

CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter deals with literature review. A review of literature can help to clarify a problem, justify research for the proposed problem, throw light on appropriate methodology and contribute towards the development of a conceptual framework.

Research review helps the researcher to make sense of their findings at the end of study as well as develop an evidence based practice.

The investigator has discussed the literature review under the following heads.

Literature related to music as therapy.

Literature related to music therapy and Alcoholism.

Literature related to music therapy and Depression.

Literature related to music therapy and Anxiety.

Literature related to music therapy and Stress.

Literature related to music therapy and Craving for alcohol.

Literature related to music as therapy

The American Music Therapy Association (2014), states that music therapy is useful regardless of musical background, and examples of clinical music therapy include lyric analysis, relaxation training, songwriting, musical games, and improvising music based on emotions or other topics relevant to treatment. In these treatments, patients go beyond simply listening to music to engage emotions, motivations, and barriers to recovery through lyrics and melody. Seminal contribution has been made by **Huron D, et al., (2010)** that emotional responses are induced by music and emotion is associated with the autonomic nervous system (**Van**

Middendorp, H, et al., 2013). And further **Nawasalkar, R.K, et al., (2012)** mention that music is the highest form of art that arouses emotions. Thus there is a strong association between music and emotions. It helps in expressing and experiencing emotions.

In the year 1990 (**Clair**) and 1991 (**Darrow, et al.**) discussed that behavioural approaches in music therapy have emerged mainly in the United States of America and, in their development; they have frequently developed the use of music as a stimulant, a relaxant or a reward. In addition, the structure and properties of music have been applied and manipulated to achieve development, growth, and improvement in patients. In this sense, the therapeutic process does not involve a dynamic and responsive interaction with the patient, but the music is structured in order to help the patient overcome emotional, physical or psychological problems from which they are suffering. This is a more prescriptive and applied use of music. And further **Felicity, A. et al., (2007)** conducted a study to determine whether music therapy programs situated within a Cognitive Behavioural Therapy (CBT) framework facilitated the exploration of emotions in 24 adults with substance use disorder attending a hospital open group cognitive behavioural therapy program. In a 7-week trial, the impact of a single music therapy session on participants' emotional experience was assessed using a self-report questionnaire at the end of each participant's first session. Results showed significant in experiencing predominantly positive emotions, and that these were experienced to a moderate or high degree. Participants reported that music therapy was beneficial in allowing them to experience emotions without the need for substance use.

Nayak, et al., (2000) examined the combination of music therapy with traditional stroke rehabilitation and also found that the addition of music therapy improved mood and social interaction. Participants who had suffered traumatic brain injury or stroke were placed in one of two conditions: standard rehabilitation or standard rehabilitation along with music therapy. Participants received three treatments per week for up to ten treatments. Therapists found that participants who received music therapy in conjunction with traditional methods had improved social

interaction and mood. **O' Kelly, J, et al., (2007)** also demonstrated a study on multidisciplinary perspectives of music therapy in adult palliative care. The study results showed that music therapy was valued by most interviewees; however, there exists some lack of understanding of the role of the music therapist, particularly amongst nurses. Emotional, physical, social, environmental, creative and spiritual benefits of music therapy were described. The researcher concluded that music therapy is an appropriate therapeutic intervention for meeting the holistic needs of palliative care service users. And on the other side **Susan, E,et al., (2007)** tested the effectiveness of music therapy in improving health-related outcomes of cardiac rehabilitation patients, using a randomized controlled trial. Sixty-eight of 103 recruited patients were randomly assigned to cardiac rehabilitation only or to music therapy plus cardiac rehabilitation. Music therapy included musical experiences, counselling, and music-assisted relaxation and imagery. Interpretation of changes at 4 months post- treatment in anxiety, general health, and social functioning are limited, due to small sizes at follow-up. Pre to post-music therapy session improvements were also reported. Their findings suggested that some health-related outcomes may be affected positively by participation in music therapy in addition to cardiac rehabilitation.

