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The Effectiveness of Tai Chi martial Art on Stress, Anxiety, Depression, and Self Confidence among Nursing Students.

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Abstract

Background: Many difficult situations are faced by medical science students; particularly nursing students like anxiety, despair and low self-confidence are psychological effects of stress. There are variety of activities that play a vital role such as Sports activities, exercises of modern life style improvement to prevent and control stress and its effects.

Objective: The goal of the current study was to find out how Tai Chi exercise affected nursing students level of stress, anxiety, depression, and self-confidence.

Methods: In this clinical trial investigation, there were 64 nursing students were chosen at random and split into (32 subjects) study and (32subjects) control groups. For eight weeks the experimental group participated in three forty-minute Tai Chi training session each week. As a pre-test, post-test and one month follow-up, both groups completed the Dass-42 Questionnaire and Eysenck's personality Questionnaire (EPQ)

Results: The current study's findings showed that, in contrast to the control group, the experimental group's overall mean score for stress, anxiety, and depression significantly decreased (P 0.05), while the experimental group's self-confidence significantly increased (P 0.05) during the pre-test, post-test, and one-month follow-up.

Conclusions: The present study's finding support the notion that Tai Chi significantly improved the self-confidence of the intended nursing students while lowering stress, anxiety and depression. Additionally Tai Chi is advised as a quick and affordable technique to help nursing students feel less stressed, anxious, and depressed while also boosting their self-confidence.

Keywords: Tai Chi Exercise, Stress, Anxiety, Self-Confidence, Nursing Students.

Background:

As Aristotle said, 'Man is a social animal'. He can't survive in isolation. Therefore, human beings interact with each other on a daily basis, having a deep impact on each other's life. Every society needs a strong physical and mental human force to advance, and as students make up a significant portion of society, their health is crucial [1]. Students are essential to the development of the nation. The Top Student in the world- Natasha Perianayagam, a 13-year-old Indian-American prodigy named in the "world's brightest" students list, has said that her parents were the biggest support system for her and they didn't put any

pressure on her to excel in her studies. In terms of health and mental wellness are the most important factors. Studies suggest that mindfulness practices may help Students to manage stress, cope better with serious illness and reduce anxiety and depression. Many students who practice mindfulness report an increased ability to relax, a greater enthusiasm for life and improved self-esteem. The real source of happiness is inner peace .If mind is peaceful, we will be happy all the time. Technology growth has increased the influence of life demands on humanity, making maintaining mental health more crucial than ever [2].One of the key things that endangers mental health is stress. Long-term stress increases the risk of mental health problems such as anxiety and depression. The stress is a physiological response that impacts on cognitive, behavioural and social components. It also involves the adaptation of the organism, the coping resources and the environment. In nursing students stress triggered by social interactions or their requirements[3]. A multifaceted phenomenon is stress. It is significant from both economic loss and a negative impact on people's physical and mental health perspective[4]. Students find education to be difficult especially in medical disciplines where they deal with human beings. Nursing students in college of nursing deal with these problems due to their lack of decision making in their employment and the necessity to gain new abilities, they face a lot of stressful situations. Apart from that, Nursing students are also impacted by the stress brought on by the clinical environment in addition to stress-induced education. Without education, the training of the human mind would be always remaining incomplete. Education is a tool that can make people easy to lead but at the same time difficult to drive[5].The academic performance and general health of pupils can be negatively impacted by excessive stress, which also hinder effective learning and can potentially lead to mental disabilities and motor disorders. The pressure to excel academically, maintaining good grades and meet high expectation can create significant stress for nursing students. This stress can manifest in various ways, such as anxiety, depression or burnout.

