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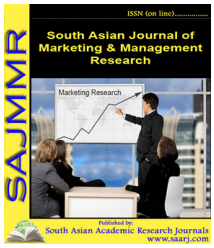

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MANAGEMENT OF STRESS THROUGH MUSIC THERAPY

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ABSTRACT

Stress management techniques involve a number of ways, with music playing an important role in the process. These techniques might be based, among other things, on biological and psychological stresses. Stress is evaluated for changes in some physiological parameters such as finger temperature, heart velocity, and blood pressure during study on these processes; modifications that influence immunological and neuroendocrine responses are also sought for. Music has long been used to soothe individuals, and much research is being conducted to determine how different forms of music may be used to manage stress. Surprisingly, some of these studies show that 'classical' music had a greater influence on stress than popular 'New Age' music, despite the fact that both are popular. Many kids use music to cope with stress, and teachers may want to consider incorporating more music into their classroom to help students study more successfully. This study provides an overview of current studies on the use of music to assist people in dealing with stressful situations.

KEYWORDS: *Music, Stress, Managing stress through Music, effects on emotions, Physical and psychological effects.*

INTRODUCTION:

A physical and psychological response generated by an individual when the difference between reality and imagination becomes intolerable is characterized as stress. This state is tolerable if it lasts for a short period of time; however, if it is prolonged or excessively present and has the potential to grow into escapist or withdrawal behavior, it must be handled (Merriam-Medical Webster's Desk Dictionary, 2005).Because technology evolves at such a quick rate, life becomes

more hectic by the day. In this environment, a rising number of people are suffering and failing to deal with heightened stress.

The stress reaction is driven by a substantial difference between (actual or imagined) reality and expectations. Even if a person lives in a way that meets personal standards, he or she is not stressed, even though the conditions are seen as difficult by those outside the family. Few people are happy with their existing status in today's fast-paced culture. Anxiety, hostility, weariness, wrath, pain, desperation, overwork, pre-menstrual tension, overconcentration, bewilderment, weeping, and dread are among stressors that impact the human brain (The American Heritage Stedman's Medical Dictionary). Individuals who are stressed use a number of methods, including medicine, relaxation techniques such as yoga, group activities such as sports, community activities, and others. Individuals may complement these therapies with potentially dangerous behaviors such as drinking, smoking, and taking narcotic medicines, which can have long-term repercussions.

In their search for new ways to cope with stress, researchers investigated the use of'music' as a stress management aid and finding that it was beneficial. Music has the capacity to release stress and calm an individual on both a psychological and physical level, with neither short- or long-term negative consequences. Music, with its wide range of study and development, along with stress management, is a challenging and interesting subject to learn and master. This study discusses how biological parameters such as finger temperature, heart rate, blood pressure, muscular contraction, and galvanic skin response vary when a person is stressed. These physical properties, which may be measured directly or indirectly, reflect the amount of stress that fluctuates proportionally with temperature change. It is examined if they are useful as a stress measurement tool and what sort of music was utilised in the testing. The reasons behind the music chosen will be considered. Classical, new age, and popular music are all words used to define different musical genres.

The comparison and analysis of the various techniques will yield ideas for future research.

1. Physiological and psychological change:

The 'autonomous' nervous system is thought to be a component of the human body that is not under the conscious control of the individual who has it. Friendly and parasympathetic characteristics, both hostile in nature, are further classified into two types. When a person is stressed, sympathetic nerve output controls and boosts blood flow to major muscles, preparing the body for an assault or escape (fight or flight). Dry mouth, motor excitation, sweating, pallor, enlarged pupils, and sleeplessness are all noted physiologically.

A number of hormonal and physiological changes occur in your body, including increased heart rate, adrenalin surge into the bloodstream, temporary digestion, and immune system shutdown (due to a reduction in immune-promoting hormones) (Lewis, 2000). The next sections go through the different physiological reactions and changes that occur when music is utilised as a stress-reduction method.

