



**EFFECTS OF LATIN DANCE ON SOCIAL PHYSIQUE ANXIETY AND
PHYSICAL SELF-ESTEEM AMONG MIDDLE SCHOOL GIRLS IN
SHANGHAI, CHINA**

By

LIU XUTAO

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfilment of the Requirements for the Degree of Doctor of Philosophy**

July 2024

FPP 2024 16

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Physical activity has been widely recognised as improving physical and psychological well-being among adolescents, with dance emerging as an engaging and culturally diverse option. The period of adolescence is particularly critical as it involves rapid physical and emotional changes, making it imperative to address both physical and psychosocial well-being to foster a healthy development trajectory. This study investigates the impact of Latin dance on social physique anxiety (social physique anxiety total score, negative evaluation, self-performance, and social comparison) and physical self-esteem (physical self-esteem total score, sport competence, physical conditioning, bodily attractiveness, physical strength, and physical self-worth) of middle school girls, an age group particularly susceptible to body image concerns and self-esteem issues.

This study employed a single-group pre-test and post-test design, recruiting 51 female participants (Age: Mean=12.78, SD=0.54) from one middle school in Shanghai, China.

The experimental group engaged in a 12-week Latin dance intervention consisting of two sessions per week. Quantitative data were collected through three measurement points: pre-test (before the intervention), post-test 1 (after 6 weeks), and post-test 2 (after 12 weeks). The Social Physique Anxiety Scale (SPAS) and the Children Youth Physical Self-perception Profile (CY-PSPP) questionnaires were used to measure middle school girls' social physique anxiety and physical self-esteem. Statistical analysis of the data incorporated One-way repeated measures ANOVA (Analysis of Variance) and Generalized Estimating Equations (GEE).

At baseline, a significant proportion of the participants exhibited high levels of social physique anxiety (Mean: 39.078, SE=0.322) and low levels of physical self-esteem (Mean: 56.392, SE=0.741), indicating the necessity of interventions targeted at these issues. The results of this study showed that Latin dance intervention can significantly reduce the Social Physique Anxiety Total Score (SPATS), including Negative Evaluation (NE), Self-Performance (SP) and Social Comparison (SC) of middle school girls. The effect sizes for these changes were notably large, with a pronounced change observed in SP ($d=1.69$). In addition, Latin dance intervention can significantly improve the Physical Self-Esteem Total Score (PSETS) of middle school girls, including Sport Competence (SPC), Physical Conditioning (PC), Bodily Attractiveness (BA), Physical Strength (PS) and Physical Self-Worth (PSW), with the most significant change in PC ($d=1.90$). On the other hand, the results showed that after 6 weeks of Latin dance intervention, only SPC and BA had no significant differences in the experimental group, while NE, SP, SC, SPATS, PC, PS, PSW and PSETS all had significant differences. After 12 weeks of the Latin dance intervention, SPATS, NE, SP, SC, PSETS, SPC, PC, BA, PS, and PSW were significantly different.

The results showed that the 12 weeks Latin dance intervention was more effective than the 6 weeks intervention. Furthermore, the intervention effectively reduced the proportion of participants with poor social physique anxiety and physical self-esteem, thereby validating the potential of Latin dance as a holistic intervention.

The results of this study verified the effectiveness of Latin dance intervention in reducing social physique anxiety and improving the physical self-esteem of middle school girls for 12 weeks. Adolescent girls who learn Latin dance have less anxiety and improve their physical health and self-esteem. The incorporation of Latin dance programs within middle school physical education curricula presents a promising avenue to address psychological well-being in adolescents. Future research should consider conducting long-term follow-up assessments to evaluate the sustainability of the improvements observed in social physique anxiety and physical self-esteem. In addition, exploring the effects of various dance styles beyond Latin dance could broaden our understanding of the impact of dance on psychological well-being.