Additionally, poor physical health can also contribute to stress, and impact mental well- being. Lack of sleep, unhealthy eating habits, sedentary life style and inadequate self- care can all negatively affect a student's mental health. Moreover, it can result in eating problems, the usage of psychoactive drugs, suicide, and psychiatric symptoms[6]. As an important problem, anxiety annually affects the education of millions of students all over the world and results in their academic failure [7].especially nursing students always experience anxiety due to stressful nature of their academic discipline, which necessitate using clinical theories. Anxiety and learning have a significant relationship. It has impact on nursing student's capacity for learning, performance, training during education and ability to make sensible clinical decisions [8]. Depression is indeed one of the most prevalent mood disorders among nursing students. Several studies have shown that the nursing students are at higher risk of developing depression compare to the general population. The demanding nature of nursing curriculum, exam anxiety, long hours of study and clinical rotations, high levels of stress, abrupt family separation and exposure to traumatic events can contribute to development of depression at various degrees. They have often alarmed of making mistakes can lead to fear of inadequacy and hopelessness, which can contribute to depression. Nursing students who works to safe guard the society's member's physical and mental health are more vulnerable to such risks than other individuals as a result of the unique circumstances surroundings their lives and careers [9].low self-esteem is another challenge faced by the nursing students. The competitive nature of the field and the constant comparison to peers can leads to feeling of self-doubt and low confidence. The main mental health issues that affect someone's ability to complete their responsibilities include stress, anxiety, and depression. Low self-esteem has been linked to depression, according to research[10]. One of the most crucial aspects of functioning in one's daily life that is connected to mental health is self-assurance. On the other side poor self-esteem results in psychological issues[11]. It is crucial to boost student's

self-confidence because they are the nation's future leaders. Therefore, it is important for educational institute and society as a whole to prioritize the well-beings of nursing students, provide support system and promote healthy balance between academic performance and overall health. Encouraging open communication, promoting self-care and fostering supportive leaning environment can also help nursing students cope with this challenges and thrive in their profession. Nursing students experience psychological strain in the hospital setting. They are more susceptible to reduced self-confidence than the other students[12].Numerous factors, such as praise for obedience ,vague work descriptions etc,contribute to nursing students lack of self-confidence[13].Nursing students creativity and drive are impacted by a lack of self- confidence [14]. Given what was previously addressed, there is a major need to lower stress, anxiety and depression among students as well as boost their self-confidence[15]. Complementary medicine ,often known as non-pharmacological approaches, has recently attracted a lot of attention[16].Mind-body medicine is one of the short of supplementary therapy that incorporate physical movements with an emphasis on breathing and nourishing or purifying the mind to achieve a profound feeling of tranquillity. One illustration of such techniques is Tai Chi[17]. The moves of Tai Chi an ancient Chines martial art are centred on the harmony between the mind as well as external pressures. It has value in treating many health problems. Tai Chi Chuan can be translated as the 'Supreme Ultimate Force'. Today is practiced as a graceful form of exercise. It consists of repetitive soothing motions that emphasises coordination, weight change, and trunk rotation [18]. Tai chi effects on depression have recently been researched in the form of a survey and also improving concentration and overall well-being particularly as a means to alleviate stress and anxiety. It is also helpful in enhancement of mood.

Essential elements of Tai Chi include breathing, movements and meditation. To improve health, respiration, strength, and endurance, Tai Chi exercise include models derived from the movements of birds, animals and nature such as brushing the knee, separating the horse tail and gripping the bird's tail[19]. By encouraging the body and mind to work together as a cohesive unit and clearing the mind of stressful ideas, this series of calming, rhythmic and flowing movements promotes mental health and calmness [20]. Tai Chi can improve the student's physical and mental health. According to Zheng et al [21].Webster et al.[22] discovered that Tai Chi had a significant effect on both physical and mental health in another study including senior students.

Objective

Since there hasn't been any research on the impact of Tai Chi on stress, anxiety, depression, and self-confidence among nursing students in India specially in Ludhiana Punjab. The Present study aimed to find out how Tai Chi effect of these factors. This is because nursing students play a significant role in maintaining the physical and mental health of the society, and because Tai Chi Chuan is a safe and affordable intervention that doesn't require special facilities.

