



ISSN: 2456-4419

Impact Factor: (RJIF): 5.18

Yoga 2022; 7(2): 94-97

© 2022 Yoga

www.theyogicjournal.com

Received: 11-05-2022

Accepted: 13-06-2022

Dipsa Shah

Bachelor student of Shrimad
Rajchandra College of
Physiotherapy, Surat, Gujarat,
India

Dr. Rajal Sukhiyaji

Assistant Professor at Shrimad
Rajchandra College of
Physiotherapy, Surat, Gujarat,
India

To compare the immediate effect of single session of yoga and aerobic exercises on feeling-states in high school students

Dipsa Shah and Dr. Rajal Sukhiyaji

Abstract

Background: Students in higher educational institutions are viewed as leaders of tomorrow. Completion of final secondary school examinations is a demanding process that has the capacity to impact negatively on the health and wellbeing of students. Aerobic exercise and yoga both produce positive changes in concentration, stress, energy and well-being. Aerobic exercise and yoga have been compared on many levels of health.

Objective: To determine immediate effect of single session of yoga and aerobic exercise on feeling-state in high school students.

Method: 120 Students age between 15-18 years from different schools in Surat and Bardoli volunteered for the study. They were assigned randomly into 2 groups equally for both yoga and aerobic sessions. Both groups included 60 students each. Group A performed yoga and Group B performed aerobic exercise. The yoga and aerobic exercise training took 30 minutes each to conduct both the sessions. At the start and at the end of the sessions Feeling State Assessment Questionnaire was filled up by the students. All the students participated actively in both the sessions. Pre and post session results were analysed.

Result: Unpaired and paired t-test were used for comparing means between two groups and within groups, respectively. Results were considered to be significant. Result was found significant for within the group. There is improvement in the feeling state assessment score in both aerobic and yoga groups. The more improvement found in yoga group, as pre and post mean difference is more in yoga group as compared to aerobic group.

Conclusion: There is no significant difference found in the immediate effect of single session of aerobic exercises and yoga on feeling state in high school students between both aerobic and yoga groups. There is significant difference found within both aerobic and yoga groups. The more improvement found in yoga group.

Keywords: Yoga, aerobic exercise, feeling state assessment questionnaire, high school students

Introduction

Students in higher educational institutions are viewed as leaders of tomorrow. They have academic success as their major goal. For this goal to be achieved, it requires dedication, sacrifices, self-discipline, motivation and cordial relationship between students and lecturers. Students at this level are saddled with a lot of responsibilities and challenges^[1]

Adolescence is a critical period full of changes, and it must be carefully managed if teenagers are to develop properly. Although some of the problems of adolescence do not originate in the school environment, they may still impact students' academic performance. We must attend to the social, physical, and psychological needs of teenagers to prevent the possible negative effects of adolescent wellbeing and stress on health and academic^[2]. Researchers have found that the main sources of stress in the academic environment are exams, homework and work outside of school, giving presentations, competition with classmates, and academic overload^[3].

Yoga is generally accepted as an ancient tradition that incorporates postures, breathing techniques, meditation, and moral and ethical principles. Despite its growing popularity among people of all ages to promote overall health and fitness, little is known about the use of yoga

Corresponding Author:

Dipsa Shah

Bachelor student of Shrimad
Rajchandra College of
Physiotherapy, Surat, Gujarat,
India

among youth, especially urban youth. Preliminary quantitative studies have found support for yoga programs:

- Improving mood
- Decreasing anger
- Depression
- Fatigue
- Improving stress resilience
- Reducing problematic physiological and cognitive patterns of response to stress such as rumination, intrusive thoughts, and emotional arousal higher secondary grade in schools ^[4]

There has been an increasing amount of research on the benefits of increased physical activity and exercise. From a physiological perspective the benefits are countless. Recently there has been a growing focus on the psychological benefits of such activities, particularly in the domain of subjective well-being ^[5].