Keywords: Physical self-esteem, middle school students, dance, social physique anxiety

SDG: Goal 3: Good Health and Well-Being

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk Ijazah Doktor Falsafah

**KESAN TARIAN LATIN TERHADAP KEBIMBANGAN FIZIKA SOSIAL
DAN HARGA DIRI FIZIKAL DALAM KALANGAN PELAJAR
PEREMPUAN SEKOLAH MENENGAH DI SHANGHAI, CHINA**

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Aktiviti fizikal telah diakui secara meluas sebagai memperbaiki kesejahteraan fizikal dan psikologi dalam kalangan remaja, dengan tarian muncul sebagai pilihan yang menarik dan beraneka budaya. Tempoh remaja adalah kritikal kerana ia melibatkan perubahan fizikal dan emosi yang pesat, menjadikan ia penting untuk menangani kesejahteraan fizikal dan psikososial bagi memupuk trajektori pembangunan yang sihat. Kajian ini menyiasat kesan tarian Latin terhadap keseimbangan fizikal sosial (jumlah skor keseimbangan fizikal sosial, penilaian negatif, prestasi diri, dan perbandingan sosial) dan harga diri fizikal (jumlah skor harga diri fizikal, kompetensi sukan, keadaan fizikal, daya tarikan tubuh, kekuatan fizikal, dan harga diri fizikal) dalam kalangan pelajar perempuan sekolah menengah, kumpulan umur yang terdedah kepada isu imej badan dan harga diri.

Kajian ini menggunakan reka bentuk ujian pra dan pasca satu kumpulan, melibatkan 51 peserta perempuan (Umur: Min=12.78, SD=0.54) dari satu sekolah menengah di

Shanghai, China. Kumpulan eksperimen menjalani intervensi tarian Latin selama 12 minggu dengan dua sesi setiap minggu. Data kuantitatif dikumpulkan melalui tiga titik pengukuran: ujian pra (sebelum intervensi), ujian pasca 1 (selepas 6 minggu), dan ujian pasca 2 (selepas 12 minggu). Skala Kebimbangan Fizikal Sosial (SPAS) dan Profil Persepsi Diri Fizikal Kanak-kanak dan Remaja (CY-PSPP) digunakan untuk mengukur kebimbangan fizikal sosial dan harga diri fizikal pelajar perempuan sekolah menengah. Analisis statistik data menggunakan ANOVA berulang satu hala (Analisis Varians) dan Persamaan Anggaran Teritlak (GEE).

Pada peringkat asas, sebahagian besar peserta menunjukkan tahap kebimbangan fizikal sosial yang tinggi (Min: 39.078, SE=0.322) dan tahap harga diri fizikal yang rendah (Min: 56.392, SE=0.741), menunjukkan keperluan untuk intervensi yang disasarkan kepada isu-isu ini. Keputusan kajian ini menunjukkan bahawa intervensi tarian Latin boleh mengurangkan Skor Jumlah Kebimbangan Fizikal Sosial (SPATS) dengan ketara, termasuk Penilaian Negatif (NE), Prestasi Diri (SP), dan Perbandingan Sosial (SC) pelajar perempuan sekolah menengah. Saiz kesan bagi perubahan ini adalah besar, dengan perubahan ketara diperhatikan dalam SP ($d=1.69$). Selain itu, intervensi tarian Latin boleh meningkatkan Skor Jumlah Harga Diri Fizikal (PSETS) pelajar perempuan sekolah menengah dengan ketara, termasuk Kompetensi Sukan (SPC), Keadaan Fizikal (PC), Daya Tarikan Tubuh (BA), Kekuatan Fizikal (PS), dan Harga Diri Fizikal (PSW), dengan perubahan paling ketara dalam PC ($d=1.90$). Sebaliknya, keputusan menunjukkan bahawa selepas 6 minggu intervensi tarian Latin, hanya SPC dan BA yang tidak mempunyai perbezaan ketara dalam kumpulan eksperimen, manakala NE, SP, SC, SPATS, PC, PS, PSW, dan PSETS semuanya mempunyai perbezaan ketara. Selepas 12 minggu intervensi tarian Latin, SPATS, NE,

SP, SC, PSETS, SPC, PC, BA, PS, dan PSW semuanya mempunyai perbezaan ketara. Keputusan menunjukkan bahawa intervensi tarian Latin selama 12 minggu lebih berkesan daripada intervensi selama 6 minggu. Tambahan pula, intervensi ini berkesan mengurangkan proporsi peserta dengan kebimbangan fizikal sosial dan harga diri fizikal yang rendah, dengan itu mengesahkan potensi tarian Latin sebagai intervensi holistik.