Methods

The current study is a clinical trial with two groups and three steps. The study was carried out at Shaheed Kartar Singh Sarabha College of Nursing, Sarabha, and Ludhiana, Punjab. By using a straight forward random assignment of odd and even card numbers, the intended participants were chosen using the objective oriented convenience selection approach and were randomly separated into two study and control groups. About 64 nursing students who met the inclusion criteria were randomly assign to the two groups, study group (32 subjects) ,control group(32 subjects) .Lack of heart history ,physical or mental issues as well as no previous Tai

chi practice were requirement for enrolment. Data were gathered using DASS-42 (Depression, Anxiety and Stress Scale-42) questionnaire which has two sections: one ask about personal information and another that gauges how much depression, anxiety and stress a nursing student is experiencing.

First Section

It evaluated seven personal characteristics of the chosen subjects: age, sex, marital status, family structure, educational status, and income and residence status.

Second section

It measured the severity of stress, anxiety and depression. Lovibond (1995) reated the DASS-42, a 42-item self-report questionnaire to measure the emotional state of depression, anxiety and stress using Likert scale. The DASS-42 consists of 14 items graded from 0 to 30 for depression, anxiety and stress. In order to assess these psychometric qualities, Lovibond administered it to non-clinical sample of 2914 people. Based on Cronbach Alpha it was estimated that the reliability of the depression, anxiety and stress subscale was acceptable at 91%, 94%, and 84% respectively. These parameters matched were observed in a clinical population in consistent manner.

Additionally the EPQ by Eyseneck was employed to measure self-assurance. The EPQ was created by Hans Eysenck in 1977 and comprises of 30 items with "Yes," "No" and "why" as the only response options. Numerous researches from outside shows the report estimated reliability and validity of the EPQ .Sampling was done in addition to giving the individuals the information they required to understand the goals and methodologies of the study in order to obtained their informed consent. Three times each week for eight weeks the preliminary short forms of Yang's Tai Chi exercise were performed and practiced. Each session lasted for 40 minutes.

The study group was given Pamphlet with a Tai Chi to remind them exercise at home. The control group was given education during Tai Chi intervention throughout.

Data were gathered in three stages: Before the intervention, after the intervention and one month later.

In order to comply with ethical standards, a letter of introduction, authorization from college of nursing, adequate disclosure of the study's objective and protection of participant's personal data confidentiality were all presented.

Using the SPSS18 program, data were analysed using the independent t-test, chi-square, Mann-Whitney, Fisher exact, post hoc test and repeated measures ANOVA.

Ethical Consideration

The study was authorized by Ethical Committee of Shaheed Kartar Sing Sarabha ,Colleg of Nursing. A formal approval from the college of Nursing was taken. Participants were informed about objective and methodology and written consent was obtained from each subject to participate in the investigation.

Results

The participants of the present study included 64 nursing students selected from Shaheed Kartar Sing Sarabha, Colleg of Nursing Ludhiana,Punjab with a mean age of 21.50 years. The results of chi-square test showed that there was no statistically significant difference in the distribution frequency of the participants' sex, marital status, and current status of residence of both case and control groups (P > 0.05). According to Fisher's exact test, the frequency distribution of family structure was not significantly different between both groups (P > 0.05). The results of Mann-Whitney U test showed that there was no significant difference in the participants' income and semester of education between the case and control groups (P > 0.05). According to the results of t-test, the mean score of depression, anxiety, stress and self-confidence was not significantly different between both groups in the pre-intervention stage (Table-1), while the mean score of depression, anxiety, and stress was significantly lower in the study than the control group in the post-intervention stage (Table -1).

In addition, the study group's self-confidence score was considerably greater than the control groups. The study groups mean score for depression, anxiety and stress was substantially lower than the control group's at one month follow-up. According to the t-test results. However, the mean score of the self-confidence was significantly higher in the case than the control group in the one-month follow-up stage.

