



Study Of Relationships Between Stress With Music Preferences And Personality Traits

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ABSTRACT

College students frequently worry about academic stress which is impacted by a variety of psychological factors. Although using music a coping mechanism is common, individual differences may affect how effective it is. The current study investigates the moderating role of personality traits among college students as well as the relationship between academic stress and music preferences.

A quantitative and cross-sectional design was used. 80-100 college students in ages between 18–25 years with equal division of gender was used. To gather the data NEO-FFI questionnaire, Academic Stress Scale and Music Preferences Scale was used. Descriptive Analysis, Correlation Analysis, Multiple Regression and Moderation analysis were performed.

The findings showed a very weak and non-significant relationship between academic stress and musical preferences. Stress levels were not significantly predicted by music preferences, according to multiple regression analysis. Moderation analysis however, showed important interaction effects. Students with High levels of openness to experience who preferred reflective music also had lower levels of academic stress, whereas students with high levels of conscientiousness who preferred energetic music had lower levels of academic stress.

The results show that music is not a universal method of reducing stress. Rather it is each person's unique personality traits determine how effective it is. The study emphasizes how crucial it is to take personality traits into account when using music as a coping strategy to lower the academic stress.

KEYWORDS: Academic Stress, Music Preferences, Personality Traits, Moderation Analysis, College Students

I. INTRODUCTION

The college years are an important stage of development that involve becoming adjusted to high academic requirements, social adjustments and expectations related to vocational choices. The pressures often lead to increased academic stress in students. The long-term academic stress is also related to anxiety, low motivation, lower level of academic achievement, performance and emotional problems. Therefore, studying the students, how they handle stress is a crucial area for psychological study.

Listening to music is the most preferred coping strategies of young adults. Music effects emotions, enhances mood, provides relaxation as well as offering emotional comfort. One commonly used technique by the students to reduce tension, manage stress, lower academic pressure and enhance concentration or to just escape from stressful situations in the current moment is music.

But not everyone reacts to music in the same way. Personal choices such as preferred genres and listening motives vary significantly and may influence its effectiveness for stress reduction. Emotional experiences are also significantly influenced by personality traits. The five-factor model states the neuroticism, extraversion, agreeableness, openness and conscientiousness, all have distinct effects on people perceive stressors, control their emotions and turn to coping mechanisms like music. People with high neuroticism, might be more stressed, whereas people with high extraversion might look for upbeat and energetic music.

There are a few researches on how these three factors interact, especially in Indian college settings, despite the fact that studies show that music helps reduce stress and helps personality influences music preferences. This shows the need for a proper investigation into the influence or impact of music preferences on academic stress and if there is any moderating role of personality traits.

Problem Statement

Although research has repeatedly demonstrated that personality and music both influence emotional reactions, not much is known about how personality traits and music preferences interact to affect the academic stress. Few empirical studies have looked at the relationship between, college students preferred musical genres and personality traits and their stress levels in India. This study attempts to close this gap.

Objectives

1. To investigate the connection between college student's musical tastes and academic stress.
2. To evaluate the relationship between academic stress and personality traits.
3. To ascertain whether personality characteristics influence the connection between academic stress and musical preferences.

Research Questions

- Do college students musical tastes affect how stressed they are about their studies?
- Are personality characteristics and academic stress substantially correlated?
- Do personality characteristics influence the connection between musical tastes and academic stress.

Hypotheses

- **H1:** There will be a substantial correlation between academic stress and musical preferences.
- **H2:** Academic stress and personality traits will be significantly correlated.

Concept Definitions

- **Music Preferences:** A structured questionnaire is used to assess an individual's liking and preference for specific musical genres.
- **Academic Stress:** A standardized academic stress scale is used to measure the psychological stress created by academic demands.
- **Personality Stress:** Individual differences such as neuroticism, extraversion, openness, agreeableness, and conscientiousness are assessed using the Five Factor Model (Neo-FFI).

