CHAPTER-II

THEORITICAL BACKGROUND

- 2.1: Music-A Psychological Phenomenon
  - 2.1.1: Therapeutic Effects of Music
- 2.2: Ancient healing roots of Indian Music
  - 2.2.1: Physiological & Psychological Aspect of Indian Music
    - 2.2.1.1 (a) & (b): Nada & its Psychoanalytical Aspect
    - 2.2.1.2 (a) & (b): Shruti & its Psychoanalytical Aspect
    - 2.2.1.3 (a) & (b): Swara & its Psychoanalytical Aspect
    - 2.2.1.4 (a) & (b): Rhythm & its Psychoanalytical Aspect
    - 2.2.1.5 (a) & (b): Raga & its Psychoanalytical Aspect
    - 2.2.1.6 (a) & (b): Time Theory of Ragas & its Psychoanalytical Aspect
    - 2.2.1.7 (a) & (b): Classification of Ragas and its Psychoanalytical Aspect
  - 2.2.2: Aesthetic Aspect of Indian Music
    - 2.2.2.1 (a) & (b): Rasa Theory & its Psychoanalytical Aspect
    - 2.2.2.2 (a) & (b): Raga Dhayan & its Psychoanalytical Aspect
- 2.3: Therapeutic Importance of Indian Music
- 2.4: Indian Music in the Present Study
- 2.5: Use of Music as a Therapy
  - 2.5.1: Types or Modes of Music Therapy
  - 2.5.2: Areas or Range of Music Therapy
- 2.6: Anxiety-An Overview and Concept
  - 2.6.1: Effects of Anxiety
  - 2.6.2: Causes of Anxiety
  - 2.6.3: Common Symptoms of Anxiety
  - 2.6.4: Relaxation Techniques to Overcome Anxiety
2.6.5: Anxiety among Indian Adolescents

2.7: Stress-An Overview and Concept

2.7.1: Signs and Symptoms of Stress

2.7.2: Causes of Stress

2.7.3: Types of Stress in the Present Study

2.8: Stages of Human Development

2.8.1: Adolescent Stage: A Problematic Phase

2.8.1.1: Anxiety at Adolescent Stage

2.8.1.2: Stress at Adolescent Stage

2.8.1.3: Music-A Powerful Healing Tool for Adolescents
CHAPTER-II
THEORETICAL BACKGROUND

2.1 MUSIC: A PSYCHOLOGICAL PHENOMENON

Since the dawn of civilization, music has been an integral part of social and cultural life of human beings. Music has been an important adjunct to our rituals and has been created with a capacity to reflect and effect human emotions. Most cultures ascribe to music, and they usually have their own peculiar cultural styles and tastes. In this sense, music can be and has been thought of as a universal language. It is difficult to guess when Homo sapiens first started to use, understand and enjoy music. The rhythm of music reflects the movement of galaxies, stars and planets, of the sun and the moon, the cycle of seasons, days and nights, the tides of the seas and the birth and death of our own cells\(^1\). Music is an activity which can contribute towards physical development in a variety of ways by relaxing muscular tension, developing coordination of mind and body, providing an outlet for emotional tension and an opportunity for creative self-expression\(^2\). Music is the oldest form of expression, older than language and art; it begins with the voice and with our overwhelming need to reach out to others. In fact, music is far more than words, for words are abstract symbols which convey factual meaning only. Music touches our feelings more deeply than most words and makes us respond with our whole being\(^3\). The combination of music and speech into single expression of song has unique power, conveying feelings of great elation or almost unbearable poignancy\(^4\). Many who researched the subject believe that music, song and dance preceded language as a means of communication\(^5\). It is a medium for communication, which can be both pleasant and healing.

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experience. According to musicologists, music is a form of language or communication that directly accesses the emotions without the intermediation of words and rational thought. Emotional experiences derived from music have an influence on the formation of one’s moral and intellectual outlook. It is apparent that there is an effect of music on the behavior and personality.

Music inspires not only the soul of great musicians or singers but also common man. The time an infant comes into the world, begins to move its little arms and legs with the rhythm of music in a mother’s womb. Therefore it is no exaggeration to say that music is the language of beauty, the language of the One whom every living soul has loved.

In Sanskrit breath is called prana, the very life. And what is voice? Voice is breath. If there is anything in life, in man’s constitution, which may be called life; it is breath. Breath manifests outwardly-the sound of the voice-which is called prana. Therefore a person can best express himself in song, or what he says. If there is anything in the world that can give expression to the mind and the feelings, it is the voice or music. Often it happens that a person talks on a subject with thousand words, and it has no influence. Another person express a thought in just few words, and makes a deep expression. This shows that that the power is not in the words, but in what is behind the words; that is in the psychological power of the voice which comes from prana. According to the strength it has, it impresses the listener. Life depends upon the rhythmic working of the whole mechanism of the body. Breath manifests as voice, as word & as sound. The sound is continually audible, the sound without and the sound within ourselves: that is music. This shows that there is music outside and music within us.

According to the esoteric standpoint, music is the beginning and end of the universe. All actions and movements made in the visible and invisible world

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are musical in nature. That is, they are made up of vibrations pertaining to a
certain plane of existence. It is easier to understand that the voice has a certain
psychological value, that one voice differs from another, and that every voice
expresses its psychological power. Often one feels the personality of the one
who is talking at a distance over the telephone. A sensitive person can feel the
effect of the voice alone, without seeing the speaker. Many don’t depend so
much upon the words as upon the voice that is speaking the words. This shows
that one’s psychological development is expressed in speaking and more
especially in singing.

Music exists in every culture and seems to be part of our biological heritage.
Music can be considered to be a universal language as it brings a pleasing
experience and also an effective therapy as it affects various kinds of human
ailments/ diseases. Practitioners of music therapy have living proof of the
effectiveness of music in therapeutic applications on a daily basis. They treat
conditions like stroke, brain injury, depression, autism, Alzheimer’s disease
and many others. From enhancing concentration and memory, reducing stress,
anxiety and depression, to dealing with diabetics, blood pressure and heartbeat
as well as boosting one’s immunity, music lends its healing touch. Every parent
knows that soothing tones and sounds pacify even the most irritable babies.
Therefore, the primary proof of the efficacy of music therapy is the lullabies we
sing to infants and toddlers.

Music integrates mind, body and spirit and provides opportunities for self-
expression. It is a scientific method of effective cures of disease. It restores,
maintains and improves emotional, physiological and psychological wellbeing.
The articulation, pitch, tone and specific arrangement of Swara (notes) in a
particular Raga stimulates, alleviates and cures various ailments inducing
electromagnetic change in the body\textsuperscript{7}. It is this human quality in music which promises a direct impact on the performer/listeners in therapeutic settings.

Music is absolutely concerned with the problems of emotional content, value and beauty. It is one of the most wonderful arts in the hands of mankind to alter or modify the feelings and emotions in all living beings to such an extent that it works better than any other form of therapy in the world. The soothing power of music is well-established. It has a unique link to our emotions, so can be an extremely effective stress management tool.

Indian music has a hoary tradition and continuity for more than 5000 years. Music of India has been known for its rich cultural heritage and traditions. Many Indian traditional healing systems like Yoga and Ayurveda have been welcomed globally and have been given scientific endorsements for their therapeutic values. Indian traditional systems of health and healing also include various musical treatment approaches.

Scientific viewpoint in music is not new in our country, though it has been sadly neglected due to the lack of evidences and distortion of facts. Our ancient musicologists had extraordinary logical concepts about sound and music. The astonishing theory of Nada, Shruti, and the creation of Swaras, Murchaans etc is indeed a great contribution to the musical thought of the world. Furthermore, associating the place of creation of Nada, Shruti and Swara with the physical body and mind provides the authenticity of scientific approach. The curative significance of Indian music has been proven since ages. Musicologists belonging to different eras in their own ways have described its therapeutic importance and establish psychoanalytical relation of various phenomenons.

such as *Nada, Shruti, Swaras, Raag, Laya, and Rasa* with human body and mind.

According to ancient texts, health is the harmony between body and mind, harmony between mind and knowledge, harmony between the members of the family, harmony in the neighbourhood and harmony with every person living in the society. If we want a healthy body, we have to make our mind healthy. With physical health, mental health has to improve. The nature, personality, psychological and psychic framework has to change. Aim of all is to get freedom from all bondages and from vagaries of the mind. Health is an equipoise state of body, mind, sense organs, and soul. This is the harmonious vibration of the elements of human body. This is the state of ease. Contrary to this is disease. In order to understand the different manifestations of life, first of all we should know our mind. It is through mind that we experience traumas, obsessions and conflicts. Through relaxation techniques whether its meditation, self-hypnosis, yoga, music, behavioural therapies and cognitive therapies etc, one can learn to smile at circumstances, one can learn to see very stressful situation as a challenge, or an opportunity to learn, give, serve and love.

Today there are winds of change, for persons trained in science prefers to investigate musical phenomenon and try to bring a scientific attitude in their studies. Experiment doesn’t necessarily mean that one should deal only with the physical objects and complicated apparatuses. What it means is that the phenomena in nature have to be systematically recorded and the general laws behind them must be described. The experimental may be physical, psychological and even para psychological. What is essential is the spirit to observe it passionately and as free from personal prejudices as far as possible.

The origin of sound is as old as the origin of the universe itself - music affects everyone. The precious, resonant and exuberant quality of music has a
vivacious and a pleasant effect on the human mind\textsuperscript{8}. Music boosts brain power. The brain seems to have an innate affinity towards sound, which is applicable to an organized sound that is music\textsuperscript{9}. Music can improve and sustain the outcome and quality of life by hastening recovery. According to Chopra, Deepak (1987) ‘therapeutic musical interventions include betterment of physical, mental, emotional, social and spiritual component within a person, and facilitate restorative movement away from illness towards wellness\textsuperscript{10}.’

Bhaskar, Khandekar (2006) viewed that ‘it is the rhythm of the music or the beat that has calming effect on us. This can be happening unconsciously also. The chance is that when we were at the foetal stage in our mother’s womb we could have been influenced by the heartbeat of our mother. This safe, relaxing and protective environment in which we were for many months would have prepared us to respond to the comforting music in the same way, in the later stages of life\textsuperscript{11}. When one hears music, the first thing which happens is an increase in the deep breathing leading to relaxation. The body produces more of serotonin in the brain which induces sleep\textsuperscript{12}. Music is used to divert one’s attention when one is under depression, mentally disturbed and stressed and makes a person relaxed, restful or contended\textsuperscript{13}.

Music is bestowed upon mankind by Nature for influencing the inner spiritual world and moral characters. It is an integral part of social and cultural life of the human beings since it is the strongest form of expression, feelings and is a powerful source of making all round development in the personality and intelligence of an individual\textsuperscript{14}. Psychological, physiological, moral, intellectual, aesthetical and spiritual effects of music confirm its supremacy.

Music is the art of combining sounds for reproduction by voice or by various kinds of musical instruments, in rhythmic, melodic and harmonic form to express thought or feeling. Throughout the ages, music has been effectively utilized in influencing emotions and resultant actions. Music has been found to have a profound effect on our physiological and psychological well-being.

Man has long known that music has the ability to calm, cajole and rejuvenate. But it is only recently that science has begun to understand and document the effects of music in methodology. Music permeates the cells of all living organisms, alters mood swings, heals the ailing, induces sleep, and creates wakefulness with the mind, the mood and the soul.

### 2.1.1 Therapeutic Effects of Music

Many cultures recognize the importance of music and sound as a healing power. In the ancient civilizations of India, the Orient, Africa, Europe and among the Aboriginals and Native Americans, the practice of using sound to heal and achieve balance from within has existed for many years. The Tibetans still use bells, chimes, bowls, and chanting as the foundation of their spiritual practice. In Bali, Indonesia, gong, and drum are used in ceremonies to uplift and send messages to Almighty. The Australian Aboriginal and Native American shamanists use vocal toning and repetitive sound vibration with instruments created from nature in sacred ceremony to adjust any imbalance of the spirit, emotions or physical being. The Priests of ancient Egypt knew how to use vowel sounds to resonate their energy centers or chakras. There is a direct link between different parts of the body and specific sounds. The way music fires the neurons in the brain to the tempo it is played, helps bring into play the characteristics that bring the biggest healing benefits to an individual.

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Although the power, range and effectiveness of music as a healing tool have many variables, there are certain traits that are Universal.¹⁷

Music is known to have a leading effect on the human soul, as it leads to certain states; joyful or sad, more or less profound. The same thing is likely to happen to other species i.e. plants and animals. It is now an established fact that music helps all living organisms-from plants to birds, birds to animals and animals to man; to grow and rejuvenate. According to Vidya, Srivastva (1988) it is said to have a soothing effect for a suffering ill animal. The same phenomenon is known to happen to plants as well, which can blossom to certain beautiful musical works.¹⁹

A few reports indicate that playing music in the fields at the time of flowering stage of the crop has some influence on the ultimate yield. A report published in a newspaper is a pointer in this direction. ‘Headlined: Sound of Music Enhances Crop Yield’, the report mentions how farmers in Krishna district of Andhra Pradesh have been putting music to good use for reaping a rich harvest.²⁰ In one of their classic book, ‘The Secret Life of Plants’, Tompkins & Bird (1973) devoted a whole chapter on how music affects plants, called 'The Harmonic Life of Plants' in which they mentioned experiments conducted by Dr. T.C. Singh, head of the Dept. of Botany at Annamalai University. Dr. T.C Singh discovered that ragas helped plants grow. They quoted that Singh observed this down to the microscopic level as well. He found not only that constant exposure to classical music caused plants to grow at twice their normal speed, but also went on to find what seemed to be one of the main causes of this accelerated growth. In Dr. Singh's experiments, the violin was found to be one of the most life-enhancing instruments of all the instruments used. Altogether, life-enhancing characteristics as a result of music were shown.

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¹⁷ Ibid.
in balsam, sugar cane, onions, garlic, sweet potatoes and other plants besides
Yet, perhaps the most interesting and significant of all of Dr. Singh's findings
was that later generations of the seeds of musically stimulated plants carried on
the improved traits of greater size, more leaves, and other characteristics.\(^{21}\)

The authors described several other experiments in Canada and the United
States in the 50's and 60's where plants and crops grew faster and healthier
when listening to Bach, Gershwin and certain sound frequencies. Experiments
were done on many other plants and had 'proven beyond any shadow of doubt
that harmonic sound waves affect the growth, flowering, fruiting, and seed-yields of plant.\(^{22}\)

In an experiment conducted in Colorado College on effect of
music on plants, Denver (1973) found out of the plants in three different
chambers, with different conditions, those exposed to soothing music grew
better than the others.\(^{23}\) In one case, the plants had bent towards the music
playing device and were lush green with healthy stems.

Research confirms that dogs have musical preferences and react differently to
particular types of music. Psychologist Deborah Wells (1997) an animal
behaviorist at Psychology Department, Queens University, Belfast exposed
dogs in an animal shelter to different types of music. The results indicated that
dogs exposed to classical music were more relaxed and rested for longer
periods than dogs exposed to no music or heavy metal music.\(^{24}\)

Adrian North & Liam Mackenzie (2001) observed that playing music while milking the cattle
results in increased amount of milk. Dairy cows produce more milk when
listening to music. Their milk yield rose by 0.73 litres per cow per day when
they were exposed to slow music rather than fast music. They found that cows
respond to a pleasant auditory environment by producing more milk. They


\(^{22}\) Ibid.


\(^{24}\) http://www.eternalanimals.com/dogs shown to react to music.html
concluded that slow music had the effect of alleviating stress and relaxing the animals which resulted in greater milk yields25.

Humans, the highest order species are not an exception to the effect of music on their cognitive, conative and affective behavior26. Music has always been known to evoke different feelings in them. There are many different qualities of music and they reach to different parts of the body. According to Vyas, Vidya (2005) ‘some music reaches our hands and we start to clap. Some music reaches our legs and we start to make rhythms with our legs. Some music reaches our whole body and that is reason that we have the feeling for dancing. Some of the music reaches our hearts and we felt so relieved from mental conflicts and tensions. It is the only art which makes us to forget ourselves’27. Music has the power to explore the realms that can’t be accessed with words. It is a way of expressing the feelings and it is a common link between people of different cultures thereby bringing about a harmony of thoughts. Listening to music basically generates specific types of vibrations which move through the air and affects the human body28. It has been observed by Sharma, Mamta (2000) that tranquil music can ease both physical pain in humans, and psychological disturbances caused by abandonment, abuse, loneliness, sadness, different traumas or any other negative emotions29.

Besides the enjoyment of listening to tunes or melodies, recent studies shows that music can have a great healing impact on body and mind. It is believed that music stimulates the pituitary gland, whose secretions affect the nervous system and the flow of blood30. Listening to music helps control negative aspects of our personality like worry, bias and anger31. In addition, it can help cure headache, abdominal pain and tension. Music is one of the most effective ways of controlling emotions, blood pressure and restoring the functioning of

25 http://www.le.ac.uk/press/press/00musicstudy.html
Music is capable of improving happiness, peace, health and concentration. Music can play an effective role in helping us lead better and fruitful lives. Wilson, G (2008) viewed that listening to specific kinds of music at specific times of a day has been shown to be helpful in maintaining good health.

Among other psychological effects of music, the most pronounced ones are on the behavior and temperament of an individual. Emotions, feelings and thoughts have been reported to be greatly influenced by music listening or participation. Musical activities lead to the development of imagination and creative thinking. Singing, playing a musical instrument or rhythmic movement, even listening provides better sense of proportion, a finer perception and a happier world outlook. Shyness, aggressiveness and many other such characters of individuals have been normalized by music. According to Verma, A.K (2010) ‘mere humming of musical notes may enable a person to overcome loneliness of his life. Music has a great ability to inspire and enthuse the listener and the performer. Thus, it is used as an important and forceful weapon for arousing the will power of an individual’.

Desirable effects of music have been described by Copland, A. (1960) as ‘it can stimulate or sooth the mind, help towards a wider education or, at least, a wider mental perspective, can gently plough the mind to be more receptive to learning, disciplined physical action, comfort the lonely and the sick, awake pleasant memories in the old, delight the young, and lull the child to sleep’. Sledzinski, S (1970) had outlined the role of art including music in the life of man and found that it shapes integrity, moulds feelings and imagination.

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induces creative abilities and enables to overcome loneliness, boredom and discouragement among the individuals. It has been reported by Goswami, R (1977) that 'all the three states of mind i.e., conscious, sub conscious and unconscious, are involved during the process of learning music by an individual. Conscious mind is at work during learning and then the learnt piece of music goes to the sub-conscious mind which is then passed on the unconscious mind. Atri (1981) points out that 'every living being is affected by music which may or may not be assessed immediately as its effect is though slow but is long-lasting on the feelings, mood, emotions and behavior of both the applicator as well as the receptor'. According to Thanvi (1982) music has limitless effects on humans and it affects their mental behavior. She also observed that mind is very closely related to music. Due to this fact, attempts have been made since ancient times to improve the behavior of the individual with the help of music. Meyer, L.B (2006) observed that the effect of music is strong, quick, necessary and infallible on the emotions of human beings.

Music is for anyone. According to Yadav, Shefali (2005) although it can be used therapeutically for people who have physical, emotional, social or cognitive deficits, even those who are healthy can use music to relax, reduce stress, improves the mood or to accompany exercise. There are no potentially harmful or toxic effects of it. Music helps to achieve a number of goals including improvements of communication, academic strengths, attention span and motor skills. Music may also assist with behavioral therapy and pain management. Music is a magical medium and a very powerful tool. Music can delight all the senses and inspire every fiber of our being. Music has the power to soothe and relax, bring us comfort and embracing joy.

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De Backer (1999) viewed that it has the power to subtly bypass the intellectual stimulus in the brain and moves directly to our subconscious. There is music for every mood and for every occasion. Music is incorporated in a number of areas of medicine which includes labour and delivery, oncology, pain management, physical rehabilitation, and pediatrics, immune system, blood pressure, heart and respiratory rates, and pain perception etc. Research has proved some of the following effects of music on human physiology:

- **Brain Waves**: Brain waves respond to different types of music in different ways. Music of louder and stronger beat helps the brain to become more sharp and alert. Slow music can bring the brain to a restful mood. Research has proved that music can bring long lasting improvements to the brain even when one stopped listening to the music.

- **Breathing and Heart Rate**: When changes are brought to the brain, its effects can be noticed in the body also. It brings marked changes in the breathing and heart rate which are controlled by the autonomic nervous system. Music can be a helping tool in chronic stress by calming the mind and relaxation. The heartbeat tends to speed up and slow down depending on the volume and speed of the auditory stimulus. Listening to the low tempo music slows down breathing and heart rate, resulting in good health.

- **State of Mind**: Music helps bringing changes in the state of mind. One can get rid of depression by developing a positive state of mind, thus preventing body from its harmful effects. It can also lead to an increased level of creativity and hopefulness.

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49 Ibid.
• Physical Effects: Rhythm guides the body into breathing in slower, deeper patterns that have a calming effect. Music relieves muscle tension and improves motor skills. According to Khandekar, B (2006), levels of endorphins, natural pain relievers are increased while listening to music and levels of stress hormones are decreased51.

• Mental Effects: Depending on the type and style of sound, music can either sharpen mental acuity or assist in relaxation52. Memory and learning can also be enhanced with music. This has been seen with good results in children who have learning disabilities53. The effect of music also leads to increased concentration.

• Emotional Effects: Music is known to be a great tension, anxiety, and stress reliever. It develops self-awareness, motivation, confidence, creativity and choice. Music also reduces isolation and distress.

• Spiritual Effects: Music is the inner or universal language of God. Music helps the spiritual seeker to go deep within to get the utmost satisfaction from life, from truth, from reality. The spiritual life, in turn, helps music to offer its capacity and its strength, which is the soul’s light, to the world at large54.

• Fights Depression and Stress: Music helps in fighting depression and stress. Depression reduces brain activity and hampers the mind's ability to plan and carry out tasks. According to Goodman, K.D (2011), lack of the neurotransmitter, Serotonin, results in a depressed state of mind Soothing musical notes help increase the Serotonin levels of the brain, thus

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alleviating mental depression. Natural musical notes are known to make the mind alert.

