



Exercise for College Students: Effects of Yoga Dan Zumba as a Stress Management Technique

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Abstract. Stress faced by college students creates challenges and tensions that can affect their health. Students who experience long-term stress are prone to have trouble sleeping at night, feeling mood swings, decreasing well-being, anxiety, and depression. Methods used by individuals to reduce the stress they experience are called stress coping. Emotion-focused coping is a strategy by controlling emotional responses to stressful situations. Yoga and Zumba are two emotion-focused coping strategies. This study aimed to compare the effect between two physical exercises on reducing stress in college students. The method used is experimental pretest-posttest control group design. The hypothesis of this research is there is a difference between Yoga and Zumba exercises on reducing stress. The subjects in this study were 18 students at the Faculty of Psychology, Universitas Sumatera Utara who had medium and high category levels of stress. Data were tested using the Mann-Whitney Test and Wilcoxon Test using the SPSS. Data analysis using the Mann-Whitney statistical test on Zumba showed a significance value of $p = 0.48$ ($p > 0.05$, $df = 1$), meaning Zumba exercise had no effect on reducing stress. However, the analysis on Yoga showed a significant value of $p = 0.016$ ($p < 0.05$; $df = 2$), meaning that there is a significant effect of Yoga exercise on reducing stress. Furthermore, it was found that the mean rank of Yoga was 4.30, while the mean rank of Zumba was 5.88, meaning that Yoga practice was more effective than Zumba in reducing the stress level of college students. Based on the results of this study, students are suggested to be able to apply yoga exercises as individual stress coping.

Keywords: college students · emotion-focused coping · stress · yoga · zumba

1 Introduction

The COVID-19 pandemic is a worldwide outbreak of coronavirus. By the end of December 2019 it first spread in the Wuhan area of China and quickly spread to Europe and worldwide [1]. Per January 2020, a total of more than 570 cases of coronavirus have been reported in 25 provinces (counties and cities) in China [2]. WHO officially designated this situation as a global pandemic [3]. In early March 2020, Indonesia was infected

with this virus. Two positive patients for COVID-19 were found in Depok, West Java [4]. It spreaded so fast that it prompted the government to act quickly in reducing the growth and dissemination of the COVID-19 virus. Efforts done by the government to prevent and reduce the spread of COVID-19 were implementing health protocols such as requiring people to wear masks, imposing social and physical distancing, and urging people to diligently wash their hands, and increase body immunity [5]. The COVID-19 pandemic shocked the whole world and affected every life [6].

Related to the fast dissemination of the COVID-19 virus, the government implemented a policy to maintain social distancing. Social distancing is the most effective measure at the moment [7]. The Minister of Education and Culture of the Republic (Kemendikbud) of Indonesia issued Circular Number 4 of 2020 regarding Implementation of Education Policy in the Emergency Period of COVID-19 [5]. This seeks to fulfill the rights of students in obtaining educational services, protect students from exposure to COVID-19 and avert the transmission and spread of COVID-19. All academic activities were adjusted from offline to online learning. The online learning method is a solution provided by the government so that teaching and learning activities still could be implemented during pandemic.

According to Mustofa (2019) [8] online learning methods are learning activities by taking advantage of the internet network to be able to participate during learning process such as delivering material [4]. Computers, laptops and smartphones connected to the internet network are facilities used in online learning. Lecturers and students can conduct learning simultaneously by using platforms namely WhatsApp, Zoom, Telegram, Google Classroom and Meets [9]. Online teaching methods support and promote teaching and learning activities, but there is an urgent need to weigh strengths and weaknesses of technology and realize its potential [10].

Learning during a pandemic resulted in students having to adapt to a new system that had several challenges or obstacles in its implementation. Perceived obstacles such as differences in the speed or smoothness of internet access in each region, constraints on the cost of buying internet quota, as well as other related facilities and infrastructure [11]. Additionally, teacher and student adaptability, level of student-teacher interaction, quality and quantity of educational content, technical support, and the overall experience of online classroom delivery is critical to the overall learning and learning experience. Influence and determine their classroom experience of an online learning system [12]. Other obstacles include delivery of lecture material that is not as clear as face-to-face lectures, delayed academic schedules, and stressors from the students' daily hustles themselves. Instant, immediate feedback and responses inaccessible in such an environment [13].