Rationale

Students frequently use music as stress relieving technique but its effectiveness may vary depending on individual preferences and personality traits. Educators, counsellors and Clinical psychologists can create individualized, culturally appropriate stress management interventions by understanding this relationship. Such research is particularly helpful in the Indian context because music consumption patterns and academic pressures are different in western settings.

Significance

This study will contribute theoretically by linking personality, music psychology and stress research. In practical terms, finding could help counsellors create music-based interventions for students for student's well-being which are sensitive to their personalities. Also, the study contributes relevant details to the small amount of the Indian research on this subject.

Scope and Limitations

College students between the age of 18 to 25 are the study's primary focus. It uses self-report questionnaires, which may involve response biases. Casual interpretations are limited by the cross-sectional design. Generalizability is limited because data is gathered from specific institutions.

II. LITERATURE REVIEW

Stress and Music

Music has been found to influence physiological arousal, emotional states and stress responses. Research indicates that listening to relaxing or favourite music lowers heart rate, lowers cortisol and enhances subjective well-being.

Similar researches from India shows that light, classical and devotional music can help young people feel help, less stressed. Students say they use music to manage emotional discomfort, improve study focus and deal with exam pressure.

Stress and Personality Traits

People's perceptions and reactions are greatly influenced by their personalities. Because neuroticism increases emotional reactivity, it is consistently linked to higher levels of stress. Extraversion and conscientiousness are linked to better coping capabilities, while openness and friendly nature contribute to supportive coping mechanisms.

These results specially the strong correlation between neuroticism and academic stress are supported by research with Indian student populations. According to Indian research, students who exhibit high levels of conscientiousness typically handle their academic workload more skilfully.

Music Preferences and Personality

Music choices are influenced by personality traits. Extraverts commonly prefer energetic genres such as pop and dance music, while individuals high in openness prefer diverse and unconventional genres like classical, jazz or world music. While agreeable prefer calming, or melodic genres, neurotic people might select emotionally charged music.

Stress and Music Preferences

Research shows that preferred music genres can reduce stress more effectively than neutral or disliked music. Students who listen to calm or slow-tempo music experience lower physiological stress responses. Studies also indicate that music used intentionally for relaxation or coping is more effective than passive listening. Indian research notes that light classical and devotional music are particularly effective in reducing academic and emotional stress among students.

These correlations are supported by international research and new studies from India show similar trends, particularly among young adults, who are heavily exposed to a variety of music via digital platforms.

Preferred music genres are more effective at reducing stress than neutral or disliked music, according to research. The psychological stress reactions of students are reduced when they listen to relaxing or slow-paced music. Additionally, studies show that intended use of music for coping and relaxation is more

beneficial than passive listening. According to Indian researches light classical and devotional music are effective specifically in reducing academic and emotional stress among students.

Interaction of Stress, Music Preferences and Stress

The combined impact of these three factors is rarely examined in the research. There is evidence to suggest that the emotional impact of music is moderated by personality traits. Extraverts, for instance might benefit, more from lively music, whereas neurotic people might feel different emotions depending on what they listen to. But research in this field is still lacking, particularly in India.

Research Gap

The available literature review states that:

- Stress and emotional reactions are influenced by musical tastes.
- Personality traits significantly affect stress vulnerability and coping.
- To some extent musical preferences are predicted by personality.
- Very few studies, especially among Indian college students, look at how personality influences the association between music preferences and academic stress.
- There is a lack of integrated studies combining these three variables using standardized tools.

This gap is justified by the study.

The literature is demonstrating the strong individual associations among music, stress and personality. However, there haven't been enough research done on how personality traits and musical tastes interact to affect academic stress. The aim of this study is to address the gap by examining the variables in an Indian population.

III. RESEARCH METHODOLOGY

Design

In this study a quantitative, cross-sectional, correlational research design was used. This design was selected because the study's goal was to investigate the connection between college students' academic stress levels, music preferences and personality traits. Without changing any conditions, a correlational approach enables the researcher to determine the strength and direction of association between variables as they naturally occur. Standardized questionnaires were used to gather data all at once, making the design appropriate, cost-effective and suitable for psychological surveys.