In addition to the effectiveness of music therapy **DeLoach, Walworth, D,(2005)** examined the cost-effectiveness of music therapy as a procedural support in the pediatric healthcare setting. Many healthcare organizations are actively attempting to reduce the amount of sedation for pediatric patients undergoing various procedures. Patients receiving music therapy-assisted computerized tomography scans (n = 57), echocardiograms (n = 92), and other procedures (n = 17) were included in the analysis. The researched concluded that music therapy-assisted procedures indicated successful elimination of patient sedation, reduction in procedural times, and a decrease in the number of staff members present for procedures.

Zarate,P,et al., (2001) demonstrated the functionality of music therapy in patients with neurological disorders and explained that music helps patients to gain control over their walking patterns after a brain injury, stimulates long and short- term

memory in patients with Alzheimer disease and social interaction in elders. Another study performed by **GuetinStephane (2009)**, a randomized controlled study to assess the effects of music therapy on anxiety and depression in patients with mild to moderate Alzheimer- type dementia. The results indicated significant improvements in anxiety ($P < 0.001$) and depression ($P < 0.01$) and confirm the valuable effects of music therapy on anxiety and depression in patients with mild and moderate Alzheimer's disease. Similarly, **Myskja, A, et al., (2000)** stated that music has been linked to the treatment of mental illness, and has been used successfully to treat anxiety and depression and improve function in schizophrenia and autism. The role of music in medicine is primarily supportive and palliative. The supportive role of music has a natural field of application in palliative medicine and terminal care. Music is well tolerated, inexpensive, with good compliance and few side effects.

Cadiagen, M.E, et al., (2001) conducted a study to measure the effect of a music intervention on physiologic and psychological responses of patients on bed rest due to procedural sheaths or an intra-aortic balloon pump. One hundred and forty patients were subjected to randomized, two-groups; pre-test/post-test design was utilized to measure the effect of a 30 minutes music intervention on heart rate, blood pressure, respiratory rate, skin temperature, pain perception, and mood states. The findings showed that there were reductions in blood pressure, respiratory rate, and psychological distress, as measured by the profile of mood states ($p < 0.05$). Music appeared to affect selected physiologic responses and reduce psychological distress in patients on bed rest.

The Sonata for Two Pianos in D major, K.448 is a work composed by Wolfgang Amadeus Mozart in 1781, **Zaslaw, Neil, (1990)**. This sonata was also used in the scientific study that tested the theory of the Mozart effect, suggesting that classical music increases brain activity more positively than other kinds of music. **Yanni, Rensin, David, (2002)**, **Bonder, M, et al., (2001)** also discussed in their behavioural studies, motivated by columnar cortical model predictions, have given evidence for music casually enhancing spatial-temporal reasoning. A wide range of

behavioural experiments showed that listening to a Mozart Sonata (K. 448) gave subsequent enhancements. An EEG coherence study gave evidence for a carryover from the Mozart Sonata listening condition to the subsequent spatial-temporal task in specific cortical regions. Similarly, **Lin, L.C, et al., (2011)** highlighted that Mozart Sonata for two Pianos in D major, K.448 (MOZART K.448), has been shown to improve mental function, leading to what is known as the Mozart Effect. The study further evaluated the long- term effect of Mozart K. 448 on epileptiform discharges in children with epilepsy. Children's listened to Mozart K.448 for 8 minutes once a day before bedtime for 6 months. Epileptiform discharges were recorded and compared before and after 1, 2, and 6 months of listening to Mozart K.448. Epileptiform discharges significantly decreased by 53.2±47.4, 64.4±47.1, and 71.6±45.8%, respectively, after listening to Mozart K.448 for 1, 2, and 6 months. Research indicates that listening to music, whether a Mozart concerto or a song from the popular music charts, has been found to lower blood pressure, improve heart rate variability and can help to de-stress, **Bernardi, L., (2007)**.

