



Role Of Indian Classical Santoor Music (Raga Mishra Khamaj Alap & Dhoon), On Anxiety, Resilience, & Subjective Happiness Of Young Adult Bengali Females During Covid-19 Pandemic

Debsagar Malik¹, Sanchita Ghosh^{2*}, Chirantani Mukhopadhyay³

¹Research Scholar, Department of Psychology, West Bengal State University, Berunanpukuria, P.O. Malikapur, Barasat, North 24 Parganas, Kolkata - 700126, West Bengal, India.

^{2*} Assistant Professor, Department of Psychology, West Bengal State University, Berunanpukuria, P.O. Malikapur, Barasat, North 24 Parganas, Kolkata - 700126, West Bengal, India.

³ Research Scholar, Department of Psychology, West Bengal State University, Berunanpukuria, P.O. Malikapur, Barasat, North 24 Parganas, Kolkata - 700126, West Bengal, India.

***Corresponding author:** Sanchita Ghosh

* Assistant Professor, Department of Psychology, West Bengal State University, Berunanpukuria, P.O. Malikapur, Barasat, North 24 Parganas, Kolkata - 700126, West Bengal, India.

Email: sanchitaghosh@wbsu.ac.in; psysanchita@gmail.com

Contact No: 9831965496

Citation: Thanakrit Phoengurn (2024), New Public Management Influences Effectiveness Of Municipality In Nakhon Pathom Province, Educational Administration: Theory and Practice, 30(5), 8063-8072

Doi: 10.53555/kuey.v30i5.4303

ARTICLE INFO

ABSTRACT

COVID-19 pandemic's impact on mental health is immensely negative. News of deaths, social alienation, fear, and the resultant psychological trauma are leading to mental health problems. Also, it has been found that Indian classical music is beneficial for a healthy mental health. This study aimed to determine the role of Indian classical Santoor music (Raga Mishra Khamaj Alap & Dhoon), on anxiety, resilience, & subjective happiness of young adult bengali females. The sample consisted of 30 female participants of age between 21-25years, 13-15 years of education, bengali, of middle socioeconomic status, residing in Kolkata & North 24 Parganas in West Bengal. The study was done on two independent groups namely, control group & study group of 15 participants each. The findings of Friedman test & Wilcoxon Signed-Rank Test revealed that there is a significant difference within the measures of both the groups. The findings of Mann-Whitney U Test revealed that there is a significant difference between both the groups. Conclusion of the study is that, Raga Mishra Khamaj when played on Santoor, significantly reduces anxiety, improves resilience, & subjective happiness among young adult Bengali females.

KEY WORDS: Santoor, Raga Mishra Khamaj, COVID-19, Anxiety, Resilience, Subjective Happiness.

INTRODUCTION

The COVID-19 is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The WHO declared the virus outbreak as pandemic in March 2020. News of deaths, social alienation, fear, and the resultant psychological trauma are leading to mental health problems. COVID-19 has serious consequences on physical and mental health of people (The Hindu, 2020). It has been found in history that music helps a person's mental health in a positive way amidst distressing situations.

Music is a form of art. It is an art of sound which contains the ability to express many emotions and ideas. Vocal and instrumental sounds are both considered to be music whenever they express any emotion or idea (Britannica, 2021); (Stanford Encyclopedia of Philosophy, 2017). Hindustani music, one of the two important types of South Asian classical music. Although vocal music plays an important role, instrumental music is

more important in Hindustani music. (Britannica, 2014).

Ancient Greeks, Arabs, and Indians were well aware of the healing property of music. Ancient Hindus believed that suffering caused by a person's uncontrolled thinking could be dealt with using music therapy. "Raga Chikitsa," one of the ancient texts elaborates on the therapeutic role of music. Ancient works collected by King Sahaji (1684–1711) serve as a record of remedial use of music in psychological ailments. The resilience of character of ancient people as observed by Indian historians can probably be attributed to the musical practices of the past (Sanivarapu, 2015).

Raga is a unique combination of selected notes. Indian Ragas are suitable for healing emotional conditions such as anxiety and stress. Ragas contain emotional effects called Rasas (Vatsyayan, 1996) each Rasa can alter the mood (bhava) of the listener. Music can provide relief, reduce anxiety and depression and improve tolerance to pain and interestingly it helps improve general well-being and quality of life (Sanivarapu, 2015). Raga Khamaj is an Indian classical evening Raga which has been generated from Thaata Khamaj. It is a Shadav-Sampurna Raga. It evokes emotions like peace, happiness, & joy (Bardekar & Gurjar, 2016). Raga Mishra Khamaj is amalgamation of two or three Ragas properly by paying importance to our emotions. The term 'Mishra' means mixed.