Variables of the Study

Independent Variable (IV): Music Preferences

The term "music preference" describes the kinds of music that students enjoy listening as well as how often and why they do so. Pop, rock, jazz, hip-hop, folk, rock, electronic music, devotional music and other genres are all included. Each genres responses were measured using a 5-point scale with additional questions on listening habits.

Dependent Variable DV: Academic Stress

The degree of stress that students endure as a result of academic tasks like tests, workload, deadlines, expectations and study pressure is referred to as academic stress. A standardized Academic stress scale is used in this study to measure academic stress.

Moderator Variable: Personality Traits

The Five Factor Model (Neo-FFI) which measures neuroticism, extraversion, agreeableness, conscientiousness and openness to new experiences is used to evaluate personality traits. These characteristics were investigated as potential moderators in the association between academic stress and musical preferences.

Operational Definitions

- **Music Preferences:**

Higher scores on the Music Preference and Listening Habit questionnaire indicate a greater preference for a particular genre or a higher frequency of listening.

- **Academic Stress:**

Higher Scores on Academic Stress Scale indicate higher levels of stress linked with academic activities.

- **Personality Traits:**

Each of the Five personality dimensions were measured by the NEO-FFI Scale.

Participants

College students between the ages of 18 to 25 years who were enrolled in undergraduate and post graduate programs in variety of fields made up the sample. Because it was practical and accessible, a convenience method was used.

- **Sample Size:** Between 120–150 students (as required for correlational research and moderation analysis).
- **Inclusion Criteria:**
 - Students aged between 18 and 25
 - Currently enrolled in a college or university
 - Familiar with at least some form of music listening
 - Willing and able to provide informed consent
- **Exclusion Criteria:**
 - Students with diagnosed psychological disorders (self-reported)
 - Students unable to understand the questionnaire items

According to statistical standards, the sample size is sufficient for correlation, regression and moderation analysis.

Instruments Used

Each tool used in this study was standardized, trustworthy and frequently used in psychological researches.

1. Music Preference and Listening Habits Questionnaire

This survey evaluates the participants' favourite musical genres, amount of time they spend listening each day, why they listen, the circumstances in which they listen and their subjective musical experiences. A 5-point Likert scale with 1 representing "never" or "least preferred" and 5 representing "very often" or "highly preferred" is used to rate each item. This instrument is appropriate for studying music behaviour and shows trustworthy reliability.

2. Academic Stress Scale (Kumar et al.)

This standardized test evaluates stress associated with academic life. It covers topic such as difficulty focusing, exam anxiety, pressure from family or teachers, stress from workload and emotional disturbances during academic assignments.

- **Response Format:** A 5-point Likert scale, ranging from strongly disagree to strongly agree
- **Scoring:** Greater academic stress is indicated through higher scores.

In samples of Indian students, the scale shows good internal consistency and content validity.

3. NEO-FFI Personality Inventory

The five main personality traits are measured by this scale:

- Neuroticism
- Extraversion
- Openness to Experience
- Agreeableness
- Conscientiousness

Each item is rated on a 5-point scale from Strongly Disagree (1) to Strongly Agree (5). Strong Psychometric qualities such as cross-cultural validity and reliability, make the Neo-FFI, a popular tool in psychological research.

Procedure

1. Permission and Preparation

Permission was granted by the college administration before data collection. The participants were all informed about the goal of the study, confidentiality of their answers and their voluntary participation.

2. Informed Consent

A consent form was given to each participant. The sample was limited to those who gave their consent.

3. Administration of Questionnaires

Depending on convenience the questionnaires were distributed in both printed and Google Form formats. Participants finished all three instruments in a single sitting. The survey took 15-20 minutes to complete.

4. Data Screening

Completed forms were examined to check for inconsistencies or missing answers. Responses that were not complete or accurate were not included in the analysis.

5. Scoring and Coding

Each of three instruments' scoring key was used to score the responses. After that SPSS/Excel was used to analyse the data.

Statistical Analysis

Data was analysed with the help of statistical software SPSS (version 25).

Analysis comprised:

1. **Descriptive Statistics:**

Mean, Standard Deviation and frequencies to characterise sample characteristics and variable distribution.

