

Exploring The Attitude Of College Students Towards Tai Chi: A Quasi Experiment Of A Short Tai Chi Course (Stcc)

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Abstract:

Background: Attitude is critical to exercise; various studies have involved in attitude to physical education but not Tai Chi. However, Tai Chi is a compulsory course in many universities in China, some students may have negative attitude to it.

Purpose: To improve college students' attitude to Tai Chi via the Short Tai Chi Course (STCC).

Methods: A quasi-experiment was conducted to assess it. The instrument for attitude is a questionnaire which consist of 15 items. STCC is a 5 weeks course for teaching both theoretical knowledge and practical skill. 325 freshmen were enrolled for the trial and finally 289 students (72.3% female, 86.9% come from countryside) finished it. Results: In the baseline, more than three fourth students showed a neutral attitude to Tai Chi, around one fifth students had negative attitude toward Tai Chi, and less than 10% participants hold the positive attitude to Tai Chi. In the post-test, there is a clear increase of mean for each item but not item 6 and item 15, this change highlights the improve of positive attitude and reduce of negative for college students to Tai Chi. The P value of paired t test for each item (exclude item 14) is $0.000 < 0.001$ which indicate those items has an extremely significant difference in pretest and post-test.

Conclusion: Although around half college students still hold the neutral attitude to Tai Chi, they already have a significantly improve on positive attitude and considerate reduce on negative attitude.

Keywords: Short Tai Chi Course; Attitude; College Students: Quasi Experiment

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1. Introduction

Although the concept of attitude had published by Eagly & Chaiken in 1993, it is still a classic definition: attitude is a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor remains (Eagly & Chaiken, 2007). Moreover, attitude is a mental state, a value, a belief, and a predisposition to behavior or action (Altmann, 2008). It is an important concept in education. Previous researches have warranted that positive attitude can improve outcomes of academic study while negative attitude on the opposite (Şen, 2013). Moreover, there is a link between attitude of physical education and outdoor activities (Donovan et al., 2015), students' attitude to physical education has an effect on their participation in sport and exercise (Kjønniksen et al., 2010). As a result, many studies have explored in the field of students' attitude to physical education, sports, as well as physical activity (Säfvenbom et al., 2015; Simonton et al., 2021; Simonton et al., 2019). However, no study investigate the attitude of students to Tai Chi.

Nowadays, Tai Chi has become an increasingly fashionable mind body exercise all over the world, it has a significantly benefit for physical and psychological health of residents (Feng Wang, 2021). Therefore, Tai Chi was introduced in various age population range from children (Sarabzadeh et al., 2019), adults (Lian et al., 2017), to older people (Kim et al., 2016; Siu & Lee, 2018). Moreover, Tai Chi is a compulsory course for students in many schools and universities in China. For example, students have to master 24 basic Tai Chi moves for graduating from high school in east China's Fujian Province (CGTN, 2018). Since 1998, one of the most prestigious universities in China, Xi'an Jiaotong University required undergraduates to take Tai Chi class prior getting their degree (Yu, 2017). In this circumstance, Tai Chi is a mandatory subject for students, which means that not all students taking the course do so willingly (Xu, 2021). In other words, some students may have a negative attitude to Tai Chi. Previous study already confirmed that the positive attitude can improve the outcomes of learning (Chen et al., 2018). Therefore, how to improve students' attitude to Tai Chi is an important problem. However, it is still a virgin field about the attitude of students to Tai Chi. Thus, there is a gap between current compulsory Tai Chi course and university students' attitude to Tai Chi.

The purpose of this study is to enhancing college students' attitude to Tai Chi via the Short Tai Chi Course (STCC). The specific objective is to investigate the changes of university students to Tai Chi pre and post STCC. Operational definition of Short Tai Chi course (STCC) is a 5 weeks course of Tai Chi lesson with once a week and 80 minutes for each session. Operational definition of attitude is the college students'

opinion to Tai Chi which specific in 15 items at the questionnaire. There are two research questions. First, what is the pretest of college students' attitude to Tai Chi? Second, what is the changes of college students' attitude to Tai Chi after STCC. Besides, there is also a hypothesis to this study. The hypothesis is Short Tai Chi Course (STCC) has a significantly positive effect on university students' attitude to Tai Chi.