The Santoor is a wooden string musical instrument. It is played using thin wooden sticks known as 'Kalam'. Number of strings can range from 72 to more than 100. Contemporary instruments typically have moveable wooden bridges, arranged in two rows that roughly parallel the right and left sides of the instrument (Britannica, 2013).

Musical activities can lead to intensely pleasurable experiences in music listeners, and these intensely pleasurable responses to music can lead to dopamine release in the striatal system (Salimpoor et al., 2011). Dopamine is responsible for allowing us to feel pleasure, satisfaction and motivation. Music is found to be effective in reducing anxiety. A study was done to examine the effects of music on elevated states of anxiety on 104 patients who became anxious and stressed during diagnostic procedures. Results indicate that the background Indian classical music is efficacious in reducing psychological distress during a gastroscopic examination who listened to it. It was suggested that music could be used to reduce undue anxiety & stress which is generated in medical situations (Kotwal et al., 1998). It was also found that anxiety state scores significantly reduced in the patients in who listened Indian Classical instrumental music - Santoor (Raga Kaushik Dhwani Gat in Teentaal for 10 minutes) during the process of upper gastrointestinal endoscopy (Padam et al., 2017).

Music also increases happiness in people (CNN Health, 2017). Happiness is a positive emotion of joyfulness, satisfaction & wellbeing. Positive emotions are the most frequently felt reactions to music (Laukka, 2006). Mathur et al. (2015) found in their study that analysis of tonal intervals of Ragas, reveals that Ragas marked as positive (calm & happy) had a greater mean frequency of occurrence of major intervals (Shuddha Swaras). Resilience is the process of adapting well in adversity, trauma, tragedy, threats, or sources of stress. It is the ability to bounce back. Interestingly, music helps to improve resilience. Gupta and Singh (2020), examined effects of listening to instrumental music for 20 days in males and females. Five measures on positive aspects of behaviour were measured. Results showed that listening to music significantly increased scores of resilience.

The present study wants to determine the role of Indian classical Santoor music (Raga Mishra Khamaj Alap & Dhoon), on anxiety, resilience, & subjective happiness of young adult bengali females amidst COVID-19 pandemic.

AIM OF THE STUDY

- To find out the differences between the control group and study group on anxiety, resilience, and subjective happiness.
- To find out the differences between the treatments of control group and study group.

OBJECTIVES OF THE STUDY

WITHIN GROUP OBJECTIVES STUDY GROUP

- To find out whether there is any difference in anxiety, resilience and subjective happiness between baseline measures and measures after receiving treatment 1 (COVID-19 narration for 9 minutes) of the study group participants.
- To find out whether there is any difference in anxiety, resilience and subjective happiness between baseline measures and measures after receiving treatment 2 (Santoor recital for 9 minutes) of the study group participants.
- To find out whether there is any difference in anxiety, resilience and subjective happiness between the measures-after-receiving treatment 1 (COVID-19 narration for 9 minutes) and treatment 2 (Santoor recital for 9 minutes) of the study group participants.

CONTROL GROUP

- To find out whether there is any difference in anxiety, resilience and subjective happiness between baseline measures and measures after receiving treatment 1 of the control group participants (COVID-19 narration for 9 minutes).

- To find out whether there is any difference in anxiety, resilience and subjective happiness between baseline measures and measures after receiving treatment 2 (for 9 minutes keeping eyes closed and not getting involved in any activities).
- To find out whether there is any difference in anxiety, resilience and subjective happiness between the measures- after-receiving-treatment 1 (COVID-19 narration for 9 minutes) and treatment 2 (for 9 minutes keeping eyes closed and not getting involved in any activities).