2. **Correlation Analysis:**

Pearson's correlation was used to examine the relationship between music preferences, academic stress and personality traits.

3. **Regression Analysis:**

Multiple Regression was used to find out the effect on academic stress from music preferences and personality traits.

4. **Moderation Analysis:**

To determine whether personality influences the association between musical tastes and academic stress interaction effects were examined using multiple linear regression analysis in interaction terms using the Ordinary Least Square (OLS) method.

A Significance Level of $P < .05$ was determined.

Ethical Considerations

The ethical standards for psychological research were followed in this study.

- It was entirely voluntary to participate.
- An informed consent was obtained from all of the participants.
- Participants were free to withdraw at any point.
- Information was kept confidential and used only for academic and research purposes.
- No identifying information was disclosed
- Participants of this study were at no risk either physically or psychologically.

IV. RESULTS

Descriptive Statistics

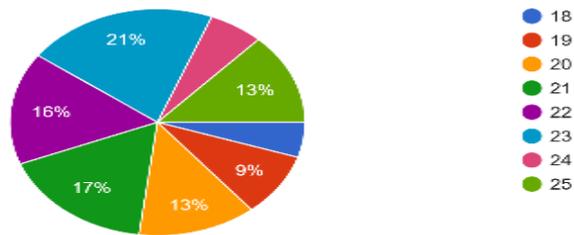
In order to better understand the general characteristics of the sample with regard to academic stress and personality traits, descriptive statistics were calculated. T-scores were used in the interpretation process.

With a Mean Total Academic Score of 55.71, the samples' academic stress levels were marginally higher than those of the normative population ($T=50$). This implies that there was more academic pressure on the students in the current study overall.

In terms of personality traits, the average score for neuroticism was 57.08, indicating a high degree of emotional instability, which is thought to put people at risk for stress, anxiety and negative affect. The sample was generally less accommodating or cooperative, as proven by the extremely low mean score of 32.64 for agreeableness. Additionally, conscientiousness was below average (41.29), indicating a lack of self-control, organization and goal-directed behaviour.

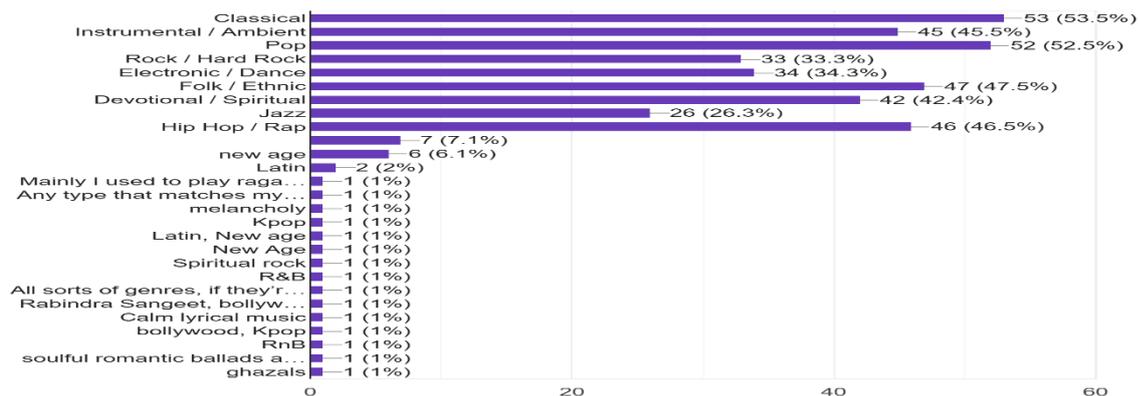
Overall, the descriptive results show that the sample has the personality profile (high neuroticism, low agreeableness and low conscientiousness) that may make them more vulnerable to stress, as well as elevated to academic stress.

