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Effect of Music on Personality: - A Experimental Study of UG Students

Dr. Smita Rajesh Patgaonkar[1], Prof. Sonali M. Thik[2]

[1]H.O.D of Statistics Department, Kirti College, Dadar (W), Mumbai.

[2]Statistics Department, Kirti College, Dadar (W), Mumbai.

Email ID: [1]patgaonkar.nivedita22@gmail.com , [2]sonalithik1994@gmail.com

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ABSTRACT

Listening to music in everyday life has become common practice in college students. Since music helped them in different ways, but we all had seen students' plugin their earphones throughout the day, they might be doing this for some other reasons. But most commonly it is seen, they do it for listening to music. So here it is necessary to test whether it is beneficial to the students or not. The overall objective of the study was to find the effect of listening to music on their personality and whether this trend is helped the students to improve their personality. A random sample of 50 UG students are selected who are interested in listening to music. The study comprised of two phases of survey namely questionnaire based and experimental based. Under questionnaire based, data is collected about students' perception about listening to music. The experimental based study is carried out in a closed class room where music is played on three different days with three different decibels (Low = 60 to 70, Normal= 70 to 80 & High=80 to100) and observations were recorded. Special guidance is taken from the psychology department to measure the personality score. Personality scores were noted down on five different personality traits namely Openness, Extroversion, Consciousness, Agreeableness and Neuroticism. A Present study tries to find out the effect of listening to music on personality of UG students. Here we have done the comparative analysis of pre and post observations of different personality traits and health issues. In short, this paper wants to explore whether listening to music is beneficial to the students to improve their personality and if yes, in what way? Also, the study assesses the health issues faced by them after listening to music.

Keywords: *Music, Personality, Psychology, Personality Traits.*

INTRODUCTION

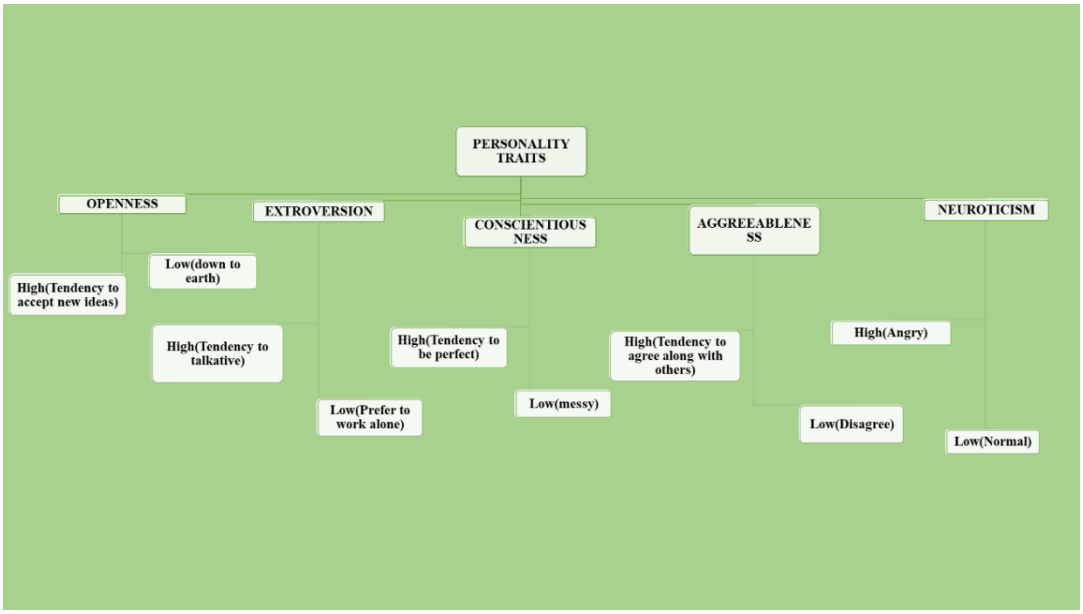
The mobile phone has become an essential part of society, including our educational, professional and even day to day lives. The age 18-29 users are highest amongst people who uses mobile specially smartphone and new features for music are readily available. This age-group can handle new features of smartphones easily and they use it for the same. Also, in modern era of technology, according to the Telecom Regulatory Authority of India (TRAI) more than 80% of Indian youth uses smart phones. So, in this digital era, we observed many students' plugin their earphones throughout the day. They might be using this for some other purposes but most commonly it is seen that they do it for listening to music. Many studies have proven, the type of music doesn't matter to students, that which music to listen to. Moreover, it is also proved, listening to music helped them to improve their concentration level, academic performance etc. On the other hand, some study says, listening to music distract their concentration level and which correspondingly reflects through the low score in examination. Students also say they listen to music for relieving their academic stress.

In our study, a random sample of 50 UG students are selected who are interested in listening to music. The study comprised of two phases of survey namely questionnaire based and experimental based. Under questionnaire based, data is collected about students' perception about listening to music. The questions pertaining to gender, type of music, how frequently they listen to music, how they feel etc. The experimental based study is carried out in a closed room where music is played on three different days with different decibels (Low = 60 to 70, Normal = 70 to 80 & High= 80 to100) and observations were recorded. To measure these observations, five different personality traits were considered, namely Openness, Extroversion, Consciousness, Agreeableness and Neuroticism. Every day pre and post observations on these personality traits were recorded. Special guidance is taken from the psychology department to measure these personality scores. In addition to this health issues on the first day of the experiment and on the third day after completing experiment were noted down. So, this research intends to find out the frequency of listening to music affecting their personality and the health issues provoked in their lives.