The Mozart effect implies the enhancement of reasoning skills solving spatial problems in normal subjects after listening to Mozart's piano sonata K 448. A further evaluation of this effect has raised the question of whether there is a link between music-generated emotions and a higher level of cognitive abilities by mere listening. Neurobiological effects of music suggest that auditory stimulation evokes emotions linked to heightened arousal and result in temporarily enhanced performance in many cognitive domains. Music therapy applies this arousal in a clinical setting as it may offer benefits to patients by diverting their attention from unpleasant experiences and future interventions. At present, there is moderate but not altogether convincing evidence of a disease and enhances the immune system by modifying stress as stated by Pauwels **EK, et al., (2014)**.

Mammarella, N, et al., (2007) pointed out that the power of music to affect memory is quite intriguing. Mozart's music with a 60 beats per minute beat pattern, activate the left and right brain. The simultaneous left and right brain action

maximizes being studied activates the right brain. Also, activities which engage both sides of the brain at the same time, such as playing an instrument or singing, cause the brain to be more capable of processing information. Listening to music facilitates the recall of information.

Bradt, J, et al., (2009) studied music interventions with standard care versus standard care alone on psychological and physiological responses in persons with CHD. The results indicated that music listening has a moderate effect on anxiety but the review did not find strong evidence for the reduction of psychological distress. The study concluded music listening may have a beneficial effect on blood pressure, heart, respiratory rate, anxiety, and pain in persons with CHD similarly **Stanley,et al., (2012)** stated that physiological changes in the body and elicit physiological responses such as pulse rate, respiration rate, blood pressure, and muscle tension. Music may also stimulate a calming effect of the cardiovascular system.

Gold, C, et al., (2009) conducted a study which aim of this review was to examine the benefits of music therapy for people with serious mental disorders. They found out that music therapy is an effective treatment which helps people with psychotic and non-psychotic severe mental disorders to improve global state, symptoms, and functioning. Slight improvements can be seen with a few therapy sessions, but longer courses or more frequent sessions are needed to achieve more substantial benefits.

Literature related to music therapy and Alcoholism.

Current trends in substance use disorders raise a concern as initiation is progressively taking place at younger ages, **Zilberman, M,et al., (2003)** and **Schulden JD, et al., (2009)**, leading to significant disability in terms of missed workdays and repeated hospitalizations **Compton, W.M,et al., (2007)**. Illicit drug use is on the rise **Compton, W.M,et al., (2004)** and continues to be a common problem. In addition, gender differences in prevalence estimates are narrowing worldwide (**Zilberman, M,et al., 2003**).

Silverman, M.J., (2003) stated that patients in substance abuse treatment reported music therapy to be highly effective in increasing relaxation, an energy level, and decreasing impulsiveness. Likewise, **Ward, K.L., (1996)** results showed that women inmates participating music therapy group were on task significantly longer than those in the non-music therapy group, in his study the effects of music therapy with chemically dependent offenders in a women's prison.

Gallant, W., et al., (1997) demonstrated a quasi-experimental study to assess the effects of music intervention with out-patient alcoholic couples. The study results showed couples who received both rehabilitation and music therapy significantly lowered scores on the psychosocial problem inventory. Additionally, song discussions significantly improve the outcome measurement of loneliness in women.

Fifteen patients attended exercise training for three months, which consisted of daily physical exercises supported by music for 30 min/session. They were compared with a group of 10 control patients, who received an equal amount of attention through daily conversation. The effect on cognition was measured by the Mini-Mental State Examination, the results show the exercise group showed a significant improvement in cognition, **Van de Winckel, et al., (2004)**.

Jones, J.D., (2005) conducted a comparative study to examine the songwriting and lyric analysis technique to evoke emotional change in a single session with people who are chemically dependent. The study results showed significantly increased feelings of acceptance and joy/happiness/enjoyment and significantly decrease feelings of guilt/ regretful/ blame and fear/ distrust. 75% of participants cited music therapy as a significant tool in their recovery. While, **Cevasco, A.M., et al., (2005)** conducted a comparative study of movement- to- music, rhythmic activities, and competitive games to assess the depression, stress, anxiety, and anger of female in substance abuse rehabilitation. The study results showed each of the three music therapy interventions were equally effective in decreasing depression, stress, anxiety, and anger in females who were in substance abuse treatment.