Age (in years)
100 responses



(Pie chart representing the age range of participants)

4. Genres you prefer
99 responses



(This graph represents genres preferred by the participants)

(This

Variable	Mean	Standard Deviation (SD)	Interpretation
Total Stress (T-Score)	55.71	11.45	Slightly above the population average (T-score mean = 50).
Neuroticism (T-Score)	57.08	10.57	Higher than average (T-score mean = 50).
Extraversion (T-Score)	45.42	8.68	Below average.
Openness (T-Score)	52.91	11.21	Slightly above average.
Agreeableness (T-Score)	32.64	10.93	Significantly below average.
Conscientiousness (T-Score)	41.29	9.75	Below average.
Reflective & Complex (Count)	1.79	0.98	Average selection of genres (out of 4 possible).
Intense & Rebellious (Count)	0.35	0.48	Lowest average preference among the four dimensions.
Music Importance (1-5)	4.22	1.14	Music is rated as quite important in life.
Chills Experience (1-5)	3.94	1.13	High average frequency/strength of 'chills' response to music.

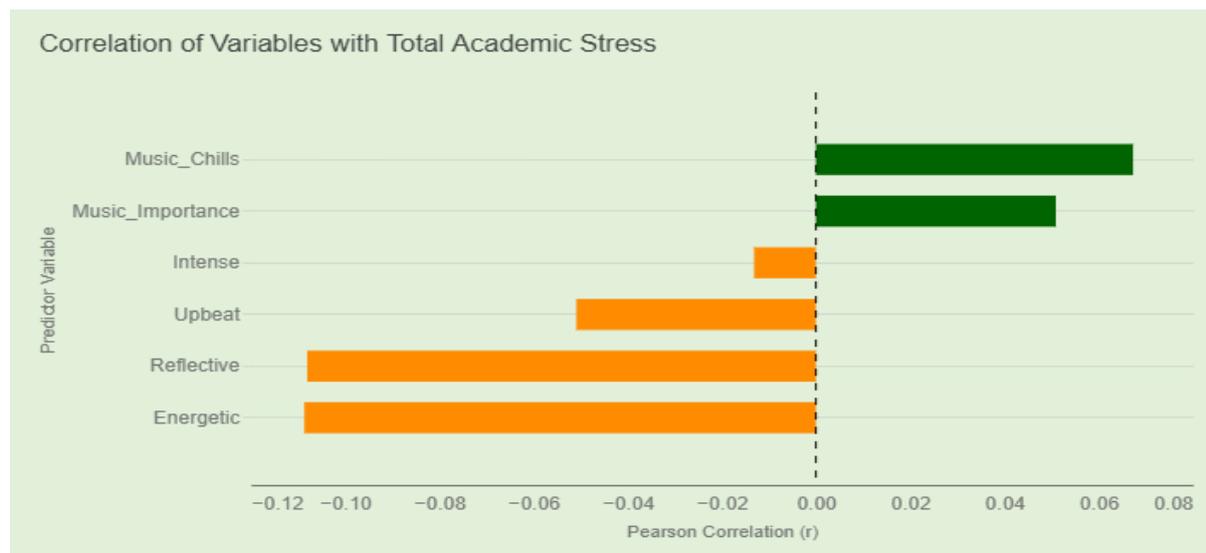
(Table 1. Results of descriptive statistics)

Correlation Analysis

The association between personality traits, music preferences and academic stress were investigated using Pearson's correlation analysis.

According to the findings, every correlation was extremely weak and nearly zero. There was no significant linear correlation found between any of the variable and academic stress. Extraversion, agreeableness and preferences for contemplative and upbeat music showed the weakest negative correlations ($r = -0.10$), indicating a slight tendency towards reduced stress. Stress and neuroticism had a weakly positive correlation ($r = 0.07$).

Overall, the correlation analysis indicates that when considered independently there is no direct significant linear relationship between music preferences, personality traits and academic stress.