The results of repeated measures ANOVA showed that there was not any significant difference between the mean anxiety scores of the control group in all the three test stages (P > 0.05) while significantly different for the case group (P < 0.05). According to LSD post hoc test, the mean anxiety scores of the case group was significantly lower in the post-intervention (P = 0.005) and one-month follow- up (P = 0.001) stages than the pre-intervention stage; however, there was not any statistically significant difference between the mean anxiety scores of the post-intervention and one-month follow-up (P = 0.45).

The findings of the repeated measures ANOVA revealed that while there was a significant difference for the case group (P 0.05), there was no significant difference between the mean anxiety levels of the control group in any of the three test stages. However, there was no statistically significant difference between the mean anxiety scores of the post-intervention and one-month follow-up (P = 0.45), despite the case group's mean anxiety scores being significantly lower in the post-intervention (P = 0.005) and one-month follow-up stages than in the pre-intervention stage, according to the LSD post hoc test.

Table:1 mean sores of SD of stress, anxiety, depression and self-confidence at different test stages

	Experimental group, mean ±SD	Control group mean±SD	Independent t-test	
			T	P value
Scores of pre-intervention				
Depression	13.17±8.38	12.14±5.10	0.59	0.56
Anxiety	11.25±7	10.18±6.46	0.62	0.53
Stress	13.91±6.76	14.53±6.51	0.37	0.71
Self-confidence	12.06±5.94	13.26±5.52	0.82	0.42
Scores of pre-intervention				
Depression	9.09±6.85	13.08±6.78	2.31	0.02
Anxiety	6.31±5.14	10.29±6.97	2.56	0.01
Stress	9.10±6.05	14.28±8.53	2.75	0.008
Self-confidence	20.32±5.87	14.71±4.42	4.25	<0.001
Scores of one month follow-up				
Depression	7.20±5.46	12.21±7.95	2.89	0.005
Anxiety	5.42±4.41	10.20±6.51	3.38	0.001
Stress	7.28±5.80	14.53±6.51	4.15	<0.001
Self-confidence	21.42±4.30	14.68±6.72	4.71	<0.001

The result of ANOVA with repeated observation revealed that while the case group's mean stress scores were substantially different from the control group's in al l three test phases (P 0.05), there was no significant difference between the two groups' mean stress scores for th e control group. The case groups mean stress scores were significantly lower than in the post intervention (P=0.008) and one month follow-up (P=0.001) stages than in post intervention stage. According to LSD post hoc test, but there was no statically significant difference between the mean stress scores of the two stages (P=0.15)

According to the results of the repeated measures ANOVA, there was no significant difference between the mean self-confidence scores of the control group in any of the three test phases (P > 0.05), but there was a difference in the case group (P 0.05). The case group's mean self-confidence scores were statistically significantly higher in the post-test and one-month follow-up stages than in the pre-test stage (P 0.001), but there was no statistically significant difference between the mean self-confidence scores of the post-test and one-month follow-up (P = 0.41), according to the LSD post hoc test.

Discussion

The objective of the current clinical trial study was to find out how Tai Chi affected the stress anxiety, depression and self-confidence of 64 nursing students at Shaheed Kartar Sing Sarabha, Colleg of Nursing Ludhiana,Punjab.

The findings of the current study revealed that while the study and control group mean scores for stress, anxiety, depression and self-confidence did not differ significantly in the pre intervention stage, they significantly decreased in the study group following Tai Chi exercise in the post intervention stage. The control group's mean score however, did not differ significantly from those of the experimental group. The effectiveness of Tai Chi on stress, anxiety, depression and self-confidence can thus be inferred.