- **Relieves Anxiety:** Anxiety is a feeling of fear or uncertainty that clouds mind accompanied with the feeling which is mostly about an upcoming event having an unknown outcome. Increased anxiety levels and stress lead to sleeplessness. Prolonged periods of anxiety may even lead to anxiety disorders. But, music can come to rescue. It calms the body nerves and soothes the mind.

- **Improves Learning Abilities:** Music affects the process of learning and thinking. Listening to quiet and soothing music while working helps to work faster and in a more efficient way. According to Bruscia, K.E (1989) music has the ability to make one positive and motivated. Research has shown that music brings about remarkable improvements in the academic skills of students, who are made to listen to certain kinds of music while studying or working in the lab. Listening to pleasant music, while doing a difficult task, can make it seem easier.

- **Boosts Confidence:** Music has a positive effect on the interpersonal skills of an individual. Lack of confidence and very less or no desire to learn is most often the reason behind a failure. It's not always inability. Students obtaining poor school grades do not necessarily lack intelligence. It's their disinterest in the subjects or the lack of motivation that leads to poor academic performance. Music lessons during school can help the students fight their mental block. Music proves helpful in encouraging young children to venture new fields. It increases their capacity to believe in themselves, that is, in boosting confidence.

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• Increases Concentration Levels, Improves Memory: It is known that music helps to increase concentration levels and improves memory\textsuperscript{58}. It has been found to increase memory levels of Alzheimer's and dementia patients. Research has shown that the silence between two musical notes triggers brain cells which are responsible for the development of sharp memory\textsuperscript{59}. Instruments like Sitar, Santoor and Sarod, flute etc. are recommended for the enhancement of concentration and memory\textsuperscript{60}. Classical music improves the ability to recall what's retained in the brain in the form of memory. Strong beats cause the brain waves to resonate in synch with the beat, thus leading to increased levels of concentration and increased mental alertness\textsuperscript{61}. This also trains the brain to change speeds of processing easily, as need be. Learning music helps increase self-discipline.

• Increases Creativity and Problem-solving Skills: Music has a positive impact on the right side of the brain and it plays a vital role in enhancing creativity\textsuperscript{62}. Music triggers brain centers which deal with the enhancement of creativity. Certain ragas are known to activate the chakras of the body, thus giving an added advantage in other creative tasks\textsuperscript{63}.

• Music increases thinking capacity: Music increases spatial and abstract reasoning skills. These are the skills required in tackling problems, solving puzzles and taking decisions. Listening to classical Indian music is known to have a positive effect on the spatial-temporal reasoning, simply put, it makes one smarter. Music stimulates the brain centers that

deal with thinking, analyzing and planning, thus enhancing one's organizational skills\textsuperscript{64}.

- Music makes learning easier: Learning beat patterns (Talas), helps improve math skills. The study of rhythm is known to help students learn math.

- Speeds Healing: Music helps in the secretion of endorphins that help in speeding the process of healing\textsuperscript{65}. It acts as an effective distraction from pain and suffering. It not only diverts the mind from pain, but also helps bring about certain chemical changes in the brain that help speed the healing process. Music therapy is recommended for patients of high blood pressure, heart diseases and even cancer. Listening to melodious, comforting music is sure to have a positive effect on the physical and mental well-being of patients. According to Mehta, Prabhsharan (1994), ‘if not cure every ailment, music definitely creates hope in the minds of patients - a hope to recover. And when nothing else works, only hope does’\textsuperscript{66}.

Marcello Sorce Keller (1986) expressed that ‘music allows us to transcend the everyday states of consciousness and travel to places that we either have a memory of or create in our imagination. This process of transcending the mundane evokes psycho physiological responses when people shift to altered states of consciousnesses\textsuperscript{67}. Abelese, H.F., & Chung, J.W (1996) quotes that ‘when individual uses music for relaxation, their abstract thinking is slowed down as they remain in a normal waking state. As they continue with their process of relaxation, the individual moves through the remainder of the six states of consciousness: expanded sensory threshold, daydreaming, trance, meditative states and rapture. In these states of consciousness, time takes on

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a different meaning for the individual. Often during listening to music, people lose track of time for extended periods, which in turn helps them to reduce the feelings of stress, anxiety, fear and pain.\textsuperscript{68}

There are many applications of music therapy in our everyday lives and the fields of treatment are very broad, encompassing psycho-therapeutic, educational, instructional, behavioural, pastoral, supervisory, healing, recreational, activity and interrelated arts applications. Turk \& Feldman \textit{(2001)} contends without a doubt that ‘music therapy ranks high on the list of modern-day management of critical care patients. It’s relaxing properties enable patients to get well faster by accepting their conditions and treatment without excessive anxiety.’\textsuperscript{69} Music enters the body through the ear, and the bones of the body act like a tuning fork. The neurological fields of the body are then stimulated by music. Music is a means by which all people can feel these healing vibrations. Even people with profound handicaps can benefit from music healing effects.

Research in physiological responses to music supports the hypothesis that listening to music influences a person’s autonomic responses. ‘Science has proven that music focused in the higher register increases tension. Conversely, music played in the lower register reduces tension. Music that is played at a tempo of 80-90 beats per minute increases tension, while music played at 40-60 beats per minute decreases tension.’\textsuperscript{70} According to Mehta \textit{(1994)}, ‘there are four distinct ways in which our brain responds to music: cognitive, affective, physical and transpersonal. When music is used as medicine, it is used in a way that directly affects the health of the patient. Music is used to alleviate or lessens pain, and can be used, at times, in lieu of pain medications. When

music is used in this way, it is a necessary component in affecting the outcome of the treatment.\textsuperscript{71}

\textit{Dibben, N., \& Williamson, V} (2007) viewed that music is one of the few experiences that can touch a person on all levels of consciousness. It is a powerful sensory stimulus that can work simultaneously on the body, mind and spirit.\textsuperscript{72} It can have a transformative effect on an individual by moving through the body systems and bringing about harmony. Through the use of music, positive effects have been seen in the nervous system, affecting the endocrine system, which in turn enhances the immune system. Studies have shown that music used as medicine can increase the immune function and decrease stress hormones.\textsuperscript{73}

According to \textit{Rogers, L} (1995), music is used as an adjunct therapy in helping people recover from strokes and head injuries. It eases the side effects of chemotherapy—it’s especially effective in controlling nausea and pain. In operating rooms it’s often used to help relax patients and stabilize their body systems.\textsuperscript{74} Research shows it to be effective in relieving pain and frustration in people with Alzheimer’s, AIDS, autism, trauma, substance abuse, learning disabilities and a host of non-specific physical, emotional and mental impairments.\textsuperscript{75} Music and sound has also been shown to kill cancer cells.\textsuperscript{76}

The interconnection between music and physical & mental health of human beings has been researched on since long. Research has concluded that music does have positive effects on our mind. It has the power of healing certain ailments.

2.2 ANCIENT HEALING ROOTS OF INDIAN MUSIC

Traditionally, healing roots of Indian music integrate spirituality and address the balance between mind, body and spirit in improving health. There are some rituals and traditional practices which are in vogue even today reflecting strongly that music and sound are used to alter states of consciousness to reduce perception of pain. According to Sunder, S (2007) ‘Fire-walking by thousands of Hindu devotees is an integral part of religious Hindu festivals. The will, faith, concentration, piety and hope of the devotee alter their states of consciousness in such a way that no pain sensation is evident. The devotees are brought to an altered state of consciousness in trance by the loud beats of drums. The specific kind of rhythm based music and sounds contribute easy walking on the hot surface which also prepare the devotees psychologically and physically to have a sense of control for performing these vows. It is this ongoing audio ambience that alters the state of consciousness and takes away the perception of pain. A few healing traditions are also integrated in modern music therapy practice in India.’

Vedic tradition dating back roughly 5000 years ago had a great intuition about the power of sound and intonation. The Vedic chants and music which had sound and rhythm, used as a source of healing and upliftment reflected the intuition that each intonation and inflection of voice could have beneficial or adverse effects. The Vedic chants were used by the people to please the presiding deities of different Vedic sacrifices to get benedictions of brilliance, power and wisdom to cure diseases. Whitney (1971) indicated that ‘Vedic hymns were used against disease arising from hurtful changes of wind, bile or phlegm and for paying homage to lightning conceived as the cause of fever, headache and cough, to release the sufferer from head ache and cough.’

According to Sairam, T.V (2005) ‘present day music therapy practice involves

79 http://www.nada.in
use of Archika, Gathika and Samika verses (Vedic verses with single, two and three notes respectively) to enhance focused attention and to improve concentration and to help get into meditative and relaxed states. These recitals called Proto Ragas are used in special education settings for children with special needs in the process of mental developments, behavior and personality trait. With these Ragas and rapid rhythms, special children respond readily and more quickly.

Similarly Nada Yoga is yoga of sound, a path of exploration of consciousness through sounds. Tripathi, Raj Mangal (1985) viewed that Nada, the primordial sound forming the basis of music, evolves from different energy centres found in the human body and opening up of these seven chakras (energy centres) reflect their physical, psychological and physiological characteristics to reestablish our inner balance restoring health and form. The system involves deep listening to the body inner sounds and music acoustics of the external worlds which are termed as Ahata and Anahata. It integrates meditation techniques and certain Hatha Yoga practices conductive to sonic exploration. Most of the modern Indian music therapy approaches use Ahata music as a therapeutic and a prophylactic medium in clinical and educational settings.

According to Mehta Prabhsharan (1994) ‘Nadopasana is a path of musical yoga used in religious rites, rituals and is considered as a medium of prayer to God. It is a path, a realization and a medium to seek salvation from the sins committed by one. Sundar (2006) by a case study of Carcinoma Hypopharynx indicated that ‘the more cultural and traditional Indian music had a spiritual influence, which expressed one's devotional feelings and might bring comfort, hopes and peace of mind to the listeners and alleviate pain and anxiety. The study indicated that traditional healing method like Nadopasana can be integrated in a cancer treatment as a supportive strategy in terms of

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modern music therapy and to find out the effects of music on cancer related pain and state anxiety. By using State-Trait Anxiety Inventory of Spielberger, the case study indicated how receptive music therapy in the form of *Nadopasana* could be combined with comprehensive counseling and also if health information could be provided as a cognitive behavioural intervention to address psychological distress and situational anxiety, which are common problems with cancer patients in a hospital environment. Baseline data was collected from the patient using Spielberger's State-Trait Anxiety Inventory. Assessments were done for situational anxiety before, during and after the music and counseling interventions. Pre and Post-test composite anxiety scores were compared, which indicated the efficacy of the treatment. Though the primary endpoint of the study was state anxiety, the unique experiences of listening to music, which could be explained only by the patient listening to music and the self report made by the patient when analyzed reflected the spiritual dimensions of the music therapy session.\(^{85}\)

Indian traditions had a great institution about the power of sound and intonation and this science of sound is very important for use in every condition of life, viz. in healing, in teaching, in evolving and in accomplishment.\(^{86}\) The ancient sacred texts i.e. *Vedas* and *Upanishads* had sound and rhythm which were used as a source of healing and upliftment.\(^{87}\) These Vedic songs were used by the people to please the presiding deities of different sects to get benedictions of brilliance, power, beneficence and wisdom. According to *Bhaduri, Jalaj* (2002), "it is only from this *Samagana*, that seven notes of Indian music were evolved which formed the basis not only for the *Raga* system of India, but also what is known as world music.\(^{88}\) In Indian music, the *raga* pattern has a well-formed sequential, character, including the characteristic multiple sub-tones with phrases in

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between, causing the neural network to respond, bringing about the desired effect on mind\textsuperscript{89}.

Presently, Indian music therapy is an integration of ancient healing practices and musical traditions coupled with the recent modifications based on the modern day practice and the knowledge gained by current clinical studies undertaken. Indian music therapy is based on long empirical traditions not proven in the western sense of empiricism but is unique and opens great scope for further proves and studies. Indian music possesses a special character of its own and it differs from music of other countries in its structure, temperament and method of improvisation and has the most striking feature of being a synthesis between the philosophy, psychology, spirituality and aesthetics\textsuperscript{90}.

The primary values of the Indian musical tradition are spiritual, with the aesthetic and the sensory being subservient to it. According to Bhandari, Sanjeev (2008) in the hierarchy of music making goals, the primary place belongs to the generation of \textit{Rasa} at the highest possible level of intensity. A musician shapes and re-shapes \textit{Ragas} in order to achieve the \textit{Rasa} goal\textsuperscript{91}. In the process, he also arranges and re-arranges relationships between the individual units of melodic expression, the \textit{swaras}. The seven notes of Indian music may be the seven wonders of the medical world\textsuperscript{92}.

\textbf{2.2.1 Physiological and Psychological Aspect of Indian Music}

The music of India is said to be one of the oldest unbroken musical traditions in the world. It is believed that listening to Indian music brings about a positive approach to life by enhancing the level of thinking, aesthetic sense, moral values, and promotes healthy lifestyle and a relaxed and refreshed emotion in a person\textsuperscript{93}. The concept of Music therapy in India has emerged from the correct intonation and right use of the basic elements of music such

as Nada, Shruti, Swara, Raga, Tala and Laya. To understand the physiological, psychological, spiritual, emotional basis of Indian music and its impact on living beings, the knowledge of its musical phenomenon is must. Indian music is composed of many elements. Elements refer to all those essential components which comprise Indian classical music. Apart from many components which have gone in the formation and development of Indian classical music, there are certain basic elements which underlie the basis of Indian music. They are as under:

2.2.1.1(a) Nada: Music is basically a sound or Nada generating particular vibrations which moves through the medium of ether present in the atmosphere and affects the human system. The use of Nada as a healing system has been an ancient tradition.

According to the Indian philosophy of Vedanta, the word for sound is Nada Brahma alias Shabda Brahma. Some commentators of Indian music explain it as ‘Nada Eva Brahman’

means, the Nada itself is the Brahma or the Nada is like the Brahman. Matanga Muni has given the principle definition of Nada in ‘Brihaddesi’ as follows:

\[
\begin{align*}
\text{Nada} & \text{ न नादेन विना गीतं न नादेन विना स्वरं}
\text{Nada} & \text{ न नादेन विना नूतन तत्समन्नात्मकं जगत्ः}
\end{align*}
\]

means, there is no song or music without the Nada, there are no musical notes without the Nada. There is no dance without the Nada; the whole world is filled with the essence of the Nada. Nada is considered to be the very essence of music.

Moreover, Nada manifests the letters (of alphabets), letters constitute the word and words make sentences, so the entire business of life is carried on through language and therefore the whole phenomenon (i.e. world) is based on Nada.

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Narada in ‘Sangeet Makranda’ described two types of Nada—Anahata and Aahat as:

अनाहतो हतश्रृवि य स नादो द्विविधो मतः।
यत्रोभ्योवस्तुयोमव्यैनाहतातोपि निरूपयते: II 4 II
आकारसंभवो नादो य: सोनाहतसंज्ञितः।
तत्समत्रात्तनाहते नादे विरामं प्रायं देवता: II 5 II

He explained that Nada is named as Anahata because it originates from the space by itself, and then elaborates the use of unmanifest sound. He says that yogis, sages and great souls attain the salvation through great mental concentration upon this Nada.

Sarangdeva comes nearer to ‘Sangeet Makranda’ as he described the Anahata Nada in the same way as Narada, yet with more elaborations of the same theme. In the second chapter of ‘Pindotpatti Prakarana’ of ‘Sangeet Ratnakar’, the importance of Nada is discussed which is similar to that of Matanga Muni in ‘Brihaddesi’ followed by manifest and unmanifest forms of Nada. Sarangdeva quoted that Nada is generated by the soul, residing in the physical body of human beings. The formation of the body from the very beginning is described at length in Sangeet Ratnakar as

आहतोनाहतसंज्ञित द्विधा नादो निगमते:।
सोद्य प्रकाशते पिण्डे तस्मात्पिण्डोभिधीयते: II 3 II

Sarangdeva’s description of Nada is said to be twofold, viz., produced and unproduced i.e. Ahata, the struck sound and Anahata, the unstruck sound and has been defined as follows:

नकारं प्राणानां सकरमश्च चिदु:।
जात: प्राणारिसंयोगात्तेन नादोभिधीयते: II 6 II

means the letter ‘Na’ of Nada is the indicator of Prana (life) representing the vital force and the letter Da of Nada is the indicator of Agni (energy) representing the fire. Thus, the Nada is being produced by the interaction of the vital force and fire. With the combination of these letters, the word Nada originates. Nada is the basis, not only for music, though specially related to it, but of the entire business of life; since it constitutes the very substance of speech which is the only means of communication. That is why it is considered to be the supreme power.

Sarangdeva refers to two types of Nada, as Saguna-concrete and Nirguna-abstract which are the means of worldly enjoyment and salvation respectively. The same attributes are allotted to the Unmanifest or Anahata and Manifest or Ahata sound as by Narada in his ‘Sangeet Makranda’. He elaborated that single minded meditation with deep concentration upon the ‘Anahata’ sound would result in salvation. According to Sarangdeva, this concentration is not possible for everybody. ‘Nirguna’ sound has neither pleasing nor unpleasing properties to the human ears and mind. It is very difficult to concentrate on something which has no form, foundation cause or any property to meditate upon. Anahata Nada is a subtle, abstract sound residing within the body which can be heard by directing one’s mind inward with full concentration. On the other hand, Ahata Nada with its concept of Saguna-concrete sound is produced by the natural friction of things accessible to everyone. This Ahata or Saguna sound is based on Shruts and Swaras. This music provides entertainment as well as spiritual upliftment and breaks the cycle of birth and death. According to Sarangdeva, either Anahata or Ahata Nada serves the purpose of spiritual upliftment and attainment of salvation. The result lies in the mental and spiritual standard of the candidate who practices it. Ahata Nada is easier to practice as the concept of music is based upon it.

Ancient musicologists attached the origin of Nada physiologically with the human body. Matanga Muni and Sarangdeva differentiate five types of Nada.

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according to the physical regions of human body from where the \textit{Nada} originate.

Immanent sound in the human body is grouped into five types on the basis of its quality of development from the root of the naval to the cerebrum and the buckle cavity of the mouth through the heart and the throat.

Matanga Muni was the first to place the origin of \textit{Nada} in human body as following:

\begin{quote}
सूक्ष्मो नादो गुहावासी हदये चातिसुभ्यकः।
कण्ठमध्ये स्थितो व्यक्तः अन्यक्तस्तालुदेशकः॥
कृत्रिमो मुखदेशे तु ज्ञेयः पञ्चचक्षो चुँबैः।
इति तावनम्या प्रोक्तता नादोपतित्रिज्ञोहरिः॥
\end{quote}

\begin{quote}
means the \textit{Nada} is five-fold viz., \textit{Sukshama} (subtle), \textit{Atisukshama} (very subtle), \textit{Vyakta} (distinct), \textit{Ativyakta} (indistinct) and \textit{Kritrima} (artificial). The subtle \textit{Nada} dwells in naval, very subtle one in the heart, distinct one in the throat, indistinct one in the region of the cerebrum and the artificial one in the mouth.

Sarangdeva differs a little from Matanga Muni in the names and order of arrangement. He puts the ‘\textit{Ati-Sukshama}’ in the first position which is more correct according to order because it means very subtle and ‘\textit{Sukshma}’ is subtle. These five types of \textit{Nada} arise from the five points in the human body, starting from the lower portion of the body, i.e., starting from the naval towards the head.

\begin{quote}
नादोपतिसूक्ष्मः सूक्ष्मरङ्च पुष्टोपुष्टश्रवः कृत्रिमः।
इति पञ्चभिधा धते पञ्चस्थाननिधियतः क्रमात्॥ ५ ॥
\end{quote}

According to Sarangdeva stationed in these five places, \textit{Nada} takes on five different names as associated with them respectively, viz., extremely subtle, subtle, loud, not so loud and artificial.

\begin{flushright}

\end{flushright}
Matanga Muni and Sarangdeva regard the locus of origin of Nada as follows:

Table No. 2.2.1.1(i)

<table>
<thead>
<tr>
<th>Locus</th>
<th>Matanga Muni’s Classification</th>
<th>Sarangdeva’s Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naval (Nabhi)</td>
<td>Subtle</td>
<td>Extremely subtle</td>
</tr>
<tr>
<td>Heart (Hridaya)</td>
<td>Very subtle</td>
<td>Subtle</td>
</tr>
<tr>
<td>Throat (Kantha)</td>
<td>Manifest</td>
<td>Loud</td>
</tr>
<tr>
<td>Palate (Moordha)</td>
<td>Unmanifest</td>
<td>Not so Loud</td>
</tr>
<tr>
<td>Mouth (Asya)</td>
<td>Artificial</td>
<td>Artificial</td>
</tr>
</tbody>
</table>

Sarangdeva defined the threefold Nada in music by explaining that the same Nada, when produced from the heart is called *Mandra*, when produced from the throat is called *Madhya* and when produced through the head i.e. the cerebrum it is known as *Tara* and each successive nada is double (in pitch) then the preceding one, i.e. the three aspects stand in the ratio 1:2:3.

यवहरे त्वसी श्रेष्ठ हृदि मन्द्रोध्विधियते: ।
कुष्ठे मध्ये मूर्तिः तारो द्रिभुगत्वोपतोरूतर: ॥ ७ ॥ ।

Further, Narada also gave importance to the order and classifies five types of Nada in the very beginning of ‘Sangita Makranda’, which are totally different from Matanga Muni and Sarangdeva as

सोहवाहत: पंचविधो नादस्तु परिकोटितः।
नक्खवयुजचम्पीण लोहशारीरजास्तः: ॥ ७ ॥

नरेव वीणादय: प्रोक्ता वंशाद्या वायुपुरका:।
चम्पीण च मूदंगाद्या लाहास्तालद्यस्तः ॥ ८ ॥


41
The types of *Nada* mentioned above however, seems to be the instruments and the fifth is naturally produced by physical body i.e., human voice. They are:

- **Nakhaj**: Sound produced by nails that is from stringed instruments. It might be termed as plucking sound.

- **Vayuj**: Sound produced by wind or wind instruments.

