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Review

Music as a therapy: Role in psychiatry

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ABSTRACT

Music is popularly believed to usher in bliss and serenity, and healing is considered its natural quality. It has an emotionally charging charisma of its own, that we all as listeners might have experienced at times. Music has been there with mankind since the beginning of history, but where does it stand as a therapy? Is there any evidence base? How this therapy came into being and how it has evolved, and what the old and current research says about its role in psychiatric disorders. This review tries to explore these questions and arrives at a conclusion that music certainly promises more than just entertainment, and evidence so far suggests music therapy can be beneficial in the treatment of psychiatric disorders, as a cost effective noninvasive adjunct to standard therapy in a variety of settings and patient groups, yet more validated scientific research is still required to establish it as a sole quantified therapy.

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A few can touch the magic string,
And noisy fame is proud to win them;
Alas for those that never sing,
But die with all their music in them!
Oliver Wendell Holmes

1. Introduction

Music a wonderful and divine blessing has healed the human mind and soul since time immemorial. Being one of the finest abstract and primitive art forms, it has been entwined and enmeshed all across the culture and human psyche. Music has always been a beautiful and sacred medium for expression of emotions and feelings experienced, right from the dawn of human civilization, be it elation, despair, aggression or love.

In Indian culture, music has been ecumenically present since the time of Vedas, and that too as a therapy as well. The well known Indian school of medicine, i.e., Ayurveda, doctrines that doshas like vata, pitta and kapha (wind, bile and phlegm respectively) can be modulated through music therapy, and that the Ragas in the Indian

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system of music are believed to act on specific chakras or energy centers, to bring about harmony in the body and consequent healing (Gardner-Gordon, 1993; Sundar, 2007). Music and healing were ad libitum, meaningfully ingrained group activities that were as natural to everyone as other daily rituals. The historical records of various cultures echo it, and give numerous accounts of it being used as a mode of treatment for its healing abilities (Horden, 2000; Pratt and Jones, 1988; Wigram et al., 2002).

In many western countries, music therapy has emerged as a specialized branch of alternative medicine, with its therapeutic use in a wide range of disorders like, Alzheimer's, AIDS, autism, trauma, substance abuse, learning disabilities, cardiovascular disorders and a range of psychiatric illnesses from anxiety disorders to schizophrenia, with the results being substantiated through many studies and research publications. However, music therapy has not yet been recognized as an established branch of alternative medicine in India. There is little awareness, if any, regarding its systematic applications and its possible role as a modality of treatment in the realm of mental health; this prompted us to undertake this review.

2. Music as a therapy

2.1. Definition

Music therapy has been defined in several ways depending on the context of its application and how it is perceived. For example, it has been defined as "Controlled use of music and its influence on the human being in physiological, psychological, and emotional integration of the individual during treatment of an illness or disability". It has also been defined as the "behavioral science that is concerned with the use of specific kinds of music and its ability to produce changes in behavior, emotions, and physiology" (Johnston and Rohaly-Davis, 1996; Watkins, 1997).

However, one widely accepted definition comes from the World Federation of Music which defines it as "the use of music and/or musical elements (sound, rhythm, melody and harmony) by a qualified music therapist with a client or group, in a process designed to facilitate and promote communication, relationships, learning, mobilization, expression, organization and other relevant therapeutic objectives, in order to meet physical, emotional, mental, social and cognitive needs. Music therapy aims to develop potentials and/or restore functions of the individual so that he or she can achieve better intra- and inter-personal integration and, consequently, a better quality life through prevention, rehabilitation or treatment" (World Federation of Music, 1996).