Winkelman, M, (2003) highlighted that drumming and drum circles can provide a complementary role in addiction treatment. Positive effects of drumming include an increased sense of relaxation, restoration of the balance in the opioid and serotonergic experiences, interpersonal support and connection to others.

Doak, B.A., (2003) investigate the relationships between music preferences, drug preferences and diagnosis of adolescents in treatment for substance abuse. 58 adolescents (ages 14-17) received and responded to a survey regarding their music preferences and drug preferences. The majority of subjects were male (35) and 23 subjects were female. Mental health diagnoses were obtained from the subjects medical records. Analysis of the data indicated significant correlations between preferred music and diagnosis ($P<.01$), drug preference and diagnosis ($P<.002$), and diagnosis and the reason for using drugs ($P<.02$). Reported reasons for using music and drugs were similar (to relax, to elevate mood, to focus, and to escape reality). The author recommended further research in this area to provide a clearer understanding of how adolescents may be trying to regulate their psychological, physiological, and emotional needs with their use of music and drugs.

Literature related to music therapy and depression.

Depression is a common problem affecting about 121 million people worldwide and is characterized by persistent low mood, which leads to changes in appetite, sleep pattern and overall functioning. At its worst, depression can lead to suicide, which is associated with the loss of 1 million lives per year. Depression is projected to become the leading cause of disability and the second leading contributor to the global burden of disease by the year 2020 (**WHO, 2000; Moussavi, 2007**).

Erkkilä, J, et al., (2011), found in the study “Individual music therapy for depression: randomized controlled trial” that depressed patients were randomized to receive individual music therapy plus standard care (20 bi-weekly sessions) or standard care only, and followed up at baseline, at 3 months (after intervention) and at 6 months. Clinical measures included depression, anxiety, general functioning, quality

of life and alexithymia. The music group showed greater improvement on depression, anxiety and general functioning at the 3-month follow-up. Similarly, **Chan, M.F, et al.,(2009)** also found the effect of music on depression levels and physiological responses in community-based older adults. Elderly people received music or standard care. The music group had lower depression scores, blood pressure, heart rate and respiratory rate after 1 month.

KhorramabadiYadollah, (2014) researched a semi-experimental method which aimed to examine the effect of music therapy on reducing anxiety, depression and stress in addicts. The statistical community of their search was all substance addicts that were under treatment in Hamedan city. Total of 60 cases referred to the therapeutic centre were chosen by accessible sampling and then 30 of them were assigned to experiment group and 30 other ones were assigned to control group randomly (after homogenization from different variables). Treatment lasted 8 months and 5 hours a day individually. Instruments for collecting data were anxiety, depression and stress questionnaire (DASS), experiment the amount of methadone use along with music, pre-test and post-test. The results indicated that music therapy reduces the amount of depression, anxiety and stress. The study concluded that there is a significant relationship between music therapy and reduction of anxiety depression and stress. Findings pointed out that the effect of music therapy on reducing anxiety, depression, and stress in addicts indicate the usefulness of music therapy on reducing anxiety, depression, and stress in addicts.

Whereas, **Hendricks, C, Bret, (2001)** analyzed a 2×2 quasi-experimental factorial design, to determine the effects of adding music therapy techniques to cognitive behavioural group treatment for depressed adolescents for 12 weeks. The dependent variables of depression, self-concept, and grade point average were compared by treatment and grade. The participants were administered the Beck Depression Inventory and the Piers-Harris Self-concept Scale. The results indicated a significant ($P < .0001$) difference and groups which did not use music therapy techniques. Results indicated that the use of music therapy techniques was positively

correlated with reduced post-test depression scores and increased post-test self-concept score.