- **Charmaz**: Sound produced by leather pertaining to percussion instruments.

- **Lohaj**: Sound produced by metals pertaining to chime of cymbals etc.

- **Shariraj**: Sound originating from the body.

Indian music has been observed to have its effect even upon the lower animals. There are several anecdotes describing the positive effects of music on animals which show how horses, birds, lizards, dogs, mice etc. come out of their way to hear music.

> ध्वनि व सशस्त्राणां वापि नादेन परिवर्तणी:।
> र्हुतो न दस्या माहत्वं व्याख्यातुं केन रक्षयते।

means, even animal, child, dears etc acknowledge the importance of *Nada*. Every human entity valued the essence of it.

### 2.2.1.1 (b) Psychoanalytical Aspect of Nada

For centuries, music and medicine have been linked together. The Greeks believed that music had the power to heal the body and the soul. It is also believed that daily exposure to music would enhance one’s health.

The word *Nada* has been used in Indian musicology in the mystical, religious, cosmological, physiological senses as well as in the empirical, psychological

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and scientific senses. God’s creations are having its own movements thus creating a vibration and every vibration creates its own sound that is the God (Brahman) or the Nada (Sound). Therefore Nada Brahma means that the Sound is God. The ultimate goal of human life is the attainment of Moksha. Music is considered to be the main medium of communication with the seeker (God) and the preacher (Man).

Our mind easily becomes absorbed in sound. This is why everybody—even infants and animals—enjoys listening to music. When the mind is fully concentrated on anything, there arises a feeling of inner bliss. With practice and concentration on carefully selected outer or struck sound/Nada, the mind becomes calm and transparent.

Nada Yoga is an ancient Indian system. It is a sound energy better known as music which helps to achieve a deeper unity between the performer and the listener. Music has its own sense of spirituality along with Yoga and philosophy. This is mostly devotional in nature and has a remarkable effect on the mental state of human beings. It results in peace, concentration, relaxation and spiritual feeling. Nada Yoga/vocal music helps breath control and mental concentration. The practice of music itself can be a powerful method of Yogic Practice. Music elevates both the musician and the listener to a higher plane of human experience, and brings great joy and peace.

In normal human activity, happiness and sorrow are always found to be mixed up. One gets the feeling that the music has opened a window into the soul, and that is a highly stimulating and satisfying experience which can be explained as

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Brahma Nada. It goes beyond the feelings of happiness and unhappiness. Good music becomes a medium as conveyer of bliss.

Correlating Nada with human body and mind is not a new phenomenon to study. Ancient musicologists have linked Nada with the physical structure of human body. Moreover, great musicologist Sarangdeva depending on the nature of its cause divided the physical body in four types viz., ‘sweat, sprout, womb and egg; such as louse etc., from sweat, creeper etc., from the sprout, human being etc., from the womb and birds etc., from the egg. Out of them, Sarangdeva placed human body suitable for the manifestation of Nada.

There is enormous research globally on the effect of structured sound on the unborn child. According to Hanser, S., Larson, S.C. & O’Connell, A.S., (1983) ‘it has been proved by the medical science that the foetus responds to sound from the 24th week of pregnancy. While sounds are greatly altered as they pass from the outside world to the ear of the foetus, there is more than sufficient stimulation to be heard in the womb. There are documented changes in the heart rate and breathing patterns of the foetus in response to sound stimulation. It has been proved that there is ‘biology in music’ and that structured specific sounds heard by the foetus in the womb provide a strong foundation for later learning and behaviour.

In India, Vedic chanting provides a culturally appropriate sound for both mother and the child. The inherent resonance and rhythms in the chanting stimulates the child and provides a strong basis for later learning patterns. While listening to the chants, it is not necessary to understand the meaning of the mantras. According to Sharma (2000), ‘the perennial sound vibrations, which exist in the cosmos, connect every cell’. By listening to Vedic

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chanting in the prenatal period, it is possible to nourish the child through music into becoming well integrated in his/her physical, emotional, intellectual and spiritual self\textsuperscript{114}. Sounds can be understood and relates to humans at three levels\textsuperscript{115}:

- **Shabda Anusandhaanam** (Perceiving the vibration of sound): When we hear certain sounds, we relate only to the sound vibration that leaves an impact us.

- **Artha Anusandhaanam** (Perceiving the meaning of sound): The mind makes an effort to comprehend the meaning of the sound, and then relate to the sound.

- **Bhava Anusandhaanam** (Perceiving the emotions/feelings of sound): Every sound, whether it has a specific meaning or not, contains a Bhava or emotion in it. A sensitive person can hear and feel the intention of the sound.

According to Levitin, D. J., 2006, ‘the ears via its neural connections, converts incoming sound waves into bio electric-magnetic signals, which it transmits to the brain. This actually is a type of ‘Energy Supply’ to the brain. The amazing thing is that scientists have found that sounds, through the ears, supply maximum of electrical energy to the brain. To decode the vibration, the brain transforms mechanical energy into electrical energy, sending the signal to the cerebral cortex- a hub for thought and memory. Within that control tower, the auditory cortex forwards the message on to brain centers that direct emotion, arousal, anxiety, pleasure and creativity. And there’s another stop upstairs: that electrical cue hits the hypothalamus which controls heart rate and respiration, plus stomach and skin nerves, explaining why a melody may give us butterflies. This link between ear, brain and the whole body makes music


therapy an effective form of treatment. Musical sounds travel to the brain soothes the ailing individuals. The possible ailments are:

Headache/Migraine, Sleep Disorders, General Stress Symptoms, Cardiac & Circulatory Disorders, Disorders of the Hormones & Immune System, Neurophysiology & Sensory Disorders, Neurodermatitis/Psoriasis, Pains/Postoperative Pains, Pregnancy and Birth, Relaxation, Concentration/Memory, Creativity, Courage to face life (Depression), Mental Distress/Fear, Harmony between Mother & Child, Reduced level of Stress, Better quality sleep, Improved healing and repair of our body, Reduced level of irritability, emotional outburst, or anxiety, Regulation of autonomic nervous system, and many more other health benefits.

Sound has long been used as a communication tool since the beginning of time. Music has the power to calm, influence creativity, and energize the body. It has nonverbal, creative, structural, and emotional qualities. Music is considered to be a powerful tool to affect our emotions and moods and ultimately our physical bodies. Tribal music, ceremonial music, devotional music and spiritual chanting can create altered states so powerful that people are known to become impervious to pain during such periods.

Encompassing all possible moods and forms of expression, it conveys the feelings of the heart more powerfully than any words of any language. Since time immemorial music is invested with divine powers to heal. Hindu scriptures have made a precise scientific study of words, pronunciations and there effects on temporal and astral planes. In energy healing, treatment of the physical body starts at the psychological level. As the ‘mind’ (as opposed to the brain) is not physical, it can only be treated at the subtle energy level. Mind is the store of our memories, such as fear, grief, pain etc. Our psychological

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health depends on erasing those elements which adversely affect us and this is what is done by music through a process of neutralization. Physical health results from a healthy mind. Music helps in achieving relaxation by soothing the nerves and through that peace of mind. Meditation on Nada/sound is one universal path to self realization, accessible to anyone and appropriate for people of any religion or spiritual aspiration.

2.2.1.2 (a) Shruti: The word Shruti originated from the root Shru, means to hear and thus Shruti means any sound that is capable of being distinctly heard by the ear.

In ‘Natyashastra’, the Shruti comes after Swara in the context of Grama arrangement and Bharata describes them in his famous ‘Chatusarana’. According to Bharata

श्रुत्यो यत्यश्वैव निल्यें स्वरगतात्मका: II 14 A II

Means, Shruti are secondary and their importance ends with the formation of Swaras. They are exposed to human ears as Swaras only. Bharata never gives much importance to Shruti.

According to Bharata, Shruti is important only because of it is the cause of two Gramas-Madhaya and Shadaj.

अथ द्वी षड्व्व्राध्व मध्यग्रामवेति:।
अत्रांश्रिता द्वाविशक्तश्व्रुत्य: स्वरमण्डलसाधिता II 23 II

Shruti has been defined by Nanyadeva as

“श्रृवन्त इति श्रुत्यव”

means the one which is heard.

Matanga Muni has analyzed Shruti as:

हु श्रवणे चास्य धातो: वित्तनुप्रयस्यसमुह्यः।
श्रुतिशश्च: प्रसाध्योऽयं शब्दन्दृश्यविनिवारधानः ।

According to Matanga Muni, there is only a single basic (Shruti) that arises out of the naval because of the friction caused by fire and wind. It passes upwards like smoke spreading up in ascension. Matanga opines that there are two types of Shrutis-the one forming the note and the other present in between the notes:

अर्जनन्दश्रुतश्राक्षतादृव ध्वनिरेष श्रुतिभैरवेत।
सा चैकार्येष्वाय तेषाः स्वरात्तरविभागत: ।

Matanga explains the views of various scholars about the number of Shrutis i.e., three types of Shrutis arise out of three points in the human body as per different properties of Indriyas- Sahaj, Doshjam and Abhighataja:

अपरे तिर्तिंद्रवैगुण्यात् त्रिविधां श्रुति मन्यते ।
इतिद्रवैगुण्यात् च त्रिविधां-सहजं दोषज्यं अभिधातमं चेति ।

Narada in ‘Sangeet Makranda’ also associated 22 shrutis with the names of swaras they belong to and then gave names of the deities from which they have originated. This shows the religious and devotional aspect of relating shrutis to Gods and making it a medium of attaining Moksha and spiritual upliftment.

According to Sarangdeva, Nada is differentiated into twenty-two grades which because of their audibility are known as Shrutis. These Shrutis were considered to be associated with twenty two upward Nadis-each of the heart, throat and the cerebrum and believed to be produced by the wind acting upon them.

125 Ibid.
Nevertheless, the concept of relating twenty-two Shruti to twenty-two Nadis is not confined to Sarangdeva but is also shared by Saradatanaya who is a contemporary of Sarangdeva. He not only relates Shruti to twenty two Nadis branching from the central Nadi viz., Susumna in the region of the heart but also further relates them to the seven places of pronouncing letters of alphabets, viz., the throat, palate, lips, cerebral and teeth either independently or from more than one place put together. Thus he goes on to relate the seven tones to these places of pronunciation assigning to them the number of Nadis equal to the number of their Shruti.128 The whole theory is illustrated in the following chart:

Table No. 2.2.1.2 (i)

<table>
<thead>
<tr>
<th>S.No</th>
<th>Place of Pronunciation</th>
<th>No. of Nadis Attached</th>
<th>Name of the Note produced</th>
<th>No. of Shruti assigned</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Throat</td>
<td>4</td>
<td>Sa</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Root of the Palate</td>
<td>3</td>
<td>Re</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Lips</td>
<td>2</td>
<td>Ga</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Centre of the Cerebrum</td>
<td>4</td>
<td>Ma</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Teeth, Throat, Cerebrum, Palate and Lips</td>
<td>4</td>
<td>Pa</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Throat &amp; Palate</td>
<td>3</td>
<td>Dha</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>Throat &amp; Lips</td>
<td>2</td>
<td>Ni</td>
<td>2</td>
</tr>
</tbody>
</table>

129 Ibid.
Alternatively, Sarangdeva also presents another theory according to which seven Swaras (notes) are related to the seven supportive tissues (dhatus) in the body, viz., serum, blood, flesh, fat, bone, marrow and semen. The theory seems to rest on the contention that the internal heat of the tissues in conjunction with prana gives rise to the seven tones through different dhamanis (arteries) that are associated to the particular tissues in the same number as that of the Shruts of the particular tones which they produce. Thus the number of dhamanis associated with the production of the seven notes through the seven supportive tissues is also twenty-two.\(^{130}\)

Both the ideas propounded by Sarangdeva present physiological evidence to support that the total number of Shruts is 22 only.

**Table No 2.2.1.2 (ii)**

**Showing the Swaras related to Dhatus as per Sarangdeva\(^ {131}\)**

<table>
<thead>
<tr>
<th>S. No</th>
<th>Dhatus</th>
<th>Swara</th>
<th>No. of supporting Dhamani(s)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Semen</td>
<td>Sa</td>
<td>4</td>
<td>Brahma Granthi (centre of the body)</td>
</tr>
<tr>
<td>2</td>
<td>Marrow</td>
<td>Re</td>
<td>3</td>
<td>Navel</td>
</tr>
<tr>
<td>3</td>
<td>Bone</td>
<td>Ga</td>
<td>2</td>
<td>Heart</td>
</tr>
<tr>
<td>4</td>
<td>Fat</td>
<td>Ma</td>
<td>4</td>
<td>Throat</td>
</tr>
<tr>
<td>5</td>
<td>Flesh</td>
<td>Pa</td>
<td>4</td>
<td>Root of the Palate</td>
</tr>
<tr>
<td>6</td>
<td>Blood</td>
<td>Dha</td>
<td>3</td>
<td>Cerebrum</td>
</tr>
<tr>
<td>7</td>
<td>Skin</td>
<td>Ni</td>
<td>2</td>
<td>Sahasrara</td>
</tr>
</tbody>
</table>


\(^{131}\) Ibid.
2.2.1.2 (b) Psycho-Analytical Aspect of Shruti: Firstly, the association of 22 shrutis with 22 Nadis in human body gives a scientific basis to relate it with living entity (with reference to Sarangdeva in ‘Sangeet Ratnakar’\textsuperscript{132}. The shruti-jati division of Pt. Ahobal and associating each Jati with the creation of specific Rasas also makes a firm basis of relating the emotional perspective of mind and 22 microtones\textsuperscript{133}. The idea of attaching emotional importance is based on the fact that Shrutis are used to fine tone the Swaras and when these Swaras are placed on different shrutis, it becomes easier to catch the mood of Ragas. The microtonal structure and patterns of Indian Classics are essential for the music therapeutic effect. Also the spiritual basis accorded to music in ancient Indian culture is evident from the practice of attaching extra-musical references and associations to various Gods and deities as enumerated in ‘Sangeet Makranda’\textsuperscript{134}.

2.2.1.3 (a) Swara: The Sanskrit explanation for note is the Swara which is sound, voice, tone in recitation (high or low), or a note of the musical scale. Dattilam says that those Shrutis used in singing however, get the position of notes. Therefore according to him, the Swaras are the Shrutis which gets the prominence and acknowledgement through exposure in singing.

*Aaadriyante Cha Ye Teshu Swaratmupalbhayete: II 10 B II*\textsuperscript{135}

Matanga Muni is the earliest author, who gives the etymology as well as the definition of Swara. He ascertained it from the root ‘Rajr’ meaning brilliance, and prefixed the word ‘Swa’, means that ‘which shines by itself’, it is known as Swara.


dvīpaścanti dhata: śvāśānaviparkṣy ca

svaṃ yona rajate vasmaat tasmadēṣa svāra: sūtra:II 63 II\textsuperscript{136}

In ‘Sangeet Ratnakar’, Swara gets its scientific definition which distinguishes it from Shruti. Sarangdeva explained that from out of 22 shrutis, arises the Swaras, which are seven in number, viz., Sa, Re, Ga, Ma, Pa, Dha, Ni.

Further, Pandit Sarangdeva defines Swara in the following way-Immediately consequent upon the Shruti, creamy and resonating, the sound that delights the listener’s mind by itself is called the Swara.

The phrase Antar-Bhavi is very important from the point that when a string is plucked the very first sound heard to the ears is the Shruti, is called the Swara. So the Shruti is essentially free from resonance whereas the Swara is characterized by resonance. It is well established fact that twenty two Shruti’s in group of four, three and two go to make the seven Swaras- Sa (4), Re (3), Ga (2), Ma (4), Pa (4), Dha (3) and Ni (2) respectively.

According to Sarangdeva, Shruti itself becomes Swara, but the difference lies in the quality of sound, smoothness, continuity and resonance. It has a natural pleasing quality to the ears and the mind.

Abhinava Gupta defines the Swara as the sound that is produced by the influence of the sound arising as a result of striking (a vibrating string) as micro-tonal position (Shruti Sthanas) and is thus, essentially resonating, sweet and creamy. Thus on any interval point (Sthana) the attacking part (Abhigata) of the sound is the Shruti and the resonant part is the Swar.

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138 Ibid.
Similarly, Kohala has also explained that the Swara is the delightful sound and it is said to be infinite, on account of its combination with the Jati, Bhasha (dialect, language) etc. It is combined with syllabic unit and verse.

According to Narada in ‘Sangeet Makranda’ Brahma created the art of drama after much consideration and gifted it to the world. He himself ascribed the seven names of Swaras after drawing it from Anahata Nada. Therefore the notes/swaras materialized from the Anahata Nada with the help of Brahma.

It has been generally recognized that it is very difficult to sing the series of 22 Shrutis arising one above the other. So, for practical purpose, ancient, medieval and modern authors, experts and musicologists in the art and science of music have unanimously accepted twelve principle sounds out of them and they are known as Swaras or notes. Though the Swara and the Shruti are alike as a matter of sound, yet there is a difference between the two, indeed the Shruti is to Swar what inches are to feet or minutes to hour.

Pt. Ahobal mentions in Sangeet-Parijat

means, 'Shruti' is like a 'Quiet (coiled) snake' (unused). When the same becomes 'active' (when used in a Raga) it becomes like a 'Moving snake' and is called as 'Svara'. (e.g., Raga Bhoopali has Sa, Re, Ga, Ma, Pa and Dha has 5 Swaras, and that leaves behind the unused 17 other Shrutis (out of a total of 22).

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Associating *Svara* with the life of an individual is an ancient phenomenon. There are plenty of references in old Hindu scripts and musical texts where the swaras are closely linked with the profession, place, caste, colours, deities etc. When generally we talk about an individual, we can’t ignore the utmost important organ of his body and that is – mind. All aspects of an individual life directly or indirectly influence the mind.

Narada provides a deep elaboration of *Svara* in ‘*Sangeet Makranda*’ by treating it like a human being and associating it with their place of birth, colour, caste, governing *Deity, Gotra, planets, Rashis, Seers, Ganas, Dwipas, Rashis* etc. He devoted 38 sholaks starting from 10 to 48 for enumerating *Svara*\(^{141}\). A brief description of it is presented here along in a tabular form:

**Table No.2.2.1.3 (i)**

**Showing the association of Seven Swaras by Narada in ‘Sangeet Makranda’**

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Sa</th>
<th>Re</th>
<th>Ga</th>
<th>Ma</th>
<th>Pa</th>
<th>Dha</th>
<th>Ni</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Colours</strong></td>
<td>Padmabh</td>
<td>Pinjra</td>
<td>Swarna</td>
<td>Kundi</td>
<td>Sita</td>
<td>Pita</td>
<td>Karbura</td>
</tr>
<tr>
<td><strong>Islands</strong></td>
<td>Jambu</td>
<td>Shaka</td>
<td>Kusha</td>
<td>Krauncha</td>
<td>Shalmali</td>
<td>Shweta</td>
<td>Pushkara</td>
</tr>
<tr>
<td><strong>Rishis</strong></td>
<td>Daksha</td>
<td>Attri</td>
<td>Kapila</td>
<td>Vasishtha</td>
<td>Bhargava</td>
<td>Narada</td>
<td>Tumburu</td>
</tr>
<tr>
<td><strong>Deities</strong></td>
<td>Vahini</td>
<td>Brahma</td>
<td>Sarada</td>
<td>Sarva</td>
<td>Srinatha</td>
<td>Bhaskara</td>
<td>Ganeshwara</td>
</tr>
<tr>
<td><strong>Meters</strong></td>
<td>Anushtub</td>
<td>Gayatri</td>
<td>Trishtup</td>
<td>Brihati</td>
<td>Pankti</td>
<td>Ushning</td>
<td>Jagati</td>
</tr>
<tr>
<td><strong>Gotra</strong></td>
<td>Jamadagni</td>
<td>Atreya</td>
<td>Gantama</td>
<td>Vasishtha</td>
<td>Srivatsa</td>
<td>Parashar</td>
<td>Shalakaya</td>
</tr>
<tr>
<td><strong>Stars</strong></td>
<td>Shatabishak</td>
<td>Chitra</td>
<td>Dhanishta</td>
<td>Makha</td>
<td>Uttara</td>
<td>Poorva</td>
<td>Ashada</td>
</tr>
<tr>
<td><strong>Rashi</strong></td>
<td>Kumbha</td>
<td>Tula</td>
<td>Jhasha</td>
<td>Sinha</td>
<td>Kanga</td>
<td>Dhanu</td>
<td>Vrischika</td>
</tr>
<tr>
<td><strong>Lord of Rashis</strong></td>
<td>Shani</td>
<td>Bhrigu</td>
<td>Sasi</td>
<td>Surya</td>
<td>Budha</td>
<td>Guru</td>
<td>Mangal</td>
</tr>
<tr>
<td><strong>Rasas</strong></td>
<td>Adbhuta and Vira</td>
<td>Raudra</td>
<td>Shanta</td>
<td>Hasya</td>
<td>Sringara</td>
<td>Vibhasta</td>
<td>Karuna</td>
</tr>
</tbody>
</table>

Sarangdeva allocated *Shrutis* as characterized by their classes and the names amongst the *Swaras*\(^{142}\). These are five classes of *Shrutis* viz., *Dipta*, *Ayata*, *Karuna*, *Mrdu* and *Madhya*. *Dipta*, *Ayata* and *Madhya* are found in *Shadaj*; *Dipta* and *Ayata* are located in *Gandhara* and *Madhyam* along with *Mrdu* and *Madhya*; *Mrdu*, *Madhya*, *Ayata* and *Karuna* are placed in *Pancham*; *Karuna*, *Ayata* and *Madhya* in *Dhaivata*; while *Dipta* and *Madhya* are in *Nishada*\(^{143}\).

Further the subdivision of these five classes and their classification is also mentioned. All these five categories have also been associated with the rasas and the aesthetic colors attributed to them and are representative of creating the emotional colour\(^{144}\).

- *Dipta*, ‘Dazzling’; literally, illuminated,
- *Ayata*, ‘vast’; literally, extended,
- *Mrdu*, ‘tender’; literally, soft,
- *Madhya*, ‘moderate’; literally, medium or central, and
- *Karuna*, ‘compassion’.