2.2. History and development of music as a therapy

Right from the Greeks to the eastern civilizations including India and China, history is replete with the belief in the curative and healing powers of music. It is believed that the ancient Greeks used music to calm down the mentally ill. Western philosophers from Pythagorous, Aristotle, and Plato to Schopenhauer and Nietzsche, have given vivid accounts of their understanding of the healing powers of music, and their faith in its practical use for bringing balance and harmony, and thereby curing ailments of mind and body (Wigram et al., 2002). The great philosopher Aristotle practiced psychocatharsis, a belief that "those who suffered from uncontrollable emotions would return to their normal condition after having listened to music, which raised their souls to ecstasy" (Chiu and Kumar, 2003; Klein and Winkelstein, 1996).

In modern times, the period after World War II saw music being used as an adjunct to standard therapy, to hasten the recovery of injured or disabled soldiers in certain parts of the world, and it can be said that this heralded the beginning of it being seen as a therapy in medical settings (Cook, 1986; Chiu and Kumar, 2003). Development of music therapy cannot be understood in its totality without first looking at the development of the psychology of music, and the theoretical framework provided by various schools of psychotherapies in its evolution as a therapy. In modern times, development of music psychology as a science can be traced back to the last decade of the nineteenth century when laboratories were established to study music psychology especially in Germany and the USA. The early research began on a positivistic paradigm taking music as an objective empirical phenomenon; the aim of the experiments was to measure human responses to selected sound stimuli, which in the 1920s and 30s shifted from the subcomponents and single perceptions, to the 'flowing' totality of 'music as experienced' under the influence of new theories guided by the gestalt point of view (Mursel, 1970; Kurth, 1931; Wigram et al., 2002).

Subsequently came the influence of behaviorism and musical behavior became the basis of study (Lundin, 1967; Wigram et al., 2002). In Denmark and other European countries music therapy was greatly influenced by psychoanalytic schools, based on the tenets of work done by Freud, Jung and ego psychologists like Kohut, with sessions characterized by a similar set of rules and techniques like, transference–countertransference, free-floating awareness and active listening etc., although in their modified form, and it was realized that music provides a great holding or containing environment, and hence deep exploratory work with the client can be carried out. During recent times, research has been focused on cognitive psychology of music especially in Europe, and it has become the most dominant school of psychology defining music therapy (Feder et al., 1993; Wigram et al., 2002).

2.3. Models and methods of music therapy

Being a noninvasive intervention, music has been used in various forms such as, just being used as a tool to provide conducive healing environment in a therapeutic setting, to its specialized use as a therapy, as in active music making and discussion. While there are diverse techniques used in music therapy, they can be broadly classified as 'Active', in which people re-create, improvise or compose music, and 'Receptive', in which they listen to music (Bruscia, 1998). Music therapy may relate to the medical treatment of the patients in a variety of ways, as categorized by Dileo (1993):

(A) Supportive to medical treatment (e.g. the use of music listening during kidney dialysis)
(B) As an equal partner to medical treatment (e.g. the use of singing in conjunction with medication as a treatment for respiratory disorders)
(C) As a primary intervention for a medical condition (e.g. the use of music listening to directly suppress pain) (Dileo, 1993; Wigram et al., 2002).

Apart from these there is one mode of therapy, in which music acts through the vibrations it produces. Speakers are built into a chair or mattress, on which the patient lies, and he directly experiences the vibrations when music is played. This receptive form of therapy has been specifically found more useful for pain reduction than music listening alone or placebo. Known by the name of "vibroacoustic therapy" it stands out as a therapy, where music is specifically being used as a physical treatment modality (Chesky and Michel, 1991; Wigram et al., 1997).

As per the 9th World Congress of Music Therapy in Washington (1999), there are five internationally known models of music therapy.

