



**Systematic Literature Review: Strategies for Active and Creative Learning in  
Elementary School Physical Education**

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**Abstract**

This study aims to find out whether there is an influence of Tai Chi Quan training on the performance of Indonesia's junior table tennis athletes. A total of 20 Indonesia junior table tennis athletes aged 14-18 years were put into an experimental group with taichiquan training. The group that received Tai Chi Quan training was trained for 60 minutes, while the control group continued to practice table tennis as usual. Changes in body conditions such as blood pressure, heart rate, changes in anxiety, feelings of confidence, and performance in playing table tennis are measured before and after training. The results of this study were that there was a change in anxiety level at the test point in the tai chi quan group after exercise, while in the control group there was no increase. There were changes that occurred after the exercise treatment, namely cognitive anxiety ( $x=-1.85$ ;  $-18.60\%$ ), while in the control group ( $x=-0.21$ ;  $-2.31\%$ ). In addition, somatic anxiety ( $x=-3.35$ ;  $-27.56\%$ ). The self-confidence component was negatively correlated with other variables, where in the tai chi quan group the value increased ( $x=1.96$ ;  $11.27\%$ ) while in the control group it decreased ( $x=-0.27$ ;  $-1.67\%$ ). The conclusion of this study is that sixty minutes of tai chi quan training can reduce the anxiety level of Indonesia's junior table tennis athletes.

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## INTRODUCTION

Every athlete who competes in a sports competition must be faced with competitive demands and competitive pressures (Low et al., 2023)(Stoyel et al., 2021)(Doron & Martinet, 2020). Depending on how the athletes perceive it in competition, and may be able to interpret stressful situations in different ways (Mojtahedi et al., 2023). Decreased performance can occur when athletes feel stressed and anxious (Gabrys, 2023)(Laura et al., 2023)(Niering et al., 2023). Therefore, the relationship between sports performance and anxiety in sports is a very interesting topic for many researchers. Experts in the field of sports psychology are starting to learn about the topic of anxiety with the aim of developing appropriate interventions that can be useful to minimize the negative impact on athletes (Park, 2023).

Martens et al. (1990) looked for to clarify the multidimensionality of don uneasiness. Their hypothesis appears that uneasiness is composed of both substantial and cognitive subcomponents. Concurring to Marten's definition, when we are on edge we encounter the physiological changes related with tall excitement, counting expanded heart rate and blood weight, quicker breathing, and flushed confront (Eysenck, 1953). Uneasiness increments heart rate and blood weight. Increments digestion system and expanded oxygen utilization. Would feel speedier weakness and diminish consideration (Beauchamp et al., 2002).

Other researchers say that decreased anxiety in athletes can improve athlete performance. There are various psychological techniques to regulate anxiety levels that can be applied to sports psychology such as Diaphragmatic Breathing, Relaxation techniques, Imagery, Transcendental Meditation (Abdelkefi & Jarraya, 2024)(Gál, 2023). Systematic desensitization and applied tension are important therapies for anxiety (Barker et al., 2020). There are equivalences for these therapies in taichiquan (relaxation and meditation).

Numerous methods are advertised to diminish uneasiness, as sketched out over. In any case, one method is gathered to speak to all that's offered, which may be a Tai Chi Quan strategy. The book on Tai Chi Quan that's related with unwinding communicated by Gary Khor (1995) contends that Tai Chi Quan is exceptionally successful for making strides wellbeing status as well

as unwinding procedures (Khor, 1995)(Mitsea & Drigas, 2023). At that point, contemplation, cognitive behavioral, and symbolism procedures can moreover be carried out by practicing Tai Chi Quan. Tai Chi Quan breathing strategies may influence uneasiness, life span, and post-traumatic push clutter, progress contemplation, and diminish misery.

## METHODS

This ponder was a controlled trial of Indonesian table tennis junior competitors. All included members were haphazardly doled out to the explore (Tai Chi Quan work out) gather or control bunch. The test (Tai Chi Quan work out) gather was given preparing for 3 days a week for 6 weeks (18 times) in add up to, with 60 minutes in each hone and the appraisal time focuses were standard and instantly after the mediation. The test utilized Table Tennis Test Execution to discover out the execution after utilizing the item. Information investigation employing a t-test is valuable to calculate the contrast or impact. T-test information investigation utilized SPSS-24 with a centrality level of 5% (0,05), ten members were included in each bunch. The study setting is found within the Indonesian junior table tennis competitor preparing center, Kudus, Central Java, Indonesia.