2. The heart's rate of beat:

The term "heart rate" refers to the frequency with which the heart beats and is determined as the number of heart contractions that occur in one minute (beats per minute or BMP). A healthy adult's heart rate ranges from 60 to 100 beats per minute, regardless of age or gender. In some circumstances, such as while under stress, the heart rate may rise. With the exception of a few

rare examples of anomalies, pulse rate is the most basic way of monitoring heart rate and is extremely accurate.

Following positive carotid artery measurement results, a sensory device is implanted in the earlobe to assess the condition (A style Z Health Guide from WebMD, accessed September 21, 2006). The connection between heart rate and body temperature is highly important. In the absence of any other factors, the heart rate and body temperature are directly linked. A change in heart rate of 10 beats per minute (BMP) equates to a 1-degree Celsius change in body temperature. Heart rate variability is frequently recognized as a useful indicator of stress and worry (Shoemaker, 1996).

Standley (1991) examined variations in heart rate and finger temperature during her study to determine the influence of music on stress management. A SomatronTM, which was designed to produce different combinations of sounds depending on music and the son of a dental workout, was used to create vibrotactile stimulation. The SomatronTM is a machine that, when combined with a sound source, produces physical vibrations or vibrations that the body perceives as vibrations. The vibration relaxes the muscles and increases circulation in the back, spine, and legs, resulting in profound relaxation and relief from back, spinal, and leg discomfort.

Any music or song's rhythm may be utilised to activate the SomatronTM, which can then be used to create stimulation (Brajkovic, 2001). Standley (1991) investigated 130 music students divided into five groups of 26 students each, each comprising 13 male and 13 female students. The groups were subjected to various vibrotactile stimuli, which were activated by music or the sound of exercise, as well as suction during a dental procedure, among other things. During the trial, they were only alternated with music or ambient noise in a variety of combinations. When compared to dental drill noises, the researchers observed that the vibration produced by music caused finger temperatures to rise and pulse beat rates to decrease in participants' hands. The music was not detailed, and the presence of the dental drill as a contrast may have caused the participants to become more conscious of the stress they were feeling. Despite this, the measurement methods were also successful.

3. Blood pressure (sometimes referred to as arterial pressure):

The pressure produced by blood on the walls of blood vessels is referred to as blood pressure.

Unless otherwise specified, blood pressure refers to the pressure in the major arteries that transport blood to locations other than the lungs, such as the brachial artery, and does not include heart rate. Most blood pressure readings are given in millimeters of mercury (mm Hg). Systolic pressure is the greatest pressure in the arteries during the heart cycle, whereas diastolic pressure is the lowest pressure in the arteries during the cardiac cycle's resting period (Marchello, 2006). A resting and healthy adult's blood pressure should be about 120 mm Hg systolic and 80 mm Hg diastolic (written as 120/80 mm Hg), with some variation depending on the individual.

Blood pressure does not remain constant throughout the day (due to a circadian rhythm) and changes in reaction to stress, diet, medicines, and illnesses (Warren, 2000). In the short term, stress can cause a rise in blood pressure; however, the long-term repercussions of stress are not yet known. Measures for stress management, on the other hand, do not appear to be beneficial in avoiding high blood pressure. Given that high blood pressure has been related to cardiovascular illness, Chafin et al. (2004) conducted an experiment to illustrate how music can help with blood pressure recovery after stress, despite the fact that not all music was beneficial. The variation in

blood pressure was compared with a change in heart rate for the aim of stress evaluation to determine the usefulness of blood pressure as a criteria for stress.

4. Muscle contraction.

Muscular tone or muscle tension refers to a constant and passive partial muscle contraction in the muscles that helps to maintain posture and is present even while resting. Unconscious nerve impulses keep the muscles partly clenched. When you pull or stretch quickly, your body responds by raising muscle tension on its own. This is known as autonomic response. Reflection helps to maintain equilibrium while also protecting against harm. Recent ideas have been proposed to explain the emergence of musculoskeletal disease symptoms in persons who work in professions that are just moderately physically demanding (Hagg, 1991; Knardahl, 2002).