2. Theoretical Framework and Conceptual Framework

2.1 Theoretical Framework

The theoretical framework of this study can be developed based on several key concepts and theories, including:

Social Cognitive Theory: This theory emphasizes the role of social factors in shaping individual attitudes and behaviors. According to this theory, people learn through observation, socialization, and reinforcement. Thus, the study can examine how the attitudes of college students towards Tai Chi are influenced by their social environment, such as peer group, family, and media.

Theory of Planned Behavior: This theory posits that attitudes, subjective norms, and perceived behavioral control are the key determinants of behavioral intention and actual behavior. Therefore, the study can investigate how the attitudes of college students towards Tai Chi are related to their intention to practice Tai Chi and actual participation in a short Tai Chi course.

Self-Determination Theory: This theory suggests that intrinsic motivation, autonomy, and competence are essential for fostering long-term engagement in physical activity. The study can explore how a Short Tai Chi Course (STCC) can promote the intrinsic motivation, autonomy, and competence of college students towards Tai Chi.

Experiential Learning Theory: This theory posits that learning occurs through a cycle of concrete experiences, reflective observation, abstract conceptualization, and active experimentation. Therefore, the study can examine how the short Tai Chi course can provide opportunities for college students to engage in experiential learning and develop a deeper understanding of Tai Chi.

Based on the above statement, the theoretical framework for exploring the attitude of college students towards Tai Chi can draw on multiple theories and concepts related to social psychology, motivation, and learning. The study can investigate the relationship between the attitudes of college students towards Tai Chi and their intention to practice and actual participation in the Short Tai Chi Course (STCC). Additionally, the study can explore how the STCC can promote intrinsic motivation, autonomy, competence, and experiential learning among college students.

2.2 Conceptual Framework

The conceptual framework of this study can be developed based on several key elements, including:

Independent variable: The independent variable in this study is the Short Tai Chi Course (STCC). The course includes a set of Tai Chi exercises that are designed to be simple, easy to learn, and suitable for beginners. The course will be delivered to college students in a quasi-experimental design to examine its impact on their attitudes towards Tai Chi.

Dependent variable: The dependent variable in this study is the attitude of college students towards Tai Chi. Attitude is defined as a positive or negative evaluation of a particular object or behavior. The study will measure the attitude of college students towards Tai Chi before and after participating in the STCC.

Theoretical framework: The theoretical framework for this study is based on multiple theories and concepts related to health promotion, social psychology, motivation, and learning. These theories include Health Promotion and Wellness, Social Cognitive Theory, Theory of Planned Behavior, Self-Determination Theory, and Experiential Learning Theory. The study will use this framework to guide the development of research questions, data collection instruments, and data analysis methods.

Overall, the conceptual framework for exploring the attitude of college students towards Tai Chi and the effectiveness of a short Tai Chi course includes an independent variable (STCC), a dependent variable (attitude towards Tai Chi), and a theoretical framework based on multiple theories and concepts. This framework will be used to examine how the STCC impacts the attitude of college students towards Tai Chi.

3. Methodology

3.1 Research Design

This study needs to investigate the changes of attitude of university students to Tai Chi, in pre and post of a Short Tai Chi Course (STCC). Therefore, a quasi-experiment, pretest and post-test design will be taken to study it. The independent variable is Short Tai Chi Course (STCC), and dependent variable is attitude. Instrument for attitude is a questionnaire as statement bellow. In the beginning, participants are selected and do the pretest. Next, all students will receive STCC, and a post-test will be done at the end of STCC, then the data of both pretest and post-test is compared to analyze. The data will collect via the questionnaire of university students' attitude to Tai Chi.

3.2 Samples

Participants involved this study are from a public vocational college, in Guangxi Zhuang Autonomous Region, China. Participants were confirmed via convenient sampling method. Totally 325 freshmen from 7 classes take part in STCC, 36 students drop out during STCC or miss the posttest, therefore data from 289 students were used for analysis.

3.3 IRB approval/consent Information Exempt Declaim

Due to the program of Short Tai Chi Course (STCC) is conducted as a part of the compulsory physical education course, non-additional exercise or intervention involved in this study. Besides, all concern data are recollected via questionnaire without biological specimen. Therefore, the IRB approval/consent information was exempted.