Keputusan kajian ini mengesahkan keberkesanan intervensi tarian Latin dalam mengurangkan kebimbangan fizikal sosial dan meningkatkan harga diri fizikal pelajar perempuan sekolah menengah selama 12 minggu. Pelajar perempuan remaja yang belajar tarian Latin mempunyai kurang kebimbangan dan meningkatkan kesihatan fizikal dan harga diri mereka. Penggabungan program tarian Latin dalam kurikulum pendidikan jasmani sekolah menengah adalah satu jalan yang menjanjikan untuk menangani kesejahteraan psikologi dalam kalangan remaja. Penyelidikan masa depan harus mempertimbangkan untuk menjalankan penilaian susulan jangka panjang untuk menilai kelestarian peningkatan yang diperhatikan dalam kebimbangan fizikal sosial dan harga diri fizikal. Selain itu, meneroka kesan pelbagai jenis tarian di luar tarian Latin boleh meluaskan pemahaman kita tentang kesan tarian terhadap kesejahteraan psikologi.

Kata Kunci: Harga diri fizikal, Pelajar sekolah menengah, tarian, kebimbangan fizikal social

SDG: MATLAMAT 3: Kesihatan dan kesejahteraan yang baik

ACKNOWLEDGEMENTS

I want to express my heartfelt gratitude to several individuals and institutions whose unwavering support and guidance have been instrumental in completing my doctoral dissertation.

First and foremost, I am deeply grateful to the Universiti Putra Malaysia (UPM) for providing an excellent academic platform and resources that allowed me to pursue my research with dedication and passion. The nurturing environment and scholarly opportunities offered by UPM have significantly enriched my academic journey.

I deeply thank my esteemed supervisors, Prof. Dr. Soh Kim Geok and Dr. Roxana Dev Omar Dev. Their exceptional expertise, guidance, and constant encouragement were invaluable throughout my research. Their mentorship has shaped my academic and research skills and inspired me to strive for excellence in my field.

I also extend my thanks to my family, friends, and fellow graduate students for their unwavering support, understanding, and encouragement during this challenging academic endeavour. Their patience, belief in my abilities, and willingness to stand by me during the ups and downs of this journey have been a tremendous source of strength.

Lastly, I appreciate the countless others who have supported me, directly or indirectly, during this research. Your contributions, whether through discussions, resources, or even a kind word of motivation, have not gone unnoticed.

This dissertation would not have been possible without these individuals and institutions' collective support and encouragement. I am profoundly thankful for their role in this significant academic and personal development milestone.



This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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LIST OF ABBREVIATIONS

BA	Bodily Attractiveness
CVI	Content Validity Index
CY-PSPP	Children Youth Physical Self-perception Profile
EG	Experimental Group
GEE	Generalized Estimating Equations
ICC	Intraclass Correlation Coefficient
IRB	Institutional Review Board
NE	Negative Evaluation
PC	Physical Conditioning
PS	Physical Strength
PSE	Physical Self-Esteem
PSETS	Physical Self-Esteem Total Score
PSW	Physical Self-Worth
SC	Social Comparison
SP	Self-Performance
SPA	Social Physical Anxiety
SPAS	Social Physique Anxiety Scale
SPATS	Social Physique Anxiety Total Score
SPC	Sport Competence

CHAPTER 1

INTRODUCTION

1.1 Background

According to the World Health Organization (WHO), 10–20% of children and adolescents globally struggle with mental health issues (Cuijpers et al., 2023). Notably, approximately 50% of mental health issues manifest around 14 years old, coinciding with the middle school years (Pap et al., 2023). Adolescence represents a phase marked by rapid biological transformations (Wang et al., 2023), during which young individuals become acutely conscious of their self-image, particularly concerning the evaluations of their bodies by others (Lewis-Smith et al., 2023). It is disconcerting that roughly 20% of youth encounter various forms of anxiety disorders, with 5% of this population being children and adolescents who experience disorders more prevalently during adolescence, particularly among girls (Ladouceur et al., 2023). Notably, a substantial body of research on social physique anxiety has predominantly centered on female cohorts (Mackenzie et al., 2023).