The EEG patterns of 48 intrusive and withdrawn mothers with depressive symptoms were assessed following a 20-minute music session to determine if the music had mood-altering effects. Half the mothers listened to classical music while half listened to rock music. Intrusive mothers were expected to have more positive responses and more symmetrical EEG following the calming classical music, while withdrawn mothers were expected to have a more positive response and symmetrical EEG following the energizing rock music. Although more positive EEGs were noted for rock music in both groups, only the withdrawn mothers showed a significant change in EEG toward symmetry following rock music, and only the intrusive mothers showed a decrease in cortisol levels following the rock music. Their State Anxiety Inventory (STAI) anxiety levels also decreased, while the Profile of Mood States (POMS) depressed mood levels decreased significantly for all four groups following music, **Tornek, A, et al., (2003)**.

Maratos, A.S, et al., (2008) conducted a study on music therapy for depression to identify randomized controlled trials and controlled clinical depression, compare the efficacy of music therapy with standards care and compare efficacy of different forms of music therapy. Findings from individually randomized trial suggest that music therapy is accepted by people with depression and is associated with improvements in mood. In conclusion, the author recommended, the continue using high-quality trials to further evaluate the effects of music therapy on depression. While another study evaluated by **Hirokawa, E, et al., (2003)** to examine the effects of listening to high-uplifting or low-uplifting music after a stress full task on immune functions, neuroendocrine responses, and emotional states in college students. Subject's emotional states, the Secretary IgA (S-IgA) level, active natural Killer (NK) cell level, the numbers of T lymphocyte CD4 +, CD8+, CD16+, dopamine, norepinephrine, and epinephrine levels were measured before and after each experimental condition. The results indicated low-uplifting music had a trend of increasing the norepinephrine

level, liveliness, and decreasing depression. Active NK cells were decreased after 20 min of silence. Results of the study were inconclusive, but high-uplifting and low-uplifting music had different effects of immune, neuroendocrine, and psychological responses.

Researchers carried out a semi- structured, in-depth telephone interview with each subject within 24 to 45 hours after each therapy session. The results showed a total of 55 important listening episodes, which could be categorized into themes. The triggering effect, when guided in a controlled fashion, represents a combination of multiple factors, including music, the individual, the therapist, and the environment. The theme of each patient's imagery episode was a result of the effect of the four factors, with music having the greater impact, **Chou, M.H et al., (2006)**.

The Cochrane determined the effects of music therapy compared with standard care on mood during inpatient stay for high dose therapy with autologous stem cell transplantation (HDT/ASCT). Patients were randomized to receive music therapy given by a trained music therapist or standard care. The outcome was assessed at baseline and every 3 days after randomization using the profile of mood therapy group scored 28% lower on the combined Anxiety/ Depression scale ($P=0.065$) and 37% lower ($P=0.01$) on the total mood disturbance score compared with controls. In conclusion of the study, the Cochrane stated that music therapy is a non-invasive and inexpensive intervention that appears to reduce mood disturbance in patients undergoing HDT (ASCT) (**Cassileth, B.R,et al., 2003**).

Mei-Feng, Lin,et al., (2010) while conducting a study on semi-structured interview with five patients with depression after each of eight sessions of the Bony Method of Guided Imagery and Music found the discovery- oriented approach fulfilled the aim of gaining a valuable understanding of the psychological growth experiences of patients with depression during the Bonny Method of Guided Imagery and Music. In another study conducted by **Burns, D.S (2001)** with eight patients with a cancer history was randomly assigned. Experimental subjects individually participated in 10 weekly GIM session scored better on both mood scores and quality of life scores than

those participating in the control group. Additionally, mood and quality of life scores continued to improve the experimental group, even after sessions were completed.

Reinhardt, U, *et al.*, (1982) evaluated a study on the effects of the performance of various forms of music and an acoustic non-musical comparative stimulus on the condition and efficiency of depressive persons. The study results showed encouraging including suitable music under group therapeutic conditions in the complex psychiatric therapy rehabilitation strategy.

Hsu, W.C, *et al.*, (2004) studied to assess the effectiveness of soft music for treatment of major depressive disorder inpatients. A pre-test-post-test with a two group repeated measures design was adopted. Subjects listened to their choice of music for 2 weeks. Results were analysed using repeated measures ANCOVA. The study result showed significant in depression scores compared to control groups. The findings provide evidence of psychiatric nurses to use soft music as an empirically based intervention for depressed inpatients.