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1. *Guided Imagery and Music (GIM)*, developed by Helen Bonny. 'GIM is a process, where imagery is evoked during music listening' (Bonny, 1990). The classic GIM involved a session, which was 90–120 minutes long, and consisted of four stages of prelude, induction, music travel, and postlude, using classical music, in which the therapist guided the patient through a deep exploratory process. However later adaptations of GIM included shorter sessions, use of other kinds of music, and the intervention being supportive rather than exploratory (Wigram et al., 2002).
2. *Analytical Music Therapy (AOM)*, developed by Mary Priestley (Priestley, 1994). AOM is the most widely used active music therapy form in Denmark. This model entails clients being actively involved, either through tonal or atonal improvisations of music, and those improvisations are used to understand and interpret the unconscious. Client's growth and functional development is the focus rather than the quality of musical expression. AOM can be used to communicate at a very basic level with multiply disabled clients who cannot verbalize. Music therapists still regard it primarily as a method for working with psychiatric clients, and it is seen as an advanced form of therapy aimed at letting the client obtain deep insight, integration and transformation of complex psychological problems (Bruscia, 1998; Wigram et al., 2002).
3. *Creative Music Therapy*, developed by Paul Nordoff and Clive Robbins (Nordoff and Robbins, 1977). As the name suggests it requires the therapist to be a highly trained musician, who basically creates a framework of musical improvisations, and whatever subsequent musical expressions come from the client are incorporated in that frame, and are creatively expanded, and hence music itself becomes the medium of therapeutic alliance, communication, self expression, and the realization of potential. In other words music making takes the center stage in the session. This model was evolved for, and still finds major applications in working with variously disabled and emotionally disturbed children (Etkin, 1999; Wigram et al., 2002).
4. *Benenzon Music Therapy*, developed by Rolando Benenzon. This model of music therapy, which is having its root in psychoanalytic thinking, is actually a confluence of various influences like, philosophy, musical training, and the culture where it is practiced. The major focus in this approach, which is centered in music and sound interaction in a nonverbal frame, is to improve the interpersonal communication, which is thought to lead to an improved quality of life and well being. This model is quite popular in Latin American countries (Benenzon, 2007).
5. *Behavioral Music Therapy (BMT)*, developed by, amongst others, Clifford K. Madsen (Madsen et al., 1968). It was developed in the USA and is still the most prominent model of music therapy there. BMT uses behavioral therapy methods, and is defined as, the use of music as a contingent reinforcement or stimulus cue, to increase or modify adaptive behaviors, and extinguish maladaptive behaviors (Bruscia, 1998; Wigram et al., 2002).

3. How it heals?

There have been several approaches to define and speculate how music is effective as a healing tool. Is it effective because it is like a verbal psychotherapeutic process akin to psychotherapy? Or does it act through vibrations the sound of music produces? Speculations and hypotheses existed even in ancient times, to find the reason behind the healing effect of music, as evident in the history of various cultures, right from the (Neo) Platonic theory in which the "harmonic vibrations system of music as sound, was interpreted as a microcosmic reflection of the vibrations and number proportions found in macrocosmos, and so it was believed to affect it", to Ayurveda's doctrine of doshas and chakras being modulated and balanced through music resulting in healing (Gardner-Gordon, 1993; Sundar, 2007; Wigram et al., 2002). Humoral theory of medicine (pathology) maintained that health is a matter of balance between the fluids/humors, and that the vibrations of music can be used to bring about this balance of humors, and hence heal the body and the mind. Also came the view that "Consciousness (the mind) can promote or impair health, and music can – through the susceptible mind – influence the individual following certain principles" (Horden, 2000; Gouk, 2000; Wigram et al., 2002).

3.1. The physiological basis

There are several proposed hypotheses in the literature regarding possible basis for the impact of music on altering emotions and behavior, but the precise mechanism remains unclear. Physiologically music seems to affect only auditory perception, but the sensorial manifestations go far beyond audition. The musical experience being laden with high emotional associations can evoke and alter emotional responses (MacRae, 1992). "The rhythm in music can structure behavior by simultaneously influencing emotions directly and altering physiological functioning such as heart rate, muscle tone, blood pressure, and respiration" (Steckler, 1998; Nayak et al., 2000). Sound travels in waves and it produces vibrations in the tympanic membrane of the ear or any membrane or surface it comes in contact with. Pitch, intensity and duration are other things which decide how a sound is perceived by us. Traveling through the external, middle and inner ear, eventually the auditory nerve transmits the sound, which is now converted into electrical impulses to the reticular activating system (RAS) in the brain stem to the thalamus, and thereafter it is relayed to multiple areas of the cerebral cortex, cerebellum, corpus callosum, limbic system, and the autonomic and neuroendocrine systems (Watkins, 1997; Wigram et al., 2002).