Middle school students find themselves in a critical developmental juncture where they undergo significant physical changes in height and weight. Consequently, they are susceptible to experiencing physical anxiety and reduced self-confidence due to heightened concern for how others perceive their bodies (Chen et al., 2023). This phase of adolescence is pivotal in determining whether individuals adhere to or abandon physical exercise routines (Guo & Liang, 2023). Recent health and sports psychology

studies have underscored the integral role of regular and appropriate physical activity in fostering and sustaining physical and mental well-being (Hovland et al., 2023; Pap et al., 2023). Research on physical activity's impact on psychological parameters has revealed that consistent participation in physical activities directly influences psychological variables. Examples include anxiety (Forshaw et al., 2023), depression (Royer & Wharton, 2022), stress (Hachenberger et al., 2023), self-esteem (She et al., 2023), and body image (Lucibello et al., 2023). Physical activity is increasingly important in preserving physical and mental health (She et al., 2023). Among the diverse forms of physical activities, dance, in particular, has garnered attention due to its potential to yield physical and psychological benefits (Liu et al., 2023). Dance, an enjoyable exercise, enhances balance, flexibility, coordination, and strength while conferring emotional benefits such as reducing stress and anxiety and promoting social interactions (Dwarika & Haraldsen, 2023).

1.1.1 Social Physique Anxiety and Physical Self-esteem

Social Physique Anxiety (SPA) is a psychosocial variable, an anxiety disorder characterized by concerns about one's appearance and the judgments others make based on appearance (Abdollahi et al., 2023). Social physique anxiety is significant because it pertains to important psychological and behavioural aspects of health. As an illustration, social physique anxiety connected to physical appearance (Kroon et al., 2023), body image (Zartaloudi et al., 2023), dissatisfaction with appearance and weight (Lucibello et al., 2023), eating attitudes (Fu et al., 2022) and exercise motivation (Kroon et al., 2023) are a few examples. According to Policardo et al. (2023), SPA is a subtype of social anxiety related to physical appearance. SPA

encompasses subdomains such as Negative Evaluation (NE), Self-Performance (SP), and Social Comparison (SC) (Ouyang et al., 2021). Negative Evaluation (NE) involves anxiety about being judged negatively by others, while Self-Performance (SP) concerns one's physical performance and appearance, and Social Comparison (SC) entails comparing one's appearance to others, often leading to anxiety (Zartaloudi et al., 2023). Individuals with SPA may feel self-conscious and anxious in social situations where they feel their physical appearance is being evaluated, such as in gym classes, fitness centers, or other social situations where physical activity or appearance is emphasised. Several studies have demonstrated the negative impact of SPA on wellbeing and mental health. For example, Yuan et al. (2022) found that SPA was positively correlated with body dissatisfaction and eating disorder symptoms in women. In addition, Markandey and Sethia (2022) reported that SPA was associated with decreased self-esteem and increased social anxiety. Adolescents, especially girls, are more likely to acquire SPA as a result of social pressure to meet excessive beauty standards (Granero-Gallegos et al., 2023).

Physical Self-Esteem (PSE) refers to an individual's evaluation and perception of physical abilities, appearance, and fitness level (Ren et al., 2023). It is an essential component of overall self-esteem, which can influence various aspects of an individual's life, including mental health, academic performance, and social relationships (Wright et al., 2023). PSE is vital for young people's overall self-esteem and mental health. PSE includes subdomains such as Sport Competence (SPC), Physical Conditioning (PC), Bodily Attractiveness (BA), Physical Strength (PS), and Physical Self-Worth (PSW) (Zayed & Elshaer, 2022). Sport Competence (SPC) relates to perceived ability in sports activities, while Physical Conditioning (PC) concerns

one's fitness and physical condition. Bodily Attractiveness (BA) involves self-assessment of physical appearance, Physical Strength (PS) evaluates one's strength, and Physical Self-Worth (PSW) reflects overall self-worth related to physical attributes (Zheng et al., 2023). According to research, middle school females are especially susceptible to having low physical self-esteem due to various biological, social, and psychological changes during this developmental stage (Kim et al., 2022). In addition, societal pressures to conform to narrow beauty standards and unrealistic body ideals can exacerbate feelings of low self-esteem. There is research to prove that a person's perception of their body may be susceptible to changes in physical activity levels (Göbel et al., 2023). Physical activity and exercise may enhance bodily Attractiveness during adolescence (Moral-García et al., 2021). Exercise and training can reduce body dissatisfaction and increase self-esteem (Ren et al., 2023).