According to Hagg's theory, the "Cinderella hypothesis" refers to the fairy tale heroine Cinderella, who was the first to wake up and the last to retire to bed. It was discovered that the motor units of a given muscle are recruited in a certain order. Small, low-threshold motor units are recruited first, and they remain active until the muscle is fully relaxed.

When these devices are left on for a lengthy amount of time, they can cause degenerative processes, harm, and discomfort in the body.

Recent study has shown that muscular tension is caused not just by physical demands, but also by emotional pressures.

1. The reaction of Galvanic Skin is as follows:

The galvanic skin response (GSR) technique can be used to assess the electrical resistance of the skin.

The assessment of the autonomous nervous system response, which is commonly recognised as a metric, is considered to be used to assess sweat gland function. There is a relationship between sympathetic activity and emotional excitement, although the exact nature of the association is unknown. Some people's GSRs are quite sensitive to their emotions, whilst others' GSRs are not.

Fear, rage, and other emotions may all generate GSR responses on a par with one another (Shoemaker, 1996). To assess GSR, two pathways to the skin are linked together, giving in a simple assessment. The GSR may then be estimated by measuring the resistance as the current passes through the body during the research, assuming one is performed.

The technique of passive GSR is used to measure the current generated by the body itself. GSR has been supplanted by more contemporary technologies, although GSR has survived because to the low-cost hardware (galvanometer) utilised in the process (Shoemaker, 1996).

Peretti and colleagues (1974) conducted a study with 100 pupils. The majority of the topics were about music. The individuals were told to go through a labyrinth while blindfolded. With each failed effort, the topic was judged incorrect, and the process had to be repeated until the GSR indicated an increased level of anxiety. The whole experiment was conducted in a variety of settings, with or without music playing before to, during, and/or after the test, depending on the conditions.

Music was proven to not only assist reduce stress, but it also had a distinct impact on the degree of anxiety experienced by men and women, as well as those who majored in music versus those who did not. The patient's anxiety was much reduced as a result of her presentation of the

musical selection. Music majors, both male and female, had lower stress levels than non-music majors. It's conceivable that this has anything to do with their musical sensibility. Men, on average, exhibited a larger reduction in stress than women. Zimny and colleagues (1962) studied the effects of music on children's GSR and observed that music induces differential GSR in children in the same manner as it does in schizophrenic students aged 20 or 50.

2. Immunological and neuroendocrine stimulation responses:

The numerous components of the human immune system, which are made up of a complex cell, organ, and tissue constellation, are linked by a sophisticated and dynamic network of connections. It is intended to maximize harmful organisms' reaction to an invasion of their area. In actuality, the immune system is a succession of detection and adaptation processes that culminate in a very effective infection-fighting mechanism.

Stress or anxiety is a condition that is extremely detrimental to the body's health. A wide range of physiological reactions support this. A frequent trend among people is that they fight external difficulties, such as illnesses, and that their bodies remember those external components.... When the human body is stressed, the physiological processes that occur are similar to those that occur when the body is fighting a sickness.

There are several situations in which the conditioned reaction to memory and association music, as it relates to the lives of musicians, resulting in a particular quality of life.

Many people who are worried or suffering from illnesses may have a profoundly pleasant emotional experience while listening to music that is significant to them. This might promote the production of hormones, which can help to decrease the disease-promoting components.

Barlet and colleagues (1993) conducted a series of studies based on the premise that if stress was treated and battled as an illness by the human body, the immune system would react similarly, which they discovered to be accurate.

Typical questionnaire analysis sets were used to conduct self-reports and psychological assessments on participants.