3.4 Transparency and Openness

The principle of research design (sample size, manipulation, and data measurement) is followed The TOP Guidelines for Journals (Nosek et al., 2015). The raw data of this research are available from first author upon request.

Data were analyzed by IBM SPSS version 23. The protocol and data analysis of this study were not pre-registered.

3.5 The Short Tai Chi Course (STCC)

The program of Short Tai Chi Course (STCC) is designed based on the physical education course. The period of STCC is 5 weeks, and the frequency is 1 time per week and 80 minutes for each session. The curriculum of STCC consists of 2 parts, one for based theoretical knowledge which is introduced through lecture, another is practical skills which need to be practiced mastering movements. The theoretical knowledge class counts for 20%, lecturer will give a brief introduction to Tai Chi such as the concept of Tai Chi, the origin and development of Tai Chi, the contents of Tai Chi, and the characters of Tai Chi and so on. In the practical skills part, trainer will teach Tai Chi Bafawubu to students. Tai Chi Bafawubu (in mandarin meaning 8 methods and 5 step-forwards) is the latest Tai Chi style which launched the Administration Bureau of Sport China, and it consumes lower energy compared with previous 24 form simplified Tai Chi (Lyu et al., 2020).

3.6 The Questionnaire of College Students' attitude to Tai Chi

Questionnaire is the instrument to assess dependent variable (attitude) in this study. it contains 2 parts. Part one is for demographic information includes age, gender, family source as well as experience of Tai Chi. The second part is attitude survey to Tai Chi. Due to this quasi

experiment is done in China, most students are not proficient with English, thus this questionnaire was built bilingually, which is in both English and Mandarin. The questionnaire consists of 16 items. After a pilot test of 48 correspondents, one item which was not at high validity and reliability was moved out. There are 15 items in the final questionnaire.

Although there are various definitions and models about attitude, the most widely accepted concepts are that attitude consist of 3 components: affective component that represents emotional response; behavioral component that represents behavioral tendency; cognitive component that represents individual's opinion (Jain, 2014). In this questionnaire, 15 items refer to these 3 dimensions. For example, Item 1 is related to affective component.

This questionnaire was distributed and recollected through internet. The 15 items and its component dimension are shown in Table 1.

Table 1. The 15 Items and Its Component Dimension

No.	Items	Component Dimension
1	总体而言，我很喜欢太极拳。 Generally, I like Taichi very much.	Affective Component
2	我有意向参加太极拳的培训班。 I'd like to take part in Taichi Training 我对体育必修课中开展太极拳的态度。 My attitude toward setting up Taichi	Behavioral Component
3	as a compulsory course. 我对体育选修课中开展太极拳的态度？ My attitude toward setting up Taichi	Affective Component
4	as a selected course.	Affective Component
5	我对大学生学习太极拳的态度。 My attitude towards students in university learning Taichi.	Affective Component
6	我认为太极拳练习非常枯燥，单调？ I think Taichi is very boring and monotonous.	Affective Component
7	我愿意向家人，朋友介绍太极拳。 I would like to recommend Taichi to my family and friends.	Behavioral Component
8	我愿意观看太极拳比赛、报道的影视资讯。 I'd like to watch Taichi game, reports, and videos.	Behavioral Component
9	我对 24 式太极拳口令音乐很喜欢。 I like the music of the 24 style Taichi very much.	Behavioral Component
10	我对太极拳比赛中自配音乐很喜欢。 I like the music in the Taichi competition very much.	Behavioral Component
11	我对太极拳的服装很喜欢。 I like Taichi costume very much.	Behavioral Component