- Aerobic exercise training reduces emotional stress reactivity in real life.
- Exercisers show decreased Noradrenaline in conditions of enhanced perceived stress.
- Emotional stress reactivity of exercisers is reduced.
- Aerobic exercise appears to be a promising strategy against stress-related diseases ^[6]

Ross and Thomas found that yoga has had equal and often superior health benefits on individuals when compared to other forms of exercise. In many studies, the physiological effects have been observed even after a period of yoga or exercise. Although both types of exercise have positive effects on mood, physiological differences in stress levels exist between the two. Exercise has been shown to increase levels of the stress hormone, cortisol, while yoga has been shown to cause the levels to decrease ^[7]

Exercise and yoga have been compared on many levels of health, but not on the impact on cognition. Yoga has been shown to produce greater positive changes in mood than exercise, and has been shown to produce greater improvements in cognition than meditation ^[8]

Feeling State Assessment Questionnaire: It is self-designed questionnaire comprising of 22 questions having 5 points system where 1 indicates strongly disagree and 5 refer to strongly agree to know the state of well-being. Questions included in the self- assessment survey measured happiness, peace, focus, endurance, positivity, personal satisfaction, self-confidence, patience, and fatigue ^[7].

Procedure

120 subjects had participated in this study based on the inclusion and exclusion criteria.

The purpose of the study and requirement and schedule of the testing procedure had been explained to the subjects. Subjects participating in the study were require to fill a self – administrated questionnaire, which includes demographic information and questions related to their health status, based on which, either they had been included or excluded. When subject arrived to the study, they were given a consent form. 120 subjects who met inclusion criteria were included and were assigned randomly into 2 groups using quasi randomization procedure as explained below. The first subject encountered by the researcher was assigned to Group-A and second to Group-B. The same sequence of allotment was

followed for consecutive subjects throughout the study. Group-A had participated in yoga and Group-B had participated in aerobic exercise. 5 minutes warm up and 5 minutes cool down period was made at starting and end of the session. The yoga group had followed one of the 20 minute yoga sessions in Shiva Rea’s video, which was entitled “Earth”, preceded by a five minute session of forward bend stretches, and ending with a five minute session of “Shavasana” for meditation. The aerobic exercise subjects had followed 20 minute cardio level one session, and a ten minute cardio level two session from the “Biggest Loser workout”. Both sessions had last for 30 minutes. At the completion of 30 minutes, subjects had two minutes to move from the centre of the room and sit at a table or desk in order to complete the post-test measures. After two minutes, subjects were administered with feeling-state assessment questionnaire. Once all of the assessments were completed and collected, subjects were verbally debriefed. The researcher had explained that the study was to examine how different types of exercise affect change in feeling states. The 22-item feeling-state assessment (Annexure 5.3) measured the participant’s subjective well-being. The feeling-state assessment scores were measured on a 5-point Likert scale from that ranged from strongly disagree (1) to strongly agree (5). The feeling states of stress, mood, motivation, and energy were derived. Three to four statements were included for each of the following categories: mood, stress, energy, concentration, self-satisfaction, and motivation; all of which were combined to produce a score of overall 36 subjective well-being. Subjects indicated their agreement with statements such as “I feel happy” (mood), “I feel anxious” (stress), “I feel tired” (energy), “My mind feels foggy” (concentration), “My body is in a condition that I am satisfied with” (self-satisfaction), and “I want to accomplish something important today” (motivation). For positive statements like “I feel energized”, scores were entered exactly how participants indicated on the assessment; if they selected “5”, “5” would be entered. Responses to negative statements like “I am upset” were reversed scored. Thus, higher numbers represented positive feeling states while low numbers represented negative ones ^[7].

The training program consist of single session of warm up period for both group including slow self-stretching. Group A had performed yoga protocol and group B had performed aerobic exercise protocol, which was followed by cool down period which included 5 minutes of whole body stretching exercise.

