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Impact of Music on the Mind and Anxiety

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Abstract

Music has a myriad of health-related benefits, both psychological and physiological. However, because the healthful effects of music have not been fully explored scientifically, many questions about the clinical efficacy of music are yet to be answered. Music Therapy (MT) is the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program. MT with seriously mentally ill clients is a psychotherapeutic method that uses musical interaction as a means of communication and expression. The aim of therapy is to help people with mental illness, including serious mental illness (e.g., schizophrenia or like illnesses) to develop relationships and to address issues they may not be able to using words alone. MT sessions include the use of active music making, music listening, and discussion. MT includes both individual and group therapy.

1. INTRODUCTION:

The effect of music on the moods, emotions and behaviour of both individuals and groups has been noted throughout history. A number of writers have discussed the functions of music (Merriam, 1964; Gaston, 1968), while others have researched both the physiological and psychological effects (reviewed in Radocy & Boyle, 1988). As a result of this research, music has come to be considered as lying on a continuum from highly stimulating and invigorating to soothing or calming (Gaston, 1968). There is certainly strong evidence from a variety of sources that people respond differently to stimulative and sedative music (Radocy & Boyle, 1988). Within the field of education, however, there have been few studies investigating the non-contingent use of music in influencing the behaviour and performance of us.

Anxiety is a common phenomenon among hospitalised patients (Wong *et al.* 2001) and is an emotional state characterised by feelings of tension, nervousness, worry, apprehension and with heightened activity of the autonomic nervous system. Anxiety has both psychological and physical effects. The psycho-physiological stress response involves activation of the hypothalamic-pituitary-adrenal axis and the sympathetic nervous system and is

characterised by increased heart rate, blood pressure and cardiac output (Bally *et al.* 2003). Recently, music has been shown to be effective in alleviating preoperative anxiety (Cooke *et al.* 2005; Wang *et al.* 2002; Yung et al. 2002). Wang *et al.* (2002) conducted a study on music and preoperative anxiety where adult patients undergoing anaesthesia and surgery were randomly assigned to two study groups. The post intervention anxiety level of patients in the music group decreased by 16% compared with the preintervention level, whereas the anxiety level of the control group did not change significantly. Yung *et al.* (2002) studied the effect of music on preoperative anxiety in Chinese men undergoing transurethral resection of the prostate. The study was designed as quasi-experimental with three groups: music intervention, nurse presence and control group. A reduction in anxiety level was found for the music intervention group. Cook *et al.* (2005) in a randomised control trial studied the effect of music on preoperative anxiety in day surgery. The reduction of the anxiety level of the music intervention group was statistically significant.

Research in different patient groups show that music therapy reduced psychological stress as evidenced by decreasing the physiological symptoms of anxiety like heart rate (Lee *et al.* 2005; Chlan 1998), blood pressure (Lee *et al.* 2005; Yung et al. 2002; White 1999) and plasma cortisol hormone levels (Leardi *et al.* 2007) as well as reducing anxiety for preoperative patients (Cooke *et al.* 2005; Wang *et al.* 2002; Yung *et al.* 2002). Chlan (1998) studied the effectiveness of a music therapy intervention on relaxation and anxiety for patients receiving ventilator assistance. The study used a two-group, pre and post - test experimental design. State anxiety (pre and post test), heart rate, and respiratory rate were obtained every 5 minutes for 30 minutes. Patients who received music therapy (n=27) reported significantly less anxiety post test than those patients in the control group (n=27). Heart rate and respiratory rate decreased over time for those patients in the music group as compared with the control group subjects. Yung *et al.* (2002) conducted a quasi-experimental design with three groups, using men undergoing transurethral resection of the prostate finding that music intervention significantly reduced patients' blood pressure levels. Lee *et al.* (2005) studied the effect of music on the physiological responses of patients receiving mechanical ventilation. A total of 64 subjects were randomly assigned to undergo either 30 minutes of music intervention or a rest period. There were statistically significant decreases in outcome measures for the music group in the post test period in respiratory rate, heart rate, systolic blood pressure and diastolic blood pressure. For the control group, there was no significant reduction in outcome measures in the post test period.

Leardi *et al.* (2007) conducted a randomised control trial to examine the effect of music therapy on stress response in patients undergoing day surgery. Sixty patients were randomised to one of three groups. Before and during surgery, patients in group 1 listened to new age music and those in group 2 listened to a choice of music from one of four styles. Patients in the control group heard the normal sounds of the operating theatre. Plasma levels of cortisol were evaluated before, during and after the operation. Plasma cortisol levels decreased during surgery in both patient groups who listened to music, but increased in the control group. Sedative music, which tends to have no accented beats, no percussive characteristics, a slow tempo and a smooth melody, is reported to be suitable for music intervention (Chlan 2000). Research focusing on the type of music used to reduce anxiety has also been conducted (Lee *et al.* 2005; Wong *et al.*

2001). Wong *et al.* (2001) conducted a pretest/post test crossover with experimental repeated measures designed to examine the effect of music therapy on anxiety in ventilator-dependent patients. The experimental group selected music from the researcher's collection of relaxing music, including both Chinese music (Chinese folk song, music played by Chinese instruments, Chinese music played by Western instruments, Buddhist music) and Western music (Western classic, Western movie music and piano music). Findings indicated that music therapy was effective in decreasing state anxiety. In Lee et al's (2005) randomised controlled study, the patients listened to Chinese classical music, religious music (Buddhist and Christian), Western classical music and music of relaxing natural sounds that had a slow beat. The study demonstrated that music could significantly reduce the physiological responses to anxiety, ie heart rate, respiratory rate and blood pressure, in mechanically ventilated patients.