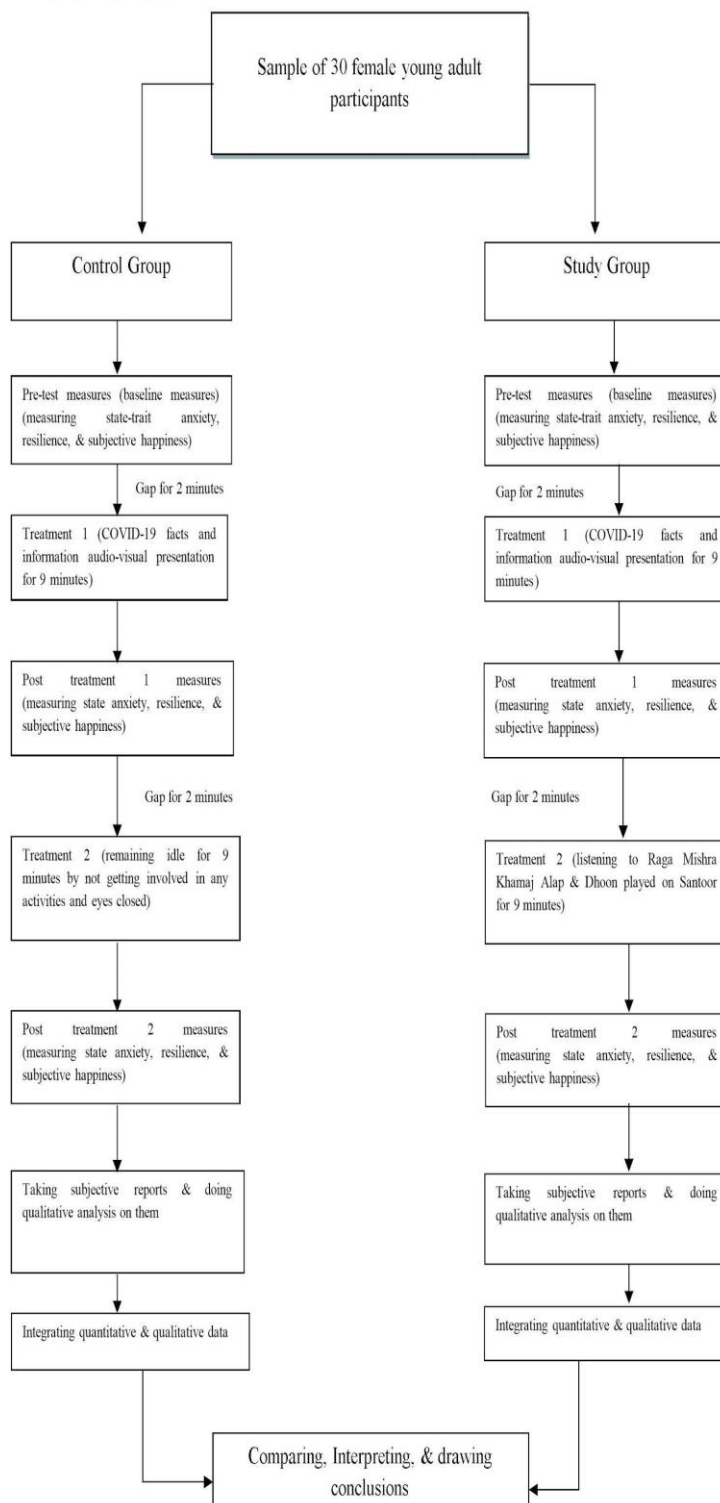
BETWEEN GROUP OBJECTIVES

- To find out whether there is any difference in anxiety, resilience and subjective happiness between baseline measures of control group and baseline measures of study group.
- To find out whether there is any difference in anxiety, resilience and subjective happiness between measures after receiving treatment 2 (for 9 minutes keeping eyes closed and not getting involved in any activities) of control group and treatment 2 (Santoor recital for 9 minutes) of the study group.

METHODS SAMPLE

30 young adult female students, aged between 21-25 years, graduate, of middle socioeconomic status were chosen using purposive sampling for the study.

PLAN OF THE STUDY



TOOLS USED

1. The State-Trait Anxiety Inventory: The State-Trait Anxiety Inventory is a tool to measure present state anxiety and trait anxiety. developed by C.D. Speilberger, R.L. Gorsuch and R. Lushene in 1970. It consists of separate self report scales for measuring state anxiety (FormX-1) and trait anxiety (FormX-2). The STAI is based on a 4 point Likert scale and consists of 40 self report statements.

1. Subjective Happiness Scale (Lyubomirsky & Lepper, 1999): Subjective Happiness Scale is a self report measure of 4 items to measure overall happiness . It is a self report questionnaire. It has a 7 point likert scale. It asks the respondent to circle or select the point on the scale that he/she feels is the most appropriate for them.