Literature related to music therapy and anxiety

Hammer, S.E, (1996) carried out a study on the effects of guided imagery through music on state and trait anxiety, patients who received 10 group guided imagery through music sessions experienced a significant decrease in state anxiety as compared to the patients in the control group. Similarly, **Hernandez-Ruiz, E, (2005)** studied the effect of music therapy on anxiety levels and sleep patterns of abused women in shelters. The results of the Hernandez indicated that music therapy constituted an effective method for reducing anxiety levels.

In another study carried out by **Abdollahanjad, R, (2005)** on Music Application in Mental and Physical Health, the results of the analysis show no important difference ($P>0.05$) between the average of state anxiety and amount of face anxiety in both group before music therapy (listening to music). After listening to music, there was a significant difference ($P<0.05$) in the intervention group.

Therefore, this decrease of the amount of anxiety in the intervention group depends on how music therapy (listening to music) is applied.

Mok, E, et al., (2003) analysed a study to assess the effects of music on patient's anxiety. The researchers assessed the effectiveness of music as a relaxation modality by measuring patients' vital signs and self-reported anxiety before and after surgery. Study results indicated that patients who listened to their choice of music during surgery experienced significantly lower anxiety levels, heart rates, and blood pressure than patients who did not listen to music.

Further, **Augustin, P, et al., (1996)** analysed a study on the effects of music on ambulatory surgery patients' postoperative anxiety. Forty-two ambulatory surgery patients were assigned to either an experimental group to receive music of their choice along with the standard preoperative instructions or a control group to receive the standard preoperative instruction alone. The results revealed that the patients in the experimental group showed significantly lower heart rates, blood pressure and respiration rate compared to the patients in the control group.

Park, H, et al., (2009) highlighted the agitation levels were lower while listening to music in the study "Effect of individualized music on agitation in individuals with dementia who lives at home" that the individuals with dementia, listened to their preferred music for 30 minutes prior to peak agitation time, two times per week for 2 weeks, followed by no music intervention for 2 weeks. The process was repeated once. In addition, **Guetin, S, et al., (2009)** conducted a prospective, observational study to evaluate the effect of music therapy on mood, anxiety, and depression in institutionalized patients with traumatic brain injury. The assessment criteria (measured at weeks 1, 5, 10, 15 and 20) were mood (on the face scale) and anxiety-depression (on the Hospital Anxiety and Depression [HAD] Scale). The mood was assessed immediately before and after the first music therapy session and every fifth session. They found that Music therapy enabled a significant improvement in mood, from the first session onwards. This short-term effect was confirmed by the immediate changes in the scores after music therapy sessions (from 4.6+/-3.2 to 2.6+/-

2; $p < 0.01$). Music therapy also led to a significant reduction in anxiety-depression ($p < 0.05$) from week 10 onwards and up until the end of the study (week 20). Their study confirms the usefulness of music therapy in the treatment of anxiety-depression and mood in patients with traumatic brain injury.

Wang, S.M, (2002) researched a randomized controlled study on music and preoperative anxiety. Subjects in group one ($n=48$) listened to a 30 minutes' patient-selected music session, and subjects in group two ($n=45$) received no intervention. They used self-report validated behavioural (State-Trait Anxiety Inventory) and physiological measures of anxiety (heart rate, blood pressure, and electrodermal activity and serum cortisol, epinephrine, and norepinephrine). Patients were evaluated before, during and after administration of the intervention. The study results showed that after the intervention, subjects in the music group reported significantly lower anxiety levels as compared with the control group ($p=0.001$). The study concluded that patients who listened to music before surgery reported a lower level of state anxiety. The physiological outcome did not differ between the two study groups.

Further, **Smith Melissa, (2008)** studied a randomized controlled trial study comparing verbal discussion as the control condition to music relaxation as the experimental condition. 80 customer service specialists (female= 40, male= 40). The state portion of the State Trait Anxiety Inventory was used as a pre and post measurement. The results of the study show the music relaxation intervention significantly reduced anxiety levels in participants compared to the discussion group intervention.