Sarangdeva in ‘*Sangita- Ratnakar*’ says that sound is first heard as *Shruti* and through resonance it expands into a note (*swara*) to create an expression in the mind of the hearer. The notes are viewed to have an organic unity\(^{145}\).

Further, three *Sthanas* are considered to be threefold according to the different registers known as *Mandra*, *Madhya* and *Tara*, i.e., low, medium and high.

In the first instance the notes are classified according to their *Sthanas* i.e., the place of perceptible effort for voice production in the human organism. As it has already mentioned that *Nada* manifests in three places, viz., in the region of the heart, throat and the cerebrum, similarly these are the three *Sthanas* from


where the *Swaras* are produced. Corresponding to these three, the notes are classified in three registers, *Mandra*, *Madhya* and *Tara*. *Mandra* representing as chest voice, *Madhya* representing throat voice and *Tara* is the high (head).

ते मन्द्रमध्यताराष्ट्रस्यांशभेदाद्विन्धः मतः।

Sarangdeva also associated the production of *Swaras* by the voices of certain birds and animals: the seven notes are believed to be commenced from peacock, cataka, goat, heron, cuckoo, frog and the elephant respectively. According to Pt. Sarangdeva, *Sadja*, *Gandhara* and *Madhyam* are of divine origin, *Panchama* has arisen from the lineage of manes, *Rishabha* and *Dhaivata* are the progeny of the rishis while *Nishad* sprung from the demonic ancestry.

SR says: “*Shadaj*, *Madhyama*, and *Panchama* are Brahmins; *Rishabha* and *Dhaivata* are known as belonging to the princely class, *Nishad* and *Gandhara* are considered to be in the merchant class while the notes *Antara-Gandhara* and *Kakli Nishad* are of the servant class. Their respective colors are: red, pale yellow, golden yellow, sparkling white, black, plain yellow, and variegated.

Pt. Sarangdeva also described the lands of the origin of *Swaras*. The notes *Sadja* etc. are respectively born in the continents of *Tambu*, *Saka*, *Kusa*, *Kraunca*, *Salmali*, *Sveta* and *Puskara*.

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The rishis (saints) who discovered the first five notes commencing from Sadja etc., respectively are Vahni, Brahma, Sasanka, Laksmikanta, Narada while Dhavata and Nisada were discovered by Tumburu. The presiding deities of Sadja etc., respectively are Vahni, Brahma, Saraswati, Siva, Vishnu, Ganesh and Sun, and the metres associated with them are anustup, gayatri, trstup, brhati, pankti, usnik and jagati.

The texts also speak of three registers across three octaves. Within each register, there are three scales (Gramas): the Sadja Grama, the Madhyama Grama, and the Gandhara Grama. The third of these, the Gandhara Grama, is rarely referred to by Bharata, suggesting that it had long ago gone out of use and that it represents an early scale used in sacred ritual. The presiding deities of the three Gramas are Brahma, Vishnu, and Shiva, respectively.

Pt. Sarangdeva described the firm visualization and personification process of Swar by associating the corresponding Rasa in the chapter ‘Swaraprakarna’ of ‘Sangita Ratnakar’, the musicological landmark as follows:

Sadja and Rishabha are employed in the expression of heroism, wonder and wrath; similarly Dhavata is used for abhorrence and terror; Gandhara and Nishad for pathos and Madhyama and Panchama for mirth and conjugal love.

Pt. Ahobal also associated swaras with the creation of specific Rasas. He assigned specific Rasas to the swaras in the following manner:

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Table No. 2.2.1.3 (ii)
Showing Swaras and specified Rasas created as analyzed by Pt. Ahobal

<table>
<thead>
<tr>
<th>Swaras</th>
<th>Rasas created</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sa</td>
<td>Hasya</td>
</tr>
<tr>
<td>Re</td>
<td>Sringara</td>
</tr>
<tr>
<td>Ga</td>
<td>Hasya</td>
</tr>
<tr>
<td>Ma</td>
<td>Sringara</td>
</tr>
<tr>
<td>Pa</td>
<td>Bhayanka</td>
</tr>
<tr>
<td>Dha</td>
<td>Bibhatsa</td>
</tr>
<tr>
<td>Ni</td>
<td>Karuna</td>
</tr>
</tbody>
</table>

‘Naradya Shiksha’ also associated these seven Swaras with colors as follows:

पद्य पद्यप्रभ: षड्जःष्ठुप्रभ: शुककृत्जः ।
कनकाभस्तु गांध्यः मध्यम: कुन्दस्प्रभ ॥
पंचमस्तु भवेतृकृण्ण: पीतकं धैवतं विदु:।
निषाद: सर्वरङ्ग: स्वायत्वेता: स्वरं - वर्णात् ॥\(^{157}\)

Further, Narada mentioned the prevailing Varna Systems and associated it with the swaras.

पंचमो मध्यम: षड्ज इत्येते ब्रह्मणा: स्मृतः:।
श्रृष्टभो धैवतश्चापीत्तौहि क्षत्रियावतुभो ॥
गान्धर्षु निषादश्च वैश्यावङ्गवेस्मृतो।
शृंदत्व विद्याधर्षुन पतितत्वान्न संज्ञाय ॥\(^{158}\)

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Following table presents a brief summary of this association:

**Table No. 2.2.1.3 (iii)**

**Showing the classification of Swaras with corresponding colour and Varna as Per ‘Naradya Shiksha’**

<table>
<thead>
<tr>
<th>Note</th>
<th>Color</th>
<th>Varna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shadja</td>
<td>Padmapatraprabha (lotus-petal-red)</td>
<td>Brahmin</td>
</tr>
<tr>
<td>Rishabha</td>
<td>Shukapinjara (reddish yellow)</td>
<td>Kshatriya</td>
</tr>
<tr>
<td>Gandhara</td>
<td>Kanakabha (golden red)</td>
<td>Half–Vaishya</td>
</tr>
<tr>
<td>Madhyama</td>
<td>Kundasaprabha (white)</td>
<td>Brahmin</td>
</tr>
<tr>
<td>Panchama</td>
<td>Krishna (black)</td>
<td>Brahmin</td>
</tr>
<tr>
<td>Dhaivata</td>
<td>Pitaka (yellow)</td>
<td>Kshatriya</td>
</tr>
<tr>
<td>Nishad</td>
<td>Sarvavarna (multi / all colored)</td>
<td>Half–Vaishya</td>
</tr>
</tbody>
</table>

Also, each *Svara* is associated with one of the seven chakras of the body and devoted to the names of Gods. The classification of the notes as the sounds of the deities in ‘Naradya Shiksha’ is as follows:

*Sa* is *Agni’s*, *Ri* is *Brahma’s*, *Ga* is *Soma’s*, *Ma* is *Vishnu’s*, *Pa* is *Narada’s*, *Dha* and *Ni* is *Tumburu’s notes*\(^{59}\).

Similar association with the names of Gods and Swaras are found in ‘Sangeet Parijat’ of Pt. Ahobal.

अनिमीतः स्वरः प्रज्ञचयो वेद्यां तर्कात्मकः: ।
सोभीमेव गीतों गाधारो विष्णुना मध्यम स्वरः ॥
पंचमस्तु स्वरों गीतों नारदेन महात्मना: ।
धैवत्स्वरः निपादश्च गीतों तुम्भुरुपणा स्वराः: ॥\(^{60}\)

Narada in ‘Naradya Shiksha’ also associated musical notes with deities, social classes, animals and colors. The notes with 4 shrutis are called Brahman, with 3 shrutis are termed Kshatriya, with 2 shrutis are termed as vaishya, and the half-notes are called shudra (Nar S 1.4.3-4).

‘Sangeet Parijat’ and ‘Nardiya Shiksha’ also comes closer on one more similar association that is of swaras with the name of birds and animals. Both associated Sa with peacock, Re with cow or bull, Ga with Goat, Ma with Saras, Pa with cuckoo, Dha with horse and Ni with Elephant.

2.2.1.3 (b) Psycho-Analytical Aspect of Swara

According to the Vedic Philosophy, Yoga and music both are part of Nada Vidya. Yoga deals with realization of (Anahata) Nada, the sublime sound (extrasensory vibrations) of the eternal force of cosmic consciousness. According to Mehta Prabhsharan, 1994, music pertains to the perception and expression of the infinite spectrum of the rhythmic flow of the (Ahata) Nada, perceivable sonic currents pervading in nature. Both have direct impact on the energy chakras hidden along the endocrine column and hence affect our physical as well as subtle bodies. The physical body is unsheathed by auric field in which seven major chakras (invisible to the naked eye) are present. According to Tripathi, Raj Mangal, 1985 each chakra is associated with an endocrine gland and controls specific organs and resonates with one major chakra. When each note is sung concentrating on the Shruti, vibration of the corresponding chakra can be experienced. The seven basic swaras (musical notes) of the musical octave have a one-to-one correspondence with these chakras (nuclei of subtle energy). The lower most (in the kava equina region along the erect endocrine column), viz., the Muladhara Chakra is associated with the Swara Sa; that means, the practice of chanting this particular musical note will have impact on awakening or activation of this particular chakra. Similarly, the chakras successively upwards in this direction namely, the


Swadhisthana, Manipura, Anahata, Vishuddha, Agya and the top-most Sahastrara Chakra have correspondence respectively with the swaras Re, Ga, Ma, Pa, Dha and Ni. Significantly, the order of the compositions of these swaras in the Aroha (ascending) and Avaroha (descending) patterns of the classical musical tunes also match with the top-down (from Sahastrara to Muladhara) and bottom-up (from Muladhara to Sahastrara) directions of the flow of energy. Some of the sounds naturally produced inside the human body are easily perceivable if one sits quietly at a calm place. Usually these are felt in the heart (beat), throat and head (cerebral region).

Seven Swaras of Indian music with variations count to 12 have a relationship with the twelve Zodiac Signs, seven main swaras, seven days in a week, seven Seas, seven skies, seven rishis, seven airs are not merely a coincidence of numbers but a properly designed framework of the cosmic power to establish harmony in nature and living beings.

The association of Swaras with colors, deities, rishis, seers, gotra, creed, caste etc attached importance of associating music with the lives of human beings, thus making the theory more reliable and authentic. Moreover, it is said that music has a universal language; perhaps it is so because it gives expression to the content of the heart without interfering with thought and therefore appeals directly to the heart. The association of various swaras with corresponding Rasas depicts the various states of mind leading to the enjoyment of various emotions. This analysis of the character of Swaras with reference to their capacity to express more effectively particularly the sentiments seems not only historical and traditional but also proves on the lines of scientific basis which gives the recognition of the present study of relating music to the mind of subjects.

To know the psychological aspect of Indian music and its impact on human mind, it is necessary to investigate the inner meaning of the notes ‘swaras’ and

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how by suitable combinations they can be made to express the desired feelings and generate the desired emotions.

A lot much of research has been done in western countries regarding the influence various colours exerts on mind, and especially the emotions and through them on health. Different colours relate respectively to the body, the mind, emotions and make an essential balance between these three. Associating Swaras with name of the deities and Seers is nothing but basically the fundamental nature of the respective deity or seer/rishis. Similarly linking those with that of Rashis depict their nature. As today we can predict the nature of man by knowing his zodiac sign similarly by knowing the Rashis of the Swaras one can know the basic nature of the respective Swaras.

2.2.1.4 (a) Rhythm: The role of rhythm in the perception of music is extremely important as it is the basis upon which all music is created. Without rhythm, humans would have no sense of patterns, and music would simply sound like nonintegrated noises of nonsense. The Tala, or rhythmic cycle of a Raga, plays an equally important role in expressing the mood\textsuperscript{166}. There is a unique relationship between melody and rhythm. The intricacies depict the complexities and sophistication with which they are woven together.

In Indian music, the time is a vessel through which tone flows. It is said that the first necessity in music is the control of rhythm, for otherwise ‘the song and dance will go out of control, like wild elephant without the check of the Ankush’ (the elephant driver’s hook).

According to ‘Sangeet Ratnakar’, singing, playing of instruments and dancing are dependent on the Tala. The ultimate basis of everything living or dead is

vibration. They all based on Tala. The vibrations when organized and ordered into manifold creation, i.e. projection designed in a systematic form may be called rhythm. The synonym for rhythm is the Laya which is the pace of movement of the Tala. Parshvadeva too has outlined the importance of Tala as

अस्तित्वम्: ।
तालहीनानि गेयानि मंत्रहीना यथाहितः ।

means every type of music is dependent on the Tala. A rendering of musical composition without Tala is like offerings without any Hymn-Mantra.

2.2.1.4 (b) Psycho-Analytical Aspect of Rhythm

Different rhythm and Laya, (e.g., Vilambit (slow), Madhyam (medium) or Dhrut (fast) influence variously the effect of Raga on moods and emotions. According to Nandi & Ghosh, 2002 while the slow-paced rhythms and tempo slow down the mental pace, leading towards calmness, they are also found to be capable of diverting the thought processes in mind, thus enhancing relaxation. Fast-paced tempos and rhythms, on the other hand, preferably in are noted for their influence in stimulating and rejuvenating the mind and body.

2.2.1.5 (a) Raga: Music is a power or universal energy in the form of Ragas. Symphonies of Raga have a definite soothing effect on the mind as well as on the body. Repeated listening to the particular Raga being chosen for a particular disease produces a network of sound vibration. According to Rao, Suvarnalata, and 2000 ‘energy from URF (Universal Energy Field) to HEF (Human Energy Field) transmitted by the strokes of the different tones of Raga affects the CNS i.e. Central Nervous System.

The conception of Ragas is one of the basic principles of the system of Indian music. Literally Raga is something that colors, or tinges the mind with some


63
definite feeling, a wave of passion or emotion. *Raga* is something very different in nature from the melody of western music. The prominent feature of Indian music is *Raga*, which has no counterpart in many kinds of music prevalent worldwide in most progressive countries. It was Matanga Muni who for the first time used it in the technical sense. His definition was repeated by many authors later. According to Matanga, “A raga is called by the learned, that kind of sound composition, which is adorned with musical notes, in some peculiarly stationary, or ascending, or descending, or moving values (varna), which have the effect of colouring the hearts of men.

स्वरवंशिष्यों ध्वनिभेदेन वा पुनः।
रज्ञाते येन यः कपिले स रागः संमतः सताम्।।
अथवा
योस्यौ ध्वनिविशेषतु स्वरवंशिष्योऽभिभूषितः।।
ठङ्को जनचित्तानां स च रागः उदाहित ।।

This definition of *Raga* is applied in today’s context too. The main property of *Raga* is the pleasing quality i.e., to please the minds of the people. Matanga Muni had derived the word ‘*Raga*’ from the root ‘*Rajr*’, to color. Kallinath points out that it acquired a different meaning in usage, in actual practice, ‘it is a tonal configuration, more than its literal meaning, the art of coloring, which refers more to it functional sense’\(^\text{172}\).

S.G. Kanhere observes; ‘In the language of music the arrangement of notes which colours or affects certain emotions of the mind is called *Raga*’\(^\text{173}\). The definitions given in many Sanskrit books define it as ‘that a particular

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combination or relation of several notes which is pleasing to the ear is called Raga.\textsuperscript{174}

In general terms, the word Raga can be summed up as:

\begin{quote}
\textit{‘Melodic patterns of tones’ (Swar Sannivesh)}
\textit{ and }
\textit{‘That which dyes or colours’ (Ranjayati Iti Ragah)}
\end{quote}

Ragas may easily be analyzed and worked to be grouped into the structural and the functional definitions. In the structural sense, Raga means a melodic mode or order of sound or formula. In its functional sense, it is to be analyzed as the act of coloring or dyeing (on the part of the maker of music) and interest, joy and delight in the musical note (on the part of the bearer). These two senses merge into one meaning of the word ‘melody’. Bharata used the word ‘Raga’ in the general sense of emotional color, or aesthetic enjoyment or pleasure.

2.2.1.5(b) Psycho-Analytical Aspect of Raga: The Swaras of Raga composition spelled and expressed some particular states of feelings and emotions. Indeed, they are believed to represent particular moods, associations, or atmosphere of the human mind, or of nature, and are able to evoke or call up an indistinctive kind of feeling answering to the state of the mind, or its physical environment, for the time being. Ragas have therefore, the power of producing certain mental effects and each is supposed to have an emotional value or significance which may be called the ethos of the Raga. According to O.C Ganguly, 1935\textsuperscript{175}, ragas may be said to stand for the language of the soul, expressing itself variously, under the stress of sorrow, or the inspiration of joy, under the storm of passion, or the thrills of the expectation, under the throes of love-longing, the pangs of separation, or the joys of union.

2.2.1.6 (a) Time theory of Ragas: The time theory which is still practiced in Hindustani classical music has its roots in the Vedic period and is not a recent


development. One of the characteristics peculiarities of Indian melodies is the
traditional association of *Ragas* with particular seasons of the year and
particular hours (watches) of day and night. The reason of associating singing
of *Raga* with time is the inherent quality present in some *Ragas*. It was
believed that singing or playing the *Raga* at a particular time associated with it
give rise to the emotive responses required form it.

Bharata mentioned the time for using the *Dhruvas*—*Praveshiki, Naiskramiki*
and *Akashepaki*. He is of the opinion that the particular *Dhruvas* should be
used to indicate the time—

\[
\begin{align*}
\text{प्रवेशिक्ष्याच्या यास्तु पूर्वाहिवेकु तु ता: स्मृता} & \text{।} \\
\text{नकनदिव समुखास्तु नैकामिक्या: स्वच्छाङ्ग ता} & \text{।} \\
\text{सोध्यामुखाकाले तु मध्याहे दीपिकेश्याम} & \text{।} \\
\text{अपरोह तथा मध्या: सम्भवायां करुणाश्रया} & \text{।} \\
\text{चलनार्थि हि ये प्रोका आक्षेपिक्या भवन्तथिपि} & \text{।}
\end{align*}
\]

But *Bharata* was more concerned with the emotions and incidents that take
place on a particular time.

It was ‘Sangeet Makranda’ of Narada where we come across written authority
on the traditional association of melodies with particular season and hours of
the day. Whereas the *Raga* system begins to have definite form at about the
time of *Matanga Muni*, it is only by the 8th-9th centuries (Narada’s Sangeet
Makranda) that such temporal rules are developed.

According to O.C Ganguly ‘The seasonal festivities were considered to be of
great antiquity. *Raga Megh Malhar* was considered to be a popular *Raga* of the
rainy season, *Raga Basant* probably become the proper melody of spring. *Raga
Hindol*, which literally means ‘the swing’ was probably associated with the
primitive Non Aryan ‘Festival of Swing’, *Raga Bhairav* was probably related
to some festival connected with the worship of Lord Shiva, formerly held in the
month of Ashwin, *Raga Sri*, (literally means Lakshmi, beauty, riches, the

\[176\]

Oriental Institute.
presiding deity of the harvest) may easily be connected with the harvesting season in the winter when the crop is cut, raised and garnered. These Ragas were considered the oldest primary Ragas, originally borrowed from the seasonal festivals. ‘Sangeeta Darpana’, is believed to be the earliest authority to codify the tradition of allocating the six Ragas to the six seasons.

According to this authority, Raga Sri is the melody of winter, Raga Basant of spring, Raga Bhairav of summer, Raga Pancama of autumn, Raga Megh of rainy season and Raga Nat-Narayana of the early winter season.

Further, he mentioned that any raga can create magic irrespective of season, particular time or hour, when the singer puts his/her full potential and mind in singing it.

On other hand apart from associating the Ragas with seasons, they are also related to specific hours of the day and night. It is believed as stated above that each Raga is connected with a special mood, or passion or special emotive value and it is therefore fitting that each melody should also have a special and appropriate time for its use. In ‘Sangeeta Makranda’, the classification of

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melodies according to their proper singing time is given into solar or day time, lunar or nocturnal Ragas.\footnote{Narada.(1978, Jan).Ragamanyucyante-Raga Adhayaya. Sangeet Makranda, ed. by Lakshmi Narayan Garg. Hathras: Sangeet Karyalaya, 15, verse 10-23.}

Further Narada in mentioned that ‘singing melodies in hours not appropriate to them should be discouraged as melodies are liable to be killed if sung during inappropriate hours, and whosoever listens to them, courts poverty and shortens his span of life’\footnote{Narada.(1978, Jan).Ragamanyucyante-Raga Adhayaya. Sangeet Makranda, ed. by Lakshmi Narayan Garg. Hathras: Sangeet Karyalaya, 15, verse 24-26.}.

Nanya Bhupala accords morning, noon and afternoon time to the three Gramas – Shadaj, Madhyama and Gandhara respectively. He mentions time and season, during which the Gramas, Geetis are to be used. In the fifth Adhayaya of ‘Bharat Bhashyam’ (Part I), the time and seasons of Gramas along with time and season of Ragas are also given. According to Nanya Bhupala, the time of the Raga should be followed only to get boons, name and fame but Ragas can be sung at any time of the day.\footnote{Nanya, Deva. (1961).Raga Adhayaya. Bharat Bhashyam, First Edition. Trans. By Chaitanya P. Desai. Khairagarh: Indirakala Sangeet Vishwavidalaya}

In ‘Sangeeta Ratnakar’, the theory of assigning times or hours is not mentioned. Sarangdeva doesn’t furnish the time for singing Bhasha Ragas, Upanga or Kriyanga or any other Ragas. Nevertheless, the hour and the season for singing most of the Grama Ragas, and some of the Desi Ragas are casually indicated.\footnote{Sarangdeva. (2006). Sangeet Ratnakar (Chapter 2), Trans. & Exp. By Subhadhra Chaudhary, 4th Part. New Delhi: Radha Publications.}

Pandit Damodar in his ‘Sangeet Darpana’ also talked about morning and evening melodies. Further, exceptions are offered during the performance on stage and under royal command, ‘singing a melody at inappropriate hours doesn’t amount to be an offence’\footnote{Pandit, Damodar. (1975, March). Sangeet Darpana, Third Edition. Hindi trans. by V.N Bhatta. Hathras: Sangeet Karyalaya, verse 27-28, 30.}.