Reliability and Validity: Has good internal consistency of 0.79-0.96 (M_{0.86}) as well as concurrent validity 0.7 with the Satisfaction With Life Scale and convergent validity with self esteem, optimism and extraversion scales.

The world adult population scores, on average, between 4.5 and 5.5.

2. Brief Resilience Scale: Brief Resilience Scale is a self report questionnaire to assess the perceived ability to bounce back or recover from stress (Smith et al., 2008). The scale consists of 6 items and has a 5 point response scale. Higher average scores indicate higher levels of perceived resilience.

Reliability and validity: Has good internal consistency with Cronbach's alpha 0.71.

The confirmatory factor analysis results also showed that the Brief Resilience Scale (BRS), with a two-factor structure, had better construct validity than the Brief Resilient Coping Scale (BRCS). The CFA results for the BRS met all of the criteria for a good model fit. The BRS was found to have better psychometric properties than the BRCS (Smith et al., 2013, p.177).

PROCEDURE:

The entire work proceeded at first by creating (recording and editing) an audio visual presentation based on COVID-19 and self composed Santoor recital based on Raga Mishra Khamaj for 9 minutes.

After that by the means of purposive sampling, young adult participants, aged between 21 to 25 years, residing in Kolkata & North 24 Parganas, having 13-15 years of education, were selected for the present work. Participants were randomly assigned to two different treatment groups. The time of the session was kept constant (9 PM, since, Raga Mishra Khamaj is meant to be played in evening). The session happened in online mode (Google meet & Zoom) for the participants of both the groups separately.

Then, The State-Trait Anxiety Inventory(STAI), Brief Resilience Scale, Subjective Happiness Scale was administered (Baseline measures) to know their state-trait anxiety levels, resilience, & subjective happiness for both the groups separately. After 2 minutes, a narration related to COVID-19 facts and information was played for 9 minutes(treatment 1) for two groups separately and the participants were informed to listen to the presentation using earphones and necessary instructions were provided. Volume was kept constant at medium level. After that, their state anxiety, resilience, & subjective happiness was measured.

After 2 minutes of gap, the control group was asked to remain idle by not getting involved in any activities for 9 minutes (Control group's treatment 2) and the study group listened to an Indian classical Santoor recital (Study group's treatment 2) using earphones and the volume of the presentation was kept constant. After that, their state anxiety, resilience, & subjective happiness was measured.

Participant's subjective report was taken regarding the work and Thematic qualitative analysis was done.

Then, all the information collected was calculated, suitable statistical analysis was done using SPSS-20, qualitative thematic analysis was done, tabulated, interpreted and finally a conclusion was drawn.

RESULTS

TABLE 1: MEAN & STANDARD DEVIATION

	CONTROL GROUP								STUDY GROUP							
	Trait Anxiety	State Anxiety	Brief Resilience Scale		Subjective Happiness Scale				Trait Anxiety	State Anxiety	Brief Resilience Scale		Subjective Happiness Scale			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Baseline Measures	39.53	7.52	39.10	3.35	3.35	0.26	4.88	0.88	43.93	9.17	41.27	11.49	3.04	0.51	4.07	1.07
Post treatment 1 measures	—	—	56.27	5.84	2.98	0.42	3.42	1.26	—	—	54.67	8.72	2.573	0.55	3.49	1.15
Post treatment 2 measures	—	—	61.27	6.22	2.62	0.62	3.11	1.17	—	—	33.87	7.93	3.34	0.57	4.26	1.10

Table 1 showing mean & SD of baseline, post treatment 1, & post treatment measures of control & study group.

TABLE 2: FRIEDMAN TEST

	CONTROL GROUP	STUDY GROUP
Friedman's Q	103.110	102.295
Level of significance	0.00**	0.00**

Table 2 showing significant difference present in both the groups (0.01** level of significance).

TABLE 3: WILCOXON SIGNED RANK TEST BETWEEN BASELINE & POST TREATMENT 1 MEASURES; POST TREATMENT 1 & MEASURES; BASELINE & POST TREATMENT 2 MEASURES OF CONTROL GROUP AND STUDY GROUP

	CONTROL GROUP			STUDY GROUP		
	State Anxiety	Brief Resilience Scale	Subjective Happiness Scale	State Anxiety	Brief Resilience Scale	Subjective Happiness Scale
Between the baseline measures & post treatment 1 measures	0.001**	0.023*	0.001**	0.001**	0.005*	0.007**
Between post treatment 1 measures & post treatment 2 measures	0.017*	0.034*	0.235	0.001**	0.001**	0.001**
Between baseline measures & post treatment 2 measures	0.001**	0.002**	0.001**	0.004**	0.011*	0.005*

Table 3 showing significant differences among the baseline measures, post treatment 1 measures, & treatment 2 measures in control group and study group (at 0.05* & 0.01** level of significance).