The musical preferences of patients are an important factor in the effect of music on patients, as not all people are likely to prefer the same types of music because of differences in age and culture for example (Lee *et al.* 2004). Some research reported that the music chosen by patients is important in music therapy (Hayes *et al.* 2003; Hamel 2001). Hamel (2001) found that two patients withdrew from the study because they disliked the music played and recommended that patients should be allowed to select the type of music listened to and suggested that patients be asked to bring their own music to hospital. Hayes *et al.* (2003) evaluated music enjoyment in their study and found that patients who listened to music felt strongly about having a choice.

There are several studies examining the effect of music on vital signs (Uçan *et al.* 2006; Güngör 1999), quality of life (Bozcuk *et al.* 2006), anxiety (Bal 2002, Yılmaz *et al.* 2003; Yıldırım and Gürkan 2007) and pain (Bal 2002) in Turkish patients. In Güngör's (1999) 4-group (music group, touch group, music and touch group and control group) experimental study, the effect of music and touch on vital signs (pulse, blood pressure and breathing) was examined. The study found that both music and touch reduced vital signs in the three experimental groups compared with the control group. Similarly, Yıldırım and Gürkan (2007) found music reduced anxiety levels in patients undergoing chemotherapy. Bal (2002) found that listening to music during extracorporeal shock wave lithotripsy (ESWL) decreased pain and anxiety levels and suggested the type of music should be determined by the patient. In contrast Bozcuk *et al.* (2006) reported that music had no significant effect on quality of life. Uçan *et al.* (2006) also reported that music did not have any significant effect on pulse rate, blood pressure or oxygen saturation in preoperative endoscopy patients. One reason why music is an attractive medium for a therapeutic nursing intervention is that it is not harmful and is easy to engage in. Providing music to patients is an inexpensive intervention, as it does not require the use of additional human or other resources, such as training or specialised equipment (Lee *et al.* 2005). Therefore, music therapy can be used as a nursing intervention in preoperative nursing care. The aim of this study was to examine the effect of music therapy on preoperative anxiety levels and various state of mind in Indian men undergoing various type of surgery.

Music is said to influence the process of thinking and learning. Music may help you think better, analyse matters faster, and work more efficiently. It also promotes a more positive mood and attitude to its listeners and gives them an overall sense of motivation. An impact of music on the mind and brain has been a subject of interest for many. The

interconnection between music and the physical and mental health of human beings has been researched on since long. Music stimulates the areas of the brain that are responsible for your thinking, planning, and analysing, thereby improving your organizational skills and making you more capable of handling challenging math problems. Research has concluded that music does have positive effects on our mind. Music has the power of healing certain ailments. Indian classical music has been found to have the strongest healing powers. Music has a calming effect on the mind. It is known to speed the recovery of health ailments. It helps fight anxiety and has a soothing effect on the brain. Following Effects of Music were reported on the Mental State;

- Fights Depression, Relieves Anxiety, Improves Learning Abilities, Boosts Confidence: Following Impacts of Music were reported on the Brain;
- Increases Concentration Levels, Improves Memory, Increases Creativity and Problem-solving Skills, Makes Learning Easier, Speeds Healing: Besides this Music also have positive and Negative Effects;

For music to have positive effects on the mind and brain, it should be complex enough to involve brain activity. It should be synchronous and generate sound waves that are in tune with the body's internal rhythm. It should be played at a volume the listeners' ears can accept and should have regular beats to have any good effects on the body and mind rhythm and functioning. Here are some of the negative effects of music on the mind.

- Very loud music can disturb the symmetry between the right and left halves of the brain. Loud music results in a disturbed state of mind. Exposure to harsh or disruptive music at an early age can lead to learning disabilities and behaviour problems in children.
- According to a study by Dr. John Diamond, an Australian physician and psychiatrist, body muscles go weak when subjected to the stopped anapaestic beat in hard rock music. He also says that shrill frequencies and irregular beats are harmful to the mind and body.
- Disharmony in music has been shown to reduce retention levels of the brain and lead to aggression and hyperactivity.
- Heavily repeating musical patterns can lead to feelings of anger and boredom.

Thus, the effects music can have on your mind or brain depend largely on the kind of music you choose to listen to. To experience the positive psychological effects of music, you should listen to only good music. A sound which spells melody is music. It's the sound that has the power of creating calm. That's the magic of music. Listening to music gives me the experience of divine pleasure.

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