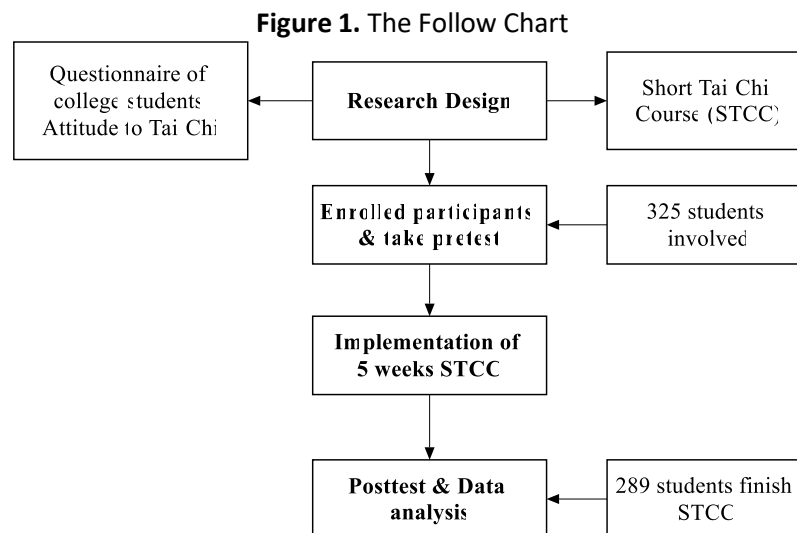
	我对太极推手的感觉是很喜欢。	
12	I like the feeling of Taichi push hands very much.	Affective Component
	我认为可以通过自学掌握太极拳。 I think	
13	I can master Taichi by self- learning	Cognitive Component
	我认为练习太极拳很酷，能吸引异性的注意	
	。	
14	I think Taichi is cool enough to attract opposite sex.	Cognitive Component
	我认为练习太极拳就步入老年化生活了。	
	I think practicing Taichi is a symbol	
15	of elderly life.	Cognitive Component

Note, there are 5 options for each item range 1 to 5 which represent that 1 Strongly disagree, 2. Disagree, 3 Neutral, 4. Agree, 5. Strongly Agree

3.7 Procedure

The procedure was conducted from November to December 2020, and it was divided into 5 steps. First and foremost, build the questionnaire of college students' attitude to Tai Chi, take pilot about the questionnaire, revise, and confirm it. At the same time, design the course of short Tai Chi Course (STCC). Next, enrolled the participants and take the pretest. Moreover, implement the five weeks of STCC. Finally, conduct the posttest, analyze data, and write the research article.

The specific follow chart is show in Figure 1 as below:



3.8 Data Analysis method

The data is analyzed through IBM SPSS, version 23. Data methods in this study are descriptive and compare mean. Specifically, it includes data descriptive, paired t test, frequencies as well as percentage. And the data are statement by means \pm standard deviation.

4. Results and Findings

4.1 The demographic of participants

There is total 352 college students involved this study, they all come from Guangxi Vocational College of Technology and Business, who are in the first year. The mean of students' age is 18.47 ± 1.35 ; among them, 27.7% are male and 72.3% are female. Moreover, 13.1% are come from city while 86.9% come from countryside. This meaning that all participants are adolescents, and most of them are female and come from the rural community areas.

4.2 The baseline of college students' attitude to Tai Chi

Table 2. The Baseline of College Students' Attitude to Taichi (n=289)

Items	1	2	3	4	5	M	SD
	F (%)	F (%)	F (%)	F (%)	F (%)		
1. Generally, I like Taichi very much.	3 (1.0)	22 (7.6)	264 (91.3)			2.9 0	0.33 0
2. I'd like to take part in Taichi Training	5 (1.7)	72 (24.9)	198 (68.5)	12 (4.2)	2 (.7)	2.7 7	0.58 0
3. My attitude toward setting up Taichi as a compulsory course.	3 (1.0)	45 (15.6)	219 (75.8)	22 (7.6)		2.9 0	0.51 4
4. My attitude toward setting up Taichi as a selected course.	1 (.3)	63 (21.8)	212 (73.4)	13 (4.5)		2.8 2	0.49 5
5. My attitude towards students in university learning Taichi.	2 (.7)	52 (18.0)	210 (72.7)	24 (8.3)	1 (.3)	2.9 0	0.54 3
6. I think Taichi is very boring and monotonous.			102 (35.3)	143 (49.5)	44 (15.2)	3.8 0	0.68 3
7. I would like to recommend Taichi to my family and friends.		65 (22.5)	194 (67.1)	29 (10.0)	1.0 (.3)	2.8 8	0.57 1
8. I'd like to watch Taichi game, reports, and videos.	6.0 (2.1)	59.0 (20.4)	206 (71.3)	16 (5.5)	2 (.7)	2.8 2	0.58 3
9. I like the music of the 24 style Taichi very much.	4.0 (1.4)	46 (15.9)	234 (81.0)	5 (1.7)		2.8 3	0.45 1
10. I like the music in the Taichi competition very much.	2.0 (.7)	42.0 (14.5)	231 (79.9)	14 (4.8)		2.8 9	0.45 8
11. I like Taichi costume very much.	3.0 (1.0)	50 (17.3)	202 (69.9)	29 (10.0)	5 (1.7)	2.9 4	0.61 8
12. I like the feeling of Taichi push hands very much.	4.0 (1.4)	43.0 (14.9)	218 (75.4)	24 (8.3)		2.9 1	0.52 9
13. I think I can master Taichi by self-learning	3.0 (1.0)	87.0 (30.1)	184 (63.7)	14 (4.8)	1 (.3)	2.7 3	0.57 9
14. I think Taichi is cool enough to attract opposite sex.	20. (6.9)	74.0 (25.6)	188 (65.1)	7 (2.4)		2.6	0.64
15. I think practicing Taichi is a symbol of elderly life.		11.0 (3.8)	61 (21.1)	200 (69.2)	17 (5.9)	3.7 7	0.60 9