TABLE 4: MANN-WHITNEY U TEST BETWEEN CONTROL GROUP & STUDY GROUP

TABLE 4. MEAN WITHIN-TREATMENT TEST BETWEEN CONTROL GROUP & STUDY GROUP										
		Baseline Measures			Post Treatment 1 Measures			Post Treatment 2 Measures		
	Trait	State	Brief	Subjective	State	Brief	Subjective	State	Brief	Subjective
	Anxiety	Anxiety	Resilience	Happiness	Anxiety	Resilience	Happiness	Anxiety	Resilience	Happiness
			Scale	Scale		Scale	Scale		Scale	Scale
Z	-1.19	-0.42	-1.70	-2.11	-0.29	-2.06	-0.27	-4.61	-2.85	-2.67
Level of significance	0.236	0.677	0.090	0.035*	0.770	0.039*	0.786	0.00**	0.004**	0.008**

Table 4 showing significant differences between the post treatment 2 measures (State-Trait anxiety, resilience, & subjective happiness) of control and study group (at 0.05* & 0.01** level of significance).

QUALITATIVE ANALYSIS OF SUBJECTIVE REPORTS STUDY GROUP (responses related to post treatment 1) COVID-19 pandemic & Anxiety

RESPONSE	CODING
<i>I was shocked when the audio was presented because of the comorbidity that both father and mother have.</i>	Anxious about parents' health
<i>My confidence is below average and I feel anxious about life after hearing the voice</i>	Anxious

COVID-19 & Resilience

RESPONSE	CODING
<i>The COVID audio made me realise again that my self confidence is below average. I don't know whether I'll be able to fight or not!</i>	Feeling of incompetence & disturbed resilience
<i>After listening to audio...If anything bad happens, it is taking a huge time to move out of it for me</i>	Reduced resilience

COVID-19 & Happiness

RESPONSE	CODING
<i>While listening to the effect of COVID virus had on people, I felt sad.</i>	Unhappiness due to the impact of COVID-19 pandemic
<i>In audio, a percentage of people who lost their jobs was said. After listening to it I felt so bad for those people.</i>	Feeling of unhappiness due to unemployment of people.

STUDY GROUP (responses related to post treatment 2)

RESPONSE	CODING
<i>With the tone and rhythm of the music, my anxiousness was at ease. The corona virus thoughts that were coming in my mind, slowly got calmed & calmed my anxiety</i>	Raga Mishra Khamaj played on Santoor reduced distress
<i>The moment I heard the sound of Santoor, it was like raindrops after a hot summer day of summer. It soothed me & stress komlo.</i>	Raga Mishra Khamaj played on Santoor reduced anxiety

COVID-19 & Raga Mishra Khamaj on Santoor: Resilience

RESPONSE	CODING
<i>After listening that music...I can now feel that I may overcome this situation. This shall pass too</i>	Increase of resilience
<i>It occurred to me that no matter the situation, I will not lose confidence. The desire arose not to lose confidence in the mind</i>	Optimistic & resilient

Happiness

RESPONSE	CODING
<i>After the musical part, I felt free and I am happy. Such happy summer tones</i>	Happiness caused
<i>I feel pleasant and happy after listening to the musical part</i>	Relaxed & happiness

**CONTROL GROUP (Responses related to post treatment 1)
COVID-19 & Anxiety**

RESPONSE	CODING
<i>After listening the audio of COVID, I felt disturbed and worried. It made me more tensed about what's going to happen next?</i>	Anxious about future amidst COVID-19 pandemic
<i>I heard a statement that a boy lost his mother, a girl lost his father. I got nervous. I have my mother only in my family</i>	Fear of loss of parents

COVID-19 & Resilience

RESPONSE	CODING
<i>The only question is, can I overcome these?</i>	Sense of incompetence
<i>Fighting against the present situation is quite tough</i>	Disturbed resilience