Perception and performance of musical activity is not a simple phenomenon; rather, it is a very complex process involving several parts of our brain, and a multitude of subcortical and interhemispheric pathways, and complex interplay of the right brain's creative and emotional functions and the left brain's mathematical organizing functions acting in unison to balance all the elements in musical activity (Wigram et al., 2002).

Studies have shown that listening to music gives rise to a cascade of cognitive and emotional events with distinct neural substrates, and music is known to be one of the most powerful sources of auditory stimulation to the human brain. All areas of the brain networked by the limbic system are stimulated by on playing music, making it the perfect vehicle for emotional expression and feelings (Sacks, 2006; Peretz and Zatorre, 2005; Koelsch et al., 2006). Music has been shown to enhance the ability of the two hemispheres to work synergistically by activating biochemical and electrical memory material across the corpus callosum (Updike, 1990). Recent brain imaging studies have also demonstrated that music listening generates a neural activity that affects the dynamics of brain activity in many cortical and subcortical areas pertaining to attention, memory, motor functions, semantic and music-syntactic processing, as well as areas related to emotions such as limbic and paralimbic regions (Koelsch et al., 2004, 2006; Popescu et al., 2004). The parasympathetic system prevails over the sympathetic system under the influence of music resulting in a relaxation response, characterized by alpha brain wave frequency on the electroencephalogram, and physiologically manifesting as a state of muscular relaxation with regular deep breathing and lowered heart rate (Updike, 1990; Kaminski and Hall, 1996; Lee et al., 2005).

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3.2. Effects on the neuroendocrine system

Studies done to find out the physiological effects of music have reported that exposure to music does produce certain neuroendocrinal changes in the body which can contribute to its healing effects. Studies have shown that pain, mood and the memory modulating effect of music may be due to the release of endogenous opioids from the pituitary on exposure to music (Cook, 1986; Updike, 1990; Kaminski and Hall, 1996). Music has also been shown to increase the level of phenylethylamine in the brain, a neuroamine that has been postulated to affect mood states (Kaminski and Hall, 1996). Studies have reported decreased levels of catchecolamines after exposure to music therapy (Cook, 1986; Updike, 1990; Mockel et al., 1994; Kaminski and Hall, 1996). On the contrary, one study reported a temporary increase in the levels of catchecolamines after four weeks, although they came down at six weeks follow-up (Kumar et al., 1999). Clearly more such studies are needed to arrive at a conclusion. There are also reports of a decrease in the levels of adrenal corticosteroids as well as corticotrophin-releasing hormone (CRH) and adrenocorticotrophic hormone (ACTH), which are secreted during stress (Mockel et al., 1994; Koelsch et al., 2004). Studies have shown statistically significant reduction in the serum levels of cortisol and ACTH in patients exposed to music listening (Kaminski and Hall, 1996; Bartlettt et al., 1993; McKinney et al., 1997a); on the other hand, there have also been reports of no effect or inconsistent effect of music on physiological indices, adrenal corticosteroids and β-endorphin levels (Rider et al., 1985; Davis and Thaut, 1989; McKinney et al., 1997b). It has also been reported that serum concentration of prolactin and platelet serotonin levels in Alzheimer disease patients remained unchanged after four weeks of music therapy and at six weeks follow-up, but melatonin concentration in serum increased significantly after music therapy, and was found to increase further at 6 weeks follow-up. The study concluded that "increased levels of melatonin following music therapy may have contributed to patients' relaxed and calm mood" (Kumar et al., 1999).