Literature related to music therapy and stress.

Field, T, et al., (1998) stated that depressed adolescents listening to music experienced a significant decrease in stress hormone (cortisol) levels, and most adolescents shifted toward left frontal EEG activation (associated with positive affect).

A meta-analytic review of research articles using music to decrease arousal due to stress was conducted on 22 quantitative studies. Results demonstrated that music

alone and music-assisted relaxation techniques significantly decreased arousal ($d = +.67$). Further analysis of each study revealed that the amount of stress reduction was significantly different when considering age, type of stress, music-assisted relaxation technique, musical preference, previous music experience, and type of intervention, **Pelletier, C.L., (2004)**.

Lee, O. K., et al., (2005) studied with sixty-four subjects who were randomly assigned to either 30 minutes of music or a rest period. The subjects were asked to answer the State-Trait Anxiety Inventory scale before and after the study period and physiological indices and resting behaviours were recorded before and after the study period in both groups. The subjects' satisfaction with music was also obtained after music intervention. The findings of the study indicate that patients on mechanical ventilation that listened to a single 30-minute session of music showed greater relaxation as manifested by a decrease in physiological indices and increase in comfortable resting behaviours.

Knight, W.E, et al., (2001) conducted a study to determine the effect of relaxing music on the participant's subjective and physiological response to stress and explored. Fifty- seven undergraduate students (43 females and 44 males) were exposed to cognitive stressor task involving preparation for an oral presentation either in the presence of Pachelbel's Canon in D major or in silence. Measures of subjective anxiety, heart rate, blood pressure cortisol, and salivary IgA were obtained during rest and after the presentation of the stressor. The stressor caused significant increases in subjective anxiety, heart rate, and systolic pressure in male and female controls. These stress induced-increases were each prevented by exposure to music, and this effect was independent of gender.

Listening to classical and self-selected relaxing music after exposure to a stressor should result in significant reductions in anxiety, anger, and sympathetic nervous system arousal, and increased relaxation compared to those who sit in silence or listen to heavy metal music. Fifty-six college students, 15 males and 41 females, were exposed to different types of music genres after experiencing a stressful test.

Several 4×2 mixed design analyses of variance were conducted to determine the effects of music and sentence conditions (heavy metal, classical, or self-selected music and silence) and time (pre-post music) on emotional and physiological arousal. Results indicate listening to self- select or classical music, after exposure to a stressor, significantly reduces negative emotional states and physiological arousal compared to listening to heavy metal music or sitting in silence as revealed by **Labbe, E.*et al.*, (2007)**.

The Cochrane was interested in finding whether stress levels would be affected by music. Forty-eight undergraduate female students above 18 years of age participated in the study. Participants were placed into one of three music to observe if music would affect stress as measured with the State-Trait Anxiety Inventory. It was hypothesized that the pre-test measures of stress between all three groups should not differ. The results obtained for the control, classical, and hard rock groups supported this hypothesis (control-M=54.38, SD=10.03; classical-M=60.25, SD=9.82; hard rock-M=62.00, SD=9.78) ($F(2,45)=2.617$, $P=.084$). Furthermore, it was hypothesized that post measures of stress would differ significantly with the classical group being the least stressed and the hard rock group being the most stressed. This hypothesis was not supported by the results obtained (control-M=53.50, SD=9.15; classical-M=58.88, SD=9.28; hard rock-M=59.88, SD=9.72) ($F(2,45)=2.135$, $P=.130$). However, there was a relationship between the pre-test and post-test STAI scores ($r(46) = .747$, $P < .001$) **Madeline, M. Chimento,*et al.*, (2002)**.

Further, **Chafin, S, *et al.*, (2004)** evaluated an experimental study to examine the effect of listening to music on cardiovascular recovery. Participants (N=75) performed a challenging three-minute mental arithmetic task and then were assigned randomly to sit in silence or to listen to one of several styles of music: classical, jazz or pop. The study results indicated that participants who listened to classical music had pressure levels (M=2.1mm Hg above pre-stress baseline) than did participants who heard no music (M=10.8mmHg). Other who heard no music did not produce significantly better recovery than silence. The data suggest that listening to music may

serve to improve cardiovascular recovery from stress, although not all music selections are effective.