COVID-19 & Happiness

RESPONSE	CODING
<i>I became sad after listening the audio</i>	Unhappiness

**CONTROL GROUP (Responses related to post treatment 2)
COVID-19 & Anxiety**

RESPONSE	CODING
<i>After the work was over, those anxieties and fear were remained with me</i>	Anxious & Scared
<i>Amidst the middle of this, I spent a blank time, all the thoughts were coming to my mind, it seemed like, what will happen to us?</i>	Distressed & anxious about future

COVID-19 & Resilience

RESPONSE	CODING
<i>I was asked not to do anything but I wasn't feeling ok. Will I be able to fight against this virus?</i>	Distressed & hampered resilience
<i>As if in an unstable, confidence seemed to be low in everything</i>	Disturbed self confidence

COVID-19 & Happiness

RESPONSE	CODING
<i>I felt sad after the work was over</i>	Unhappiness
<i>Thoughts related to the death of those people that were close to me, came to mind and my mood turned down</i>	Unhappiness caused by death news

DISCUSSION

BETWEEN GROUP:

From table 4, it can be said that there is a significant difference between the post treatment 2 measures (State-Trait anxiety, resilience, & subjective happiness) of control and study group. It can further be said that from the table 1, the state anxiety mean values of control group (61.27) & study group (33.87), state anxiety reduced in the participants of the study group after listening to Raga Mishra Khamaj (Alap & Dhoon) on Santoor for 9 minutes (treatment 2), when compared with the participants of the control group who remained idle for 9 minutes by not getting involved in any activities and eyes closed (treatment 2). Some of the participants of the study group informed, *"With the tone and rhythm of the music, my anxiousness was at ease. The corona virus thoughts that were coming in my mind, slowly got calmed & calmed my anxiety"*. This means that the participants became less anxious after listening to Raga Mishra Khamaj on Santoor. Listening to classical music after exposure to a stressor, significantly reduces negative emotional state (Labbe et al., 2007). Whereas the participants of the control group informed, *"Amidst the middle of this, I spent a blank time, all the thoughts were coming to my mind, it seemed like, what will happen to us?"*, *"I was sitting quietly but there aroused a feeling of worthlessness & uncertainty about life. Many exams are getting cancelled, what will happen to our academics?"*. A study found that older adolescents and youth are anxious about cancellation of examinations & academic events (Lee, 2020). Thus, it shows they became more anxious.

Resilience of the participants in the study group also improved after listening to the Indian classical Santoor music than the control group who didn't listen to it (table 1 shows brief resilience scale mean values of the study group and control group after their group appropriate treatment 2 is 2.62 & 3.33 respectively). Some of the participants of study group informed, *"after the audio of Santoor was played, I immediately felt calmness of nature and it made me realise to think everything in new & positive way that YES I CAN DO!"*. This means that the participants of the study group might have developed better coping or ability to bounce back i.e. resilience. Music listening significantly increases resilience of a person (Gupta & Singh, 2020). Whereas the participants of the control group informed, *"That no sound period was suffocating, A big question can we overcome?"*, which shows that their resilience was hampered.

If subjective happiness is compared between the participants of study & control group, it is found that it increased in the study group after listening to Raga Mishra Khamaj (Alap & Dhoon) on Santoor for 9 minutes (treatment 2), (from table 1 it is found that subjective happiness scale mean values of the study & control group after their group appropriate treatment 2 is 4.26 & 3.11 respectively). This means that the study group might received a healing effect which helped to increase their happiness, which can also be supported by the verbatims of participants, *"I started feeling happy & positive after listening to the music"*. Bardekar & Gurjar, (2016) found that the notes of Raga Khamaj are said to create a Happiness mood. Whereas the participants of the control group said *"Thoughts related to the death of those people that were close to me, came to mind and my mood turned down"*, *"I felt sad after the work was over"*, which shows they were not happy. Thus, it can be said that the study group experienced a healing effect on their state anxiety, resilience, & subjective happiness due to Raga Khamaj (Alap & Dhoon) played on Santoor.

WITHIN GROUP

Control Group

From table 2, it can be seen that there is a significant difference in Friedman Test across the measures of the group, which can further be supported by the findings of Wilcoxon Signed Rank Test (Table 3), which shows that there exists a significant difference among the baseline measures, post treatment 1, and post treatment 2 measures (at 0.05* & 0.01** level of significance) except, in subjective happiness ($p=0.235>0.05$) there is no significant difference between post treatment 1 & 2 measures as the distress that was induced due to treatment 1 remained static.