Students around the world experience stress caused by many academic and non-academic aspects, being environmental, socio-cultural and psychological factors [14]. Research by Livana et al., (2020) shows several source of student stress during the COVID-19 pandemic, namely assignments 70.29%, boredom 57.8%, boring online learning process 55.8%, unable to gather with beloved ones 40.2%, unable to participate in online learning due to limited signal 37.4%, unable to do hobbies as usual 35.8%. The main reason that cause student to stress during the COVID-19 pandemic is learning assignments [15]. The COVID-19 pandemic has substantially impacted the academic performance of undergraduate students and causing unparalleled stressful situations [16].

The University of North Sumatra is one of the state universities in Sumatra. On March 16 2020, the Chancellor of the University of North Sumatra (USU) issued a circular number: 3195/UN5.1.R/KPM/2020 concerning Precautions for the Dissemination of *Coronavirus Disease* (COVID-19). The University of North Sumatra is determined to use online learning methods in all study programs for as long as needed. Changes in lecture methods carried out at USU resulted in students experiencing several difficulties and problems.

On September 21–24, 2020, researchers conducted a survey of 332 active Undergraduate (S1) students at the USU for the class of 2018–2021. Namely, which consists of the faculties of Pharmacy, Economics and Business, Cultural Sciences, Medicine, Dentistry, Cultural Sciences, Computer Science and Information Technology, Forestry, Social Sciences and Political Science, Agriculture, Nursing, Public Health, Mathematics and Natural Sciences, and Psychology.

It was found that USU students experience various problems during the online lecture process, namely; decreased motivation to study 67.5%, loads of thoughts 58.7%, feeling bored or fatigue 85.2%, procrastination 56%, internet connection 72%, assignments piling up 57.2%, in conducive learning climate 55.1%, lack of social support 38.9%. Feeling bored/fatigue is the most common problem faced by USU students.

USU students also show some negative symptoms or reactions experienced during online lectures. Some of the symptoms experienced by USU students such as; insomnia 38.9%, difficulty to regulate emotions 42.5%, dizziness 53%, pain in certain body parts 58%, eat irregularly 56.3%, forget easily 48.2%, feel sad and depressed 46, 7%, being indifferent 25.3%, often speaking harshly 18.4%, difficult to make decisions 32.5% and students who do not feel any symptoms namely 7.8%. The survey results indicated that the most common symptom experienced by USU students was that they easily felt pain in certain parts of the body.

Several other problems were also found by researchers from open questions, namely; (1) constraints on the cost of buying internet quota, (2) lack of knowledge of lecturers in using online learning media, (3) delivery of material that is not clear, (4) difficulty understanding learning, (5) changes in class schedules, (7) assignments difficult, (8) difficult to discuss with groups, (9) teachers who rarely attend, (10) decreased grades, and (10) little income.

This study objects to see the effect of (1) Yoga exercises; and (2) Zumba exercise to reduce stress in students of the Faculty of Psychology, USU during the COVID-19 pandemic.

2 Theory

A. *Stress*

1) *Definition of Stress*

According to Gadzella (1994) defines stress as a perception related to the source of stress and how the reaction is felt to the source of stress including physical, emotional, behavioral, and cognitive reactions [17]. According to Lazarus and Sarafino (2012) stress is a form of the body's response that occurs because of demands that come from

outside the body that exceed the ability to overcome and solve the problems experienced [18]. Based on the definition above, it can be concluded that stress is the perception of an individual caused by external demands that exceed the individual's ability to solve problems and cause physical, emotional, behavioral and cognitive reactions.

2) *The dimensions of stress*

According to Gadzella (1994) in measuring stress there are two components, namely the stressor and the reaction to the stressor [17]. Stressor is stimulus that emphasizes the ability to adjust to the usual things in everyday life. There are 5 categories of stressor, including:

- Frustrations
- Conflicts
- Pressure
- Changes
- Self-imposed

According to Gadzella (1994), there are four categories of reactions to stress that occur in students [17], including:

- Physiological
- Emotional
- Behavioral
- Cognitive Appraisal

B. *Coping Stress*

The definition of coping stress according to Lazarus and Folkman [18], is a process that is owned by individuals in trying to reduce the distance between demands and individual resources when facing stress [19]. According to Sarafino (2002), coping is an attempt to neutralize or reduce the stress that occurs [20]. Based on the definition above, stress coping is an individual effort based on behavior and thoughts in order to reduce stressful situations.