A recent study conducted to examine the effect of music on constitutionally expressed opiates and cytokines found that with regard to mu opiate receptor expression, mononuclear cells showed a statistically significant increase in subjects in the music group compared to the control group. Plasma morphine 6 glucuronide levels increased while plasma morphine levels decreased, implying morphine's conversion to morphine 6 glucuronide. Interleukon-6 (IL-6) levels were significantly decreased whereas there was no change in IL-1b, IL-10 and cortisol value. The study concluded that it "appears that music-listeners exhibit plasma signal molecule changes consistent with the physiological changes associated with the reported actions of music, i.e., lower blood pressure" (Stefano et al., 2004).

Another recent study investigated the effect of music exposure in mice on hypothalamic levels of brain-derived neurotrophic factor (BDNF) and nerve growth factor (NGF), which are proteins involved in the growth, survival and function of neurons in the central nervous system. In the study young adult mice were exposed to slow rhythmic music (6 hours per day; mild sound pressure levels, between 50 and 60 dB) for 21 consecutive days. At the end of this period it was found that music exposure significantly enhanced BDNF levels in the hypothalamus but NGF levels were decreased. The results, which show music's differential effect on the neurotrophin production in the hypothalamus in mice, give credence to the notion that modulation of neurotrophins may be the reason behind some of the physiological actions of music, and indicate another area where further research is solicited (Angelucci et al., 2007).

4. Music as a therapy in psychiatry

With this background of modulating, expressing, or altering emotions, feelings and mood states, with the potential of a therapeutic effect, music is naturally expected to have a lot of implications in this role in the field of psychiatry. Effectiveness of music therapy has been claimed in many areas including the domains of physical recovery, cognitive improvement, communication skills, and social and emotional rehabilitation (Standley and Prickett, 1994). Steckler (1998) observed it to be a healing therapy transcending physical, mental, emotional and spiritual dimensions, which as an adjunct can reduce the cost of therapy by reducing the medication need and the side effect burden of medications, and concluded that in "treating and caring for clients and sharing their life experiences, health care professionals can also move closer toward their own wholeness and deeper understanding of the human experience" (Steckler, 1998). A growing evidence base suggest, music therapy sessions in the form of active music making, music listening and discussion in group or at an individual level may help people with mental illnesses, including serious and chronic mental illnesses like schizophrenia, to develop relationships, and address issues which they may not be able to do with words alone (American Music Therapy Association,2011).

A recent metanalysis studying the effect of music therapy on psychosis and depression has revealed that music therapy, when added to standard care, has strong and significant effects on global state, general symptoms, negative symptoms, depression, anxiety, functioning, and musical engagement. Significant dose–effect relationships were identified. The study observed that "Music therapy is an effective treatment which helps people with psychotic and non-psychotic severe mental disorders to improve their global state, symptoms, and functioning. "Slight improvements can be seen with a few therapy sessions however longer courses or more frequent sessions are needed to achieve more substantial benefits" (Gold et al., 2009). Another recent study reports effectiveness of an experimental protocol "Sound Training for Attention and Memory" (STAM) in improving memory and skills in schizophrenic subjects indicating that music therapy may have a role in cognitive rehabilitation of schizophrenic patients. However, the data was too small to make any generalization; nevertheless, it points toward a potential area of research where drugs have not been very promising (Ceccato et al., 2006).

In a randomized controlled single blind trial it was found that in people hospitalized with schizophrenia, adding music therapy to standard care leads to greater improvement in symptoms compared with standard care alone at 12 weeks, although there was no significant difference in patient satisfaction with care and global function between groups (Gold, 2007). A recent exploratory randomized controlled trial showed that it is feasible to carry out randomized trials of music therapy for inpatients with schizophrenia and that it paves the way for randomized trials of music therapy's role in acute psychosis. In therapy sessions, patients were provided a range of musical instruments and they were encouraged to use them to express themselves. The group which was on both standard therapy and music therapy showed greater improvement in symptoms of anxiety, depression and negative symptoms (Talwar et al., 2006).