The study revealed that, there is a direct impact of different decibels on agreeableness trait whereas remaining traits doesn't have so. The frequency of listening to music is moderately associated with health issue, headache and strongly associated with health issue, mind vibration.

1. MATERIALS AND METHODS

- A random sample of 50 students were selected, those who are interested in listening to music.
- A sample comprised of 25 girls and 25 boys.
- The study is carried out in two phases namely questionnaire based and experimental based.
- Under questionnaire based, data is collected about students' perception about listening to music.
- The experimental based study is carried out in a closed class room where music is played on three different days with different decibels (Low = 60 to 70, Normal= 70 to 80 & High= 80 to100).
- Music played on three different days with three different decibels namely Low, Medium and High. These decibels are called treatments.
- Treatment 1 : Low ; Treatment 2 : Normal ; Treatment 3 : High.
- Special guidance is taken from the psychology department to measure the personality score. Personality scores were noted down on five different personality traits namely Openness, Extroversion, Consciousness, Agreeableness and Neuroticism.



- Participants, included in this study, attended all the sessions regularly.
- Measured with the help of Psycho Motor Ability test.
- The Data Analysis is done using SPSS.
- Statistical tools: (i) Descriptive statistics (ii) Chi-square test (iii) ANACOVA

Objectives:

(1) To gain students' perception about listening to music.
To study the impact of listening to music with different decibels on personality in undergraduate students.
(2) To find the association between the frequency of listening to music on health in undergraduate students.
(3) Comparing the distribution of pre-and-post health issues w.r.t. listening to music in undergraduate students.

2. RESULTS AND DISCUSSION

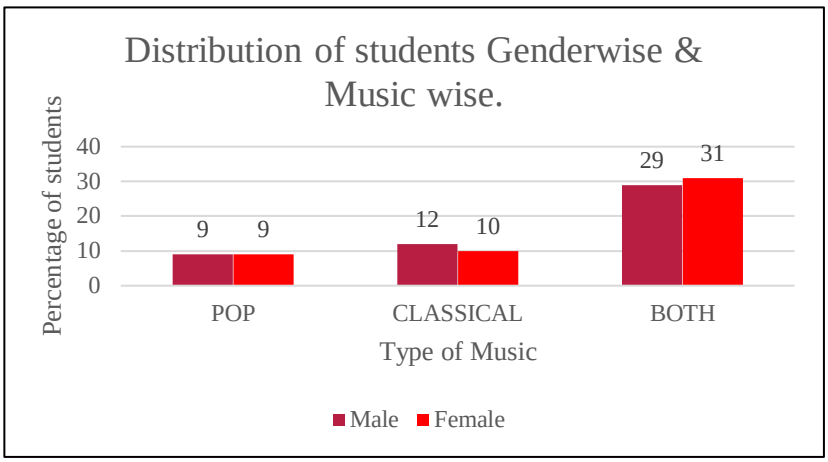
(ALL DATA GIVEN IN PERCENTAGES)

(1) Objective 1: To gain students' perception about listening to music.

i) Gender: -

Table 1: Distribution of students w.r.t. Gender & Type of Music.

	Gendere		Total
Type of Music	Male	Female	
POP	9	9	18
CLASSICAL	12	10	22
BOTH	29	31	60
TOTAL	50	50	100



Graph1: Gender wise & Type of music wise distribution of students.

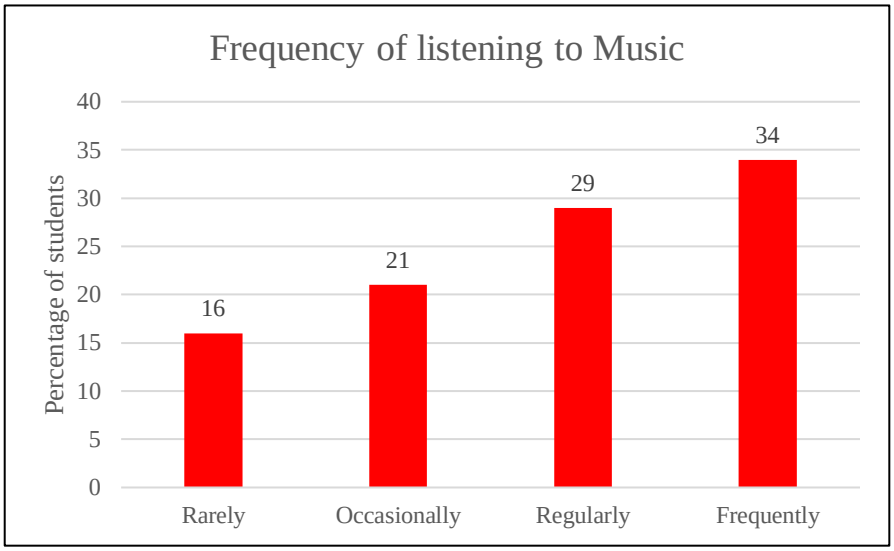
- **Table 1 & Graph 1 shows that:**

  In present study, 18% students prefer to listen Pop music, 22% listen to classical music whereas 60% listen to Pop as well as classical. Thus, gender wise there is no significant differences listening to the type of music. Also, there is maximum percentage of students prefer to listen Pop as well as classical. It indicates that, since music helped them in different ways, it does not matter to students that which music to listen.

ii) Frequency of listening to music:

Table 2: Distribution of students w.r.t Frequency of listening to music

Frequency of listening to music	Percentage of students
Rarely	16
Occasionally	21
Regularly	29
Frequently	34



Graph2: Distribution of students w.r.t Frequency of listening to music

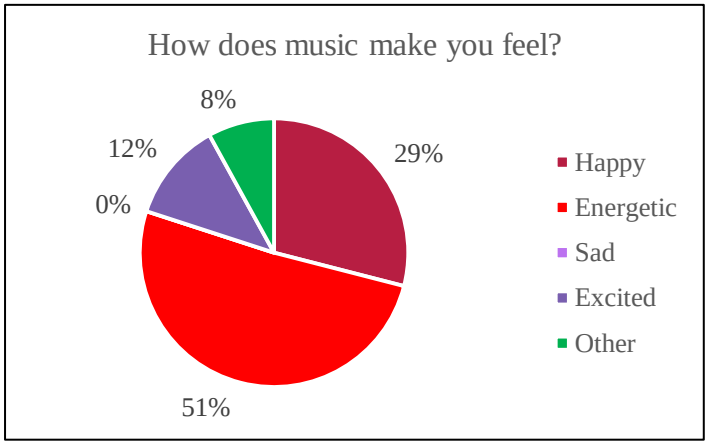
- **Table 2 & Graph 2 shows that:**

In present study, students prefer to listen music Frequently (34%), Regularly (29%), Occasionally (21%) and Rarely (16%). It seems music has helped students in different ways therefore overall percentage of listening to music Frequently (34%) is maximum whereas Regularly (29%), Occasionally (21%) and Rarely (16%).

iii) How does music make you feel?

Table 3: Distribution of students w.r.t type of feeling

Type of feeling	Percentage of students
Happy	29
Energetic	51
Sad	0
Excited	12
Other	8



Graph3: Distribution of students w.r.t type of feeling

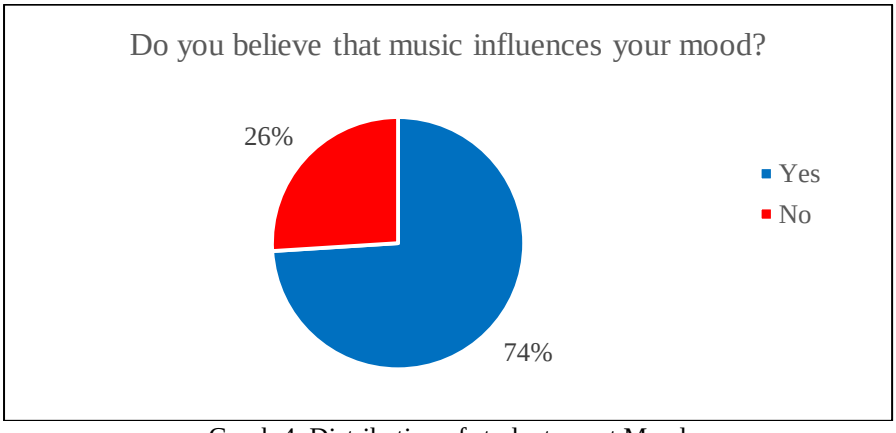
- **Table 3 & Graph 3 shows that:**

The maximum percentage of students listen to music (51%) since they feel 'Energetic' whereas there was not a single student who felt 'Sad'. Also 29% students feel 'Happy', 12% students feel 'Excited' and 8% students have any other reason. Overall, it is observed that the students have positive feelings towards listening to music.

iv) Do you believe music influences your mood?

Table 4: Distribution of students w.r.t Mood

Answer	Percentage of students
Yes	74
No	26



Graph 4: Distribution of students w.r.t Mood

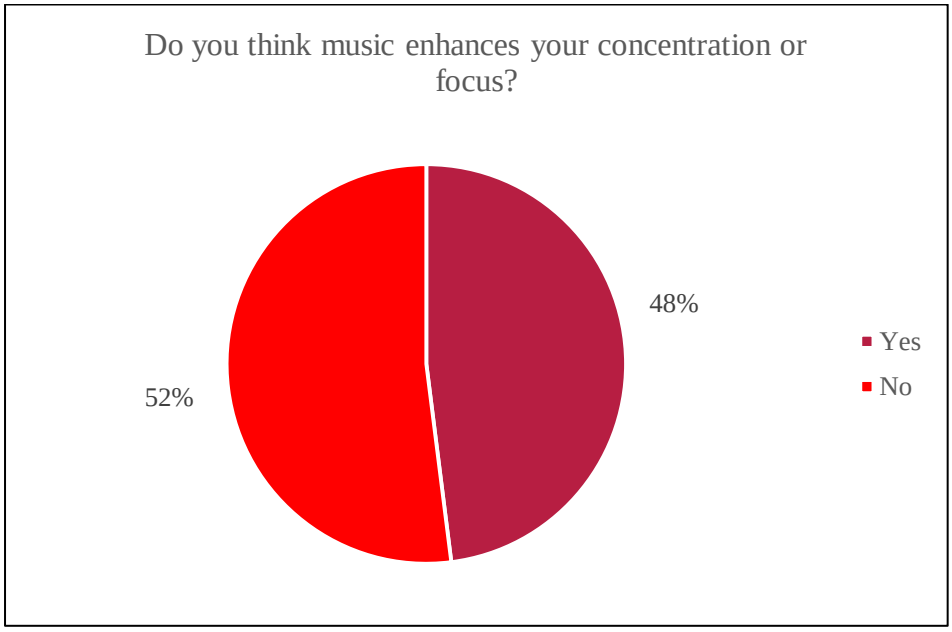
- **Table 4 & Graph 4 shows that:**

The maximum percentage of students (74%) answer, music influences their mood whereas 26% students say it is not so.

v) Do you think music enhances your concentration or focus?