(A) Yoga Protocol Shiva Rea Daily Energy Vinyasa Flow

Yoga: Earth (9) This yoga practice was led by a single instructor who was narrating and conducting every movement. The video encompasses flows through the yoga positions of downward dog, plank, chaturanga (similar to a slow push-up), cobra, upward dog, warrior I, warrior II, lunge, and child’s pose. Each movement was associated with a specific breath (in or out), and the rhythm of breath was maintained through the practice. The instructor, demonstrated movements clearly and allowed for slow progression in learning the 37 positions and movements. The session works the muscles of the arms, shoulders, and legs. The specific practices from this video being used are “Earth”, which is 20 minutes of energizing yoga flows, “Forward Bends” which is 5 minutes of various leg stretches, and “Shavasana” which is 5 minutes of meditation. All these yoga poses were demonstrated by researcher along with video.

(B) Aerobic Exercise Protocol the Biggest Loser: The Workout Cardio Max (9) This aerobic exercise video consisted of movements conducted on a single spot, without moving around the room. Movements such as lunges, squats, jumping jacks, and pushups are conducted that raises the heart rate. An instructor was always describing how and when to conduct each movement. There were several sample participants in the video taking part in the work out at different physical strength levels. The workout encompasses non-stop movement for 30 minutes (comprised of one 20 minute, and one 10 minute session). One of the researcher was performing the aerobics and other researcher was guiding through the movements for any correction along with the protocol.

Statistical Analysis: Data were analysed using SPSS software version 22, with a 95% confidence level ($p \leq 0.05$). A test of normal distribution was conducted on all data before the analysis ($p < 0.05$). All data were normally distributed. An Independent Sample T test was used to test the difference between groups (experimental and control; $p < 0.05$).

Results

Table 1: Represents mean and SD of Aerobics Group and Yoga Group for Feeling State Assessment Scale at pre and post session.

	Group	N	Mean	Std. Deviation	Std. Error Mean
FSA_Pre	Aerobics	60	73.25	10.91822	1.40954
	Yoga	60	74.17	8.97863	1.15914
FSA_Post	Aerobics	60	86.20	12.49380	1.61294
	Yoga	60	88.62	10.47206	1.35194

The mean of pre Feeling State Assessment score for Aerobics Group and Yoga Group are 73.25 and 74.17 respectively. The result shows that the score of yoga group is more as compared to aerobics group in pre assessment.

Table 4: Represents the differences in mean, t value and p value of the pre and post Feeling State Assessment score for aerobics and yoga group.

		Paired Differences					
		Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pair 1	Aerobics_Pre- Aerobics_Post	-12.95	14.97843	1.93371	-6.697	59	.000
Pair 2	Yoga_Pre-Yoga_Post	-14.45	10.40278	1.34299	-10.760	59	.000

For aerobics group, difference in mean = -12.95, $t = -6.697$ and associated significance value $p = 0.000$.

For yoga group, differences in mean = -14.45, $t = -10.760$ and associated significance value $p = 0.000$.

The more improvement found in yoga group as pre and post mean difference is more in yoga group as compared to aerobics group.

Discussion

The present study was conducted to determine the effects of yoga and aerobic exercise on the feeling state of high school students. It also aimed to compare the effects of single session of yoga and aerobic exercises on well-being of high school students. Result of this study showed that there was no significant difference found between the group as $p > 0.05$ but significant difference found within the group as $p < 0.05$. There was more improvement found in yoga group as pre and post mean difference is more in yoga group (-14.45) as compared to aerobics group (-12.95)

Conclusion

There is no significant difference found in the immediate

The mean of post Feeling State Assessment for Aerobics Group and Yoga Group are 86.20 and 88.62 respectively.

The result shows that the score of yoga group is more as compared to aerobics group in post assessment.

Table 2: Represents t value, p value and mean difference of aerobics group and yoga group for Feeling State Assessment Scale at pre and post session.

	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
FSA_Pre	-.502	118	.616	-.92	1.82494
FSA_Post	-1.148	118	.253	-2.42	2.10459

For pre Feeling State Assessment score, $t = -0.502$. Its associated significant value $p = 0.616$ and mean differences = -0.92.

For post Feeling State Assessment score, $t = -1.148$. Its associated significant value $p = 0.253$ and mean differences = -2.42.