Note: F=Frequency; M=Mean ; SD=Std. Deviation

1=Strongly disagree; 2=Disagree; 3=Neutral; 4= Agree; 5= Strongly agree.

In Table 2, the frequency and percentage for each item which is designed on a five-point Likert scale rating. Higher score indicates higher positive degree attitude to each item except Item 6 and item 15. Due to Item 6 and item 15 is on the opposite, which higher scores indicate low positive degree attitude to Tai Chi.

According to Table 2, it found that item 6, highlighted that half students agree, and 15% students strongly agree that Tai Chi is monotonous. For item 15, three fourth correspondents deemed that Tai Chi is a symbol of elderly lifestyle. For item 1 and 2, generally 91.2% students showed a neutral stance to Tai Chi, 68% participants showed neutral attitude to Tai Chi training, a quarter students disagree to Tai Chi training, and only 0.7% individuals desired join Tai Chi training. For items 3 to 5, more than 70% undergraduates show a neutral attitude to take Tai Chi as compulsory course or optional course or to learn it. Around one fifth people reflect a disagree attitude to them. For item 7 to 8, although most students still show neutral attitude to watching Tai Chi moving or recommend Tai Chi to their friends, nearly 15% correspondents agree to it. For items 9 to 11, around three fourth learners hold the neutral attitude to Tai Chi' music and costume, nearly 20% students show a negative attitude to it, less than 5% participants love Tai Chi music, however, 11.7% students show a positive attitude to Tai Chi costume. For item 12, around 15% people dislike the feeling of Tai Chi push hands, 3 fourth students show neutral attitude while 8.3% students like it. For item 14, nearly 30% leaner don't believe Taichi is cool enough to attract opposite sex, more than half students show neutral option and only 2.4% individual agree with it. For item 13, around 5 % people deem can master Tai Chi by themselves and Tai Chi is a symbol of elderly lifestyle., most students show a neutral and negative attitude to it.

While analysis the means of baseline, except item 6 and item 15, other items' means are below 3, which represents that most students don't agree with the statement in items for example, I like Tai Chi very much. For item 6 and item 15, the means is 3.80 ± 0.683 , 3.77 ± 0.609 respectively. It points out that most students agree that Tai Chi is boring, monotonous and symbol of elderly life.

To summary, results of baseline show that more than 3/4 students show a neutral attitude to Tai Chi, around 1/5 students hold a negative attitude toward Tai Chi, less than 10% participant hold the positive attitude to Tai Chi.

4.3The changes of college students' attitude to Tai Chi

Table 3. The Posttest of College Students' Attitude to Taichi (n=289)

