As research in this area is not represented fully in publications and in the absence of a professional journal for MT in India, a systematic research could not help much and lots of unsystematic searches for any material available in this field were carried out. Research articles from Journal of Madras Music Academy, Journal of Sangeet Natak Academy and Journal of Indian Musicological Society were searched. Also, Apart from the available primary, secondary and tertiary sources of literature taken for review, the papers presented during National Conferences and an International Conference on Music Therapy were also taken for review.

The review presented has been classified under the following categories

1. MT in India
2. Gate Control Theory of Pain
3. Cancer pain and its functional symptoms
4. MT for cancer related pain

3.3 MUSIC THERAPY IN INDIA

Most of the articles published in music journals, gave only a background for testing the therapeutic effects of Indian music, which caused some speculative interest in the medical field and nothing more.

(Sairam, 2006) in his study on designing training methods for the mentally retarded (MR) children prescribed baseline rules for treating MR children as – (1) Beta music with rapid fire orchestral rhythms to activate
participation and anger management, to gear up physiological activities and
alertness in mind. (2) Alpha music without rhythms to induce relaxation and
(3) repeated rhythmic experience to regulate the wavering emotions and to
bring regularity by his experimental observations during music therapy
sessions with mentally retarded children.

Neha (2003) used a pre and post test design with an experimental
group receiving classical music as intervention (specific ragas like Ahir
Bharav, Darbari Kannada and Bageshri) and a control group not receiving any
music intervention reported that Raga Ahir Bhairav helped in the reduction of
blood pressure and improved QOL, Raga Darbari Kanada helped in reducing
frequency of inhaler use in asthmatics and Raga Bageshri reduced crying
spells with patients having Mixed Anxiety Depression Syndrome.

In a case study in a palliative care set up by Gujral, listening to music
exerted positive effects on the minds of terminally ill cancer patients in terms
of their emotional behaviour, physical discomforts and social interactions
Gujral (2003).

Purnima Pujare (2002) resorted to case study design using pre
recorded music developed on the basis of a comprehensive pilot study (Hindustani Classical - vocal and instrumental) and conducted individual
music sessions to two groups 1) depressed group and 2) non-depressed group
and reported that music had therapeutic effect on clinically depressed
patients.
Further, according to Subramanyam (2002) and Sairam (2002), there are references and suggestions to specific raga-s having therapeutic effect on specific diseases. All these studies gave an initial understanding to the researcher that music was tried as a therapeutic medium in clinical settings in Indian context.

Mamta Sharma (2000) examined the relaxation effect of music and biofeedback on the persons having different levels of musicality, extraversion and neuroticism and indicated that instrumental music treatment has an edge over biofeedback treatment irrespective of the personality patterns of the subjects.

Manorama Sharma (1996) reported by a pioneering study entitled “Effect of music education on school achievement and adjustment of mentally handicapped children in Himachal Pradesh” in a special education set up by using pre and post test design, the effect of music education in the form of listening and participation in the music programmes arranged in the class on regular basis and also compared the effect of two types of music – classical, folk and popular music by using Alexander passalong test and the school adjustment inventory developed by M.N. Bhagia. The study indicated significant improvement in the school achievement and adjustment of the mentally handicapped children. Also the group, which received folk-popular songs as music education, exhibited better adjustment in the school than the group receiving music education as classical songs.

One of the earliest reported systematic study conducted with an experimental and control group on the therapeutic usefulness of music was
by T. Mythily (1994) who adopted an experimental approach with pre
and post test design and reported that Classical music coupled with relaxation
training improved classroom and addressed behaviour problems of school
children.

Khumar and Kaur (1992) investigated by a single case study, tested the
efficacy of instrumental music for treatment of insomnia and found the results
to be negative.

Deva & Virmani (1974) studied the psychological response to raga-s
to compare the mood created with the mood intended by the raga-s used as
stimuli by semantic differential technique and factor analysis and indicated
that the mood created matched the mood intended by the musical
compositions in Hindustani raga Bhairav which meant empathy, compassion,
vital, positive, courageous and tranquility.

