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CONFERENCE PAPER

INDIAN CLASSICAL MUSIC AND ITS EFFECTS ON STRESS AND BODY AWARENESS IN UNIVERSITY STUDENTS

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Abstract

The stress relieving effects of music, and specifically Indian Classical music have been proven many times, in various contexts. Studying its immediate effects though, on university students, adds to this field. Researcher intends to explore the stress levels and understand the effect of listening Indian Classical music on stress level and body awareness. This study measures if there exists any difference in the state level stress, and body mindfulness, before and after exposure to a 10-minute piece of instrumental Indian Classical music. Using an experimental design, pre and post playing the music, the data for the two variables was collected, using standardized questionnaires, on a sample of 30 university students. This data was statistically analysed, and the results show, significant reduction in stress, which supports the existing literature, but none in body awareness. To apply these results to the development of Indian Classical music-based therapies, more longitudinal studies are required and encouraged, to understand long exposure effects beyond just state level effects.

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Introduction:-

Distress is rampant in the current quick paced and overwhelming world. And therapies or other methods to deal with stress can be difficult to begin or maintain, as might start feeling like a task after one point. But, utilizing the calming and relaxing effects of music, specifically, Indian Classical Music, can help create an intervention that is interesting, fun, and has the ability to provide immediate relief from stress. Music has played a significant role in influencing human emotions, cognition, and physiological states. Many times, Music is not only used as an artistic expression, but also in meditation, relaxation, and psychological balance. Much of the research in the field of psychology and neuroscience suggests that Music engages multiple neural networks, which are associated with emotional regulation and autonomic nervous system.

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Research in neuroscience strongly suggest that Music influences emotional processing, and neural systems associated with effective regulation (Koelsch, 2014). Research in the field of psychology also shows that music has played a great role in managing stress, reducing depression and other negative psychological symptoms.

Listening to relaxing music, reduces cortisol and stress responses. Particularly Indian classical music offers a unique framework to study psychological dimensions, based on Raga and rhythm Sounds. This system of Music is structured around two components that is Raga (melodic framework) and Tala (rhythmic cycle). In recent years, the empirical research has begun. To investigate the therapeutic role of Raga based listening, for example a research examining the effect of Indian classical reported significant reductions in depression, anxiety, and stress among participants who were exposed to structured Raga listening sessions. (Pareek & Shekhawat, 2022).

Body awareness refers to a mindfulness-like state or attitude towards one's own body sensations. Such focus on one's body sensations is the root of many therapeutic measures that are used to reduce stress and help relax, such as progressive muscle relaxation therapy and many meditative techniques also use intentional focus on one's body parts and sensations to help reflect and calm the mind. The rhythmic focus of Indian classical music could help naturally increase body sensation awareness in individuals listening to it, and through this route, it could reduce stress.

This increased awareness could also help one consciously recognize early physical symptoms of stress and understand and interpret through their physiological responses their own emotional experiences, as they are linked and can be understood through the physical or physiological sensations we feel in our body. Existence of an impact on body awareness due to Indian classical music could thus imply not just a pathway to reduce stress as a therapeutic measure, but also a pathway to become more aware at an earlier stage of negative psychological symptoms through physiological symptoms and help identify signs of fatigue, stress, or discomfort early.

Music, stress, and Anxiety:-

Thoma, M. V., et al. (2013) discuss the effect of music on the human stress. Music can also influence nervous system activities by altering heart rate, respiration, and cardiovascular functioning. (Bernardi et al., 2006). Music based therapeutical interventions have been used widely as complimentary approaches for reducing anxiety and psychological distress. (Bradt et al., 2013). Emerging evidence suggest that the Indian classical music may contribute to reducing anxiety and perceived stress in various contexts.

Indian Classical Music and Stress:-

Recent research has highlighted the Indian classical music as an intervention for mental well-being suggest raga-based Music influence psycho physiological processes associated with stress regulation. (Chauhan et al., 2024). Arya (2020) demonstrates how a month-long exposure to ragas music therapy reduces physiological indicators of stress in male medical students. Indian classical music has also been shown to reduce physiological stress due to variations in musical characteristics like pace, octave, and timbre (Sharma et al., 2020). However, the majority of research only considers ragas' effects.

Another study by Gupta and Gupta (2005) assesses the decrease in state and trait anxiety levels after a group of male postgraduate students listened to raga todi played on the flute for 30 minutes every day for 20 days. An RCT study by Padam et al. (2017) that examined the impact of vedic chanting and Indian classical music on anxiety levels revealed that a ten minute Indian classical music piece also reduced anxiety in patients undergoing upper gastrointestinal endoscopies. These studies exist in various contexts but a focus on the taal of the music used, not utilising the rhythm of the music which can create cognitive focus due to its pattern and stability, as compared to the emotion evoking pathway that raga based compositions take, to reduce stress. Many studies exist on the long term exposure effects of Indian Classical Music, but fewer on immediate and state level effects.