C. *Yoga*

1) *Definition of Yoga*

Yoga is an exercise that awakens and guides physical and mental development qualitatively so that humans can balance their body, mind and spirit [21]. Yogis or yogic practitioners of the past have understood the difference between body and mind and have created a system of yoga, a combination of breathing and meditation, which can provide movement and calmness of mind that is beneficial to the health of the body. Based on the description, it can be presumed that yoga is a physical activity that can have a positive impact both physically and psychologically for individuals who do yoga exercise.

2) *The Core Components and Basic Elements of Yoga*

- Poses: Yoga poses are a set of movements created to increase strength and flexibility. In simple poses, the movement of the pose can involve lying on the floor completely relaxed, and what may be difficult with this pose is that it stretches the physical limits.

- Breathing: Yoga teaches individuals to control breathing that can help control the body and calm the mind.
 - Meditation or relaxation: In yoga, individuals can combine meditation or relaxation. Meditation can help people become more aware of themselves and their surroundings
- 3) *Three Basic Elements in Yoga*
- *Asanas*, is a pose that trains the front, back and sides of the body evenly. *Asanas* increases muscle strength, joint mobility, respiratory circulation, balance and body awareness.
 - *Pranayama*, is breath control, which helps individuals take deeper breaths so as to provide more oxygen to the body.
 - Concentration is very important in yoga. Focusing on specific poses and breath control will increase concentration.

D. Zumba Exercise

1) *Definition of Zumba Gymnastics*

Zumba Gymnastics is a form of applying the *High Intensity Interval Training* (HIIT) method, namely cardio exercises that are performed by high intensity and short duration, so it is useful for basic fitness such as cardiorespiratory endurance, muscle strength and flexibility [22]. Zumba is popular, especially among women who are teenagers and adults. The movement takes about 30 min with 3 stages namely, warming up, core movement and cooling down [23]. Zumba gymnastics is in the “dance fitness” because the exercises are a combination of dance movements with the *interval training* to increase calorie burning and bodybuilding [24].

2) *Stages of Zumba Gymnastics*

There are 3 stages of Zumba gymnastics in general [25], namely:

- **Warming Up:** The initial movements are carried out at a slow tempo and not too forceful, aiming to raise the heart rate slowly, prepare the muscles and joints, increase body temperature and increase circulation of fluids in the body. This movement is carried out for a duration of 3 min.
- **Core Training:** Movements are more active, including tight movements to train certain body parts and do repetitions. This part of the core moves progressively (from single movements to simultaneous body movements). This movement is done with a duration of 22 min.
- **Cooling Down:** This movement is useful for lowering the pulse frequency to achieve a normal pulse with at least approaching the pulse at the beginning of the exercise. This movement is done with a duration of 5 min.

3) *Benefits of Zumba Gymnastics*

There are benefits of Zumba gymnastics for health [26], as follows:

1. Dynamic and healthy body exercises
2. Reduction of high calories
3. Easy to learn
4. Reduce weight body
5. Positive self-image
6. Body that is formed, dense and filled
7. Sport without feeling tired

3 Method

This study used the stress aspect of Gadzella and Masten, namely the Student Life Stress Inventory as a guideline for creating a stress scale that will be measured through the stressors and the responses displayed by the research subjects, in total of 44 items. Stressors and reactions that exist will then be seen through measurements using a 5-point Likert scale. Content validity is used to test each item on a stress measurement scale based on Gadzella's (1994) stress dimensions. Researchers used professional judgment by experts of 4 lecturers and 10 students from the Faculty of Psychology, University Sumatera Utara. The validity test of the measuring instrument was carried out on 8 February 2022. In addition, this research measuring tool was measured by the validity of Aiken V. The reliability test was carried out on 12 February 2022. The test was conducted on 525 students at the University of North Sumatra apart from students from the Faculty of Psychology. The reliability test that was used by researchers to measure reliability in this study was to look at internal consistency with Cronbach's Alpha Coefficient with an average yield of 0.942 and a correlation coefficient of 0.33. The data analysis method in this study used the JASP application version 0.16.3.0.