From table 1 it can be seen that the mean values of the state anxiety increased, resilience reduced, and subjective happiness reduced after receiving the treatment 1 (COVID-19 facts and information audio-visual presentation for 9 minutes) when compared with the baseline measures of their group. Some of the participants informed, *"After listening the audio of COVID, I felt disturbed and worried. It made me more tensed"*, *"I became sad after listening the audio. So many bad things are happening, will things continue"*

like this?"

It can be found in table 1 that the state anxiety increased, resilience reduced, and subjective happiness reduced after receiving the treatment 2 (remaining idle for 9 minutes by not getting involved in any activities and eyes closed), when compared with the treatment 1 and baseline measures of their group. Some of the participants informed, *"During the blank period, constant thoughts were rushing in my mind about the present situation which made me very stressed"*, *"I was asked not to do anything but I wasn't feeling ok. Will I be able to fight against this virus?"*.

Study Group

From table 2, it can be seen that there is a significant difference in Friedman Test across the measures of the group, which can further be supported by the findings of Wilcoxon Signed Rank Test (Table 3), which shows that there exists a significant difference among the baseline measures, post treatment 1, and post treatment 2 measures (at 0.05* & 0.01** level of significance). From table 1 it can be seen that the mean values of the state anxiety increased, resilience reduced, and subjective happiness reduced after receiving the treatment 1 (COVID-19 facts and information narration for 9 minutes) when compared with their respective baseline measures. Some of the participants informed, *"I was shocked when the audio was presented because of the comorbidity that both father and mother have"*. COVID-19 complications is found to be more with people having comorbidities (Zhang et al., 2020).

"My confidence is below average and I feel anxious about life after hearing the voice", which can be supported by the recent poll conducted by UNICEF which showed that mental health of adolescents & young people is getting impacted due to COVID-19 crisis (Unicef, 2020).

But, interestingly it is found that the state anxiety decreased (Kotwal et al., 1998), resilience increased (Gupta & Singh, 2020), and subjective happiness increased after receiving treatment 2 (listening to Raga Mishra Khamaj Alap & Dhoon on Santoor for 9 minutes) when compared with the treatment 1 and baseline measures. Some of the participants informed, *"After listening that music...I can now feel that I may overcome this situation. This shall pass too"*, *"After the musical part, I felt free and I am happy. Such happy summer tones"*. Positive emotions (happiness) are the most frequently felt reactions to music (Laukka, 2006)

CONCLUSION

COVID-19 pandemic impacts a person's mental health negatively. It increases anxiety, reduces resilience, and subjective happiness of a person. From the present study, it is found that Raga Mishra Khamaj (Alap & Dhoon) when played on Santoor, can help to reduce state anxiety, increase resilience, & subjective happiness of the participants amidst COVID-19 pandemic.

IMPLICATIONS

The present study puts light on Raga Khamaj (Alap & Dhoon) when played on Santoor, might help to build a healthy mental health amidst COVID-19 pandemic very easily.

LIMITATIONS & SCOPE FOR FURTHER STUDY:

I. The sample size could have been larger. Due to the COVID-19 pandemic distress many didn't want to participate and also due to paucity of time the participants couldn't be added to the sample; future studies can include a greater number of participants which would help in better understanding and generalization of the findings.

II. While doing the present study, all the participants of the groups couldn't be included together. Since, entire study happened in online mode, it becomes difficult to observe and manage participants during the session if they join all; future studies can be done in offline mode so that the participants can be observed and managed easily.

III. Disturbances in audio quality of the presentations were informed by 3 participants. Since the work happened in online mode, fluctuation of the internet might have happened; future studies could be done in offline mode or with better internet connection quality.

The present study included only female participants but in future male participants could also be included which would help in comparing and understanding the findings from a different perspective

REFERENCES

1. Bardekar, A. A., & Gurjar, A. A. (2016). Study of Indian Classical Ragas structure and its influence on human body for music therapy. *2016 2nd International Conference on Applied and Theoretical Computing and Communication Technology (ICATccT)*. <https://doi.org/10.1109/icatccT.2016.7911976>.
2. Chinni M. (2014) Subjective Happiness Scale. In: Michalos A.C. (eds) Encyclopedia of Quality of Life and Well-Being Research. Springer, Dordrecht <https://doi.org/10.1007/978-94-007-0753-52898>
3. Epperson, G. (2021). *music*. Encyclopedia Britannica. <https://www.britannica.com/art/music>