Pundarika Vithala in ‘Ragamala’ indicated the appropriate time for each Raga. He divided the timings into early morning melodies, sunrise melodies, morning melodies...
melodies, noon-tide melodies, afternoon melodies, evening melodies, nocturnal melodies and melodies suitable for all hours. Ramamatya in his famous treatise, ‘Swara-kalanidhi’ divided the timings of Ragas into early morning, morning, former part of the day, afternoon, later part of the day, fourth and last part of the day, evening and melodies sung at all hours. Somanath in ‘Raga-Vivodha’ devoted ten verses to the time theory.

In an excellent paper read before the Fourth All-India Music Conference at Lucknow, Pandit V.N Bhatkhande., 1925 expounded the time theory and divided the Ragas into Purava Ragas i.e. the Ragas fit to be sung between mid day and mid night and Uttar Raga i.e. the Ragas fit to be sung between mid night and mid day. Furthermore, division was also done into three groups: (i) Group taking sharp ‘Re’, ‘Ga’ and ‘Dha’ (ii) Group taking flat ‘Re’ and sharp ‘Ga’ and ‘Ni’ (iii) Group taking flat ‘Ga’ and ‘Ni’.

2.2.1.6 (b) Psycho-Analytical Aspect of Time Theory of Raga: Various authorities of Indian musical culture have given varying suggestions for the association of Raga with the seasons, certain practices, certain places, certain flowers, certain regional practices of the specific regions. It is said that a raga to be more attractive must be sung at a time when it pleases the mind i.e., when its signing time or impact is in conformity with the state of mind of the singer or the hearer or both. Considerable mystic significance is ascribed to the singing of a particular Raga in its appropriate hour. Some music scholars have recently discovered some physiological basis in the structure of the Ragas which seems to offer rational explanation for assigning particular melodies to particular Ragas. It is asserted from the ancient texts that since Ragas connate different and differentiated states of feelings, or emotive flavors (Rasas), Indian theorists lay great stress on their relative difference in note-structure,
corresponding to their relative emotive significances\textsuperscript{190}. The beauty of the raga will not be marred by the time of the day it is sung. It is the psychological association with the time that goes with the mood of the raga. The object of a raga is to express a certain emotional mood and sentiment without any reference to time and season.

2.2.1.7 (a) Classification of Ragas: The earliest classification of the Ragas has been based on the number of Swaras used in their structure, according to which they fall into Sampurana, Shadava and Audava classes or types. Narada in ‘Sangeet Makranda’ beautifully defined the importance of singing Sampurana, Shadava and Audava Ragas in the life circle of an individual.

According to Narada, for the blessing of long life, good deeds, strength, intellect, money, profit and desiring for child etc, Sampurana Ragas should be sung. In taking revenge, overcoming loneliness, for spiritual upliftment, going for wars, Raga with six notes i.e. Shadava Ragas should be sung. For defending someone, ignoring fears and failures, bodily or health problems, Audava Ragas should be sung.

Dattila classified the Ragas under 18 Jatis of which seven are named after the seven notes and remaining eleven according to their component notes. This is


followed by Bharata also, who evolve Ragas from the Jatis, a group called Grama Ragas, which are generic Ragas themselves, seven swaras under Shadja Grama and eleven under Madhyam Grama.

By the time of Matanga, the melodies were grouped under seven classes of which the fifth class, i.e. Raga Giti was the most significant, the group of melodies being recognized by the name of the ‘ragas’. They were seven in number, some having proper names derived from the names of early tribes or from ancient culture areas. As new melodies were discovered or accepted they were affiliated to one or other of these seven raga-gitis, which were regarded as root ragas, and were accepted as ‘Bhasas’. As other melodies were discovered they were categorized and accepted as ‘bibhasas’ and ‘bhasangas’, ‘kriyangas’ and ‘ragangas’. Thereafter, the system of classification of ragas into suddha and vikrita Jatis comes into existence. Somewhat akin to this classification, is another classification of ragas into ‘Suddha, Salanka and Sankirna’. Then followed the principle of classifying the ragas according to the structural affinity, or resemblance of note structure.

There were many fanciful depictions, both conceptual as well as visual (e.g. many Ragas described as having human traits and moods ascribed to Raga depicted in paintings. The conception of Ragini as a graceful, or a diminutive phase of the raga and designated with a feminine ending appears to be a peculiarity of northern system of music. The differentiation of female melodies is first come across in the ‘Sangeeta Makranda’ of Narada, who gives three classes of melodies under male ragas ‘masculine’ melodies, female ragas ‘feminine’ melodies and neuter ragas ‘napumsaka’ melodies. This classification is ascribed to Brahma, and the three groups are allocated to three different types of emotive values. The male melodies are assigned to the sentiments of wonder, courage, or anger; the female to the sentiments of love. Laughter and sorrow while the neuter melodies are assigned to the sentiments of terror, fear, disgust and peace.
2.2.1.7 (b) Psycho-Analytical Aspect of Classification of Ragas

The classification of ragas yields important data for the origin and their history of evolution. But, they also have their practical uses in correctly apprehending the identity and rasa giving rise to the different emotive values. The classification of ragas into Jati Ragas, Grama Ragas, Bhasas, ‘Bibhasas and ‘Bhasangas’, ‘kriyangas’ and ‘ragangas’, shudh and vikrita Ragas, Suddha, Salanka and Sankirna’ and masculine and feminine Ragas—all is based on ushering different emotive responses to different situations.

2.2.2 AESTHETIC ASPECT OF INDIAN MUSIC

Man’s mind is never vacant. It has always some feeling (Bhava) or other. This is however static, its active principle being what is known as emotion. Emotions give meaning to our lives. Emotions make life worth living, or sometimes ending. The English word 'emotion' is derived from the French word émouvoir which means ‘move’194. Great classical philosophers—Plato, Aristotle, Spinoza, Descartes conceived emotion as responses to certain sorts of events triggering bodily changes and typically motivating characteristic behavior195.

2.2.2.1 (a) Rasa Theory: The term rasa occurs in the Rig-Veda means the juice of the soma plant, i.e. soma-rasa.(IX.63.13; 65.15). In addition to its earlier meaning as the juice of plants and herbs, in the Atharva-Veda (III.31.10)

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193 Ibid.
it is used to denote the sap of grain. During the *Upanishad* times, in par with other *Vedic* concepts that developed from the particular to the universal, the term *rasa* assumed an abstract connotation of ‘essential element’ or ‘essence’, abandoning different connotations such as water, milk, sap of grain etc. (*Brh. Up., I.3.19*). However, it is in the *Taittiriya Upanishad* that the term *rasa* seems to have acquired a philosophical significance (*Taittiriya Up, II.7*). In these scriptures, *rasa* denotes the ‘ultimate reality’ which is the basis of *Ananda* or the highest state of bliss.

The concept of *Rasa* is the most important and significant contribution of the Indian mind to aesthetics. The study of aesthetics deals with the realization of beauty in art, its relish or enjoyment, and the awareness of joy that accompanies an experience of beauty.\(^{106}\) *Rasa* has no equivalent in word or concept in any other language or art of the world hitherto known to us. The closest explanation can be ‘aesthetic relish’.\(^{107}\)

The Indian theory of emotions has been usually associated with a literary appreciation of the theory of “*Rasa*” (aesthetic emotion) based on Hindu psychology. The study focuses on an analysis of *Rasa therapy* for the rejuvenation of the mind. According to Singh, Jaidev, (1957) ‘though *Rasa* itself is identified with emotion, in most of the current literature, it is both emotional behaviour and more; it is an awareness of the totality of the emotional situation. It is a detached observance of such a condition of mind and body.’\(^{108}\) *Rasa* is considered to be a contemplative state of mind. Right from very ancient days attempts have been made to relate these specific *Rasas* to music. The experience of *Rasa* is absolute and is known only by empathy that

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is to say, by entering into, feeling the permanent motif. Delightful or disgusting, exalted orlowly, obscure or refined, actual or imagery, there is no subject that cannot evoke *rasa* in man\(^{199}\).

Each *Raga* is associated with a definite mood or sentiment that nature arouses in human beings. The ancient musicologists were particularly interested in the effects of musical notes, how it affected and enhanced human behavior. Music has the power to cure, to make us feel happy, excited, keep us calm, balance our mind and so on. Emotions, feelings and thoughts have been reported to be greatly influenced by music listening or participation. Emotional experience derived from music has a powerful effect on the formation of one’s moral and intellectual outlook. Music activities enhance imagination & creative thinking.

The earliest associations of *Rasa* and *Bhava* are found in Bharata's *Natyashastra*. Bharata Muni very emphatically states the concept of Bhava-Rasa in the VI and VII chapter i.e. *Rasadhyaya* & *Bhavaadhyaya* of *Natyashastra* which forms the bedrock for all deliberations on aesthetics, including the most brilliant contribution of *Abhinavaguptacharya*, whose *Abhinavabharati* remains till date the best commentary on the ‘Natyashastra’

According to Bharata, ‘*Bhava*’ is derived from the root 'bhuhbhavati, that is, 'to become', 'to come into existence'. He gives a causal quality to *Bhava*, saying

**तत्त्वज्ञानी ऐतिहासिक नात्वयत्वं परस्परः: ॥ ३ ७॥**

that is, *Bhava and Rasa* are interrelated, that can’t be separated from one another.

Further, Bharata succinctly encapsulates the theory of *Rasa* in the following words:

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i.e. *Rasa* arises from a combination of the stimulants (*Vibhavas*), the physical consequents (*Anubhavas*) and the transient emotional states (*vyabhichaari*).

*Bishan Swaroop, 1950* presented a clear elaboration of emotional states of rasas in his book ‘Theory of Indian music’ as follows:

**Vibhavas (the determinants):** *Vibhava* is the main stimulating cause being termed as *Alambana Vibhava (the determinant)*, the person or object (or the idea of these), which acts as a stimulus and, the environmental factors that are additional causes termed as *Uddipana Vibhava (excitant)* the situation that is the context for such behavior. They are the causes of emotional responses.

**Anubhavas (the consequents):** These form the responsive reactions. Obviously, with the Indian theory of emotion being closely linked to dramaturgy, this usually refers to overt expression. *Anubhavas* is the consequent physical reaction through action, word and facial expression that follows (anu), as the impact of the *Vibhava*.

**Sattvabhavas (involuntary responses):** They are also the bodily signs of emotion in which are included both external and internal responses to *Vibhavas*.

**Bhavas:** By this is meant the states of mind, which are usually referred to as emotions. *Bhavas* are considered to be of two kinds (1) *Sthayi bhavas* are the ‘permanent’ emotions and (2) *Sanchari bhavas* are the transient moods. The essential difference between the two- *Sthayi* and *Sanchari* bhavas seems to be that the former are more lasting and common to all human beings, and the latter more fleeting and characterized by the personal idiosyncrasy of the individual.

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Right from the very ancient days attempts have been made to relate these specific Rasas to music. Bharata classifies the Rasa under eight categories (ashtarasa) and gives the corresponding Bhava which gives rise to the Rasa. The following table presents Astharasa as given by Bharata\textsuperscript{203}:

<table>
<thead>
<tr>
<th>S. No</th>
<th>Bhava</th>
<th>Rasa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Rati(love)</td>
<td>Sringara(amoous)</td>
</tr>
<tr>
<td>2.</td>
<td>Hasaya(mirth)</td>
<td>Hasya(humorous)</td>
</tr>
<tr>
<td>3.</td>
<td>Shoka(grief)</td>
<td>Karuna(pathetic)</td>
</tr>
<tr>
<td>4.</td>
<td>Krodha(anger)</td>
<td>Raudra(furious)</td>
</tr>
<tr>
<td>5.</td>
<td>Utsaha(heroism)</td>
<td>Vira(valorous)</td>
</tr>
<tr>
<td>6.</td>
<td>Bhaya, (fear)</td>
<td>Bhayanaka(horrific)</td>
</tr>
<tr>
<td>7.</td>
<td>Jugupsa(disgust)</td>
<td>Bibhatsa(repugnant)</td>
</tr>
<tr>
<td>8.</td>
<td>Vismaya(wonder)</td>
<td>Adbhuta(wondrous)</td>
</tr>
</tbody>
</table>

Bharata also correlated each of the above mentioned Bhava with its presiding deity\textsuperscript{204}.

Bharata said, for instance, the ethos of a Jati depends on the dominant note in it: Madhyama – humorous, Panchama – erotic, Shadja – valorous, Rishabha – furious, and so on\textsuperscript{205}. Matanga Muni described the intrinsic sentiments of ‘Jati Ragas’ in ‘Brihaddesi’. According to him, Raga Bhinna Shadja and Raga Bhima Panchama produce ‘Vibhasta’ and ‘Bhyanaka Rasa’. Sarangdeva says

that *Shadja* and *Rishabha* should be used for *Veera* (valorous), *Dhaivata* for *Bibhatsa* (odious) and *Bhayanaka* (fearful), *Gandhara* and *Nishad* for *Karuna* (pathetic), *Panchama* and *Madhyama* for *Hasya* (humorous).

Similarly in *‘Sangeet Samayasas’*, Acharya Parshvadeva has also described the *Ragas* having their respective sentiments and moods. Sarangdeva has described the sentiments of the ‘*Gram Ragas*’ in *‘Sangeet Ratnakar’* and according to that, *Raga* should be sung with the application of sentiments in such a way that its specific sentiment is represented. On the basis of this concept, *Ragas* were depicted in the *Raga Dhayan* and their iconography to represent the specific mood.

*According to Swaroop Bishan, (1950) ‘the task of an artist lies in depicting the particular Rasas, i.e., giving expression in his work to the sentiments desired to be expressed. The poet (including an orator) does it by means of suitable words with proper accents; the painter and the sculptor expressing the particular sentiments, and the musician by combining suitable notes to form appropriate tunes. The task of the musician is rather difficult, but if he can combine poetry with music in his songs, and take help of the Anubhavas in his gesticulations, his performance will surely surpass that of the others’.*

The feelings which give rise to sentiments are grouped into nine, as below:

1. **Rati** = pleasure, amusement, love, affection, sexual pleasure or passion;
2. **Hasya** = laughter, merriment, ridicule;
3. **Shoka** = sorrow or grief;
4. **Krodha** = anger or wrath;
5. **Utsaha** = effort, determination, perseverance, firmness or fortitude;
6. **Bhaya** = fear, alarm or terror;
7. **Jugupsa** = censure, dislike, disgust;
8. **Vismaya** = wonder, surprise, admiration;
9. **Shanta** = tranquility, rest, absence of passion, restraint of senses.

The last one has not been recognized by *Bharata*, the author of *Natyashastra*, as a feeling giving rise to a sentiment.

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207 Ibid.
The Rasas which arises from the above feelings or bhavas are respectively known as (1) Sringara, (2) Hasya, (3) Karuna, (4) Raudra, (5) Vira (6) Bhayanaka (7) Bibhatsa (8) Adbhuta (9) Shanta. On the other hand, there are other writers who have recognized two extra Rasas, Vatsalya or affection, especially for one’s offspring and Bhakti or worship and devotion. These are surely included in Sringara, Vira, Adbhuta and Shanta. The nine bhavas mentioned above are Sthai when they are pervading feelings of a particular Rasa, but when they come and go, strengthening the pervading feeling they are called Vyabhichari which is further categorized into Tanu Vyabhichari, affecting the body and Mana (mind) Vyabhichari affecting the mind.

2.2.2.1(b) Psycho-Analytical Aspect of Rasa: Raga and Rasa are the two prominent terms that invariably figure in the context of Indian classical music and Indian aesthetics, respectively. Association of a specific Rasa (aesthetic emotion) with Swara (note), Jati (ancient modal pattern) and Dhruvas (Jati-based vocal compositions) as theorized by Bharata, finally culminated into Raga-Rasa relation.

Indian music has melody providing an agreeable succession of soft, sweet and mellow sounds, emphasized appropriately with cadences in the shape of Alankars, which takes a high place in creating the feeling or emotion of pleasure. Akanshi (2010) believed that the concurrence of related sounds in harmony of different instruments, playing either the same or different tunes, provides pleasure due to its concord, just as discord sometimes produces pain and feeling of conflict. Music is considered to be the most efficacious in generating the desired emotions.

In Indian music, Raga-Bhava is the expressive aspect that is to be experienced in the performance of a Raga. The Rasa experience, brought about by the perception of the Raga-Bhava has the potential to affect an experience in the listener tantamount to a divine revelation. Indian Ragas have been assigned

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different moods and sentiments and they are sung according to their respective aesthetic sentiment for creating different emotional moods in the minds of the singer and the listener. Very recently some experiments on current scientific lines were conducted by measuring the responses to defined phrases of a few *Ragas*. In another set of studies, the relations of a few *Ragas* to their *Rasas* were studied using present techniques in behavioural psychology, semantics, statistics and computerization. As an example; *Raga Bhairav* of Hindustani music had *Veera* (courageous) Bhayanaka (fearful) Santa (tranquil) and *Rasas* (mental state). It was associated with autumn, early morning and white colour. These responses tally very well indeed with our ancient introspective descriptions of the Raga\(^{211}\).

2.2.2.2 (a) Raga–Dhayan: There is always fundamental psychic value involved in *Ragas* which helps in the interpretation of particular emotional situations and conditions\(^{212}\). It is believed that each *Raga* or *Ragini* has its peculiar psychic form, corresponding to its sonal body over which the former (*raga*) presides as the nymph, deity or the devata of that particular melody\(^{213}\). This idea is evidently, coloured with the doctrine of image-worship as known in the Hindu-Brahmanical religious thought. It is believed that by the earnest prayers and spiritual exercises of the worshipper, the divinity comes down and incarnates in the form of the image. The application of it to the theory of Indian music, has led to the conception of the forms of *Ragas* and *Raginis* in dual aspect i.e. as audible- Sound form and as visible- image form; *Nada-maya rupa* and *Devata-maya rupa*. This is called *Rupa* which by being embellished with sweet flourishes of *Swaras* brings a *Raga* vividly before one’s mind. This doctrine inherent in the theory of *Ragas* is not cleared in any text before the ‘*Raga-Vivodha*’ (*Pancama Vivekah*), where the author describes the two-fold forms (*Rupa*) of melodies.

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According to ‘Sangeet Darpana’, the images of the melodies emanate from the Supreme Deity (Brahma) and their function is to worship the Supreme Deity. According to this doctrine, it is believed that the presiding deity—the spirit or ethos of the Raga or Ragini can be induced to come down and incarnate in its physical sound form (Nada-Maya-Rupa). If the presiding spirit can’t be induced ‘to descent’ the rendering or interpretation of that particular melody cannot be pronounced to have been successfully achieved. A Raga and Ragini is considered something more than a mere physical form, it has a ‘soul’ which comes to dwell and inhabit in the ‘body’. This principal of ‘soul’ in Indian poetics is known as ‘Rasa’, flavour, sentiment, impassioned feeling, or aesthetic emotion. It is this emotive principle, the presiding sentiment, or passion which is evoked by the peculiar combination of Swaras.

According to ‘Sangeet Makranda’, each Swara has a peculiar emotive value, symbolized by its presiding deity and has its interpretive seer, sage or expounder.

Particular Swaras (notes) are said to have peculiar quality of interpreting particular emotions. In ‘Sangeet Darpana’, ‘the notes ‘Sa’ and ‘Re’ are said to

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be appropriate for interpreting the emotion of heroism, wonder and resentment; the note ‘Dha’ is suitable for emotions of disgust and terror; the notes ‘Ga’ and ‘Ni’ are suitable for emotions of sorrow and the notes ‘Ma’ and ‘Pa’ are suitable for emotions of humor and love.

The objective of the Raga is the evolution of Rasa—the aesthetic emotion, the theme, the subject matter or the motif of the melody. ‘As the soul must inhabit a body, so every Rasa is incarnated in the Rupa of particular Raga or Ragini. To evoke the Rasa, one must meditate upon the Rupa. Each particular form of Raga is suitable for the expression of a particular type of Rasa, that is to say, each Raga is associated with and is the medium of a particular sentiment or emotion—its characteristics and definite ethos’. Rasa is a state of the mind—its expression can only be effective and adequate in a dramatic form, it lives in an environment and in relation to other realities, in moods and in phenomena.

According to O.P. Goswami, ‘Each classical Raga in northern India has a pen portrait which depicts the basic elements and inherent sentiments or moods it is supposed to possess’. A musician should have, therefore knowledge of the relation of the Ragas to their associated Rasas. Since early times, this kind of form was considered a *sino quo non* of musical education. The iconography is the picturization of emotions in a concrete and plastic form answering the abstract states of the mind. They have depicted in an appropriate dramatic and emotional setting—the surrounding circumstances which give rise to the various emotions e.g. ‘the Basant Raga is the human reaction to the joy of life in spring, Raga Megh, to the advent of rains, Raga Todi is the surrender of animal

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life to the magic and enchantment of the beauty of nature. *Raga Nata* is the symbol of the heroic or martial spirit in man and so on.\(^2\)

### 2.2.2.2 (b) Psycho-Analytical Aspect of Raga-Dhyana:

Music in general sense, considered to the universal language of emotions. Also, in a true sense, music is a much more definite language than the language of words. The psychology of *Ragas*—being the very basic of Indian music, have been an essential part of the education of an Indian musician from very early times. According to Devangan, Tulsidas (1985) the *dhyana*-formulas in the shape of Sanskrit verses represents the *devata-maya-rupa*, the image forms of *Ragas* and *Raginis*. In these descriptions of *Raga-mala pictures*, the essential character, the spirit-, the *Rasa*, the emotional objective of each *Raga* or *Ragini* is indicated.\(^2\) Moreover, the introduction of these poetical ideas has not only enriched the significance of musical expression but also helped to achieve a happy and a subtle unification of literary and musical ideas. The raga paintings are the personifications of the moods and sentiments inherent in the *Ragas*. The essential characteristics and feature of the *Raga* is its power of evoking an emotion that holds the hearers and cast a spell on them. ‘There is a complete vocabulary in terms of significant melodies—to express the whole gamut of human feeling in all shades and varieties of moods, skillfully woven with the moods of nature’.\(^3\)

### 2.3 THERAPEUTIC IMPORTANCE OF INDIAN MUSIC

Since time immemorial, the therapeutic value of Indian music is considered indivisible from its own nature. Specific sounds and music were played as a form of natural medicine. Music was implemented to induce, transmit, and transform diverse realms of perception (sensorial, emotional, and cognitive), becoming one of the most effective mediators of emotional communication at intra psychic, interpersonal and transpersonal dimensions of experience.\(^4\)

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\(^2\) Ibid.


has been proved now that musical energy implemented as a healing practice has the capacity to improve the quality of life, facilitating relaxation, sleep, mental concentration, improving memory, learning abilities, intuition and creativity, reducing stress, strengthening our vitality, nervous system and maturing personal and inter-personal communication. All these functions are stimulated by enhancing the emotional system of perception: reception, sensation, feeling and expression. Through music, it becomes easy to achieve the target of balancing the emotional state.