(This

graph represents the correlation of variables with total academic stress)

Variable	Correlation with Total Stress (T-Score)	Strength & Direction
Neuroticism (T-Score)	0.07	Very Weak Positive
Music Chills	0.067	Very Weak Positive
Music Importance	0.051	Very Weak Positive
Openness (T-Score)	0.018	Very Weak Positive
Intense & Rebellious	-0.013	Very Weak Negative
Upbeat & Conventional	-0.051	Very Weak Negative
Conscientiousness (T-Score)	-0.081	Very Weak Negative
Reflective & Complex	-0.108	Weak Negative
Energetic & Rhythmic	-0.109	Weak Negative
Extraversion (T-Score)	-0.113	Weak Negative

(Table 2. Result of Correlation Analysis)

Multiple Regression Analysis

Multiple regression analysis was performed to examine whether music preferences could collectively predict academic stress.

The regression including all four music preference factors (reflective, intense, upbeat and energetic) was found to be statistically non-significant ($p=0.568$). Only 2.1% of variation in academic stress was explained by musical preferences, according to the coefficient of the determination ($R^2=0.021$)

These findings implies that academic stress levels cannot be accurately predicted by musical preferences alone. Factors like academic workload, personal circumstances, emotional factors and personality traits that are not included in this model seem to account for most of the variance in stress.

Variable	Coefficient (β)	P-value	Significance
Intercept	58.235	0	***
Reflective & Complex	-1.142	0.273	Not Significant
Intense & Rebellious	1.15	0.61	Not Significant
Upbeat & Conventional	0.156	0.922	Not Significant
Energetic & Rhythmic	-1.436	0.282	Not Significant
R2 (Coefficient of determination)	0.021		
Model F-Stat P-value	0.568		Not Significant

(Table 3. Results of Multiple Regression Analysis)

Moderation Analysis

Moderation analysis was conducted to examine whether personality traits changed the relationship between music preferences and academic stress. A total of twenty moderation models were tested.

Significant Moderation Effects

Two significant interaction effects were observed out of twenty models:

1. **Reflective Music Preference \times Openness to Experience**
2. **Energetic Music Preference \times Conscientiousness**

Reflective Music Preference \times Openness

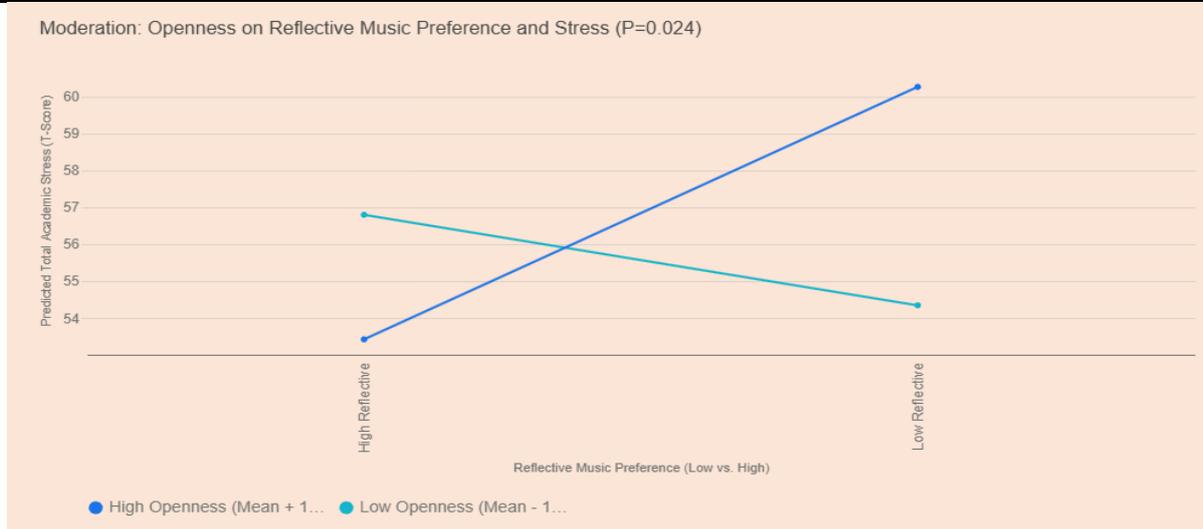
There was a statistically significant interaction ($p = 0.024$, $\beta = -0.211$) between openness to experience and preference for complex and contemplative music (such as jazz and classical). Reflective music has a stronger stress-relieving effect as openness increases, according to the negative interaction coefficient.