Items	1	2	3	4	5	M	SD
	F (%)	F (%)	F (%)	F (%)	F (%)		
1. Generally, I like Taichi very much.			204 (70.6)	72 (24.9)	13 (4.5)	3.34	0.561
2. I'd like to take part in Taichi Training	6 (2.1)	41 (14.2)	198 (68.5)	35 (12.1)	9 (3.1)	3.00	0.687
3. My attitude toward setting up Taichi as a compulsory course.		12 (4.2)	166 (57.4)	90 (31.1)	21 (7.3)	3.42	0.688
4. My attitude toward setting up Taichi as a selected course.	1 (.3)	10 (3.5)	159 (55.0)	96 (33.2)	23 (8.0)	3.45	0.706
5. My attitude towards students in university learning Taichi.		6 (2.1)	155 (53.6)	109 (37.7)	19 (6.6)	3.49	0.651
6. I think Taichi is very boring and monotonous.	10 (3.5)	182 (63.0)	97 (33.6)			2.30	0.530
7. I would like to recommend Taichi to my family and friends.		9 (3.1)	168 (58.1)	95 (32.9)	17 (5.9)	3.42	0.651
8. I'd like to watch Taichi game, reports, and videos.	10 (3.5)	230 (8.0)	188 (65.1)	67 (23.2)	10 (3.5)	3.21	0.647
9. I like the music of the 24 style Taichi very much.		15 (5.2)	203 (70.2)	61 (21.1)	10 (3.5)	3.23	0.592
10. I like the music in the Taichi competition very much.	10 (3.5)	160 (55.0)	198 (68.0)	60 (20.8)	14 (4.8)	3.24	0.643
11. I like Taichi costume very much.		11 (3.8)	195 (67.5)	70 (24.2)	13 (4.5)	3.29	0.612
12. I like the feeling of Taichi push hands very much.		90 (31.1)	180 (62.3)	79 (27.3)	21 (7.3)	3.39	0.668
13. I think I can master Taichi by self-learning	50 (17.0)	420 (145.0)	187 (64.7)	48 (16.6)	7 (2.4)	3.03	0.691
14. I think Taichi is cool enough to attract opposite sex.	120 (42.0)	680 (235.0)	184 (63.7)	17 (5.9)	8 (2.8)	2.80	0.729
15. I think practicing Taichi is a symbol of elderly life.	180 (62.0)	1060 (367.0)	138 (47.8)	19 (6.6)	8 (2.8)	2.63	0.811

Note: F=Frequency; M=Mean; SD=Std. Deviation

1=Strongly disagree; 2=Disagree; 3=Neutral; 4= Agree; 5= Strongly agree.

Based on Table 2 and Table 3, there is an obvious change in the percentage of agreement level to each item at post-test. For item 6 and item 15, there is a fierce boost at disagreement level (surge from 0 to 63% for item 6, and 3.8% to 36.7% for item 15) and a huge decline in agreement level (drop from 49.5% to 15.2% for item 6, and 69.2% to 6.6), which represent that most students have a decrease on the negative attitude to Tai Chi. For item 1, the neutral attitude decreases from 91.3% to 70.6%. No students like Tai Chi in pretest, however, nearly 30% students like it in post-test. It indicates an increase trend to like Tai Chi in post-test. For item 2, despite no changes in neutral attitude, the disagreement level reduces from 24.9% to 14.2% while agreement level increase from 4.2% to 12.15. It is meaning more and more undergraduate like to take part in Tai Chi training. For item 3 to item 5, it is an obvious decline in disagree and neutral attitude, and a clearly raise in agreement level which did not show in baseline. This points out that students show a positive attitude to lean Tai Chi and set it as the physical education course in university. For item 7 to 12, although more than 60% students still hold a neutral attitude, there are obvious increase on agreement level, which jump from around 7% to 20% and above. These changes reveal that in the post-test, many students prefer to recommend Tai Chi to their friends, like Tai Chi music, videos, costume as well as the feeling of Tai Chi push hands. For item 13, although clearly changes at the neutral level, it is a decrease in disagreement level and rise in agreement level. This indicates that students become more confidence to learn Tai Chi. For item 14, there is a slight reduce of disagreement level and increase agreement level in post-test. This represents some students believe practicing Tai Chi can attract opposite sex.

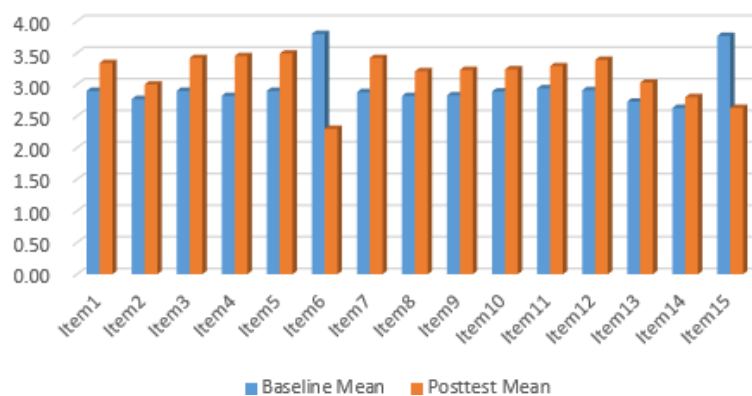
Table 4. The Paired T test of College Students' Attitude to Taichi (n=289)