Numerous studies have also investigated the effect of Tai Chi on improving the psychological symptoms such as stress, anxiety, depression. Most of these researches have been conducted to look at how Tai Chi affects with chronic illness among elderly population. Some researchers have studies the relationship between Tai Chi and the physical and emotional well-being of the young people. Wang et al. studied the effect of Tai chi on the physical and mental health of students. For three months, they provided the pupils with models of Tai Chi training routines twice a week. The pupil's physical and mental health found to be improved by Tai Chi. Lee et al aimed to investigate the effect of Tai Chi on improving the psychological well-being of elderly people. Healthy elderly people (mean age:n=72)were included in the population. For 24 weeks, they received twice weekly, one hour Tai Chi Training sessions. The result indicated decreased stress. Tsai et al.studied Tai Chi beneficial effects on 28 healthy individual's blood pressure, cholesterol and anxiety were researched three times a week for 12 weeks. The participants received 50 minutes Tai Chi sessions. When compared to the control group, the findings showed that Tai Chi had a positive impact in reducing anxiety levels in the study group. Wang[23], studied how Tai Chi helped rheumatoid arthritis patient with pain management improved performance.20 participants underwent Tai Chi instruction for 12 weeks. In comparison to control group, the case group symptoms of anxiety and depression decreased according to the findings. According to Sattin et al. study on Tai Chi, it greatly lessens depression. Furthermore Tai Chi was found by Han et al.to significantly lessen the signs and symptoms of anxiety and despair. According to Mustian et al.[24] Tai Chi helped the participants feel more confident. According to Fransen et al.[25], Tai Chi no beneficial effects on lowering stress, anxiety and depression.

The currents study's finding also revealed that, at one month follow-up stage there was no discernible difference between the study and control groups in terms of mean stress, anxiety, and depression and

self-confidence ratings. Maleki et al.'s study looked at how schema therapy affected nursing and midwifery student's symptoms of anxiety and depression disorders. A case control study with pre-test, post-test and two months follow-up was conducted in three stages. In the post-test and two month follow-up phases, the symptoms of anxiety and depression lessened ($p<0.05$). Maleki et al.'s findings were in line with the results of the present study in terms of the reduction of anxiety and depression in nursing students. In this study, there was not any significant difference in the mean scores of stress, anxiety, depression, and self-confidence between the case and control groups in the post-intervention and one-month follow-up. In Fujian, China, Zheng et al. how Tai Chi could improve the physical and mental health of medical students. The age group and inclusion criteria of Zheng et al.'s study were comparable to those of the current investigation. The case group in Zheg et al.'s study received straight forward Tai Chi Chuan models five times per week for a period of 12 weeks. The control group did not participate in any particular work outs. Following the completion of the 12-week intervention, the follow-up phase began. The Zheng et al. study's findings showed that Tai Chi had a significant impact on participants' ability to maintain balance, flexibility, self-confidence, fitness, self-sufficiency, psychological symptoms, concentration, stress, quality of life, and sleep quality at the conclusion of the intervention. Following the completion of the 12-week intervention, the follow-up phase began. The Zheng et al. study's findings showed that Tai Chi had a significant impact on participants' ability to maintain balance, flexibility, self-confidence, fitness, self-sufficiency, psychological symptoms, concentration, stress, quality of life, and sleep quality at the conclusion of the intervention. . Tai chi, however, had no noticeable impact on the case group's cardiovascular function, blood pressure, self-esteem, mood, happiness, quality of life, or quality of sleep during the follow-up stage.

The current study's strength is that it examines a crucial intervention namely Tai Chi for lowering stress, anxiety and anxiety while boosting nursing students self-confidence. Evidence based interventions for improving student nurses' physical and mental health are essential, and this study provides results that encourage replication and further study of Tai Chi among employers in the workplace.

Limitations

The sample size of the present study was one of its drawbacks because it limited the generalizability of the findings .Therefore, after comparable investigations have been conducted in other setting, the result of the study should be revaluated.

Conclusions

On the basis of the findings of the current study, it concluded that, Tai Chi helped nursing students feel less stressed, anxious, and depressed while also boosting their confidence in the post-test and one month follow-up. As a result it can be said that Tai Chi is effective method for helping nursing students with their psychometric symptoms.

Declaration of Consent

The participants were informed of the study's goals and all of them gave their written informed consent to take part in the investigation.

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