Indian music has the capacity to activate the memory of an emotion. The more aware we become of the process of how music perception is related to our emotions, the more effectively we are able to use it when assisting someone who needs help. In an attempt to shed new light to the phenomenon experienced as the healing power of music, we find an answer in a collection of ancient books, the Vedas of India. According to the Vedas, sound is God -Nada Brahma - and musical experience is the path towards the realization of the self, the complete knowledge of our nature, which guides us to discover the true meaning of the universe. The highest aim of Indian music is the stage of ‘self realization’ and to reveal the essence of the universe it reflects. Thus, through music as a spiritual path and sensible mirror, we are able to reach ‘God’, our own essential ‘divinity’, which transcends us.

During the musical experience, the mind experiences conscious joy even in the representation of painful events because of the integration of perceptual, emotional, and cognitive faculties in a more expanded and enhanced auditory perception completed by the subtle aesthetic of sensing, feeling, understanding and hearing all at the same time. Indian music is based on rasa. Rasa is a multi-dimensional principle that explains thoroughly the relation between a


sentiment, a mood, the creative process and its transpersonal qualities\textsuperscript{228}. This Eastern approach to emotional aesthetics and intelligence redefines the transformational power of music, giving a greater meaning to its application in psychotherapy and the healing arts\textsuperscript{229}. According to Vanarase, Shyamala (1975) ‘from the point of view of contemporary psychology, we understand \textit{Rasa} as an experience of a transpersonal nature. It is a germinating power hidden behind aspects of great musical creation that can reveal it, and is able to induce the complete chromatic range of each emotion. \textit{Rasa} involves a transpersonal quality of appreciation and perception. \textit{Rasa} conveys the idea of an aesthetic beauty to be tasted, and knowable only in the activity of tasting. Thus, aesthetic experience is a transformation of not merely feeling, but equally of cognition, a condensed understanding in the mode of ecstasy; the ecstasy of the intellect, an ecstasy itself inscrutable and illuminating\textsuperscript{230}.

The information and the appreciation of \textit{Rasas} have a great therapeutic potential to examine the emotional implications of musical perception, and to refine the application of musical technologies. It activates transpersonal sensibility by ripening the non-mundane appreciation of music and its emotional qualities. In healing with Indian music, the impersonal, tranquil state of physical, mental, intellectual and spiritual health is the goal\textsuperscript{231}. And it is this \textit{rasa} which is ideal for music therapy. The serenity, the sweetness, the satisfaction, the delightful, ecstatic graceful movements and words and rhythms of melodious Indian music has a structure best suited for this purpose.

One of the unique characteristics of Indian music is the assignment of definite times of the day and night for performing \textit{Raga} melodies. It is believed that only in this period the \textit{Raga} appears to be at the height of its melodic beauty and majestic splendor. This connection of time of the day or night, with the

\textsuperscript{230} Ibid.
Raga is based on daily cycle of changes that occur in our own body and mind which are constantly undergoing subtle changes in that different moments of the day which arouse and stimulate different moods and emotions. Each Raga is associated with a definite mood or sentiment that nature arouses in human beings. The ancient musicologists were particularly interested in the effects of musical notes, how it affected and enhanced human behaviour. Indian music had the power to cure, to make you feel happy, and so on. Extensive research was carried out to find out these effects. According to Nandi, Muni., Ghosh, Vijay (2000) it is believed that the human body is dominated by the three Doshas - Kapha, Pitta and Vata. These elements work in a cyclic order of rise and fall during the 24 hours period. Also, the reactions of these three elements differ with the seasons. Hence it is said that performing or listening to a raga at the proper allotted time can affect the health of human beings.

Indian music is dominant mood enhancer. Indian classical music is the soul of music which greatly affects the brain activity; it also has a positive effect on hormone system that’s why people feel relax after hearing the classical music. India has got the strong historical background of music. Archeological studies and evidence too has validated the presence of music as a potential healer from ancient times. Thus through the rich melodies of Indian music, every human emotion, every subtle feeling and nature, can be musically expressed and experienced.

Music Therapy is an emerging discipline in India that warrants more research in this area to make it evidence based. The existence of Music Therapy as a belief system and the integrated approach in treatment of diseases advocated by medical professionals in the clinical arena has made them turn favourably towards music as a promising therapy. The potentials of the ancient healing roots of Indian Music like Nada-yoga, Vedic Chanting and Raga Chikitsa have been recognized by various medical professionals, psychologists, musicologists.

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and music therapists, making them engage in more and more of experimental studies which might strengthen and vouch for the efficacy of Indian music and to make music therapy an evidence based practice in India and abroad. Music is a kind of yoga system through the medium of sonorous sound, which acts upon the human organism and awakens and develops their proper functions to extent of self-realization\textsuperscript{233}. This is the ultimate goal of Hindu Philosophy and religion. Indian music helps in the treatment of actual diseases in the following manners:

1. One obvious use of Indian music is that of a sedative. It can replace the administration of tranquilizers, or at least reduce the dosage of tranquillizers.

2. Indian music has the capacity to increases the metabolic activities within the human body. It accelerates the respiration, influences the internal secretion, improves the muscular activities and as such affects the Central Nervous System and Circulatory System of the listener as well as the performer.

Melody is the keynote of Indian Music. Indian Music is predominantly melodic in nature and the unique \textit{raga} system, born of the various combinations and permutations of notes with the existence of microtones and different embellishments produce sweet and soft impressions in the minds of listeners. Indian classical music is much more than a mere sensate music, which not only pleases the ear and ends there, but is idealistic and expresses mystic significance of life and brings divine thoughts\textsuperscript{234}. It gratifies the soul of the listeners. The \textit{ragas} create a consoling and transcending attitude of the mind, elevate the listener to an ethereal plane and purify the knots of the mind through devotion, the supreme sacrifice\textsuperscript{235}.

Indian music possesses a special character of its own and it differs from music of other countries in its structure, temperament and method of improvisation.

and has the most striking feature of being a synthesis between Philosophy, Psychology, Spirituality and Aesthetics\textsuperscript{236}. Music, as being the most dispensable of arts, is probably the hardest to throw off. Just as memories and landscapes eventually emerge to make emotional claims upon us, music comes uninvited, and stays. It is the lure of place, the call to belong. The essential purpose of music would be to dynamically orient the body and mind in relation to the environment, both consciously and unconsciously. Thus the integrated, experiential nature of music makes it a profound and unique way of knowing, being and being well. All these characteristics make Indian music capable of improving happiness, peace, health and concentration.

Time has come to appreciate and understand the importance of our Indian music to lead a peaceful and purposeful life amidst today’s atmosphere of tension and confusion all around. Material prosperity and innovative ways of life have blurred the mirror of our age old tradition through which saint; seers and even a common man used to find solace, peace and inspiration in earlier days. As a fixed centre one cannot draw concentric circles in geometry; similarly without keeping music as our central and permanent point, we cannot draw concentric circles of happiness, social harmony, mutual respect, interdependence, prosperity and fulfillment in our lives\textsuperscript{237}. Scriptures of all faith give clear guidelines in this regard. There is an urgent need to recognize the importance of Indian music and then make it compulsory at primary and higher levels of education. 50% of the problems faced by adolescents can be overcome by this infusion of transcendental taste in them. Indian music definitely can fill the vacuum and voids in everyone’s life caused due to turbulence in our fast paced life-style.

In recent years, more and more therapists, organizations, clinics and websites have been working on music therapy in India. It has been made a compulsory


section in renewed hospitals and many universities and colleges are opening new arenas in this subject.

Great seer, saint and musician, Rabindra Nath Tagore beautifully quoted on the music of India. “For us, music has above all a transcendental significance. It disengages the spiritual element from the happenings of life; it sings of the relationships of the human soul with the soul of things beyond. The world by day is like European music; a flowing concourse of vast harmony, composed of concord and discord and many disconnected fragments. And the night world is our Indian music; one pure, deep and tender raga. They both stir us, yet the two are contradictory in spirit. But that cannot be helped. At the very root nature is divided into two, day and night, unity and variety, finite and infinite. We men of India live in the realm of night; we are overpowered by the sense of One and Infinite. Our music draws the listener away beyond the limits of everyday; human joys and sorrows, and takes us to that lonely region of renunciation which lies at the root of the universe, while European music leads us a variegated dance through the endless rise and fall of human grief and joy”238.

2.4 INDIAN MUSIC IN THE PRESENT STUDY

The rich traditions of Indian music and its psychological and physiological importance have already been discussed above. Indian music is known for its vastness and comprehensiveness and includes multiple varieties of classical music tradition , including Carnatic and Hindustani music, folk, popular, pop, fusion, film music. It has a history spanning millennia and developed over several eras. Music in India began as an integral part of socio-religious life and is essentially melodic: sounds follow one another expressing an emotional state in an aesthetic unity. On the advice of experts, it was decided to compare different kinds of Indian music to see its impact on adolescent’s anxiety and stress. Because of paucity of time, it was not possible to study the impact of all forms of Indian music in the present study; hence the

238 http://www.brainyquote.com/quotes/authors/r/rabindranath_tagore.html
investigator selected only three kinds of Indian music for comparative analysis which are as follows:

- **Instrumental Indian Music**: Instrumental Indian music is considered one of the most popular and soothing music types for relaxation. Most of the meditative music used for meditation worldwide is in the form of instrumental music. Moreover, instrumental music only uses musical components like pitch, intensity, rhythm, and timbre and doesn’t use any component like verbal language (lyrics). So the effects get generated exclusively from the musical components.

In the present study, it is used as one of the variables during the intervention period or treatment phase. Due to the vastness and comprehensiveness of Indian instruments, the investigator has taken only one stringed instrument—**Sitar**. The selection of the particular instrument—**Sitar** or the study is due to its popularity and recognition in ‘stringed instrumental’ category. Also, it has been taught in schools and colleges in northern India. Moreover, the selection is done on the basis of personal favourite of the researcher. For the present study, sitar recitals of three **ragas** namely, **Raga Vrindabani Sarang**, **Raga Bilaskhani Todi**, and **Raga Bhimplasi** belonging to the specific timings of the day are selected to make a deeper impact on the subjects. Before the starting of Raga, a brief introduction is given verbally. The subjects of one of the experimental groups are made to listen to the compositions of these **ragas** during treatment phase.

- **Fusion Music**: Fusion is an old trend in Indian music. It is that type of music where Indian classical music is combined with the western music forms to create a musical mix of east and west. Indian fusion music came to being when collaborations were ensued between Indians musicians and Western musicians. The growing popularity of Fusion Music, with both vocal and instrumental of India, indicates that

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For detailed elaboration, see Chapter-V. Also find attached DVDs in Appendix VIII.
multiculturalism and globalization are influencing tastes and creativity in music worldwide. National boundaries or limitations of their own music and culture no longer circumscribe musicians, who are keen to experiment and explore new horizons. Because of its popularity nowadays, fusion music in the form of Indian classical and western is included in the present study as one of the variables for intervention period/treatment phase. The subjects of one of the experimental groups are made to listen to the compositions of Fusion music during the treatment phase\textsuperscript{240}.

- **Folk Music:** India has a very rich tradition of folk music. The extreme cultural diversity creates endless varieties of folk styles. Since, India is a land of diversified cultures; one can find a different culture by moving hardly 15 kilometers. Henceforth, a different form of folk music is available at such a short distance. For such a music which has huge diversity, it is impracticable to use all forms due to its vastness and broader area of specifications. Therefore, in the present study, the researcher is restricted only to the folk music of Punjab\textsuperscript{241}. The researcher as well as the subjects belonged to Punjab and having Punjabi as their first language the subjects. Moreover, the study was conducted in the schools of Punjab where it was easy for the subjects to relate to music belonging to their own native land and mother language.

The historical perspective of Indian music, its psychoanalytical aspect, relation with human body & mind and kinds used in the present study has already been discussed above in details. The next part of thesis will be concentrating on the clinical perspective of music as a therapy, detailed discussion about the two variables taken in the study namely, anxiety and stress, stages of human development, the problematic stage-adolescent period and use of music for adolescents.

\textsuperscript{240} For detailed elaboration, see Chapter-V. Also find attached DVDs in Appendix IX.

\textsuperscript{241} Ibid.
2.5 USE OF MUSIC AS A THERAPY

Modern science and medicine are now rediscovering the healing powers of music. And music therapy—the specialized use of music in treating persons with special needs in mental and physical health, rehabilitation and special education is gaining ground. In the west it is now an accepted form of treatment even within orthodox medical practice. Music Therapy is an allied health profession and one of the expressive therapies, consisting of an interpersonal process in which a trained music therapist uses music and all of its facets—physical, emotional, mental, social, aesthetic, and spiritual—to help clients to improve or maintain their health\textsuperscript{242}. Music therapists primarily help clients improve their health across various domains (e.g., cognitive functioning, motor skills, emotional and affective development, behavior and social skills, and quality of life) by using music experiences (e.g., singing, songwriting, listening to and discussing music, moving to music) to achieve treatment goals and objectives\textsuperscript{243}. It is considered both an art and a science, with a qualitative and quantitative research literature base incorporating areas. Referrals to music therapy services may be made by other health care professionals such as physicians, psychologists, physical therapists, and occupational therapists.

According to American Music Therapy Association (2005), ‘Music therapy is the clinical and evidence based use of musical interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program’\textsuperscript{244}. Music therapy is based on the understanding that the ability to respond to music is an inborn quality in all human beings. The ability usually remains unimpaired by disability, injury or illness and is not dependent on musical training. In music therapy, therapeutic aim is achieved by developing a musical relationship where emotions can be expressed and music is used as a tool to develop


\textsuperscript{244} http://www.musictherapy.org
individuality, communication skills, confidence, motivation, creativity and self expression for children with a range of disabilities. Kenneth Bruscia (1989) defined music therapy as ‘a systematic process of intervention wherein the therapist helps the client to achieve health, using musical experiences and the relationships that develop through them as dynamic forces of change’.

Music therapy is a new form of approach to help children and adults, who have problematic behaviors, to make effective adjustments toward social, emotional, mental and educational aspects, where brain plays a dominant role. Many of the imbalances in the so called normal body may also be made set right by regular exposure to certain ‘Ragas’ with special emphasis on certain notes.

Music Therapy acts on the human beings before being transformed into thought and feelings. According to Australian Music Therapy Association Inc, music therapy may address physical, psychological, emotional, cognitive and social needs of individuals within a therapeutic relationship. It focuses on meeting therapeutic aims, which distinguishes it from musical entertainment or music education.

2.5.1 Types or Modes of Music Therapy

Music Therapy has two modes of presentation. One is passive mode or passive form of music therapy which give importance to listening; the other one is active mode or active form of music therapy, which give importance to participation. Passive form of MT may be beneficial to almost all forms of ailments. Active form of music therapy will be of immense help in neurological problems, like neurological aphasia, receptive aphasia, expressive aphasia in the segment of alternative medicines to help children to reduce speech problems- to enhance speech fluency, in hyperactive children to reduce hyperactivity and so on. Passive form of music therapy is more helpful in enhancing the concentration and memory, to reduce the stress and strain, anxiety,
frustrations and various conflicts, to cope up with series of heart problems, like hypertension, in normalizing the blood pressure. The music which is being presented in the therapeutic sessions does the difference on patients. Music is a direct experience before being transformed into thought and feelings. It acts as vibration, which does the wonder on patients. The results are proven scientifically, many research papers and experiments all over the world has been conducted. Music therapy is a complementary form of medicine, in few situations it functions as alternative medicine also.

Music Therapy is helpful in both the forms (sickness and wellness) of medical industry. In both forms, music therapy helps to restore good health. Active mode requires participation of the patients in the music therapy sessions, while the passive mode of music therapy mere involved listening. In the medical field, passive form of music therapy plays a dominant role in the betterment of the patients. The active mode of music therapy is useful in pediatric areas and in few of the neurological problems. Many of the behavioural problems in children, developmental delays and other problematic behaviors also may be attended through active mode of music therapy. The expressive behavior, imagination development in children, and projecting the ideas while participation etc., are all feasible in this active mode. The lyrics in active music surely trigger the memory folders in the brains of patients and help to revive the same. The passive mode/form of music therapy may surely be implemented in almost in all areas of medical field as an alternative or as a complement to medicine.

In the present study, passive form of music therapy was followed where the subjects in experimental groups listened to musical interventions.

251 Ibid.
2.5.2 Areas or Range of Music Therapy

Music Therapists work with adults and children of all ages and with a wide range of developmental & emotional needs and problems. Following are the areas where music and/or music therapy have been found to be beneficial:

In general, music therapy is beneficial for

- Autistic Spectrum Disorder
- Cerebral Palsy
- Learning Difficulties
- Down’s Syndrome
- Epilepsy
- Emotional and Behavioural Concerns
- Communication Problems
- Challenging Behavior
- Mental Health Problems
- Neurological Conditions
- Physical Disabilities
- Sexual Abuse
- Stress, Anxiety, Depression and Conflicting Situations
- Addictions

Specifically, music therapy is helpful for

- Intelligence and brain development:
  - Speeds up development of auditor cortexes of children

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- Increases intelligence and brain plasticity (particularly performing music),
- Increases short-term memory retention on intelligence tests (passive listening to music)
- Enhances healing from wounds and trauma
- Enhances exercise experience through increasing heart rate and oxygen consumption
- Improves muscular coordination
- Slows heart rate
- Reduces blood pressure
- Reduces oxygen consumption
- Reduces heart stroke volume
- Reduces pain levels

- **Surgery:**
  - Reduces anxiety prior to surgery
  - Reduces the need for anesthesia during surgery
  - Reduces the need for post-surgical pain medications
  - Improves the ambience in the post surgery recovery room
  - Helps surgeons, nurses and other operating room personnel in smoothly performing surgeries

- **Surgical Procedures:**
  - Applying or removing casts for broken bones and sprains
  - Cataract surgery
  - Gastrointestinal surgery
  - Gallbladder surgery and/or ultrasound to dissolve gallstones
- Knee arthroplasty
- Prostate surgery
- Hysterectomy and other gynecologic surgeries
- Heart surgery, including bypass surgery

- **Helpful with other procedures:**
  - Lithotripsy (ultrasound to dissolve kidney stones)
  - Dental procedures, and ultrasound to dissolve dental plaque
  - Angiography
  - Sigmoidoscopy or gastrointestinal endoscopy
  - Bronchoscopy
  - Mammography
  - Autologous stem cell transplantation
  - Ventilation support
  - COPD patients
  - Procedures such as debridement for burn patients
  - Other invasive and/or painful procedures

- **Music is helpful in intensive care units Premature infants:**
  - Increases sucking behaviors, feeding, and weight gain (music with fast tempos)
  - Improves oxygen saturation
  - Reduces pain during procedures
  - Reduces pain in baby boys undergoing circumcision

- **Mental health problems:**
  - Reduces stress, anxiety and depression
  - Improves schizophrenic patients
- Understanding of speech, including picking up implicit content such as sarcasm.
- Improves social interactions with others.
- Understanding of people's intentions and emotional states.
- Helps regularize mood in bipolar patients.

- **Children with developmental disabilities:**
  - Improves communication skills of autistic children or those with Asperger's Syndrome.
  - Learn communication skills.
  - Improves social interactions with others.
  - Decreases self-mutilation.
  - Enhances focus and social interaction of ADHD (Attention Deficit with Hyperactivity Disorder) children.
  - Helps children with dyslexia (and normal children) learn to read more easily.

- **Sluttering:**
  - Transforms highly arrhythmic speech patterns.

- **Cancer patients:**
  - Helps them to deal with pain.
  - Helps them to accept life changes.
  - Reduces physical and psychic pain from tests, radiation therapy, and chemotherapy, as well as mitigating other squeal such as nausea.

- **Grieving and dying:**
  - Helps people to deal with loss of loved ones.
  - Helps dying people to deal with impending death.
• Alzheimer's disease and dementias:
  ➢ Improves appetite and consequently, increases energy
  ➢ Increases melatonin levels in Alzheimer's patients
  ➢ Reduces agitated behaviors and ‘wandering’
  ➢ Improves social interactions

• Movement disorders:
  ➢ Helps Parkinson's patients to initiate movement
  ➢ Rhythm patterns helpful to Parkinson's patients, cerebral palsy patients, and other patients, in regularizing movements
  ➢ Increases respiratory muscle strength in multiple sclerosis patients

• Traumatic brain injury, stroke, amnesia, epilepsy:
  ➢ Unlocks access to functions in damaged brain areas
  ➢ Increases plasticity and development of alternative pathways

• Other areas of benefit:
  ➢ Improves sleep (soothing music)
  ➢ Helps to wake up and face the day (cheerful, upbeat, fast tempo music)
  ➢ Helps psoriasis patients and those with other skin problems
  ➢ Enhances acupressure point stimulation
  ➢ Enhances productivity
  ➢ Improves consciousness raising
  ➢ Helps balance chakras
  ➢ Enhances shamanistic rituals
  ➢ Helps to induce trance states
  ➢ Synchronizes activity in brain hemispheres
2.6 ANXIETY: AN OVERVIEW & CONCEPT

Anxiety is a physiological and psychological state characterized by cognitive, somatic, emotional, and behavioral components. These components combine to create the painful feelings that we typically recognize as uneasiness, apprehension, or worry. When anxiety becomes excessive, it may fall under the classification of an anxiety disorder. Anxiety is often described as having cognitive, somatic, emotional and behavioural components\textsuperscript{253}. Emotionally, anxiety causes a sense of dread or panic and physically causes nausea and chills. Behaviorally, both voluntary and involuntary behaviors may arise directed at escaping or avoiding the source of...

anxiety. These behaviors are frequent and often maladaptive, being most extreme in anxiety disorders.