Table 5: Distribution of students w.r.t Concentration or Focus.

Answer	Percentage of students
Yes	48
No	52



Graph 5: Distribution of students w.r.t Mood

- **Table 5 & Graph 5 shows that:**

52% students' answer that listening to music enhances their concentration or focus whereas 48% says that listening it is not so. It seems, the opinion about listening to music enhances their concentration or focus does not differ much.

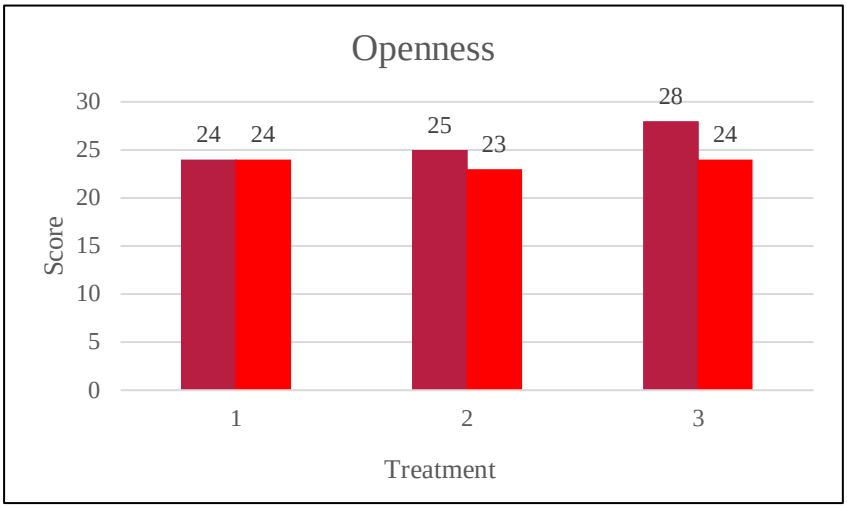
(2) Objective 2: To study the impact of frequency of listening to music on Personality in undergraduate students.

To assess the impact of listening to music with different decibels(Treatments) on personality, we have studied this in two sections:
(I) We have compared the Pre & Post score data of personality traits with different treatments.
(II) Using statistical test ANACOVA, we have checked whether there is an impact of different treatments on personality traits Viz. Openness, Extroversion, Consciousness, Agreeableness and Neuroticism.

(a) Openness:

(I) Table 6: Distribution of students listening to music w.r.t Openness score & Treatments

Openness / Treatment	Pre_Median Score	Post_ Median Score
1	24	24
2	25	23
3	28	24



Graph 6: Distribution of students listening to music w.r.t Openness score & Treatments

(II) Table 7: ANACOVA testing

H_0: There is no impact of treatments on post openness.

H_1: There is an impact of treatments on post openness.

Tests of Between-Subjects Effects

Dependent Variable: Post Openness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	81.407[a]	3	27.136	1.879	.137	.045
Intercept	1074.169	1	1074.169	74.394	.000	.381
PRE_OPENNESS	60.950	1	60.950	4.221	.042	.034
Treatment	21.346	2	10.673	.739	.480	.012
Error	1747.121	121	14.439			
Total	71307.000	125				
Corrected Total	1828.528	124				

a. R Squared = .045 (Adjusted R Squared = .021)

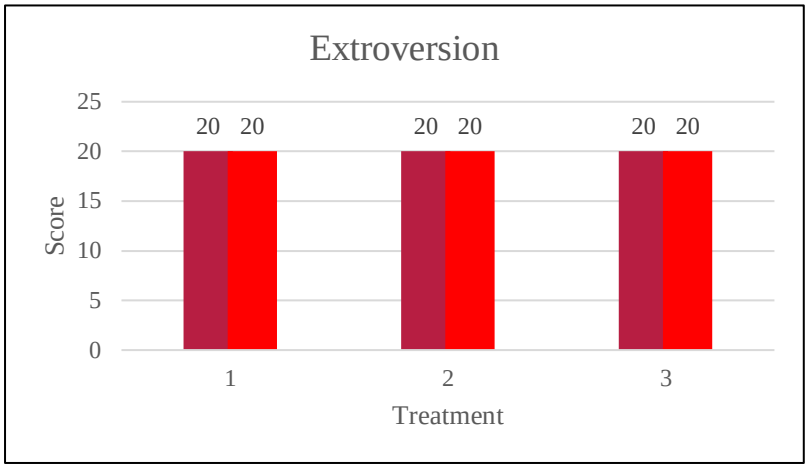
In present study:

- Table 6 & Graph 6 shows that, there is not much difference between Pre-median and post-median openness score.
- This evidence is confirmed by statistical test ANACOVA (Table 7) which showed that, (F-value = 0.739, P-value = 0.480>0.05). Therefore, 95% confidently we can say there is no impact of different treatments on Post Openness score.

(b) Extroversion:

(I) Table 8: Distribution of students listening to music w.r.t Extroversion score & Treatments

Extroversion / Treatment	Pre_Median Score	Post_ Median Score
1	20	20
2	20	20
3	20	20



Graph 7: Distribution of students listening to music w.r.t Extroversion score & Treatments.