Twenty Indonesian junior table tennis competitors at last taken an interest in this think about. Ten members were allotted to hone Tai Chi Quan for 60 minutes, and the other ten members performed 15 minutes of pretense Tai Chi Quan work out and 45 minutes of unwinding. Each member in this ponder marked a composed educated assent some time recently appraisals. The systole and diastole blood weight, heart rate, cognitive uneasiness, physical uneasiness, self-confidence, and table tennis execution were surveyed some time recently and after the mediation.

The members criteria were as takes after: (a) sound Indonesian junior table tennis competitors matured 14-18 a long time (beneath the supervision of a specialist); (b) no antidepressants, anti-anxiety medicines, or resting medicines were utilized within the past 20 days; (c) have not learned and practiced Tai Chi Quan too other meditation hone routinely within the past 3 months; (d) no strenuous work out and no physical weakness 24 hours (one day) some time recently pattern appraisals.



**Figure 1.** Twenty Four Tai Chi Quan movements

**Figure 1** gives a brief depiction of the twenty-four Tai Chi Quan developments. The twenty-four developments completely encapsulate this characteristic, with changes within the center of gravity completely different headings.

It has been mentioned above that, one indicator of a person's anxiety is by increasing heart rate and blood pressure of that person. Therefore, one way of measuring somatic anxiety is by taking physiological measures. The increased adrenaline is also directly proportional to the increase in heart rate that occurs when athletes feel anxious, this is measured using a fingertip pulse oximeter. As our blood pressure also increases when we are anxious, this is measured using a sphygmomanometer.

## RESULTS AND DISCUSSION

This think about points to decide the impact of "Taijiquan preparing for junior table tennis competitors" on competitive uneasiness and table tennis execution in Indonesia. The analyst evaluated the indications of competitive uneasiness and table tennis execution in both bunches and compared some time recently and after treatment between the exploratory and control bunches. Based on the t-test calculation, the T values of

systole, diastole, and heart rate were underneath 2.177 or sig. (2-tailed) more than 0.05 ( $p > 0.05$ ), which implies that there's no critical contrast between systole, diastole, and heart rate values. Whereas the t-values of cognitive uneasiness, uneasiness, self-confidence, and usage of table tennis capacity tests were more than 2.177 or sig. (2-tailed) were underneath 0.05.

From the explanation above, the researcher hypothesized that after taijiquan training, there would be a difference between the assessment of anxiety and table tennis performance in the experimental group after taijiquan training.



**Figure 2.** Implementation of Taijiquan training in the experimental group

In this study, it was also observed that the mean systolic variables changed in a positive direction in the experimental group that was given taijiquan exercises ( $x = -2.67$ ;  $-2.17\%$ ), and the same thing happened in the control group also changed ( $x = 6.55$ ;  $5.76\%$ ). This is different from the control group who did not receive taijiquan training who actually experienced an increase in systolic blood pressure before the match. There was no significant difference in diastolic blood pressure variables both before and after taijiquan exercise ( $x = -0.75$ ;  $-0.03\%$ ). In the control group, there was an increase in the mean value ( $x = 6.23$ ;  $8.53\%$ ).

These results suggest that when an athlete experiences high cognitive anxiety, even a small increase in arousal beyond its optimal level can result in significant performance gains.



## CONCLUSION

Taijiquan preparing in this think about was carried out by junior table tennis competitors exceptionally effortlessly since. Taijiquan developments are nearly comparative to extending developments that are more often than not done by junior competitors and are moreover helped by the nearness of educates who offer assistance in actualizing the Taijiquan developments. Table tennis execution testing between the Taijiquan gather and the control gather appeared that the exploratory bunch was detailed to have experienced a critical increment in execution compared to the control bunch. The Taijiquan gather experienced an increment within the taking after viewpoints:

While the control bunch experienced an increment within the aspects: diastolic; heart rate; and substantial uneasiness, as well as diminishing within the taking after viewpoints: systolic; cognitive uneasiness; self-confidence; and table tennis execution. From different information, it was concluded that the test bunch experienced noteworthy changes compared to the control gather, so that treatment with Taijiquan for table tennis preparing succeeded in diminishing uneasiness and moving forward the execution of junior table tennis competitors.

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