This research used a quantitative approach using experimental research methods. Experimental research has two groups where the experimental group will be given treatment while the control group will not be given any treatment. The experimental design used was the pretest- posttest control group design.

The population of this study were Universitas Sumatera Utara students. The sample of this research is Psychology students at USU. The characteristics of the subjects in this study namely; a) Students of the Faculty of Psychology, University of North Sumatra, class of 2019 - 2020; b) Students who are still studying during the pandemic; c) Experiencing stress in the medium-high level.

The sampling technique used in this study was non- random sampling based on the subject's willingness to participate in this study. Subjects of the experimental group were obtained based on the willingness of the subjects to participate in this study. Subjects were obtained by random selection and availability. Each population has the same opportunity to be sampled or to represent the population. Subjects will be grouped into 2 groups, namely the control and experimental groups with details: 5 participants were given yoga exercises, 5 participants were given zumba exercises, and 10 participants were in the control group.

Yoga practice will be done 4 times a week for a month. Each yoga practice session will be carried out with a duration of 30–60 min per session. Whereas Zumba is carried out for 4 days in 2 weeks with a duration of 30 min and is guided by an instructor so that wrong movements will be immediately corrected by the instructor. Zumba exercises are done in the afternoon after individual routines.

Data analysis in this study used non-parametric statistics with SPSS version 20 using the Mann U Whitney and Wilcoxon to find out whether there is a difference in scores between Yoga and Zumba exercises in reducing stress in college students.

4 Results

Data analysis using the Mann-Whitney Zumba statistical test as shown in Table 1 showed a significance value of $p = 0.48$ ($p > 0.05$, $df = 1$), meaning that Zumba exercise had no effect on reducing stress. However, the Yoga analysis as shown in Table 2 showed a significance value of $p = 0.016$ ($p < 0.05$; $df = 2$), meaning that there is a significant effect of Yoga practice in reducing stress.

In addition, it was found that the mean rank of Yoga as shown in Table 3 was 4.30, while the mean rank of Zumba was 5.88, meaning that Yoga practice was more effective than Zumba in reducing student stress levels.

Based on the analysis results that have been presented by researchers, it can be concluded that Zumba gymnastics is not effective in reducing individual stress. One of the factors that influenced the results were the schedule of the experiment. When giving the first treatment, the participants experienced anxiety. The anxiety was caused because the treatment was given during the mid-term test, so that some participants were worried because they were thinking about the subjects to be tested – this comes from the narrative of the participants, but the participants also reported feeling happy because the treatment can relieve the stress experienced during the previous mid-term test. This research that does not meet several conditions needed to optimize treatment. It can also be concluded that zumba gymnastics still needs further research to find out more about the working

Table 1. Zumba Hypothesis Test Result

Independent Samples T-Test	
	p
Pretest and Posttest Zumba	0.486

Table 2. Yoga Hypothesis Test Result

Independent Sample T-Test	
	p
Pretest and Posttest Yoga	0.016

Table 3. Mean Rank Comparison

Ranks				
	Group	N	Mean Rank	Sum of Ranks
Posttest	Yoga	5	4.30	21.50
	Zumba	4	5.88	23.50
	Total	9		

mechanism of zumba gymnastics so that it can make participants more relaxed and able to reduce their stress.

Overall the results of the research data analysis show that the hypothesis which states that there is an effect of yoga on reducing stress in individuals is proven. The researcher also gave open questions to the experimental group at the end of the experimental session, namely how they felt or their experiences after participating in yoga practice. Following is a summary of the responses from all respondents: it was found that experimental participants felt more relaxed, had better sleep quality, reduced anxiety and stress when doing yoga, felt more comfortable, had a more flexible body, were able to concentrate and think positively, and learned better breathing techniques. The results of the analysis and responses to open questions showed that yoga practice can effectively reduce stress levels in students. So it can be presumed that there is a positive influence of yoga practice on individual stress levels. The impact of various yoga practice techniques gives a sense of calm, relaxation, and comfort to oneself so that it is effective as stress coping.

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