(II)Table 9: ANACOVA testing

H_0: There is no impact of treatments on post extroversion.

H_1: There is an impact of treatments on post extroversion.

Tests of Between-Subjects Effects

Dependent Variable: Post Extroversion

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	13.209[a]	3	4.403	.881	.453	.023
Intercept	1176.487	1	1176.487	235.418	.000	.678
PRE_EXTR	1.088	1	1.088	.218	.642	.002
Treatment	12.083	2	6.042	1.209	.302	.021
Error	559.713	112	4.997			
Total	46853.000	116				
Corrected Total	572.922	115				

a. R Squared = .023 (Adjusted R Squared = -.003)

In present study:

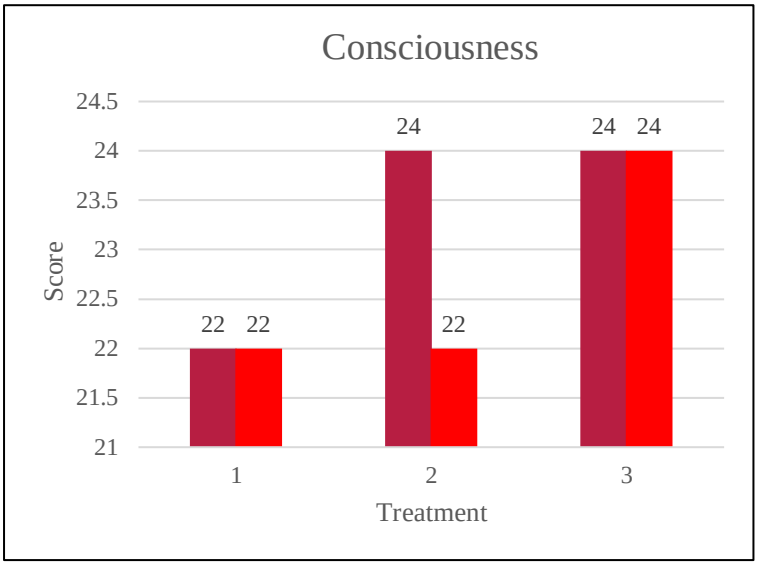
- Table 8 & Graph 7 shows that, there is no difference between Pre-median and Post-Median Extroversion score.

- This evidence is confirmed by statistical test ANACOVA (Table 9) which showed that, (F-value = 1.209, P-value = 0.302>0.05), therefore 95% confidently we can say there is no impact of different treatments on Post Extroversion score.

(c) Consciousness:

Table 10: Distribution of students listening to music w.r.t Consciousness score & Treatments

Consciousness / Treatment	Pre_Median Score	Post_ Median Score
1	22	22
2	24	22
3	24	24



Graph 8: Distribution of students listening to music w.r.t Consciousness score & Treatments.

Table 11: ANACOVA testing

H_0: There is no impact of treatments on post consciousness.

H_1: There is an impact of treatments on post consciousness.

Tests of Between-Subjects Effects
Dependent Variable: Post Consciousness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	25.666[a]	3	8.555	.986	.402	.024
Intercept	1300.127	1	1300.127	149.840	.000	.553
PRE_CONS	14.272	1	14.272	1.645	.202	.013
Treatment	13.513	2	6.756	.779	.461	.013
Error	1049.886	121	8.677			
Total	57936.000	125				
Corrected Total	1075.552	124				

a. R Squared = .024 (Adjusted R Squared = .000)

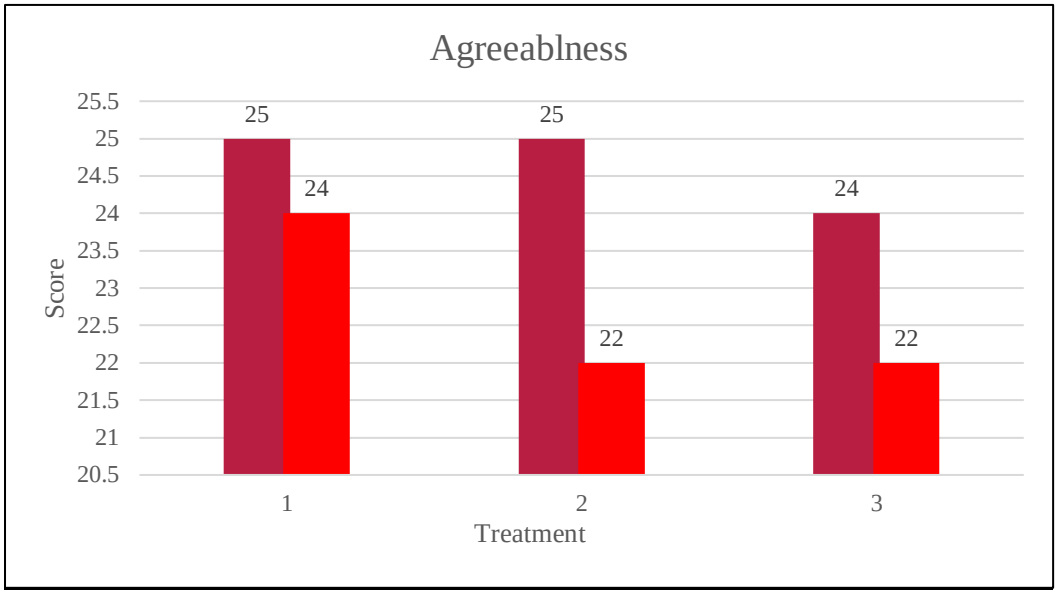
In present study:

- Table 10 & Graph 8 shows that, there is no difference between Pre-median and Post-Median Consciousness score.
- This evidence is confirmed by statistical test ANACOVA (Table 11) which showed that, (F-value = 0.779, P-value = 0.461>0.05), therefore 95% confidently we can say there is no impact of different treatments on Post Consciousness score.