Khaffa, S, et al., (2003) also shows the effect of music in their study to determine whether relaxing music (as compared to silence) might facilitate recovery from a psychologically stressful task. The changes in salivary cortisol levels were regularly monitored in 24 students before and after the Trier Social Stress Test. The data shows that in the presence of music, the salivary cortisol level ceased to increase after the stressor, wherein silence it continued to increase for 30 minutes.

Literature related to music therapy and craving for alcohol.

There is limited evidence supporting the effectiveness of music therapy on craving for alcohol.

Dingle, G.A, et al., (2008) researched on the 7-week trial of music therapy as an adjunct to group cognitive behaviour therapy with the aim of increasing patient engagement in a private hospital open group programme. Patient attendance rates and perceptions of the music therapy session by means of an anonymous survey, and only data from each patient's first survey were used in the analysis. Twenty-four surveys were analysed, representing feedback from 10 men and 14 women, aged between 17 and 52 years. The average attendance rate over the 7-week trial was 75%. The results indicated that enjoyment and motivation to participate during the sessions was uniformly high (mean ratings of 4.3 and 4.0 out of 5, respectively). The majority (83%) of participants reported that they would attend another music therapy session, and almost half (46%) endorsed that '(music therapy) would help them to feel more a part of the group'. Additional analyses revealed that music therapy was able to engage patients regardless of their age group (25 years and under Vs. over 25 years) or substance (alcohol only vs. other drugs). The study concluded that Music therapy is a promising approach to improving engagement in substance abuse treatment groups.

Ross, S, et al., (2008) conducted a study on music therapy: A novel motivational approach for dually diagnosed patients. Patients who attended more than 6 music

therapy sessions had a significantly longer attendance during in-patient treatment was predictive of successful follow-up to the initial after-care appointment. In another research by **WinkelmanMicheal, (2000)** shows positive drumming produces pleasurable experiences, enhanced awareness of preconscious dynamic, the release of emotional trauma, and reintegration of self and alleviates self-centeredness, isolation, and alleviation, creating a sense of connectedness with self and others. The study concluded drumming circles have applications as complementary addiction therapy, particularly for repeated relapse and when other counselling modalities have failed. Further, **Winkelman, M, (2001)** stated that drumming may reduce addiction by providing natural alterations of consciousness.

Robinson, T.N,et al., (1998) conducted a prospective cohort study to assess the exposure to media portrayals of alcohol use may lead to increased drinking. Six public high schools in San Jose, California participated (N=1533; mean age=14.6 years) in the study. The outcome measures were, students reported hours of television, music video, and videotapes viewing; computer and video game use; and lifetime and past 30 days' alcohol use at baseline and 18-months later. Associations between baseline media exposure and subsequent alcohol use were examined with multiple regressions. The study results showed, during the 18-month follow-up, 36.2% of baseline non-drinkers began drinking and 50.7% of baseline drinkers continued to drink. Onset of drinkers continued to drink. The onset of drinking as significantly associated with baseline hours of television viewing (odds ratio (OR) = 1.09; 95% confidence interval [95% CI] = 1.01-1.18], music video viewing (OR= 1.31; 95% CI=1.17-1.47), and videotape viewing (OR=0.89; 95% CI=0.79-0.99), controlling for age, sex, ethnicity and other media use. Computer and video game use was not significantly associated with the subsequent onset of drinking. Among baseline drinkers, there were no significant associations between baseline media use and maintenance of drinking. The study concluded that increased television and music video viewing are risk factors for the onset of alcohol use in adolescents.

Summary:

This chapter explained the review literature under six headings of music therapy related to music as therapy, music therapy and alcoholism (substance abuse), music therapy and depression, music therapy and anxiety, music therapy and stress and music therapy and craving for alcohol.