

# RAG BILASKHANI TODI RELIEVES PSYCHOLOGICAL DISTRESS IN ADOLESCENTS WITH INCREASED NEUROTICISM AND DECREASED AGREEABLENESS

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## INTRODUCTION

Music is widely used for three different purposes, viz., emotional use ( the extent to which music is used for inducing moods that change an individual's experienced emotionality), cognitive or intellectual use of music ( the extent to which an individual listens to music in an analytical and intellectual manner), and background or social uses of music.<sup>1</sup> Music's emotional affect, which is people's primary motivation for listening, may prepare them to act on prevailing conditions to attain or maintain a state of well-being.<sup>2</sup> For adolescents, the major gratification they get from music is the relief of tension and diversion from concerns.<sup>3</sup> Music can evoke powerful emotional reactions in people, and listening to music affects the emotional and cognitive experience of an individual as well as physiological arousal.<sup>4</sup> It has also been stated that music is used as a coping mechanism in emotionally unstable individuals, in contrast to those scoring high on emotional stability who are even tempered, and therefore may not need music to cope with emotions.<sup>5,6</sup>

According to certain authors, the three factors regarding the use of music( emotional, cognitive and social) are associated with the Big Five personality traits (Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness),<sup>7</sup> the above studies confirming that there are a number of personality predictors of music use, which may generalize across cultures. These authors have reported that positive correlations exist between Neuroticism and emotional use of music, and Openness to Experience and cognitive or intellectual use of music. A study conducted in Malaysia by Chamorro-Premuzic et al. has found that individuals higher in Neuroticism are more likely to use music for emotional regulation.<sup>8</sup> The positive association between Neuroticism and reports of using music for emotional regulation is consistent with the idea that individuals higher in Neuroticism experience higher intensity of emotional affect, especially negative emotions.<sup>9</sup>

The Big Five personality traits provide a comprehensive profile of an individual's behavioral tendencies, including their consistent affective and cognitive patterns, and though several studies have examined the relationship between personality factors and musical taste,<sup>10,11</sup> to date no references are available regarding the association between personality traits and response to music therapy. The present study was carried out to determine whether there are any definitive links between the different personality traits and response to music therapy using classical Indian ragas.

## AIM OF THE STUDY

To determine the association between the Big Five personality traits and response to music therapy based on classical Indian ragas, as evaluated by the improvements in self-rated anxiety and depression scores before and after music administration.

## MATERIALS AND METHODS

28 adolescent students (15 males, 13 females) who recently joined the medical career with signs and symptoms of clinical anxiety and depression as evaluated by the Self- Rating Scale for Anxiety and depression (SAS and SDS) devised by Zung<sup>12, 13</sup> were chosen for the study. Written informed consent was obtained from all the participants. The exclusion criteria included chronic physical ailments such as hypertension, obstructive pulmonary disease, diabetes, or history of drug abuse. The anxiety and depression scores before and after 21 days of music administration (30 minutes twice a day, through head phones ) were compared. The personality traits of the students was assessed using the NEO-FFI of Costa & Mc Crae.<sup>14</sup> Association between the personality traits and the difference in anxiety and depression

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scores before and after 21 days of music listening was calculated using Pearson's Correlation Coefficient. The results have been tabulated below:

#### Results

Correlation with SAS N E O A C

$$r = 0.32^* 0.02 0.2 - 0.31^* 0.15$$

Correlation with SDS

$$r = 0.16 0.04 0.1 - 0.3^* 0.05$$

\* denotes significant correlation coefficient.

Table-1

## DISCUSSION

The results from our study indicate that response to music therapy is associated with the personality traits of Agreeableness and Neuroticism among students of the adolescent age group. Significant negative correlation exists between those with low scores on the Agreeableness scale and indices for anxiety and depression ( $r = -0.3$  for anxiety scores;  $r = -0.2$  for depression scores). Positive correlation is found to exist between those with high scores on the Neuroticism scale ( $r = 0.3$  for anxiety scores) and improvement in the anxiety indices when assessed before and after the music therapy sessions. The low correlations could be attributed to the small sample size, which, if increased may yield more significant associations. It is thus evident that participants with low Agreeableness and high Neuroticism scores demonstrate a good response to music therapy using classical ragas. While Neuroticism has been linked to brain mechanisms associated with avoidance, fearful temperaments, or negative emotionality, low Agreeableness is associated with lack of consideration for others and decreased empathy.<sup>14,15</sup> Both the above characteristics being linked to negative emotional states, the notion that music is used as a coping strategy is reinforced, as emotionally stable people are believed to be even tempered and not the type to let things get them; therefore they may not need music to cope with emotions. This could be the reason for the lack of good response to music therapy observed in participants with personality traits not related to negative emotionality. The increased receptivity for music therapy in those individuals with elevated Neuroticism and decreased Agreeableness may be connected with their emotional experience induced during music listening. Though autonomic and electrophysiological recordings have provided time-sensitive biological markers for emotion perception in music,<sup>16,17</sup> the degree to which biological markers predict the multidimensional psychological experience of musical emotion is unclear. Scherer<sup>18</sup> put forth the component process model of emotion which consists of the "emotion response triad" of physiological arousal, motor expression, and subjective feelings. Further, a given song might elicit one emotion from participant A and a completely different sentiment from participant B,<sup>17</sup> and these variations have been correlated with potential personality differences.<sup>19</sup>

The above findings have been reinforced by recent studies which have suggested possible connections between Agreeableness and emotion.<sup>20</sup> In a study conducted by Tobin et al.,<sup>21</sup> both Neuroticism and Agreeableness emerged as significant predictors of emotional experience, when the participants' degree of emotional perception was assessed using standard psycho-physiological methods for examining responses to both positively and negatively charged emotional materials. Participants lower in Agreeableness rated the psycho-physiological measures as more pleasant than did participants higher in Agreeableness when positively charged emotional measures were used. They concluded that Agreeableness was related to nonverbal psycho-physiological measures of emotional responses.

According to Rothbart and Bates,<sup>22</sup> individual differences in Agreeableness may have their origins in temperament systems that control reactions to frustration. Therefore we can hypothesize that a good response to music therapy using pleasant, soothing classical ragas infused with love and compassion, is associated with the inherent personality traits, namely Agreeableness and Neuroticism. The findings from the above study reinforce the fact that the brain is built to changes in response to mental training due the phenomenon of neural plasticity, and therefore it is possible to train a mind to be happy in those individuals endowed with personality traits linked to negative emotional states. More studies involving the association between the personality traits which are genetically determined, and receptivity to music therapy are needed to validate these findings.

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