(c) Agreeableness:

Table 12: Distribution of students listening to music w.r.t Agreeableness score & Treatments

Agreeableness / Treatment	Pre_Median Score	Post_ Median Score
1	25	24
2	25	22
3	24	22



Graph 9: Distribution of students listening to music w.r.t Agreeableness score & Treatments

Table 13: ANACOVA testing

H_0: There is no impact of treatments on post agreeableness.

H_1: There is an impact of treatments on post agreeableness.

Tests of Between-Subjects Effects

Dependent Variable: Post Agreeableness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	303.291[a]	3	101.097	7.690	.000	.160
Intercept	816.665	1	816.665	62.119	.000	.339
PRE_AGGRE	204.908	1	204.908	15.586	.000	.114
Treatment	83.510	2	41.755	3.176	.045	.050
Error	1590.757	121	13.147			
Total	66328.000	125				
Corrected Total	1894.048	124				

a. R Squared = .160 (Adjusted R Squared = .139)

Table 14: To check the higher impact of treatments on Post Agreeableness.

Pairwise Comparisons

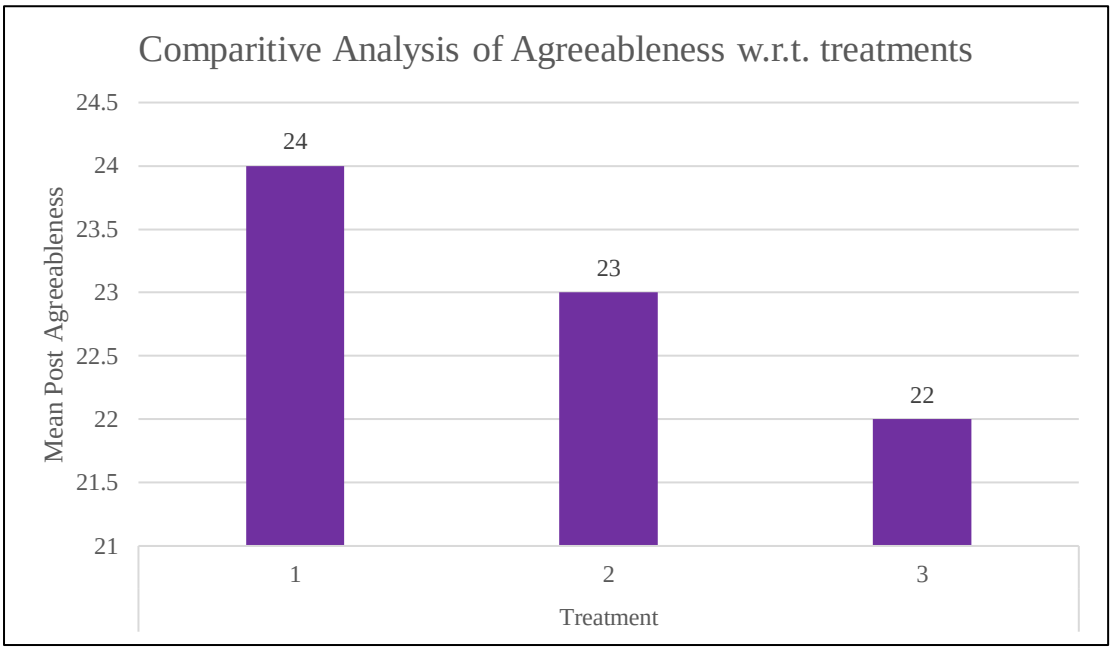
Dependent Variable: Post Agreeableness

(I) Treatment	(J) Treatment	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	1.989*	.803	.044	.041	3.938
	3	1.262	.783	.329	-.639	3.163
2	1	-1.989*	.803	.044	-3.938	-.041
	3	-.727	.802	1.000	-2.673	1.219
3	1	-1.262	.783	.329	-3.163	.639
	2	.727	.802	1.000	-1.219	2.673

Based on estimated marginal means

a. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.



Graph 10: To check the higher impact of treatments on Post Agreeableness.