In another study, group music activity significantly reduced the scores in total and subscales of the brief psychiatric rating scale (BPRS) in patients with acute schizophrenia. The experimental group received 50-minute sessions of group musical activity five times a week for two weeks in addition to standard care (Peng et al., 2010). Music therapy has also been reported to reduce positive symptoms like auditory hallucinations after one week of listening to music in inpatients with schizophrenia; the negative

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symptoms improved as well (Hyun and Yang, 2009). A study done on inpatients with schizophrenia and schizoaffective psychosis, in which 15 group music therapy sessions were provided over a four month period, reported significant advantage in personal relations and in subjective sense of participation in musical activity; however, notably the effects were not sustained on follow-up evaluation (Hayashi et al., 2002). A 2005 Cochrane database review and its update in 2011 found that music therapy as an addition to standard care helps people with schizophrenia to improve their global state, and also improves mental state (including negative symptoms) and social functioning, if a sufficient number of music therapy sessions are provided by a qualified music therapist. However, it also pointed toward the need for further research to address the dose effect relationship and the long term effects of music therapy. The review suggested that studies are needed to examine the effectiveness of music therapy in clinical practice, and to further explore the psychological 'mechanisms' through which music therapy works (Gold et al., 2005a; Mössler et al., 2011).

The role of music therapy in depression has also been researched; studies claim that it has the potential to be an effective adjuvant or alternative therapy for people with depression, indicating further need of research to validate the findings (Brandes et al., 2010). Chan et al. (2011) have recently observed "Music listening over a period of time helps to reduce depressive symptoms in the adult population. Daily intervention does not seem to be superior over weekly intervention and it is recommended that music listening session be conducted repeatedly over a time span of more than three weeks to allow an accumulative effect to occur". Music therapy may also be beneficial for depressed patients with disturbed sleep architecture as the effects were comparable to hypnotics in improving the quality of sleep in such patients (Chan et al., 2010; Deshmukh et al., 2009). A Cochrane database systematic review on the role of music therapy for depression by Maratos et al. (2008) has reported that, although music seems to be a well tolerated and feasible therapy for depression indicated by low dropout rate and some improvement in mood, music therapy research is marred by faulty study designs and poor reporting, consequently decreasing the confidence regarding its effectiveness. A recent randomized controlled trial studied the effect of improvisational psychodynamic music therapy in working age patients of depression. The sample consisted of 79 adult patients with unipolar depression randomized to two groups; one received standard care (short term psychotherapy 5–6 sessions, medication and psychiatric counseling), and the other received individual music therapy (consisting of a total of 20 sessions offered biweekly, each lasting 60 minutes of improvisational music therapy) in addition to standard care. The patients who were on music therapy plus standard care fared significantly better in depressive symptoms (mild, moderate to severe), anxiety and general functioning than the standard care only group at three month follow-up. An important finding from this comparatively better designed study was that the effect of music therapy did not significantly vary across therapists, indicating it probably depends upon the music therapy method utilized (Erkkila et al., 2011). Similar studies with a larger sample size and longer duration can validate and generalize the findings. Moreover, studies are needed which can point out the specific ingredients of music therapy responsible for the effects observed.

Many recent studies have explored the role of music therapy in substance dependence and abuse disorders, and have found it to be a useful adjuvant therapy facilitating better emotional control and emotional experience without drugs (Baker et al., 2007), reducing depression, anxiety, stress, and anger in such patients (Cevasco et al., 2005), and lowering scores on psychosocial problem inventory (Gallant et al., 1997). Moreover, use of interventions like drumming and drum circles can lead to an increased sense of relaxation, positive spiritual experiences, and interpersonal support and connection to others in patients undergoing a rehabilitation program for substance abuse (Winkelman, 2003). However, there is no consensus in literature regarding the efficacy of music therapy in treatment of patients with addictions (Mays et al., 2008).