1.1.2 Prevalence of Latin Dance in China

Latin dance, which comprises the dances associated with bullfighting, cowboys, samba, cha cha cha, and rumba, is a type of sports dance that has its roots in Latin America (Coutinho et al., 2023). Latin dance's rise in popularity in China is evident through the proliferation of dance schools, public performances, and competitive events (Zhou et al., 2023). Latin dance steps are flexible. With the beat of the music, the dancer's body increases strength, speed, and posture to highlight the beauty of the human body (Liu et al., 2023). Traditional aerobic training lacks the unique dimension of human engagement and interactivity that Latin dance brings (Wanke et al., 2023).

Latin dance has garnered attention as a potential solution for SPA and low PSE among middle school females in recent years. Latin dance provides a non-competitive and inclusive environment where girls can feel comfortable and confident in their skin (Pandya, 2023). It also provides chances to engage in social contact and skill development, which can positively affect mental health (Marquez et al., 2021). Furthermore, the physical activity involved in Latin dancing is a good way to get fitter, body composition, and overall health (Soltero et al., 2022). Latin dance involves various movements requiring strength, flexibility, and coordination. The cardiovascular benefits of Latin dance are also well documented, with research showing that it can improve aerobic fitness and reduce the chance of developing heart disease (Yan et al., 2022). The physical activity involved in Latin dance can also help in enhancing muscle mass, decreasing body fat, and improving body composition (Odemis et al., 2022). Positive effects of Latin dancing on mental health include lowered stress and anxiety, elevated mood, and enhanced self-esteem (Humphries et al., 2023). Another benefit of Latin dancing is its social component, as it provides opportunities for social interaction and skill development (Wang & Xiao, 2018), which can improve confidence and social skills. Latin dance is a highly inclusive activity that people of all ages, genders, and abilities can enjoy. Unlike other physical activities that may be competitive and exclusionary, Latin dance is a non-competitive activity that promotes inclusivity and diversity.

Latin dance has several unique features that make it an ideal intervention for SPA and low PSE among middle school girls. First, it is a highly engaging and enjoyable activity (Kaushal et al., 2022) that can provide a sense of fun and excitement for girls struggling with body image issues. Second, Latin dance provides a non-competitive

and inclusive environment where girls can feel comfortable and confident in their bodies (Usmani et al., 2023). Third, the social aspect of Latin dance can help girls develop critical social skills and build positive relationships with their peers (Wanke et al., 2023). Fourth, the physical activity involved in Latin dancing can enhance one's physical health, body composition, and overall health (Banio, 2020).

1.2 Problem Statement

In contemporary China, with the country's advancement into a well-off society, the focus of individuals has shifted beyond mere sustenance as they now seek health and beauty (Pan, 2023). Physical exercise has emerged as a primary means for enhancing physical fitness to maintain a sound mind and body (Castelli et al., 2023). However, imperfect lifestyles and dietary habits often lead individuals to suboptimal health (Lamb & Howard, 2023). Furthermore, the apprehension of revealing one's body during physical activity engenders heightened levels of body image anxiety, thereby hindering the confidence of individuals in their physiques (Lucibello et al., 2023; Urteaga et al., 2023). This complex interplay of societal change, body image concerns, and the pursuit of health and beauty underscores the need for innovative solutions, particularly among middle school girls at a critical juncture in their physical and psychological development.

As the Chinese adage rightly proclaims, "China is strong when young people are strong," highlighting the paramount importance of nurturing the health and well-being of the younger generation as a foundational pillar for the nation's future (Ai et al., 2023). Middle school emerges as a pivotal period during adolescence when girls, in

particular, become acutely attuned to their physical form and its development. Confidence in one's physical self is inextricably linked with academic performance (Li et al., 2023), making it a key determinant of academic success. Hence, the quest to identify an exercise regimen capable of nurturing self-assurance while alleviating anxieties related to physical appearance anxiety emerges as a pressing concern that warrants urgent investigation.

Physical exercise has consistently demonstrated its capacity to safeguard middle school students' physical and mental well-being (Song et al., 2022). However, understanding how to harness its full potential remains a paramount societal and educational significance. A substantial body of domestic and international scholarship underscores the indispensability of moderate aerobic exercise in fostering overall health (Belcher et al., 2021). This significance is heightened when the heart rate hovers within the optimal metabolic range of 120-140 beats per minute, ensuring efficient physiological functioning (Islam et al., 2023; Saraiva et al., 2023). Physical activity serves not only as a conduit for alleviating the mental and physical stresses of academic life (Kang et al., 2021) but also as a means to nurture aesthetic appreciation, ultimately relieving academic stress and boosting scholastic achievements (Bi et al., 2022).