The Quick Reference Dictionary for Occupational Therapy, edited by Jacobs, K. and Jacobs, L. (2005), defines anxiety as: ‘characterized by an overwhelming sense of apprehension; the expectation that something bad is happening or will happen; class of mental disorders characterized by chronic and debilitating anxiety (e.g. generalized anxiety disorder, panic disorder, phobias, and post-traumatic stress disorder)’.

Kaplan, H. and Sadock, B. in the Concise Textbook of Clinical Psychiatry (1996) state that anxiety ‘is characterized by a diffuse, unpleasant, vague sense of apprehension, often accompanied by autonomic symptoms, such as headache, perspiration, palpitations, tightness in the chest, and mild stomach discomfort’. They argued that a person who is anxious often feels restless and unable to be still for long. From these definitions, we can conclude that anxiety is an unpleasant feeling of apprehensiveness and often includes physical symptoms. If anxiety becomes debilitating and chronic, it may be diagnosable as an anxiety disorder. Anxiety is a distressing emotion.

Anxiety is a generalized mood condition that can often occur without an identifiable triggering stimulus. As such, it is distinguished from fear, which is an emotional response to a perceived threat. Additionally, fear is related to the specific behaviors of escape and avoidance, whereas anxiety is related to situations perceived as uncontrollable or unavoidable.

2.6.1 Effects of Anxiety

Anxiety is a general term for several disorders that cause nervousness, fear, apprehension, and worrying. These disorders affect how we feel and behave, and they can manifest real physical symptoms. Mild anxiety is vague and

256 www.apa.org/topics/anxiety/index.aspx
unsettling, while severe anxiety can be extremely debilitating, having a serious impact on daily life. People often experience a general state of worry or fear before confronting something challenging such as a test, examination, recital, or interview. These feelings are easily justified and considered normal. Anxiety is considered a problem when symptoms interfere with a person's ability to sleep or otherwise function. Generally speaking, anxiety occurs when a reaction is out of proportion with what might be normally expected in a situation. The effects of anxiety can be broadly summed under the following headings:

- **Physical effects**: The physical effects of anxiety may include heart palpitations, muscle weakness and tension, fatigue, nausea, chest pain, shortness of breath, stomach aches, or headaches. The body prepares to deal with a threat, blood pressure and heart rate are increased, sweating is increased, blood flow to the major muscle groups is increased, and immune and digestive system functions are inhibited. External signs of anxiety may include pale skin, sweating, trembling, and papillary dilation. Someone who has anxiety might also experience it as a sense of dread or panic. Panic attacks usually come without warning, and although the fear is generally irrational, the perception of danger is very real. A person experiencing a panic attack will often feel as if he or she is about to die or pass out.

- **Emotional effects**: Such effects may include feelings of apprehension or dread, trouble concentrating, feeling tense or jumpy, anticipating the worst, irritability, restlessness, watching (and waiting) for signs (and occurrences) of danger and feeling like mind's gone blank as well as

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nightmares/bad dreams, obsessions about sensations, a trapped feeling, and feeling like everything is scary.

- Behavioral effects: It may include withdrawal from situations where unpleasant effects of anxiety have been experienced in the past. It can also be affected in ways which include changes in sleeping patterns, nail biting and increased motor tension, such as foot tapping etc.

### 2.6.2 Causes of Anxiety

Common causes of anxiety include the below mentioned mental conditions:

- **Panic Disorder**: In addition to attacks of anxiety, called panic attacks, common symptoms of panic disorders are stomach upset, palpitations (feeling your heart beat), dizziness, and shortness of breath. These same symptoms also can be caused by caffeine consumption, amphetamines (when they are not prescribed by a doctor), an overactive thyroid, abnormal heart rhythms, and other heart abnormalities. The panic attack sufferer may experience their mind going blank or that they somehow do not feel real, in that they feel as if they are looking at themselves from outside of themselves. In order to qualify for the diagnosis of panic disorder, the individual would experience repeated panic attacks rather than just one episode.

- **Generalized Anxiety Disorder**: Those who endure this condition experience numerous worries that are more often on the mind of the sufferer. Those worries interfere with the person's ability to sleep.

- **Phobic Disorders**: People with phobias experience irrational fear that may rise to the level of panic attacks in response to a specific thing or situation. Examples of phobias include fears of spiders; insects in general, open spaces, closed-in spaces, air travel, heights, and social anxiety.

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• Obsessive Compulsive Disorder: Individuals with this condition either suffer from intrusive and distressing thoughts (obsessions) or engage in irresistible, often repetitive behaviors (compulsions). Examples of obsessions include worries about germs or having items in a particular order. Examples of compulsions include counting items or activities, avoiding walking on cracks, or avoiding touching doorknobs.

• Separation Anxiety Disorder: Considered a disorder of children, separation anxiety disorder can be diagnosed when a child becomes extremely anxious in response to anticipating or being separated from one or more care giving adults (usually a parent). The separation may come with the child's going to school each day or going to bed each evening, for example.

• Side effects of Medication
  - Intoxication (being high on) with an illicit drug, such as cocaine or amphetamines.
  - Withdrawal from an illicit drug, such as opiates (for example, heroin) or from prescription drugs like Vicodin, benzodiazepines, or barbiturates)

Apart from the above mentioned causes, anxiety can also be caused by a mental condition, a physical condition, the effects of drugs, or from a combination of these.

2.6.3 Common Symptoms of Anxiety

Anxiety can be a symptom of an underlying health issue such as chronic obstructive pulmonary disease (COPD), heart failure, or heart arrhythmia. Abnormal and pathological anxiety or fear may itself be a medical condition falling under the blanket term ‘anxiety disorder’. Such conditions came under the aegis of psychiatry at the end of the 19th century and current

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psychiatric diagnostic criteria recognize several specific forms of the disorder. The following is the list of commonly found anxiety symptoms\footnote{Ohman, A. (2000). \textit{Fear and Anxiety: Evolutionary, Cognitive, and Clinical Perspectives, Handbook of emotions.} New York: The Guilford Press, 573-593.}:

- Excessive, ongoing worry and tension.
- An unrealistic view of problems.
- Restlessness or a feeling of being ‘edgy’.
- Irritability.
- Muscle tension.
- Headaches.
- Sweating.
- Difficulty concentrating.
- Nausea.
- The need to go to the bathroom frequently.
- Tiredness.
- Trouble falling or staying asleep.
- Trembling, Twitching or Shaking.
- Being easily startled.
- Feelings of panic, fear and uneasiness.
- Uncontrollable, obsessive thoughts.
- Repeated thoughts or flashbacks of traumatic experiences.
- Nightmares.
- Ritualistic behaviors, such as repeated hand washing.
- Problem sleeping.
- Cold or sweaty hands and/or feet.
• Shortness of breath.
• Palpitations.
• An inability to be still and calm.
• Dry mouth.
• Numbness or tingling in the hands or feet.
• Muscle tension.
• Dizziness.
• Fullness in the throat or chest.
• Aches or soreness.
• Fatigue.
• Obsessive thoughts.

2.6.4 Relaxation Techniques to Overcome Anxiety

Each individual have unique way to relax. The relaxation techniques listed below are the options that one can try to overcome anxiety. There is no right or wrong way to relax, and no one technique works for everyone. Relaxation is something that can be learned and practiced, it is something we are not necessarily just born knowing how to do (not everyone knows how to relax), and we often are not good at it at first. Each person has the ability to learn how to relax, but not everyone relax the same way.

• Listening to calm Music: Relaxing sounds are forms of auditory (sound) relaxation, and are effective sensory relaxation strategies.

• Progressive Relaxation: Passive progressive relaxation is the act of relaxing muscles progressively without tensing them.

• Physical Techniques: It includes progressive muscle relaxation; also stretching, yoga, tai chi, Pilates and other physical techniques.
- Visualization: Visualizing something for relaxation or making positive changes, such as picturing a relaxing scene in mind.

- Guided Imagery: It is the process of being guided through calming or helpful mental images, such as calming scenes, the healing process, or positive changes.

- Meditation: It is focusing the mind on a word, phrase, or idea and letting go of other thoughts with an attitude of passive acceptance for relaxation or making positive changes.

- Sensory: Experiencing or imagining the sensations of sight, sound, smell, taste, and/or touch.

- Deep breathing: Breathing slowly and regularly and taking sufficiently deep breaths.

- Other methods: Other methods include exercise, massage, hypnosis, self-hypnosis, crafts, hobbies, dance, music, conscious mental rest, artwork, walking etc.

2.6.5 Anxiety among India Adolescents: Anxiety is one of the most common psychological disorders in school-aged children and adolescents worldwide\textsuperscript{265}. Anxiety is associated with substantial negative effects on children’s social, emotional and academic success\textsuperscript{266}. Specific effects include ‘poor social and coping skills, often leading to avoidance of social interactions’\textsuperscript{267}, ‘loneliness, low self-esteem, perceptions of social rejection, and difficulty forming friendships’\textsuperscript{268}. Importantly, school avoidance, decreased problem-solving

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abilities, and lower academic achievement have also been noted as consequences. Anxiety is considered to be a universal phenomenon existing across cultures, although its contexts and manifestations are influenced by cultural beliefs and practices.

In India, the main documented cause of anxiety among school children and adolescents is parents’ high educational expectations and pressure for academic achievement. Generally, more girls than boys develop anxiety disorders and symptoms. ‘Adolescent girls report a greater number of worries, more separation anxiety, and higher levels of generalized anxiety’. Socioeconomic status has been found to be related to anxiety. Broadly, social disadvantage is associated with increased stress. In studies of adolescents, socioeconomic status has been found to impact both directly on rates of mental illness and indirectly via the influence of poverty and financial hardship on low and middle income groups. With respect to mother’s employment status, research suggests that maternal employment, by itself, is unlikely to impede an adolescent’s social and emotional development. In particular, clinical and nonclinical studies have identified parental rejection and control as risk factors for the development of high levels of anxiety and anxiety disorders. The attributes of time spent with parents and the communication between parent and adolescent are important as measures of parent physical and emotional health.

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availability. Recent literature on the multiple roles adopted by working parents is mixed with some studies suggesting that multiple roles increase stress levels and diminish parenting capacity.\(^\text{277}\)

In the current study, attempt has been made to measure the anxiety of adolescents and use Indian music as a technique of relaxation. The anxiety of adolescents is measured by General Anxiety Scale for children developed by Dr. Anil Kumar.\(^\text{278}\)

### 2.7 STRESS-AN OVERVIEW & CONCEPT

The word ‘stress’ is defined by the Oxford Dictionary as ‘a state of affair involving demand on physical or mental energy’.\(^\text{279}\) It is a condition or circumstance (not always adverse), which can disturb the normal physiological and psychological functioning of an individual. In medical parlance ‘stress’ is defined as a perturbation of the body’s homeostasis. This demand on mind-body occurs when it tries to cope with incessant changes in life. Stress, nonetheless, is synonymous with negative conditions.

In medical terms stress is described as, “a physical or psychological stimulus that can produce mental tension or physiological reactions that may lead to illness”. According to Lazarus (1966), stress is a feeling experienced when a person thinks that ‘the demands exceed the personal and social resources the individual is able to mobilize’.\(^\text{280}\)

Stress is the subjective feeling that is produced by events that are perceived as overwhelming and beyond one’s control. ‘Stress involves a sufficiently potent danger to psychological or physical well being; may also lead to disordered behaviour, anxiety or other emotional disturbances’.\(^\text{281}\) *Hens Selye (1950)*

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278 Appendix III: Manual of General Anxiety Scale for Children developed by Dr. Anil Kumar.


defines stress as the state manifested by the specific induced changes within a biological system\textsuperscript{282}.

Stress, originally a concept of the physical science, has come into common usage in the biological and human sciences to describe a state in which the vital functioning of the organism is threatened. Stress is a situation in which a person’s ongoing behaviour altered from its customary pattern, because of continuing pressure from others or from his own reactions. Stress is the consequence of the failure to adapt to change, specifically the inability to respond appropriately to emotional or physical threats to the organism, whether actual or imagined. Common stress symptoms include irritability, muscular tension, inability to concentrate and a variety of physical reactions, such as headaches and accelerated heart rate.

Today, with the rapid diversification of human activity, we come face to face with numerous causes of stress and the symptoms of anxiety and depression. Stress is simply a fact of nature—forces from the inside or outside world affecting the individual. The individual responds to stress in ways that affect the individual as well as their environment. Because of the overabundance of stress in our modern lives, we usually think of stress as a negative experience, but from a biological point of view, stress can be a neutral, negative, or positive experience. In general, stress is related to both external and internal factors. External factors include the physical environment, including job, relationship with others, home, and all the situations, challenges, difficulties, and expectations confronted with on a daily basis. Internal factors determine body's ability to respond to, and deal with, the external stress-inducing factors. Internal factors which influence one’s ability to handle stress include nutritional status, overall health and fitness levels, emotional well-being, and the amount of sleep and rest.

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2.7.1 Signs and Symptoms of Stress

Excess stress can manifest itself in a variety of emotional, behavioral, and even physical symptoms, and the symptoms of stress vary enormously among different individuals. Common somatic (physical) symptoms often reported by those experiencing excess stress include sleep disturbances, muscle tension, muscle aches, headache, gastrointestinal disturbances, and fatigue. Emotional and behavioral symptoms that can accompany excess stress include nervousness, anxiety, changes in eating habits including overeating, loss of enthusiasm or energy, and mood changes, like irritability and depression. Of course, none of these signs or symptoms means for certain that there is an elevated stress level since all of these symptoms can be caused by other medical and/or psychological conditions. It is also known that people under stress have a greater tendency to engage in unhealthy behaviors, such as excessive use or abuse of alcohol and drugs, cigarette smoking, and making poor exercise and nutritional choices, than their less-stressed counterparts. These unhealthy behaviors can further increase the severity of symptoms related to stress, often leading to a "vicious cycle" of symptoms and unhealthy behaviors. The experience of stress is highly individualized. What constitutes
Stress Warning Signs and Symptoms

<table>
<thead>
<tr>
<th>• Loss of sex drive</th>
<th>• Teeth grinding or jaw clenching</th>
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<tr>
<td>• Frequent colds</td>
<td>• Overdoing activities (e.g. exercising, shopping)</td>
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<tr>
<td></td>
<td>• Overreacting to unexpected problems</td>
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</tbody>
</table>

2.7.2 Causes of Stress

Whenever the body feels something not favourable, then it tries to defend itself. If this situation continues for a long time, then the body is working overtime. There are several causes of stress as illustrated below:

*Causes of Stress at Home:*

- Death of spouse, family, near relative or friend.
- Injury or illness of any family member.
- Marriage of self or son or daughter or brother or sister.
- Separation or divorce from partner.
- Pregnancy or birth of a new baby.
- Children's behavior or disobedience.
- Children's educational performance.
- Hyperactive children.
- Sexual molestation.
- Argument or heated conversations with spouse, family members or friends or neighbors.
- Not sufficient money to meet out daily expenses or unexpected expenditure.
- Not sufficient money to raise standard of living.
- Loss of money in burglary, pick-pocketed or share market.
- Change of place or change of city or change of country.

**Causes of Stress at Work**

- To meet out the demands of the job.
- Relationship with colleagues.
- To control staff.
- To train your staff and take work from them.
- Excessive work pressure.
- To meet out deadlines.
- To give good results.
- To produce new publications.
- Working overtime and on holidays.
- New work hours.
- Promotion or have not been promoted or the junior has superseded.
- Argument or heated conversations with co-workers or boss.
- Change of job.
- Work against will.
- Harassment.
- Sexual molestation.

**Other Causes of Stress**

- Fear, intermittent or continuous.
- Threats: physical threats, social threats, financial threat, other threats.
- Uncertainty.
- Lack of sleep.
2.7.3 Type of Stress taken in the Present Study

Types of stress can be numerous. As it was not possible to deal with every kind of stress, only three types have been taken in the present study, namely academic stress, family stress and social stress.

**Academic Stress:** Students have different expectations, goals, and values that they want to fulfill, which is only possible if the students’ expectations, goals, and values are integrated with that of the institution. Academic stress among students have long been researched on, and researchers have identified stressors as too many assignments, competitions with other students, failures and poor relationships with other students or lecturers. Students report experiencing academic stress at predictable times with the greatest sources of academic stress resulting from taking and studying for exams, grade competition, and the large amount of content to master in a small amount of time. When stress is perceived negatively or becomes excessive, students experience physical and psychological impairment. Methods to reduce stress by students often include effective relaxation techniques in the form of music, meditation, time management, social support, positive reappraisal, and engagement in leisure pursuits.

Academic stress is the feeling of anxiety or apprehension over one's performance in the exams. It can lead to students being unable to perform to the best of their abilities in exams. Stress in academic institutions can have both positive and negative consequences if not well managed. Academic

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institutions have different work settings compared to nonacademic and therefore one would expect the difference in symptoms, causes, and consequences of stress\textsuperscript{288}. It is important to the society that students should learn and acquire the necessary knowledge and skills that will in turn make them contribute positively to the development of the general economy of any nation. It is important for the institutions to maintain well balanced academic environment conducive for better learning, with the focus on the student’s personal needs. Academic stressors include the student's perception of the extensive knowledge base required and the perception of an inadequate time to develop it\textsuperscript{289}. When stress is perceived negatively or becomes excessive, students experience physical and psychological impairment. The pressure to perform well in the examination or test and time allocated makes academic environment is very stressful\textsuperscript{290}. This is likely to affect the social relations both within the institution and outside which affects the individual person’s life in terms of commitment to achieving the goals\textsuperscript{291}.

Although the topic of academic stress and adolescent distress is less well documented in India, several reports in academic journals and newspaper stories reveals that the issue is of serious nature. There is only a limited understanding of the extent and prevalence of the problem, because few large-scale surveys or other ethnographic explorations have been conducted. Nevertheless, the existence of the issue is well known, and it is frequently discussed in the popular press\textsuperscript{292}. Psychologists in India have speculated that academic stress leads to adolescent distress\textsuperscript{293}. For instance, a study conducted by a mental health organization in 150 educational institutions in New Delhi

found that 40% of students feel overwhelmed by exams. Another study conducted by a non-governmental organization with 850 students found that 57% were depressed and 9% had considering committing suicide as a result of academic stress294.

Few studies conducted in India have assessed adolescent distress in terms of depression or anxiety, but several studies have documented the link between academic stress and negative effect. Researchers investigated school stress throughout the school using the Experience Sampling Method (ESM) in a sample of one hundred 8th graders from the north Indian city of Chandigarh295. In this study, participants were given alarm watches that they wore for a week. When the watches signaled the participants, which they were randomly programmed to do seven times a day (between 7:30 am and 9:30 pm), participants recorded their current activity and emotional states of mind. They found that students had negative affect when they were doing school work; they were less happy, cheerful, and friendly than when they were doing other activities, and they were also less relaxed or excited. Schoolwork was also a source of severe discomfort, and caused students to feel lonely, disappointed and worried. Girls appear to have a unique and contradictory experience – although they reported better performance at school, they also reported more academic anxiety and externalizing symptoms than boys. Another study explored academic stress in a sample of 254 students aged between 12 and 15 in the north Indian city of Chandigarh. It was found that the stress of examinations, homework, and the expectations of teachers and parents resulted in a variety of somatic symptoms. Students suffered from headaches, stomach aches, nausea, and fevers, in addition to behavioral problems such as aggressiveness, temper tantrums, and adjustment difficulties. They also experienced tension, anxiety, withdrawal, irritability, and sleeplessness. The

symptoms were found to be greater in younger rather than older students.\textsuperscript{296} This is likely because younger adolescents are more likely to express somatic symptoms of distress, such as those described above, than older adolescents who tend to express themselves in psychological terms. Both of the above studies, which were conducted with middle school students, reveal that academic stress is a common experience for students in middle school, suggesting that negative affect associated with school is evident well before high school. In another large study ($n=5759$), increased risk of occasional self-harm was reported with lower academic achievement in 15-year-old students.\textsuperscript{297} In Indian studies, academic problems were reported to be associated with deliberate self-harm and more stress.\textsuperscript{298} In a study of completed suicides in adolescents from Delhi, 56\% of the suicides occurred in the months from March to July. These months correspond to announcements of results, entrance into college and beginning of new academic session.\textsuperscript{299}

In the current study, the academic stress of adolescents was measured by Bisht Battery’s Scale of Academic Stress by Abha Rani Bisht, 1980.

**Family Stress:** In most of the societies about a century ago, the family was the most valued system in almost all spheres of life and human living. Family is the only institution which provides the security and support without any rewards in return. The effectiveness of family functioning in conditioning the adolescent’s personality and social development has an outstanding importance.\textsuperscript{300} The interaction and interpersonal relationships are seen between parents, parent and child, siblings, and any other relative or person living in the

household. The healthy functioning of these interaction patterns enhances mental health of the individual.

Adolescents need a happy and stable family environment and a conductive social network for their overall growth and development. Yet, happy families are not happy all the time. Disagreements and conflicts are a necessary part of living closely together. Both love and hate are to be expected in the intensity of family life and peers interactions, but it is the way negative emotions are handled that makes a difference to family life and social interactions\(^\text{301}\).

Parenting has long been recognized as making an important contribution to the development of competencies and problem behavior among children and adolescents. However, recently researchers have begun to develop attention to understanding variations in parenting in different cultures and how it is related to psychosocial outcomes in children and adolescents\(^\text{302}\). Research has shown that family dynamics is one of the most important elements affecting healthy child development. Positive family functioning can help mitigate the influence of other factors in child development, such as family income and family structure\(^\text{303}\). Research shows that both overall family system functioning and parental behaviors are positively related to adolescent well-being\(^\text{304}\).