While students with low openness showed little to no stress reduction from reflective music, those with high openness who preferred it reported lower predicted stress levels.

Energetic Music Preference \times Conscientiousness

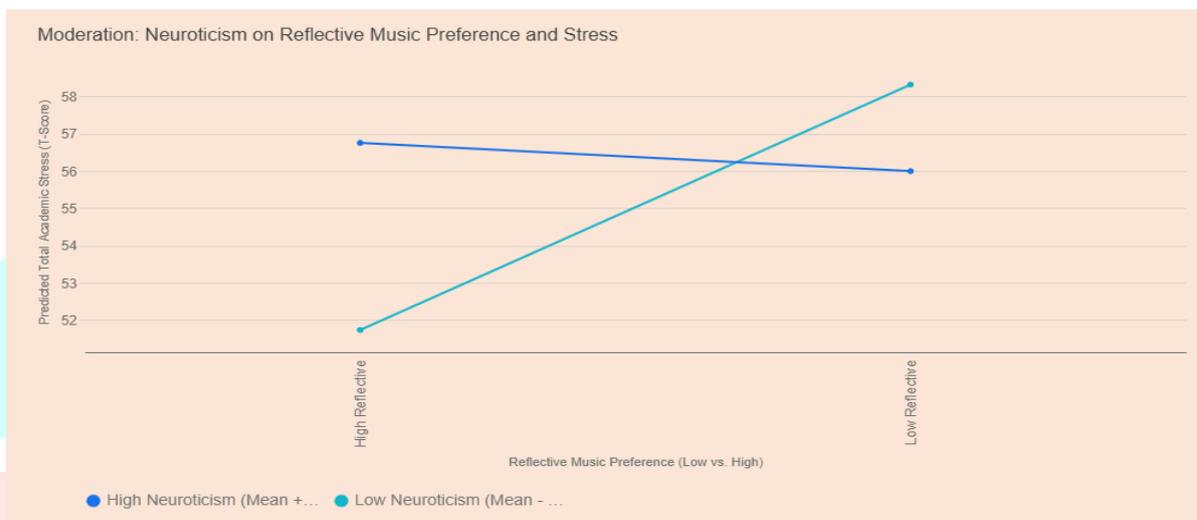
The interaction between preference for energetic and rhythmic music and conscientiousness was also significant ($p = 0.045$, $\beta = -0.216$). According to this research, students with high conscientiousness levels benefit more from energetic music's ability to lower stress.

Higher conscientiousness students seemed to use upbeat music in a more systematic and goal-oriented way, which might help lower stress levels. On the other hand, students with low conscientiousness demonstrated a less significant stress reducing effect.



(This

Graph represents Moderation: Openness on Reflective Music Preference and Stress)



(This graph represents Moderation: Neuroticism on Reflective Music Preference and Stress)

Music Preference Factor	Neuroticism (N)	Extraversion (E)	Openness (O)	Agreeableness (A)	Conscientiousness (C)
Reflective	0.058	0.57	0.024	0.929	0.869
Intense	0.536	0.768	0.816	0.364	0.238
Upbeat	0.767	0.067	0.517	0.932	0.741
Energetic	0.325	0.651	0.542	0.856	0.045

(Table 4. Moderation Analysis)

Summary of Findings

The following is a summary of the study’s main conclusions:

1. Academic stress levels among college students, were marginally higher than average.
2. The sample showed low conscientiousness and agreeableness and high neuroticism.
3. There was very little correlation found between personality traits, musical preferences and academic stress.
4. Academic stress was not significantly predicted by music preferences alone.
5. In some cases, personality traits moderated the association between musical preference and academic stress.
6. Students with high levels of openness experienced a greater reduction in stress when listening to reflective music.
7. Students with high conscientiousness levels experienced less when listening to upbeat music.

V. DISCUSSION

Academic Stress and Personality Characteristics of the Sample

The descriptive findings showed that the academic stress levels of the college students in this study were marginally higher than average. This result is in line with earlier studies that demonstrate how stress during college years is greatly influenced by performance expectations, academic pressure and future worries.