Indian Classical Music and the Body:-

A study by Bardekar, A.A., & Gurjar, A. A. (2016) points out the ability of Indian classical music to change an individual's body resonance, implying that it can help the body sync with the vibrations of the music, as affirmed by ancient Indian classical maestros and studies the effect of it on the body to better understand the pathway through which raga therapy shows healing effects. But it does not study the role of body sensation awareness in this. A work based on the author's first hand experience of learning Karnatic classical music studies the effect on body sensation awareness and its role in learning music, in the context of a Karnatic music apprentice (Weidman, 2012), but this effect due to mere listening has not researched upon.

Method:-**Objectives:-**

1. To see if exposure to an original composition of Indian Classical Instrumental Music has any state level change on stress levels in university students during pre-exam period.
2. To see if exposure to an original composition of Indian Classical Instrumental Music has any effect on the body awareness in university students during pre-exam period.

Hypotheses:-

H₀: There will be no significant difference observed in the stress levels of university students, before and after a single exposure of instrumental Indian Classical music.

H₀: There will be no significant difference observed in body awareness, in university students, before and after a single exposure of instrumental Indian Classical music.

Research Design:-

The impact of a single exposure to an original piece of instrumental Indian classical music was investigated using an experimental methodology. Raaga Ahir Bhairav and a teen taal (16 beats) were purposefully used in the composition, taking into consideration the relaxing effects of raga Ahir Bhairav (Valla et al., 2017). The composition's concentration was on the teen taal because, although there are numerous researches on the impact of ragas, a focus on the taal is lacking. The goal is to use the rhythmic part of the music to monitor any changes. Additionally, the taal's repeated and pattern-like qualities can be used to sustain focus and attention on the pattern, while its stability promotes mental calmness and even draws attention to one's own body and bodily sensations. This study assesses psychological changes at the state level. The tabla served as the main instrument in a 10-minute original composition. To gauge the music piece's immediate impacts, a pre- and postcomparison research was carried out. The Stress levels and Body awareness/mindfulness was measured using self-report, standardized questionnaires.

Sample:-

A sample of 34 students participated in the study. Participants in groups of five to ten, were exposed to the musical composition. The inclusion criteria based on age was kept to be between 18 to 25 years, considering the focus of the study on university students. This group was chosen because it would be possible to observe the impact of the music more clearly and in the pertinent context during the pre-exam time when distress and rumination levels would be significant. Since relationship with music can affect its impact, their level of musical engagement was also used as a selection factor. Those with higher levels of music engagement were selected for further study. Four participants were eliminated from the study as a result of the exclusion of those with music engagement levels lower than 33, leaving 30 participants for analysis.

Procedure:-

Recruitment of participants was done in person on campus of the university. The participants were informed of the theme of the study and its experimental nature. Basic details about the psychological nature of the study were provided. Once they agreed, the written informed consent was taken and they were asked to fill a set of questionnaires in order to collect the pre-exposure data. They were instructed to fill it based on how they were feeling in that moment. After which they were informed that they would be listening to a piece of classical Indian music and were asked to engage as much as possible with the music. Once the participants had listened to the 10-minute piece of Indian classical instrumental music, they were then asked to fill another set of questionnaires, this time keeping in mind their current state. This was done so that the state-level differences could be studied. Post that, the participants were debriefed about the complete study, its intentions, and the information that could not be revealed at earlier stages in order to avoid bias and they were assured and kept ethically informed.

Tools:-**Stress Arousal Adjective Checklist:-**

This checklist measures state level stress and arousal in participants. It is a self-report form. It consists of 30 items. They are to be answered on a scale of ++(definitely yes), +(slightly yes), -(not sure), and -(no). The scoring is dichotomised, with the positives indicating a scoring of 1, while a selection of either of the negatives indicating a 0. The data for only the stress subscale was utilised. This scale has a Cronbach's alpha of 0.86 for stress as a measure. And it shows good construct, discriminant, and convergent validity (King, M. G. et al., 1983).

State Mindfulness Scale:-

This scale is used to measure the state level mindfulness of an individual. The measure is self-report. A 5-point Likert scale, ranging from "not at all" to "very well," is used to rate each of the 21 items. It is divided into two subscales: state mindfulness of the body (6 items) and state mindfulness of the mind (15 items). Only the data of the state mindfulness of the body subscale was utilised to measure body awareness. Cronbach's alpha values of 0.90 to 0.95 indicate that this scale has strong construct validity and good internal consistency (Tanay et al., 2013).

Music Engagement Questionnaire:-

The participants' engagement and relationship with music was assessed using the 11-item self-report version of this scale. This scale is to be answered on a 5 point Likert scale, ranging from not at all to very much. According to Vanstone et al. (2015), this scale exhibits excellent convergent validity and internal consistency.