It is within a secure and stable family setting that a young adolescent can best learn concern for the well-being of others as well as self; moral values; empathy; and genuineness. The quality of relationships in the family is reflected in the adolescent's relationships with friends and later with neighbors, fellow citizens, colleagues, lovers, and with his or her own children. Indeed, the family provides the link to wider values within the community and at the same time is controlled by those values. The adolescent's beliefs about social

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values, about what is decent and fair, are created in his or her family or origin. Many studies have shown that family plays an important role in adolescents' mental health. Apart from an individual's psychological resources, support from interpersonal networks, such as family and friends, is an important resource.

Stress in families vary, but the most common stress factors that affect diverse groups of families are usually attributed to financial hardship, infidelity, job loss, substance abuse and spousal or child abuse. In some instances, one hardship can lead to multiple hardships, which will sometimes result in the breakup of the family unit.

Family stress is pressure or tension within the family that disrupts normal, day-to-day life. Individual and family stresses are a normal and unavoidable part of everyday life, but change can make a family particularly vulnerable to distress as a result of having to constantly make adjustments. Stress comes in a variety of forms and means different things to different people. What is stressful for one person may seem like an invigorating challenge to the next. Family stress can build from a variety of everyday events or from a one-time crisis event.

Even very young children are affected by family stress. While each day offers stimulating new experiences for young children, some chronic stressful experiences can damage the rapidly growing brain of a young child. The stresses of financial hardship, crowded housing, abuse and neglect, exposure to intimate partner violence, or family turmoil in early childhood can disrupt the architecture of the brain leading to increased risk of developmental delay and a host of long-term health problems, including alcoholism, depression, eating disorders, heart disease, cancer, and other chronic diseases. Community


resources and public services are available for lessening the effects of chronic stresses on your child’s health and development.

The family interactions play an important role in the development of an adolescent.

Adolescents from a warm and supportive family environment builds high levels of organization, cohesion, and expressiveness, as compared with adolescents from a stressful family environment, characterized by high conflict and control. To study the level of family stress of adolescents, this type was undertaken for the investigation.

In the current study, the family stress of adolescents was measured by Bisht Battery’s Scale of Family Stress by Abha Rani Bisht, 1980.

**Social Stress:** Social stress is stress that stems from one’s relationships with others and from the social environment in general. A person experiences stress when he or she does not have the ability or resources to cope when confronted with an external stimulus (stressor), or when they fear they do not have the ability or resources. An event which exceeds the ability to cope does not necessarily have to occur in order for one to experience stress, as the threat of such an event occurring can be sufficient. This can lead to emotional, behavioral and physiological changes that can put one under greater risk for developing mental disorder and physical illness.

Humans are social beings by nature, as they typically have a fundamental need and desire to maintain positive social relationships. Thus, they usually find maintaining positive social ties to be beneficial. In particular, social relationships can offer nurturance, foster feelings of social inclusion, and even lead to reproductive success. As a result, anything that disrupts or threatens to disrupt their relationships with others can result in social stress. This can include low social status in society or in particular groups, giving a speech, interviewing with potential employers, caring for a child or spouse with a chronic illness, meeting new people at a party, the threat of or actual death of a loved one, divorce, and discrimination. These social stressors convey that
social stress can arise from one's micro-environment (e.g., family ties) and macro-environment (e.g., hierarchical societal structure). Given the social nature of humans, it is not surprising that social stress is typically the most frequent type of stressor that people experience in their daily lives and affects people more intensely than other types of stressors.

According to a study published online in the Springter's Journal Annals of Behavioral Medicine, adolescents who experience social and financial stress are associated with increased risk for disease, such as higher blood pressure, body weight and cholesterol levels later on in life\textsuperscript{307}. Chandola, T., Brunner, E., Marmot, M., 2006 from Umea University in Sweden and his team found out that social and financial stress in youths leads to physiological problems later in life, independently of how difficult their life is in the meantime\textsuperscript{308}.

In the current study, the social stress of adolescents was measured by Bisht Battery’s Scale of Social Stress by Abha Rani Bisht, 1980.

2.8 STAGES OF HUMAN DEVELOPMENT

The helpless baby of today who is an adult of tomorrow, has to cross various stages in the process of his development. This also involves the development of his physical, intellectual, social and character side of the personality. The term development means a progressive series of changes as a result of maturation and experience. The human being is never static. From conception to death, change is constantly taking place in physical and psychological capacities. Often the pattern of change resembles a bell-shaped curve, rising abruptly at the start and then flattening out during the middle years, only to decline slowly or abruptly in old age\textsuperscript{309}. It is important to recognize that at no time can this pattern be represented by a straight line, though plateau periods of short or long duration may occur in the development of different capacities.

\textsuperscript{307} http://www.springer.com/medicine/journal/12160

121
Regardless of how long or how short the total life span is, it is usually subdivided into stages or periods, each of which is characterized by certain behavioural or developmental characteristics. There are certain periods in the process of development, where certain characteristics features of behaviour stand out more prominently than other periods of life; they are termed as ‘stage’. It is therefore desirable that for proper understanding of individuals we may divide their life into various stages. Different scholars, psychologists and biologists have categorized and given various stages of human development.

Table No. 2.8

Human development: Biological-Psychological Overview

<table>
<thead>
<tr>
<th>Pre and Perinatal</th>
<th>Prenatal development.</th>
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<tr>
<td></td>
<td>Perinatal development.</td>
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<tr>
<td>Infancy</td>
<td>Infant and child development (stages)</td>
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<td></td>
<td>Infancy.</td>
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<tr>
<td>Childhood</td>
<td>Child development (stages)</td>
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<td>Toddlerhood.</td>
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<td>Preadolescence.</td>
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<td>Adolescence</td>
<td>Youth development</td>
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<td>Puberty.</td>
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<td>Adulthood</td>
<td>Early adulthood</td>
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<td>Middle adulthood</td>
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<td>Advanced adulthood.</td>
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<td>Old age</td>
<td>Early old age</td>
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<td></td>
<td>Advanced old age.</td>
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</tbody>
</table>

Due to paucity of time and other delimitations, it was impossible to experiment on all the stages of human development, the investigation was limited to
adolescent stage only. Moreover the adolescent stage is considered to be the most crucial of all stages.  

2.8.1 Adolescent Stage –A Problematic Phase

The word ‘adolescence’ comes from the Latin word ‘adolescere’ which means ‘to grow’. So the essence of the word adolescence is growth and it is in this sense that adolescence represents a period of intensive growth and change in nearly all aspects of a child’s physical, mental, social and emotional life. Adolescence has been described as ‘the period of storm and stress of human life’. It is a very crucial period of one’s life which covers roughly from 12-18/19+ years. The most important fact about adolescence is that it is a period of transition from childhood to adulthood. As transition from one period to another is always associated with some problems, adolescence is not an exception.

The period of adolescence is considered as crucial and significant period of an individual’s life. Psychologically, adolescence is the age when the individual becomes integrated into the society of the adults. It is the stage when the child no longer feels that he is below the level of his elders but rather an equal with them, at least in rights. This integration into the adult society has many aspects, more or less linked with puberty. Adolescence has been considered, almost by definition, a period of heightened stress due to the many changes experienced concomitantly, including physical maturation, drive for independence, increased salience of social and peer interactions, and brain development. It also includes profound intellectual changes. These intellectual transformations, typical of an adolescent’s thinking, enable him to achieve his integration into the social relationships of the adults, which is the most general characteristic of this period of development. Studies of changes in

310 For elaborate details, refer to Chapter-II.  
behaviour, attitudes and values throughout adolescence have revealed that these changes are more rapid in the early part than in the later part of adolescence. Early adolescence is usually referred to as the ‘teens’.

Adolescence is the period of rapid changes in an individual’s physical, mental, moral, emotional, social and sexual aspects. It is the period characterized to learn new things, a period of anxieties, worries, conflicts etc. It is the period of ambitions as well as of conflicts and complexities.

Some consider adolescents to be merely savage because of their boundless imagination, rashness, craftiness, forgetfulness, inconsistency, explosive temper and lack of cares. Some say an adolescent is a madman in view of his/her inclination towards superstitions, pride and extreme sensitivity concerning one’s honor. It has been asserted that an adolescent is a potential criminal in view of his/her fits of rage, crudity, extreme vanity and egoism a tendency towards moral degradation.

It is a period when rapid physiological changes and demands for new social roles take place. The adolescents, due to these changes often face a number of crises and dilemmas. However, ‘a variety of bodily changes do appear including growth of long bones of arms and legs, appearances of pubic hair and appearance of facial hair. The boys also experience nocturnal emissions or ejaculation of semen during sleep. It is the period when the child moves from dependency to autonomy. It is a period demanding significant adjustment to the physical and social changes which distinguish childhood behaviour from adult behaviour. The stage of puberty brings in a number of physical and physiological changes.

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317 Ibid.
Early adolescence extends roughly from thirteen to sixteen years, and late adolescence covers the period from then until eighteen, the age of legal maturity. The significance of this period becomes manifold for the following reasons:

- To understand the nature and changes taking place in this transition period.
- To know about problems of adolescents and providing proper guidance to them. For this causes of problems whether physiological or psychological need to be known to provide adequate guidance for adjustment in society.
- To maintain mental health and ensure proper emotional development. This is important to prevent any incidence of maladjustment.
- To help adolescents realize their responsibility towards themselves, family, society and above all their nation.

The physical and psychological characteristics of adolescents and the nature of developmental tasks which they are expected to perform often pose certain challenges and problems for adjustment. Basically adolescents face problems related to their home, school and society. The following list represents the common problems faced by almost all the adolescents:

- Body image
- Eating disorders
- Bodily changes
- Growth and Development of Sex Organs
- Moodiness and Emotional Variations
- Anger and Feeling of rebel
- Hypersensitivity
- Attraction towards opposite sex

• Crushes and Infatuation
• Day dreams
• Authoritative parenting
• Poor rapport with parents
• Lack of communication
• Low socio-economic background
• Non conducive atmosphere
• Space constraint
• Comparison with others
• Strict teachers and Partial treatment
• Closed school atmosphere
• Not acceptable classmates
• Poor marks
• Too much homework
• No co-curricular participation.
• Long school hours
• Gender bias, caste related problems
• Generation gap
• Orthodox practices
• Repressive atmosphere
• Over expectations of Parents, Teachers and Society
• Lack of friends

Steinberg, L., 2011 rightly remarked that “adolescence is a voyage through rough seas; on this voyage a young man has to navigate carefully avoiding the rocks and other dangers and know how to get pleasure by overcoming these hurdles.”

2.8.1.1 Anxiety at Adolescent Stage
The mental and emotional health problems adolescents face today challenge their sense of mental and emotional balance and without a doubt; produce a
tremendous amount of anxiety. Alcohol and drug use, depression, acquaintance rape, teenage, examination tension, high hopes of family and society, tremendous changes undergoing are a few examples of anxiety producers that adolescents deal with on a daily basis. Anxiety disorders can lead to poor school attendance, low self-esteem, deficient interpersonal skills, alcohol abuse, and adjustment difficulty. Therefore, schools can be a good setting for the recognition of anxiety disorders in adolescents. In addition, parents, caregivers, teachers, and other health practitioners should be understanding and patient when dealing with adolescents with anxiety disorders. The symptoms of anxiety disorders are often difficult to recognize and unfortunately, people who suffer from one or more of them are either too ashamed to seek help or they fail to realize that these disorders can be treated effectively. The age groups showing the greatest prevalence of anxiety disorders include those between the ages of 12 and 23.

When emotions are associated with behavior, the frequency and intensity of an anxiety disorder is usually an indicator of the adolescent’s level of emotional wellness. Adolescents may attempt to cope with anxiety in a number of ways therefore, it is important to have young people identify and cope with their anxiety in emotionally healthy ways. Anxiety is an inevitable part of life and becoming aware of the causes and types of anxiety is necessary in order to educate adolescents to maintain a healthy lifestyle and overall wellness. Adolescents need to learn how to manage anxiety and become aware that anxious feelings do not have to be harmful or dangerous to them.

Since anxiety can result in feelings of mild uneasiness to extreme terror and panic, it is important for adolescents to become familiar with the causes of

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anxiety to have a better understanding of the variability in severity of anxious reactions. The causes of anxiety may be due to a variety of stressful life events, numerous hereditary factors, personal background, personality, physical illness, and possibly overproduction, underproduction, and/or misplacement of serotonin, dopamine, and/or norepinephrine in the brain. Children and adolescents are more likely to have an anxiety disorder if their parents have anxiety disorders however; it is not known whether biology or environment plays the greater role in the development of anxiety disorders. Other components that play a part in the cause of anxiety are; 1) inefficiency, which is the loss of mental alertness and inability to gear the mind toward problem solving, and 2) fear, which is to imagine that actions always have bad or painful consequences, or to imagine only possible adverse events.

2.8.1.2 Stress at Adolescent Stage of Human Development

Adolescence is a confusing time in an individual’s life. An individual at every stage of human development experiences some kind of stress on daily basis. However, adolescents are confronted with new kinds of stress stemming from relationships with parents, romantic partners, or friends or dissatisfaction with body image, school, society etc. One source of stress is school. There are academic challenges and responsibilities placed on the adolescents, but they are also likely beginning to formulate life goals. For example, adolescents may be thinking about career paths and what must be accomplished now and in the near future to reach their end goals. Along with academic stress, adolescents must deal with social pressures and peer pressure. The words “popularity” and “cliques” are frequently associated with this time in life. Being accepted into desired social circles and keeping up with the “popular kids” is of high priority for many adolescents with many going to great lengths to be accepted. This can lead to poor decision-making and hurt feelings (e.g., teasing others).

additional source of stress stems outside school. Many adolescents are attracted towards luxurious life style and want to possess cell phones, clothes and shoes, video games, and other technology. Other sources of stress are not limited to but may include pressure from parents, to do well in school, unique family circumstances, or illness. Stress can make it more difficult for adolescents to cope with the demands of daily living, thus having negative physical and emotional effects. The physiological response to stress is a combination of a reaction between the body and the brain. More specifically, when a person is presented with a stressor, areas in the brain are activated and release hormones thus activating other response systems throughout the body. Regarding adolescent’s emotional health, if stress is ongoing or left unchecked or un-addressed, it can lead to serious mental health problems, such as depression, later in life. The effects of stress in a student’s life can have serious impacts on their ability to perform, progress, or succeed in school. 

*Rosenberg (1965)* reported that emotional stress predicted future class failure and other school problems. In addition, adolescents have reported that school is the number one cause of stress in their lives. While earning good grades can potentially increase a student’s self-esteem and sense of adequacy, earning failing grades or grades that do not meet expectations of students themselves, parents or teachers and being compared by grades can create emotional distress among students. *McLaughlin & Hatzenbuehler (2009)* reported that stress can negatively affect adolescent’s work performance. Majority of the

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adolescent undergo stress, whatever the sources may be internal or external it hampers the major functioning of the body. Most of the adolescents face multiple problems in their life. Each one has to cope with different kinds of pressure laid down by the society and family. On the verge of coping those pressures, an adolescent himself unconsciously frames a net and is caught in the same. Parent’s expectation, sibling’s rivalry, status issues, financial issues. Most of them confront with these issues in which some problems are actually genuine and some are self-created. Youngsters need to reduce their level of expectations. These people build unreasonable expectation from their life. Most of the adolescents are pseudo they keep their own self in a rosy world and when they are confronted with the actual situation, they are unable to handle and thus it throws them to a stressful situation. Most of the youngsters are reluctant to share their problems with their parents this leads to depression and stress. Anxiety, Stress and depression are the serious problems for an adolescent. Stress is categorized by feelings of tension, frustration, worry, sadness and withdrawal, which commonly last for few days. Home and school are the centers of these problems. Most of the conflicting issues arise because of the fear of loss of friends, parents. They become entangled in the grip of insecurity. Most of the time they have this fear that if they are not able to meet expectations of their near and dear ones then he or she will lose them. The additional burden of general expectations of parents, friend’s teachers etc stress the youngster and when confronted with failure hurts their self-esteem. Adolescents set up unrealistic goals for their own self. Most of them are overambitious; they set up unrealistic goals for their own self. They want to attain those things in their life, which are not possible through their present financial status. Youngsters compare themselves with their friends whose parents are financially well and feel inferior. When the parents show disapproval on this front then adolescents become aggressive. They get involved in a useless controversy, which again adds to the level of stress. These issues they are not able to discuss with their parents and thus keep cribbing over it. Most of the adolescents want to show their grandeur to their opposite
gender. Parents are generally unable to develop a friendly relationship with their child.

2.8.1.3 Music: A Powerful Healing Tool for Adolescents

Music is considered to be an incredibly powerful healing tool. Physical, mental and emotional challenges are met so much more easily with music. Music is a powerful catalyst for adolescent’s healing because it touches the very core of humanity i.e. our souls. With music, one can remember his connection with the Creator. Music works as therapeutic tool to help adolescents heal by encouraging self-expression and self-awareness. It helps an adolescent to deal with troubling problems or behaviors. Music is used in various ways such as writing songs, listening to the lyrics of specific songs or discussing how particular music changes the way an adolescent is feeling. Music appeals to many adolescents that discover that it often express their own feelings and experiences. Adolescents tend to gravitate to music describing what they are feeling and what is important to them. People react to it in their own ways. In some people, stress-induced adverse feelings and anxieties tend to persist and intensify. Learning to understand and manage stress can prevent the counter effects of stress. Methods of coping with stress are plenty. The most significant or sensible way out is a change in lifestyle. Relaxation techniques such as meditation, physical exercises, listening to soothing music, deep breathing, various natural and alternative methods, personal growth techniques, visualization and massage are some of the mostly known stress busters.

Examples of How Music Helps A Troubled Adolescent:

- Singing along with the lyrics of a song provides the healthy release of painful or difficult emotions.
- Soothing music helps an anxious adolescent to relax.
- Discussing the violent lyrics of a song helps an angry adolescent express his rage.
- Upbeat music helps a depressed adolescent improve his mood.
• Writing new lyrics to a song helps identify the reasons for feelings of sadness.

The following are some of effects of music on adolescents, which help to explain the effectiveness of music:

• Brain Waves: Research has shown that music with a strong beat can stimulate brainwaves to resonate in sync with the beat, with faster beats bringing sharper concentration and more alert thinking, and a slower tempo promoting a calm, meditative state. Also, research has found that the change in brainwave activity levels that music can bring can also enable the brain to shift speeds more easily on its own as needed, which means that music can bring lasting benefits to our state of mind.

• Breathing and Heart Rate: With alterations in brainwaves, come changes in other bodily functions. Those governed by the autonomic nervous system, such as breathing and heart rate can also be altered by the changes music can bring. This can mean slower breathing, slower heart rate, and an activation of the relaxation response, among other things. This is why music can help counteract or prevent the damaging effects of chronic stress, greatly promoting not only relaxation, but health.

• State of Mind: Music can also be used to bring a more positive state of mind, helping to keep depression and anxiety at bay. This can help prevent the stress response from wreaking havoc on the body, and can help keep creativity and optimism levels higher, bringing many other benefits.

• Other Benefits: Music has also been found to bring many other benefits, such as lowering blood pressure (which can also reduce the risk of stroke and other health problems over time), boost immunity, ease muscle tension, and more. With so many benefits and such profound physical effects, it’s no surprise that so many are seeing music as an important tool to help the body in staying (or becoming) healthy.
Music and Stress Management: With all the ways music affects the body, one can probably already clearly see how music can be used as an effective relaxation and stress management tool. In addition to the many physical changes that music can bring, music is especially helpful in relaxation and stress management because it can be used in the following ways:

- **Music and Physical Relaxation:** Music can promote relaxation of tense muscles, enabling to easily release some of the tension.
- **Music as an Aid in Stress Relief Activities:** Music can help to get ‘into the zone’ when practicing yoga, listening to music, self hypnosis or guided imagery, can help us feel energized when exercising, and be a helpful part of many other stress relief activities. It can take an effective stress reliever and make it even more effective.
- **Music and a Meditative State:** As mentioned before, music can help the brain get into a meditative state, which carries wonderful stress relief benefits with it. For those who find meditation intimidating, music can be an easier alternative.
- **Music to Promote a Positive Focus:** Music, especially upbeat tunes, can take the mind off what stresses us, and help us feel more optimistic and positive.
- **Music and Affirmations:** Music that has affirming lyrics can bring the double benefit of music and positive affirmations, helping to surround ourselves with positive energy and more often look on the bright side, letting stressful events more easily roll off.

Wilson (1991) concluded that music enhances self-expression and self-esteem. Moreno (1995) described music therapy as similar to traditional healing methods in its ability to support positive belief systems, enhance

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feelings of group support and individual self-esteem\textsuperscript{337}. Henderson (1983) found self-esteem had increased following a music therapy intervention with thirteen hospitalized patients diagnosed with ‘adjustment reaction to adolescence’\textsuperscript{338}. Within a population of autistic children, Kivland (1986) argued that music therapy and adapted music lessons may both influence self-esteem\textsuperscript{339}. Disclosure and awareness of self has been precipitated through the music as the relationship with music, therapist and self has developed. Songwriting, according to Goldstein (1990) provides a successful, pleasant experience and that a great deal of additional information about the participant can be gained through such techniques\textsuperscript{340}. Music therapy not only allows for the development of self-esteem through successful educational and social interactions, it also enables the child to use the group as a support system, a replacement for what has lacked in family structure and rituals. Music has structure within itself, and has been used to mark rituals throughout time for as long as man has known music. Also, it is important to remember that toning (the release of tension and anxiety through the voice), is the body's natural regulation mechanism for healing, both emotionally and physically\textsuperscript{341}. Seeing the therapeutic importance of music from all angles; ancient healing roots, to the views expressed by musicologists, to the scientific procedures adopted for its evaluation, adolescent’s critical stage, role of Indian music in relieving the anxiety and stress levels, it can be concluded that music is one of several types of expressive therapies that help troubled teens gain self-understanding and learn better ways to cope with their lives. Research has shown that music has a profound effect on our body and psyche. Those who


practice music therapy are finding a benefit in using music to help cancer patients, children with ADD, and others, and even hospitals are beginning to use music and music therapy to help with pain management, to help ward off depression, to promote movement, to calm patients, to ease muscle tension, and for many other benefits that music and music therapy can bring. This is not surprising, as music affects the body and mind in many powerful ways.