Personality analysis reveals high neuroticism along with low agreeableness and conscientiousness in the sample. High neuroticism is associated with emotional instability, anxiety and vulnerability to stress which helps explain the elevated stress levels observed. Academic stress may be exacerbated by low conscientiousness, which may indicate issues, with self-discipline, time management and organization. These results are consistent with past research that found personality to be significant factor in stress perception.

Relationship between Music Preferences and Academic Stress

Hypothesis 1, which suggested a significant relationship between music preferences and academic stress, was not supported by the correlation analysis, which showed that all relationships between music variables and stress were weak and close to zero. This suggests that simply listening or preferring to certain types of music does not automatically lead to lower stress levels.

These findings are consistent with research suggesting that music alone is not a universal stress reduction tool and that its effectiveness depends on individual and contextual factors. Many students may listen to music habitually or for entertainment rather than purpose.

Predictive Role of Music Preferences

This pattern was further validated by the multiple regression analysis. Only a very small percentage of the variance in academic stress was explained by musical preferences and the regression model on the whole was not significant. This suggests that music tastes by themselves do not significantly predict academic stress.

This result implies that other psychological and situational factors such as workload, academic expectations, emotional regulation and personality traits, have a greater impact on academic stress than does music listening preferences.

Moderating Role of Personality Traits

Moderation analysis showed significant interaction effects, emphasizing the role of personality, even though music preferences did not directly predict stress.

There were two notable moderating effects discovered:

- **Reflective Music Preference × Openness to Experience**
- **Energetic Music Preference × Conscientiousness**

Reflexive and complex music was more beneficial to students with high levels of openness to experience, as evidenced by their reduced stress levels. This could be due to the fact that open people are more sensitive to introspective music both emotionally and cognitively and they may use it more successfully to process and control their emotions.

Similarly, students high in conscientiousness experienced lower stress when they preferred energetic music. In order to boost motivation and lower stress, conscientious people may use upbeat music in a planned and intentional manner, such as studying or finishing a task.

These results show that music works well only as stress-reduction strategy when it matches a persons' personality traits.

VI. CONCLUSION

The current study looked at the moderating effect of personality traits among college students as well as the impact of music preferences on academic stress. The results show that:

- Music preferences alone do not significantly reduce academic stress.
- The effectiveness of music as a coping mechanism is largely dependent on personality traits, especially conscientiousness and openness.
- Music functions as a personality-dependent coping tool, rather than a universally effective stress-reduction method.

Overall, the study emphasizes that when suggesting music-based stress reduction techniques, individual differences must be taken into account.

Implications of the Study

Practical Implications

- Counsellors and psychologists should avoid general recommendations such as “listen to music to reduce stress” and instead promote personality-based coping strategies.
- Students high in openness may benefit from reflective or complex music, while conscientious students may benefit from energetic music during structured activities.
- Educational institutions can design stress-management programs that acknowledge individual differences rather than adopting one-size-fits-all approaches.

Theoretical Implications

- The findings contribute to music psychology by emphasizing moderation effects over direct effects.
- The study supports interactional models of stress, which consider both personal and environmental factors.

Limitations of the Study

The study has some limitations despite its contributions

1. The limit of sample size from 80-100 students may limit its generalizability.
2. Response biases may be present in self-report measures.
3. Causal interpretation is limited by cross-sectional design.
4. Contextual elements like mental health history and academic workload were not evaluated.

Suggestions for Future Research

Future studies may:

- Make use of more varied and larger samples.
- Look at techniques for controlling emotions as mediators.
- Incorporate longitudinal and experimental designs.
- Investigate active participation in music (singing, playing instruments).
- Include signs of physiological stress.
- Perform research on music interventions tailored to individual personalities.

This study concludes by showing that music is not naturally stress-relieving. How well it fits a person's personality traits determine how effective it is. The study offers a more complex understanding of stress

management among college students by identifying the relationship between personality and musical preferences.

VII. ACKNOWLEDGMENT

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