But all the studies had an assumption that classical music and raga-s
have therapeutic effects generally. The role of culture, the musical
preferences, the likes and dislikes of the subjects and the basis for selection of
classical music were not explained. The reported studies were sometimes,
case studies or anecdotal experiences and sometimes involving only
experimental groups and no control groups from which the generalization of
the results were difficult. Most of the articles except a few clearly indicated
the methodology adopted and the procedures clearly.
3.4 MUSIC THERAPY STUDIES ABROAD

3.4.1 Gate Control Theory of Pain

Pain is a complex phenomenon and is multidimensional. It is physiological (functional), pathological (organic) and neuropathic. Twycross (1994). International Association for the Study of Pain defines pain as “Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage (IASP, 1986). The perception of pain is influenced by mental as well as physical factors and it is important to address both areas Standley (1986); Sarafino (1997); Gfeller (1999). Further studies and researches have established that emotional and cognitive factors contribute to the severity of perceived pain. Sarafino (1997) Anxiety and tension, fear and perceived loss of control can accompany and exacerbate feelings of distress and pain. These negative emotions can lead to increased muscle tension, which, in turn, can create greater pressure on already sensitive nerve endings. Gfeller (1999).

Many aspects of pain perception can be explained by a principle called Gate Control Theory of Pain by Melzack & Wall(1965) which also provides a theoretical basis for music therapy studies. The theory proposed as quoted by Whipple (1992) that there exists a gating mechanism in the nervous system that blocks the entry of pain sensation at the level of the spinal cord, specifically in the substantia gelatinosa of the dorsal horn. This gating system can increase or decrease the flow of nerve impulses from noxious simulation of peripheral fibers to the central nervous system and includes brain processes that exert descending control over sensory input at the level of the spinal cord.
The extent to which the gate is open or closed depends on 10 the amount of noxious stimulation (1) the more pain, the more active the pain fibers, (2) the amount of sensation in other peripheral fibers (competing stimuli such as massage or rubbing), and (3) the messages that descend from the brain (e.g., the effects of some brain processes such as anxiety or excitement can open or close the gate for all or some types of inputs. Gieller (1999).

Figure 2 Gate Control Theory of Pain

(Adapted from Annamalai University, Distance Education Study material for MA Applied Psychology, 2002)
3.4.2 CANCER PAIN

Pain experienced by HNC patients in advanced stage disease, present both before and after the treatment was a major problem and was to be addressed in order to improve their QOL by multidisciplinary approach. Onakaya (2006). Radiation therapy treatment caused tissue destruction and functional alterations in the oral cavity, which led to the development of painful oral mucositis in oral cancer patients. Continuous oral pain and inability to carry out even such simple oral tasks as swallowing saliva could have a profound psychological effect on patients. Patients could become discouraged, depressed, anorexic, and physically weakened due to weight loss and inadequate sleep. Schubert (2006).

The elevated levels of emotional distress that cancer patients continue to experience even after cancer treatment negatively impacted immune and endocrine functions and decreased life quality. Burns (2001). According to Compass et al (1998), psychosocial therapies, including behavioural and cognitive interventions were effective in improving psychological and behavioural adjustment during cancer treatment and survivorship.

Cancer pain was physical, psychological, social and spiritual. Magill (2001) and successful cancer pain management required treatment of all aspects of pain: Physical, psychological and social. Cancer pain could be caused by the cancer itself, related to cancer, related to anticancer treatment and also caused by a concurrent disorder. WHO (1996) and although good pain relief could be achieved in many patients with severe pain, using
symptomatic therapy, successive attempts in treating pain were usually needed utilizing pharmacological, interventional and psychological modalities.

The treatments such as surgical resection, local radiotherapy or the presence of a specific device could also contribute to disturbances in the physical, social and psychological domains. Psychological problems as a consequence of the time taken for diagnosis and treatment due to involvement of various diagnostic procedures were common in HNC. Amir, Z. et al (1999).

The effectiveness of psychosocial interventions was indicated by Meyer and Mark (1998) in a meta analysis by examining the dependent variables emotional adjustment, functional assessment, medical measures and global measures that there were significant effect sizes for the dependent measures and there were no differences in effectiveness between the various interventions.


According to Twycross (1994) pain was experienced by 20 – 50% of cancer patients at diagnosis and varied according to the primary site and by up
to 75% of the patients with advanced cancer. Moderate to severe pain was experienced by 40–50% and very severe or excruciating pain in 25–30% of the patients.

3.4.3 CANCER PAIN AND ITS FUNCTIONAL SYMPTOMS

According to (Beck, 2005) Pain was related significantly to fatigue in individuals experiencing cancer pain. Although some of the effect of pain on fatigue was mediated by sleep disturbance, pain had a direct effect on fatigue as well. Strategies to improve sleep by effectively managing pain might decrease fatigue.

(Gift et al. 2004) used a factor analytic approach in patients with lung cancer; the symptom cluster of pain, sleep disturbance, and fatigue did not emerge as a factor. Pain, fatigue, mood state, and quality of life were intertwined.