Music therapy has also been reported to be beneficial in patients with Alzheimer's disease or patients with dementia, and has been found to improve depressive symptoms and reduce behavioral symptoms while improving social behavior (Han et al., 2010; Pollack and Namazi, 1992). It has also been noted, that in caregivers of late stage dementia patients, caregiver's participation engagement frequency was better with musical activities. Caregiver's burden, depression and positive and negative affect, and self-reported health did not change, but their increased satisfaction with visits in music therapy was statistically significant (Clair and Ebberts, 1997).

It is widely reported that music can be beneficial to individuals with autism in increasing social behavior and reducing avoidant behavior; music has also been reported as an effective motivating activity for the child to participate in (Kim et al., 2009; Finnigan and Starr, 2010). On the other hand, studies are there which have pointed out limited evidence to support the use of music interventions in young children with autism, hence indicating the requirement of further quality research in this area for generalization (Simpson and Keen, 2011). Studies have found significant influence of music therapy activity in increasing group cohesion, acceptance, and interpersonal relationship in psychiatric patients as compared to participation in non music activities, hence suggesting music as a viable means to improve the outcomes of group therapy; however, these studies are older and need to be replicated (Mitchell and Zanker, 1948; Cassity, 1976).

Various other accounts have explored music therapy's effectiveness in a variety of conditions, where individual characteristics and cultural influences are pronounced and medications have little to offer, like grief and trauma to eating disorders, and show it to be promising, but the need for more research to validate the findings remains (Loewy and Hara, 2007; Lejonclou and Trondalen, 2009). A recent interesting study examined mentally ill patient's expectations, evaluations and experiences of undergoing music therapy and found that it often varies with the nature of the long standing relationship the patient has had with music in the past. Along with the usual benefits it also helps in reestablishing music as a coping strategy and health promoting resource in the patient's life (Ansdell and Meehan, 2010). In another study, patients rated music therapy favorably in terms of effectiveness in addressing specific psychiatric deficit areas, and more than half of the patients rated it as their favorite class/therapy (Silverman, 2006).

Gold et al. (2005b) have pointed that while considering music as a therapy it is important to recognize one significant aspect, that if it is a psychotherapeutic procedure, then among other factors, patient motivation for therapy should be taken into consideration while prescribing or evaluating it. It is a well known fact that psychotherapy may not work if patients are not motivated for it and this may be true for music therapy as well; this fact might have confounded the results of many studies done so far (Gold et al., 2005b). Music as a therapy has always been portrayed and perceived as a cost effective intervention in various studies done so far; a recent cost benefit analysis has echoed that music therapy is indeed cost effective as it may directly reduce medication cost and improve staff utilization (Romo and Gifford, 2007).

5. Conclusion

The research done so far establishes this fact with clarity that music is certainly more than just an entertainment entity or

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cultural phenomenon and places it forth strongly as a therapeutic tool in the treatment of psychiatric disorders. Music influences the mind and body in several ways and on multiple levels, including subjective emotional and feeling state changes, which are difficult to quantify, to various measurable neurochemical, endocrinal and structural changes.

Although being a psychotherapeutic procedure, patient motivation and a host of other factors which influence outcome in psychotherapy research and variables like study design make interpretation of results difficult. Yet more often than not it has been proven as a valuable noninvasive cost effective adjuvant therapy. Recent studies exploring the effect of music on neurochemicals and neurophysiology also point toward its capacity to induce structural changes in the brain as well as a capacity to alter neurochemical and neurohormone secretions, indicating the need for more quality research in these areas, which may help define its exact mechanism of action, and may also help delineate potential areas of definite benefit in the realm of psychiatric disorders. To conclude, music definitely aids and accelerates the healing process, and this fact can be harnessed for better holistic care of the psychiatric patients. However, advancement in scientific understanding and more methodically sound research is still required to establish it as a sole quantified therapy. Till then, there exists ample evidence to not only enjoy it but to use it for the benefits it brings and promises as a therapy.

Happy listening...

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