The result shows that there is no significant difference found between aerobics and yoga groups at pre and post session, as $p > 0.05$. So, we accept null hypothesis for between group comparison.

Table 3: Represents the summary measures of Mean, N, Std. Deviation, Std. Error Mean of selected variables for the paired t-test.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Aerobics_Pre	73.25	60	10.91822	1.40954
	Aerobics_Post	86.20	60	12.49380	1.61294
Pair 2	Yoga_Pre	74.17	60	8.97863	1.15914
	Yoga_Post	88.62	60	10.47206	1.35194

The mean of the pre and post Feeling State Assessment score for aerobics group are 73.25 and 86.20 respectively.

The mean of the pre and post Feeling State Assessment score for yoga group are 74.17 and 88.62 respectively.

effect of single session of aerobic exercises and yoga on feeling state in high school students between both aerobics and yoga group as $p > 0.05$ for both aerobics and yoga group. So, we accept null hypothesis for between group comparison.

- There is significant difference found in the immediate effect of single session of aerobic exercises on feeling state in high school students within aerobics group as $p < 0.05$. So, we reject null hypothesis for Aerobics group (Within group).
- There is significant difference found in the immediate effect of single session of yoga on feeling state in high school students within yoga group as $p < 0.05$. So, we reject null hypothesis for yoga group (Within group).
- There is improvement in the feeling state assessment score in both aerobics and yoga group (Within group). The more improvement found in yoga group, as pre and post mean difference is more in yoga group as compared to aerobics group.

Acknowledgment

Me Dipsa Shah firstly offer this study to almighty God, without whose blessing this study would have not been

possible.

I take this opportunity to extend our heartiest gratitude towards our parent institution, the Shrimad Rajchandra College of Physiotherapy, Bardoli.

I take this opportunity to extend our heartiest gratitude towards our director Dr. Anil Mishra and our guide Dr. Rajal Sukhiyaji for all I have learned from them and their continuous help and support throughout the study.

And finally would like to thank family for believing in me and for all their support.

References

1. Danniell Hagarty, Jannetcurrie. Emotional intelligence, self-efficacy, psychological well-being and students attitudes: Implications for quality education. *European Journal of Educational Studies*. 2010;2(3):247-57.
2. Ali NM, Nowshad NA, Mansoor KM, Ibnouf RA, Albehiery RM, Carrick FR, *et al*. Perceived Academic and Psychological Stress among Adolescents in United Arab Emirates: Role of gender, age, depression, and high expectation of parents. *Psychiatria Danubina*. 2019 Sep 1;31(3):331-7.
3. Acosta-Gómez MG, De la Roca-Chiapas JM, Zavala-Bervena A, Cisneros AE, Pérez VR, Rodrigues CD, *et al*. Stress in high school students: a descriptive study. *Journal of Cognitive Behavioral Therapy*. 2018 Mar 1;1(1):1.
4. Wang D, Hagins M. Perceived benefits of yoga among urban school students: A qualitative analysis. *Evidence-Based Complementary and Alternative Medicine*. 2016 Jan 18; 2016.
5. de Abreu JM, de Souza RA, Viana-Meireles LG, Landeira-Fernandez J, Filgueiras A. Effects of physical activity and exercise on well-being in the context of the Covid-19 pandemic. *medRxiv*. 2020 Jan 1.
6. VonHaaren B, Haertel S, Stumpp J, Hey S, Ebner-Priemer U. Reduced emotional stress reactivity to a real-life academic examination stressor in students participating in a 20-week aerobic exercise training: A randomised controlled trial using Ambulatory Assessment. *Psychology of Sport and Exercise*. 2015 Sep 1;20:67-75.
7. Dolde EJ. The effects of yoga and aerobic exercise on concentration and feeling-states.
8. Telles S, Singh N, Balkrishna A. Heart rate variability changes during high frequency yoga breathing and breath awareness. *Bio Psycho Social Medicine*. 2011 Dec;5(1):1-7.