A hierarchical multiple regression approach of symptom cluster of cancer pain, fatigue and sleep insufficiency attempted by (Dodd et al, 2001) using a QOL instrument indicated that age, pain, and fatigue explained 48% of the variance in functional status. Sleep insufficiency was not a significant factor.

(Buchsel, 2000) tested from a secondary analysis of 58 of 81 patients who completed a phase I study treatment algorithm based on the Agency for Health Care Policy and Research Guidelines for cancer pain management
indicated that improved pain management can reduce patients’ fatigue experience.

Beck (2000) tested the conceptual model of a ‘symptom complex’ and examined the effect of pain intensity on fatigue and sleep quality. A cross-sectional design was employed using a prospective consecutive sampling approach in three settings: outpatient oncology, radiation therapy and inpatient oncology. The results indicated that worst sleep quality and fatigue were associated with severe pain. The findings also indicated that pain was a significant contributing factor to fatigue and insomnia and effective pain management might well be a critical strategy in relieving other troubling symptoms.

In a descriptive, correlational study of 24 outpatients receiving radiation therapy for bone metastases, Miaskowski and Lee (1999) found that cancer patients suffering from intense pain also had increased levels of fatigue and pain disturbs sleep leading to increased fatigue.

Anxiety was a common symptom experienced by cancer patients, which was mainly situational, in relation to stressful painful surgical procedures and treatments such as radio or chemo therapy. Chaturvedi, K Santosh & Chandra S. Prabha (1998). Long lasting pain and associated fatigue affected the quality of life in physical, psychological, social and spiritual domains of an individual's life. Ferrell et al (1996).
All these studies gave an initial understanding to the researcher that symptoms in individuals with cancer pain may have complex relationships with one another that need to be considered in symptom management research and practice. It was indicated that cancer related pain is associated with state anxiety, sleep disturbance, fatigue which may also have a relationship with QOL and these symptom clusters have a bearing on the psycho social dysfunction of cancer patients which needed to be addressed for a better QOL to cancer patients and pain management.

3.4.4 MUSIC THERAPY FOR CANCER RELATED PAIN.

There is a growing body of literature regarding music therapy experiments that have been researched and documented in oncology settings in the West on cancer related pain and the other symptoms connected with cancer pain.

Hilliard (2003) from Florida State University studied on the effects of music therapy on quality of life, length of life in care, physical status and relationship of death occurrence to the final music therapy interventions of hospice patients diagnosed with terminal cancer. 80 subjects participated in the randomly assigned groups matched on the basis of gender and age. Quality of life was measured by Hospice Quality of Life Index-Revised (HQOLI-R) and Palliative Performance Scale. ANOVA revealed a significant improvement between the groups and Quality of Life was higher for those subjects receiving music therapy and there were no significant differences
between groups on physical functioning, length of life, or time of death in relation to the last scheduled visit by the music therapist or counselor.

Kwekkeboom (2003) in a randomized controlled experiment of 60 cancer patients tested the effects of music intervention and simple distraction on procedural pain and anxiety. Contrary to hypothesis, outcomes achieved with music did not differ from those achieved with simple distraction. Moreover outcomes obtained under treatment as usual were not significantly different from those obtained with music or distraction interventions. Some patients found the MT and the distraction interventions bothersome and reported that they wanted to attend to the activities of the surgeon and the medical procedure itself.

An experimental randomly assigned and wait-list control group experiment conducted by Burns (2001) with 8 volunteers in 10 GIM sessions indicated that GIM was effective in improving mood and quality of life in cancer patients. The subjects completed Profile of Mood States (POM) and Quality of Life-Cancer (QOL-CA) questionnaires pretest, post test, and at a 6-week follow up. Individuals who participated in GIM sessions scored better on both mood scores and quality of life scores at posttest than those participating in the control group. Additionally, mood and quality of life scores improved in the experimental group, even after the sessions were complete.

Burns (2001) by a quantitative pre-posttest, psychological/physiological measures at Bristol Cancer Help Centre at United Kingdom. She compared
the therapeutic effects of listening to music in a relaxed state with the active involvement of music improvisation in a music therapy group and investigated the potential influence of music therapy on positive emotions and the immune system of 29 cancer patients. Psychological data from the study indicated increased well being and relaxation and less tension during improvisation. Physiological data showed increased salivary immunoglobulin A in listening experience and a decrease in cortisol levels in both interventions over a 2 day period.