4. Gupta, U., & Singh, V. K. (2020). Effects of music listening on resilience, self-efficacy and positivity in healthy young adults. *Journal of Psychosocial Research*, 15(1), 1–24. <https://doi.org/10.32381/JPR.2020.15.01.1>
5. Kotwal, M. R., Rinchhen, C. Z., & Ringe, V. V. (1998). Stress reduction through listening to Indian classical music during gastroscopy. *Diagnostic and therapeutic endoscopy*, 4(4), 191–197. <https://doi.org/10.1155/DTE.4.191>
6. Kuttoor, R. (2020, July 22). 'COVID-19 taking its toll on mental health'. The Hindu. <https://www.thehindu.com/news/national/kerala/covid-19-taking-its-toll-on-mental-health/article32154987.ece>
7. Labbé, E., Schmidt, N., Babin, J., & Pharr, M. (2007). Coping with stress: The effectiveness of different types of music. *Applied Psychophysiology and Biofeedback*, 32(3-4), 163–168. <https://doi.org/10.1007/s10484-007-9043-9>
8. Laukka, P. (2006). Uses of music and psychological well-being among the elderly. *Journal of Happiness Studies*, 8, 215–241
9. Lee J. Mental health effects of school closures during COVID-19. *Lancet. Child Adolesc. Health*, S2352-4642(20)30109-7. 2020 doi: 10.1016/S2352-4642(20)30109-7. PubMed. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
10. Lyubomirsky, S., & Lepper, H. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, 4, 137–155. Google Scholar
11. Mathur, A., Vijayakumar, S. H., Chakrabarti, B., & Singh, N. C. (2015). Emotional responses to Hindustani Raga music: The role of musical structure. *Frontiers in Psychology*, 6. <https://doi.org/10.3389/fpsyg.2015.00513>
12. McGilchrist, S. (2011). Music 'releases mood-enhancing chemical in the brain'. BBC NEWS. <https://www.google.com/amp/s/www.bbc.com/news/health-12135590.amp>
13. Nettl, B. (2014). Hindustani music. Encyclopedia Britannica. <https://www.britannica.com/art/Hindustani-music>
14. Padam, A., Sharma, N., Sastri, O., Mahajan, S., Sharma, R., & Sharma, D. (2017). Effect of listening to Vedic chants and Indian classical instrumental music on patients undergoing upper gastrointestinal endoscopy: A randomized control trial. *Indian journal of psychiatry*, 59(2), 214–218. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_314_16
15. Salimpoor, V. N., Benovoy, M., Larcher, K., Dagher, A., & Zatorre, R. J. (2011). Anatomically distinct dopamine release during anticipation and experience of peak emotion to music. *Nature Neuroscience*, 14(2), 257–262. <https://doi.org/10.1038/nn.2726>
16. Sanivarapu, S. L. (2015). India's rich musical heritage has a lot to offer to modern psychiatry. *Indian Journal of Psychiatry*, 57(2), 210. <https://doi.org/10.4103/0019-5545.158201>
17. Skapinakis P. (2014) Spielberger State-Trait Anxiety Inventory. In: Michalos A.C. (eds) Encyclopedia of Quality of Life and Well-Being Research. Springer, Dordrecht. https://doi.org/10.1007/978-94-007-0753-5_2825
18. Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine*, 15(3), 194–200. <https://doi.org/10.1080/10705500802222972>
19. Stanford University. (2007, October 22). *The Philosophy of Music*. Stanford Encyclopedia of Philosophy. <https://plato.stanford.edu/cite.html>
20. Unicef. (n.d.). The impact of covid-19 on the mental health of adolescents and youth. <https://www.unicef.org/lac/en/impact-covid-19-mental-health-adolescents-and-youth>
21. Valla, J. M., Alappatt, J. A., Mathur, A., & Singh, N. C. (2017). Music and Emotion—A Case for North Indian Classical Music. *Frontiers in Psychology* 8. <https://doi.org/10.3389/fpsyg.2017.02115>
22. Willingham, A. J. (2017). Are music and Happiness LINKED? CNN. <https://www.google.com/amp/s/amp.cnn.com/cnn/2016/08/17/health/music-concerts-dancing-study-trnd/index.html>
23. World Health Organization. (2021, July 27). Coronavirus disease (COVID-19) pandemic. World Health Organization. <https://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/novel-coronavirus-2019-ncov>
24. Zattore, R. (2003). Music and the Brain. *Annals of the New York Academy of Sciences*, 999(1), 4–14. <https://doi.org/10.1196/annals.1284.0>