Many physiological reactions to music's usefulness as a stress reliever have been tested, but the experience of stress is also subjective. Music's efficacy as a stress-relieving aid has also been investigated by researchers. In psychological research investigations, questionnaires, especially self-reporting rating scales, are frequently utilised. Smith (2001) directed the R-State scale's creation and specialised in the examination of participants' psychological states. However, there are several conflicting findings that are freely accessible.

One probable reason for this discrepancy is the individual's previous musical knowledge.

Stratton (1992) performed study on 42 men and 48 women who had completed an introductory psychology course at the university to accomplish this. In a series of experimental scenarios, participants were asked to wait for an appointment outside an office for a total of 10 minutes. Depending on the scenario, people were obliged to wait alone or in groups, with or without music and social interaction. Participants were asked to fill out a questionnaire to assess their degree of stress. One of the most important questions was how long they anticipated to be able to hold out (their wrist watches had been removed). The band that stayed silent in front of strangers and didn't play any music had the longest recording, clocking in at 16.33 minutes.

Because psychologically mediated variables have been shown to impact the results of therapeutic therapies such as chemotherapy and bone marrow transplantation, music therapy may be useful to patients. In such conditions, the frequency of negative psychological illnesses such as concern and sadness, as well as emotional weariness and despair, is widespread, and the quality of life of survivors is generally reduced as a result.

Sahler et al. (2003) performed a research to assess the benefits of music therapy in bone marrow transplant patients (BMT). They are compelled to make physiological and psychological adaptations as a result of their pain. An intervention was necessary to have an influence not only on their general well-being, but also on the control of physiological symptoms, notably measurable immunological markers. Music therapy was chosen for this study due to its demonstrated efficacy in promoting emotional self-regulation under medical conditions, such as decreased pain sensation, anxiety reduction, stress-related reductions in cardiovascular and endocrinological reactions, relaxation increases, and immunological defence. The objective of this study was to reduce the feelings of agony and sadness, as well as the nausea and vomiting symptoms that came with it. The trial's findings were important. After taking the drug, subjects reported a significant reduction in their nausea, vomiting, and pain sensations.

Discussion of Findings:

Much progress has been made in the study of physiological reactions to musical stimuli since the end of the nineteenth century, and the idea that music has an influence on physiological processes has received universal recognition.

The same or similar music, when heard by various persons, can produce positive, negative, and occasionally unchanged physiological reactions (Dainow, 1977). A stimulus for cardiac response to music, according to Hodges (1980), has generated a range of conflicting results. The heart rate increased in response to stimulating music and reduced in response to calming music, according to seven of the twenty-one studies evaluated. According to five studies, every form of music, whether thrilling or soothing, has the ability to raise heart rate. Two studies have discovered that both stimulative and sedative music may have an effect on heart rates, albeit the results were unexpected in both cases.

CONCLUSION:

Finally, seven research have shown that music has no influence on heart rates and is hence useless in stress management. Similarly, research into the numerous physiological characteristics of music as a stimulus has yielded radically disparate results (Hodges, 1980). Given the stunning magnitude of the inconsistencies discovered here, it is apparent that more research is required. These abnormalities might be caused by a lack of statistical analysis, control, standardised measuring procedures, defective equipment, or a lack of baseline data. The description of music as sedative or energising only on the basis of the number of beats per unit time might be another explanation that ignores the subject's attitude and choice in the music they listen to. On the other hand, it is conceivable to suppose that all people have a comparable reaction to musical or other stimuli, which entirely rules out the idea of idiosyncratic physiological reactions.

Music has already been proven to be an effective stress-reduction method in research. Certain researchers have discovered several connections between stimuli and response. However, the findings were more inaccurate, most likely because the individual distinctive reactions to stimuli were not taken into account. Jellison (1975) discovered a reduction in subjective anxiety in his participants without a significant change in blood pressure, finger temperature, or pulse rate.

O'Connell (1984) reported similar findings, indicating that college students who listened to music before examinations reported lower anxiety levels but no changes in finger temps or pulse rates. Scartelli (1984) made the discovery.

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