Case Examples of Magill (2001) demonstrated by qualitative assessments the “lifting”, “transporting” and “bringing of peace” qualities of music that offered patients moments of release, reflection, and renewal. This study undertaken at Memorial Sloan-Kettering Cancer Centre, New York University indicated the use of variety of music therapy techniques like vocal techniques, listening and instrumental techniques for exploration of the feelings and issues compounding the pain experience which might alleviate the suffering of cancer pain and symptoms and helped in comprehensive pain management by decreasing pain perception, increased control and improved comfort, peace of mind and quality of life.

Smith (2001) by an experimental, longitudinal, random assignment study with 42 subjects receiving definitive external beam radiation therapy for pelvic or abdominal malignancies indicated that no significant difference existed between the two groups to suggest that music moderated the level of anxiety during radiotherapy. However, post-hoc analyses identified changes
and trends in state anxiety scores, suggesting a possible benefit of music therapy during radiotherapy.

The study of Standley & Hanser (1995) revealed that from the initial diagnosis throughout the course of the disease, treatment and rehabilitation to the cure or end of life, music therapy was a service that addressed both the medical and psychosocial needs of the patient: It met common psychological objectives in oncology like fear, anxiety, stress or grief and music therapists facilitated health objectives by reducing intensity or duration of pain, alleviating anxiety and decreasing the amount of analgesic medication needed.


Magill (1993) by providing 3 case studies indicated music therapy could be used in pain and symptom management in the care of patients with
long-term and life threatening illnesses as a non-pharmacological approach. Music therapy helped ameliorate pain and suffering and decreased pain perception. His theoretical framework described methods and techniques by these case studies how music could be used to decrease pain perception, by distraction, change in mood, increased control, use of prior skills and relaxation.

Beck (1991) developed a conceptual framework for the effect of music on pain according to which, "All of the pathways led to activation of the endogenous system of pain modulation and, therefore, decreased pain perception. Similar to other cognitive/behavioural interventions, music might modulate pain through affective (i.e) improved mood by increased relaxation and decreased anxiety and cognitive (i.e, increased control, attention distraction) effects that stimulate endorphin production and the endogenous mechanisms for pain modulation. The distinct sensory component of music also might have a direct effect on pain perception via counter stimulation, the application of sensory stimuli to afferent fibers leading to neurons in or near the nociceptive pathways." She examined by a experimental cross over study on the therapeutic effects of music on patients with cancer who were receiving scheduled analgesics. The study made with a reliable and valid multidimensional instruments with 15 cancer patients indicated a statistically significant decrease in pain but the effect of music on pain varied with individuals. Bailey (1983); Bailey (1984) indicated by case studies on cancer patients that MT was used to promote relaxation, to reduce anxiety, to supplement
other pain control methods and to enhance communication between patient and family. Bailey also discovered a significant improvement in mood when playing live music to cancer patients as opposed to playing taped music, which she attributed to the human element being involved.

An Indian case study of Carcinoma Hypopharynx, (please see appendix 1: 1.3 page no. 15) indicated that the more cultural and traditional Indian music had a spiritual influence, which expressed one's devotional feelings and might bring comfort, hopes and peace of mind to the listeners and alleviate pain and anxiety. By using State-Trait Anxiety Inventory of Spielberger, the case study indicated how receptive music therapy could be combined with comprehensive counseling and also if health information could be provided as a cognitive beahvioural intervention to address psychological distress and situational anxiety, which are common problems with cancer patients in a hospital environment. Baseline data was collected from the patient using Spielberger's State-Trait Anxiety Inventory. Assessments were done for situational anxiety before, during and after the music and counseling interventions. Pre- and Post-test composite anxiety scores were compared, which indicated the efficacy of the treatment. Though the primary endpoint of the study was state anxiety, the unique experiences of listening to music, which could be explained only by the patient listening to music and the self report made by the patient when analysed reflected the spiritual dimensions of the music therapy sessions.

These studies gave an initial understanding of the already researched areas indicating the effectiveness of music therapy in oncology patient care.
relating to pain management and other associated symptoms. The literature had both quantitative and qualitative reports and although most of the earlier studies reported were mostly anecdotal and also were of case study design, the studies reported in the recent times were more systematic using formal research methods of control and test arms and standardised tools of measurement. All these studies focused on the different symptomatic problems associated with cancer and demonstrated the effects of music in the oncology setting, but there were no studies until the beginning of this research on the effects of music on HNC patients and also on cancer related pain and its complex relationship with the symptom clusters like anxiety, CRF and sleeplessness and also the impact of pain on QOL and vice versa. Also, most of the studies did not choose a homogenous population to compare the results as the symptoms of cancer differ for different sites, different stages and also the treatment regimen that was adopted. Though the treatment method was controlled, most of the studies did not control the stage or the site of cancer – the confounding factors which could influence the results.