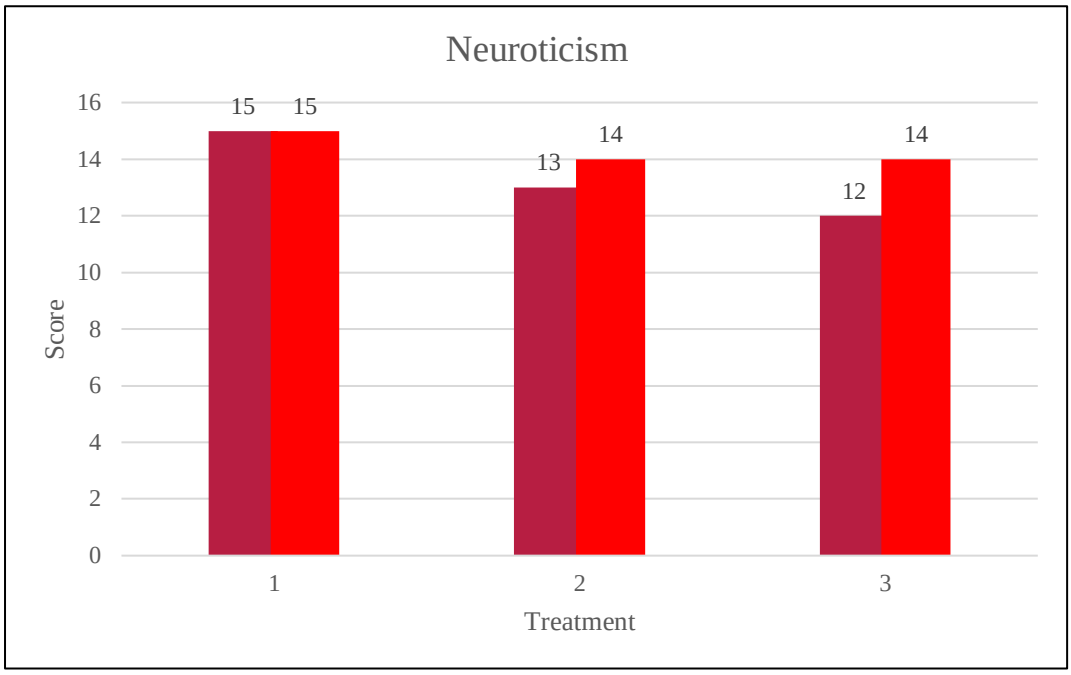
In present study:

- Table 12 & Graph 9 shows that, there are differences between Pre-median and Post-Median Agreeableness score.
- This evidence is confirmed by statistical test ANACOVA (Table 13) which showed that, (F-value = 3.176, P-value = 0.045 ≤ 0.05), therefore 95% confidently we can say there is an impact of different treatments on Post Agreeableness score.
- Table 14 & Graph 10 shows that treatment 1 has the higher impact on post-agreeableness score. It also reveals treatments 1 & 2 together has significant impact on Post Agreeableness score (P-value = 0.044 ≤ 0.05).

(e) Neuroticism:

Table 14: Distribution of students listening to music w.r.t Neuroticism score & Treatments

Neuroticism / Treatment	Pre_Median Score	Post_ Median Score
1	15	15
2	13	14
3	12	14



Graph 11: Distribution of students listening to music w.r.t Neuroticism score & Treatments

Table 15: ANACOVA testing

H_0: There is no impact of treatments on post neuroticism.

H_1: There is an impact of treatments on post neuroticism.

s of Between-Subjects Effects

endent Variable: Post Neuroticism

Source	Type III Sum of Squares		Mean Square			Partial Eta Squared
Corrected Model	228.460[a]	3	76.153	3.222	.025	.074
Intercept	2318.695	1	2318.695	98.089	.000	.448
PRE_NEURO	199.397	1	199.397	8.435	.004	.065
Treatment	14.249	2	7.124	.301	.740	.005
Error	2860.292	121	23.639			
Total	32243.000	125				
Corrected Total	3088.752	124				

Squared = .074 (Adjusted R Squared = .051)

In present study:

- Table 14 & Graph 11 shows that, the post-median neuroticism remains same w.r.t. treatment1 and increases w.r.t. treatment 2 & 3, which is not good so it is an alarming situation to the students.
- ANACOVA test (Table 15) shows that though Pre Neuroticism and Post Neuroticism are statistically dependent (F-value = 8.435, P-value = 0.004<0.05) but treatments don't show any impact on Post Neuroticism (F-value = 0.301, P-value = 0.740>0.05), therefore 95% confidently we can say there is no impact of different treatments on Post Neuroticism score.

(3)Objective 3: To find the association between the frequency of listening to music on health in undergraduate students.

Hypothesis:

H_0: Frequency of listening to music & Health issues are Independent.

H_1: Frequency of listening to music & Health issues are dependent.

Table 16: Frequency of listening to music * Headache

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.531[a]	4	.049
Likelihood Ratio	11.028	4	.026
Linear-by-Linear Association	.078	1	.780
N of Valid Cases	45		

a. 6 cells (60.0%) have expected count less than 5. The minimum expected count is .31.

Table 17: Correlation between Frequency of listening Music & Headache Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	**Contingency Coefficient**	.324	.020
N of Valid Cases		100	

Table 18 :Frequ_LSTMu * Mindvibration

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.715[a]	4	.020
Likelihood Ratio	13.495	4	.009
Linear-by-Linear Association	1.171	1	.279
N of Valid Cases	100		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is 1.32.