	Paired Differences					t	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
				Lower	Upper		
Item1	-.436	.632	.037	-.509	-.363	-11.726	.000
Item2	-.228	.876	.052	-.330	-.127	-4.433	.000
Item3	-.516	.858	.050	-.615	-.416	-10.211	.000
Item4	-.630	.861	.051	-.729	-.530	-12.438	.000
Item5	-.592	.816	.048	-.686	-.497	-12.325	.000
Item6	1.498	.875	.051	1.397	1.600	29.126	.000
Item7	-.533	.878	.052	-.635	-.431	-10.319	.000
Item8	-.391	.880	.052	-.493	-.289	-7.557	.000

Item9	-.398	.789	.046	-.489	-.307	-8.575	.000
Item10	-.353	.799	.047	-.445	-.260	-7.507	.000
Item11	-.353	.928	.055	-.460	-.246	-6.466	.000
Item12	-.481	.886	.052	-.584	-.378	-9.227	.000
Item13	-.301	.929	.055	-.409	-.193	-5.506	.000
Item14	-.166	1.004	.059	-.282	-.050	-2.814	.005
Item15	1.142	1.049	.062	1.020	1.263	18.497	.000

Note: F=Frequency; M=Mean ; SD=Std. Deviation

Figure 2. The Changes of Mean



According to the Table 4 and Figure 2 there is a clear increase of mean for each item but not item 6 and item 15, which is consistent with the changes of frequency and percentage stated above, it highlights the improvement of positive attitude and the reduction of negative attitude for college students to Tai Chi. In Table 4, the P value for all other item is $0.000 < 0.001$ except item 14, which indicates those items have an extremely obvious difference in the post-test. Moreover, the P value for item 14 is 0.005 which is also less than 0.05, this represents there is still a significant difference in the post-test. Therefore, the hypothesis of this study is accepted. Short Tai Chi Course (STCC) has a significantly positive effect on university students' attitude to Tai Chi. To summary, the finding of results revealed that STCC has an obvious improvement of college students' attitude to Tai Chi. The data shows the negative attitude level reduced while the positive attitude level rose to all 15 items in the questionnaire. And the hypothesis is accepted.

5. Discussion

According to Table 4, all value of items lower than 0.05, it is meaning there is a significant difference in the post-test. As a consequent, the previous hypothesis was be verified STCC has a significantly positive

effect on university students' attitude to Tai Chi. Consistent with the 3 components of attitude, the outcomes can be further interpreted that STCC evidently improve college students' affective attitude, behavior attitude as well as cognitive attitudes toward Tai Chi.

In this study, most participants are female (72.3%) and from countryside (86.9%). Some reasons may attribute to it. Firstly, this quasi experiment was conducted in a university of business, in this university most majors are related to business and finance. Both business and finance are the most popular majors for female students (Novakovich, 2019). Therefore, most students are female in this study. Secondly, this college is located in Guangxi Zhuang Autonomous Region which is a relatively poor and underdeveloped region in China, and 66.4% residents living in the countryside (Zhao & Lu, 2020). In this college most students are come from Guangxi. Thus, most participants involved this research are come from countryside. This study has warranted that STCC can obviously improve the attitude positively and dramatically reduce the negative attitude of college students to Tai Chi. Various factors may contribute to the changes of attitude. In the review of Attitudes and Attitude Change, Albarracin and partner pointed out that there are 3 context to influence the changes of attitude, person context, social relationship context as well as historical unique event (Albarracin & Shavitt, 2018). In the STCC, a clear goal and the value of Tai Chi were introduced to all students, which can influence students' attitude on person context. During the period of STCC, students practice Tai Chi together which certainly involve some social communication, thus STCC influence students' attitude on social relationship context. Moreover, the positive spillover also contributes to the changes of attitude. Spillover is interpreting the change of targeted behavior and associated behaviors. Specific explanations how behavioral spillover resulting from the change of one behavior that causes other behaviors to change in an intervention (Henn et al., 2020). STCC is an intervention in this study so the spillover can explain that why STCC can improve students' positive attitude to Tai Chi. Besides, all the items in questionnaire are qualitative statement, for example, item 1 generally, I love Tai Chi very much. According to Bechler and his team's research, individual perceived greater change when that change is qualitative in nature (Bechler et al., 2019). Therefore, the results of post-test showed a huge significant improvement on college students' attitude to Tai Chi. Another interesting finding in this study is that despite there is a considerable improvement on the mean of 15 items, half students still hold the neutral attitude in the post-test. This may be caused by the influence of Zhong Yong thinking. Zhong Yong principle is also called The Golden Mean or the Doctrine of the Mean, it is a substantial achievement of Confucius and it is also the most influential philosophy