Ethical Considerations:-

Before starting the trial, each participant provided written informed consent. Before, during, and after the experiment, they were briefed on the essential study specifics and given a debriefing on any information that could not be disclosed. The participants were assured that the information gathered would be confidential and used only for academic and research purposes. They were made aware of their freedom to withdraw from the study at any time and their right to request access to their data and findings.

Analysis and Results:-**Demographics:-**

A final sample size of 30 participants that was utilized for analysis after the exclusion of four participants due to low engagement in music. Sample constituted of 25 females and 5 males, university students, all of them studying at an undergraduate level. 26.67% of these participants lived with their family, 73.33% of them lived in hostels. And 53.33% of the participants belonged to a nuclear family, 30% belonged to a joint family, while 16.67% did not answer this demographic. The ages of the participants ranged from 18 to 21 years. SPSS software was used to conduct statistical analysis.

Table 1

Basic Descriptive Statistics for Stress and Body Awareness

	N	Minimum	Maximum	Mean	Std. Deviation
Stress (pre-exposure)	34	2	14	5.94	2.870
Stress(post-exposure)	34	0	13	4.03	3.721
Body Awareness (pre-exposure)	34	9	27	18.68	5.431
Body Awareness (post-exposure)	34	6	30	19.76	5.478

Normality test was conducted using Shapiro Wilk. The data was found not normally distributed for all the variables, except for body mindfulness after listening to music. Thus, non-parametric comparison of means for matched pair i.e. Wilcoxon signed-rank test was conducted on the data.

Inferential Statistics:-

Table 2.1. Wilcoxon Ranks Table for Stress				
		N	Mean Rank	Sum of Ranks
Stress After - Stress before	Negative Ranks	26 ^a	17.56	456.50
	Positive Ranks	7 ^b	14.93	104.50
	Ties	1 ^c		
	Total	34		
a. Stress After < Stress before				
b. Stress After > Stress before				
c. Stress After = Stress before				

Table 2.1 shows that 26 out of the 34 participants experienced a reduction in stress scores, 7 experienced an increase in stress scores, while one experienced no change.

Table 2.2. Test Statistics for Stress	
	Stress After - Stress before
Z	-3.160 ^a
Asymp. Sig. (2-tailed)	.002
a. Based on positive ranks.	
b. Wilcoxon Signed Ranks Test	

This result shows that there was a significant difference in stress levels at a 0.002 level of significance (Table 2.2). Thus, the null hypothesis is rejected in favour of alternate hypothesis stating listening Indian classical music significant reduces state stress level.

Table 3.1. Wilcoxon Ranks Table for Body Awareness				
		N	Mean Rank	Sum of Ranks
Body Awareness After - Body Awareness Before	Negative Ranks	15 ^a	14.27	214.00
	Positive Ranks	17 ^b	18.47	314.00
	Ties	2 ^c		
	Total	34		
a. Body Awareness After < Body Awareness Before				
b. Body Awareness After > Body Awareness Before				
c. Body Awareness After = Body Awareness Before				

The above table 3.1 shows that 15 participants experienced a decrease in body awareness, 17 experienced a decrease in body awareness, and 2 experienced no change.

Table 3.2. Test Statistics for Body Awareness	
	Body Awareness After - Body Awareness Before
Z	-.937 ^a
Asymp. Sig. (2-tailed)	.349
a. Based on negative ranks.	
b. Wilcoxon Signed Ranks Test	

Since the significance value of the test is 0.349, the null hypothesis is retained (Table 3.2). Thus, there is no significant difference observed in body awareness, in university students, before and after a single exposure to the piece of instrumental Indian Classical music. There is a significant difference observed in the stress levels of university students, before and after a single exposure to the piece of instrumental Indian Classical music, such that stress is reduced post the music experience.

Discussion:-

The results of the study on analysis show that exposure to a piece of instrumental Indian classical music during just one session shows reduction in stress levels in university students. This result is in line with the existing research which shows the stress reducing effects of Indian classical music. This shows that taal-focused compositions and the rhythm of the taals play an integral role in stress reduction in Indian classical music. No difference in body awareness was observed. This can be attributed to the fact that without external instructions or guidance to focus on one's own body, even though physiological changes and body resonance might be occurring, the individual is not usually aware of this change.

Thus, implying that the stress-relieving effect of Indian classical music exists but does not occur through the body sensation awareness pathway, as no significant difference in body sensation awareness was observed. This study was conducted on a small group of university students, due to its experimental nature and focused on the immediate stress-relieving effects of Indian classical music through just a single exposure. To understand the long-term effects of multiple exposures to Indian classical music, a longitudinal study must be conducted. Many existing researches implore the need for longitudinal studies in this field in order to support the development of a formal Indian Classical Music based Music Therapy.

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