Table 19 : Correlation between Frequency of listening Music & Mind vibration

Symmetric Measures

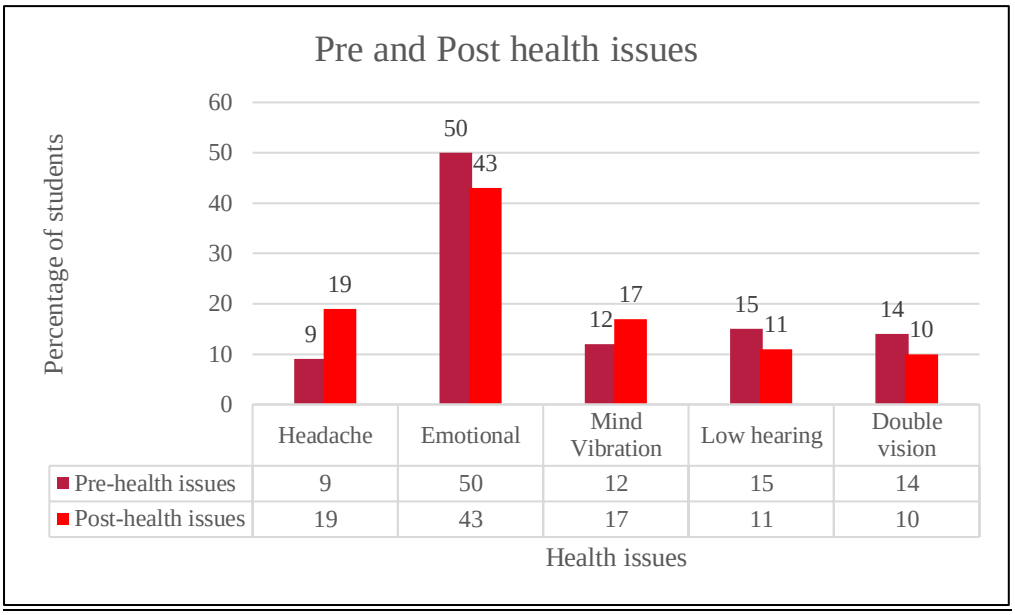
		Value	Approximate Significance
Nominal by Nominal	Phi	.460	.049
	Cramer's V	.460	.049
	Contingency Coefficient	.418	.049
N of Valid Cases		45	

In present study:

- Table 16 shows that, Chi-square value =11.715 with P-value=0.020<0.05, thus Reject H_0 and Table 17 shows that contingency coefficient =0.324 with P-value=0.020 < 0.05, Therefore 95% confidently we can say that Frequency of listening to music & Headache are dependent on each other and there is moderate association between Frequency of listening to music & Headache
- Table 18 shows that, Chi-square value = 9.531 with P-value=0.049 ≤ 0.05, thus Reject H_0 and Table 19 shows that contingency coefficient =0.460 with P-value=0.049 < 0.05, Therefore 95% confidently we can say that Frequency of listening to music & Mind vibration are dependent on each other and there is a strong association between Frequency of listening to music & Mind vibration.
- Also, there is evidence, the health issues viz. Emotional, Low hearing and Double vision doesn't depend on Frequency of listening to Music.

(4)Objective 4: Comparing the distribution of pre-and-post health issues w.r.t. listening to music in undergraduate students.

Table 20: Distribution of pre and post health issues listening to music.



In present study:

- Table 20 shows that, in post health issues, the percentage of students having headache and mind vibrations problems were increased as compared to pre health issues. On the other hand, the percentage of students having emotional, low hearing and double vision health issues were reduced.

3. CONCLUSION

The overall objective of the study was to find the effect of listening to music, trend will help the students to improve their personality or not and the results are as follows:

- Gender wises there is no significance differences listening to the type of music. Also, there is maximum percentage of students who prefer to listen Pop as well as classical. It indicates that, since music helped them in different ways, it does not matter to students' which music to listen to.
- Students prefer to listen music frequently (34%), Regularly (29%), Occasionally (21%) and Rarely (16%). It seems music has helped students in different ways therefore overall percentage of listening to music Frequently (34%) is maximum whereas Regularly (29%), Occasionally (21%) and Rarely (16%).
- The maximum percentage of students listen to music (51%) since they feel 'Energetic' whereas there was not a single student who felt 'Sad'. Also 29% students feel 'Happy', 12% students feel 'Excited' and 8% students have any other reason. Overall, it is observed that the students have positive feelings towards listening to music.
- The maximum percentage of students (74%) answer, music influences their mood whereas 26% of students say it is not so.

- 52% of students answer that listening to music enhances their concentration or focus whereas 48% says that listening it is not so. It seems, the opinion about listening to music enhances their concentration or focus does not differ much.
- The findings of the study reveals that there is an effective impact of different treatments on personality trait; agreeableness whereas less impact on the remaining personality traits; Openness, Extroversion, Consciousness and Neuroticism.
- There are differences between Pre-median and Post-Median Agreeableness score. This evidence is confirmed by statistical test ANACOVA (Table 13) which showed that, (F-value = 3.176, P-value = 0.045 ≤ 0.05), therefore 95% confidently we can say there is a impact of different treatments on Post Agreeableness score.
- Treatment 1 has the higher impact on post-agreeableness score (Table 14 & Graph 10). It also reveals treatments 1&2 together has significant impact on Post Agreeableness score (P-value = 0.044 ≤ 0.05)
- There is moderate association between Frequency of listening to music & Headache.
- 95% confidently we can say that Frequency of listening to music & Headache are dependent on each other (Table 16, Chi-square value =11.715 with P-value=0.020<0.05).
- There is a strong association between Frequency of listening to music & Mind vibration.
- 95% confidently we can say that Frequency of listening to music & Mind vibration are dependent on each other (Table 18, Chi-square value = 9.531 with P-value=0.049 ≤ 0.05).
- There is an evidence, the health issues viz. Emotional, Low hearing and Double vision doesn't depend on Frequency of listening to music.
- In post health issues, the percentage of students having headache and mind vibrations problems were increased as compared to pre health issues. On the other hand, the percentage of students having emotional, low hearing and double vision health issues were reduced.

Suggestions:

The result of the discussion is mark with the positive end, the situation where agreeableness is not required, playing music will help the people to perform better. At the same time due to the frequency of playing music, the students would be aware how the health issues get provoked in their lives. So, the students will be able to decide how much time they should spend listening to music, allowing them to control their listening habit

Limitations:

(1) Small participant numbers.
(2) Students' participants were taken from one particular college therefore it may limit to generalizing results.

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