which rooted in the daily life of Chinese residents through thousands years(Yuhua, 2015; Zeng & Wang, 2017). The Zhong Yong thinking content two thinking systems: eclectic thinking (neither A nor B) and integrated thinking (both A and B)(Zhou et al., 2019). Specifically, Zhong Yong thinking considers things from an opposite perspective to get an appropriate matter for life, it holds an idea that person's affect, cognition, and behavior are always experienced and expressed in moderation: neither too much, nor too little, but keep the appropriate degree(Lin et al., 2020). In the questionnaire of this study, all items have 5 answers include 1 strongly disagree, 2 disagree, 3 neutral, 4 agree, 5 strongly agree. According to the Zhong Yong thinking of Chinese, students prefer to choose neutral rather than disagree or agree. This is the reason why half students still hold neutral attitude to Tai Chi in the posttest.

Obviously, various educators have investigated teachers' attitude to physical education (Fredrick & Silverman, 2020; Haegele et al., 2016; Hutzler et al., 2019) and students' attitude to physical education (Agbuga et al., 2012; Phillips & Silverman, 2012; Reynolds et al., 2022). However, it is no study to examine the attitude of college students to Tai Chi, particular no researcher assess attitude change after a Tai Chi course. In this study, the researcher investigates colleges students' attitude to Tai Chi and further reveal the changes of students' attitude to Tai Chi after five weeks of STCC. Therefore, the significance of this study is to bridge the knowledge gap of college students' attitude to Tai Chi and assess the changes of college students' attitude after STCC.

There is also some limitation in this study. Firstly, there is no control group in this study, thus it cannot do the comparison between STCC to other Tai Chi course or physical education course. But no expert investigate attitude in their Tai Chi course. Secondly, the experiment is conducted in one university despite more the 300 students are enrolled for this study. Students have similar demographic information, so it cannot compare the difference between demographic groups. Thirdly, the questionnaire of this study is not anonymous. This is because the STCC is done as a part of curriculum in the physical education of that semester, and the PE teacher will assess students' achievement via their performance in STCC. Thus, some students may deliberately choose agree option in post-test in order to get a high score in physical education course. As a result, it may ample the bias of the outcomes in post-test. Fourthly, although this research assesses the attitude and its change for college students to Tai Chi, no investigation to the relationship between attitude and the cognition. This may lead to an uncertainty about the cognition and the changes of university students to Tai Chi.

According to the limitation of this study, here a few recommendations for further research. First and foremost, a control group would be

better in the study. It will help to confirm the effects of the independent variables. Next, difference categories in demographic may lead to more splendid results, which implicates to enlarge the range of samples. Moreover, an anonymous survey can reduce the bias of the research. Last but not least, in further research experts can try to investigate the relationship between attitude and cognition of college students to Tai Chi.

6. Conclusion

This study highlighted that most students show a neutral and negative attitude to Tai Chi before STCC. Although around half college students still hold the neutral attitude to Tai Chi, they already have a significantly improvement on positive attitude and obvious reduction on negative attitude. It further indicates that the 5 weeks of quasi-experiment of STCC can improve college students' affective attitude, behavior attitude as well as cognition attitude to Tai Chi. Therefore, STCC can be an efficacy approach to improve college students' attitude to Tai Chi.

Contributions

Feng Wang: research design, formulate questionnaire, conducted STCC, data analysis, and write manuscript.

Syed Kamaruzaman Syed Ali: supervise the research, revise, and confirm the paper.

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Conflict interest

All authors involved in this study have claimed have no conflict interest to any institution, individual as well as program.

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