Social Physique Anxiety (SPA) is a psychosocial variable characterised by concerns about one's appearance and the judgements others make based on appearance (Abdollahi et al., 2023). SPA encompasses subdomains such as Negative Evaluation (NE), Self-Performance (SP), and Social Comparison (SC) (Ouyang et al., 2021). Negative Evaluation involves anxiety about being judged negatively by others, Self-Performance concerns one's physical performance and appearance, and Social Comparison entails comparing one's appearance to others, often leading to anxiety

(Zartaloudi et al., 2023). These subdomains are crucial as they pertain to psychological and behavioural aspects of health, influencing factors such as body image, dissatisfaction with appearance and weight, and exercise motivation (Kroon et al., 2023). Research has shown that SPA is positively correlated with body dissatisfaction and eating disorder symptoms in women (Yuan et al., 2022) and is associated with decreased self-esteem and increased social anxiety (Markandey & Sethia, 2022).

Physical Self-Esteem (PSE) refers to an individual's evaluation and perception of physical abilities, appearance, and fitness level (Ren et al., 2023). It includes subdomains such as Sport Competence (SPC), Physical Conditioning (PC), Bodily Attractiveness (BA), Physical Strength (PS), and Physical Self-Worth (PSW) (Zayed & Elshaer, 2022). Sport Competence relates to perceived ability in sports activities, Physical Conditioning concerns one's fitness and physical condition, Bodily Attractiveness involves self-assessment of physical appearance, Physical Strength evaluates one's strength, and Physical Self-Worth reflects overall self-worth related to physical attributes (Zheng et al., 2023). These subdomains are vital for overall self-esteem and mental health, influencing various aspects of an individual's life, including academic performance and social relationships (Wright et al., 2023).

Latin dance has gained popularity among Chinese individuals, particularly among young women (Kilic & Nalbant, 2022). It has become a social and cultural trend and a valuable tool for fostering physical and mental well-being (Vecchi et al., 2022). While previous studies have shown the positive effects of physical activities like dance on physical and mental health, this study aims to investigate the specific impacts of Latin dance on SPA and PSE among middle school girls in China. This focus is particularly relevant given the unique aspects of Latin dance, such as its rhythm, social

interaction, and physical demands, which may address both SPA and PSE more effectively than other forms of exercise (Wanke et al., 2023). By examining these specific subdomains of SPA and PSE, this study differs from previous research by providing a more nuanced understanding of how Latin dance can influence these psychological factors, potentially offering more targeted and effective interventions for middle school girls.

1.3 Research Objectives

1.3.1 General Objective

To examine the effect of Latin dance across three time points (pre-test, post-test 1, and post-test 2) on social physique anxiety (SPA) and physical self-esteem (PSE) among middle school girls.

1.3.2 Specific Objectives

1. To examine the effect of Latin dance on the SPA total score and its sub-components (negative evaluation, self-performance, social comparison) among middle school girls across pre-test, post-test 1, and post-test 2.
2. To examine the effect of Latin dance on the PSE total score and its sub-components (sport competence, physical conditioning, bodily attractiveness, physical strength, physical self-worth) among middle school girls across pre-test, post-test 1, and post-test 2.

1.4 Hypotheses of Research

These objectives are the foundation for this study's general and specific hypotheses.

Here is a list of these presumptions:

1.4.1 General Hypotheses

Latin dance intervention will significantly affect the social physique anxiety and physical self-esteem of middle school girls across three time points.

1.4.2 Specific Hypotheses

The following are the relevant null hypotheses based on the objectives listed above.

For Objective 1:

Ho1: There was no significant difference in the SPA total score among middle school girls at pre-test, post-test 1, and post-test 2.

Ho2: There was no significant difference in negative evaluation scores of SPA among middle school girls at pre-test, post-test 1, and post-test 2.

Ho3: There was no significant difference in self-performance scores of SPA among middle school girls at pre-test, post-test 1, and post-test 2.

Ho4: There was no significant difference in social comparison scores of SPA among middle school girls at pre-test, post-test 1, and post-test 2.

For Objective 2:

Ho5: There was no significant difference in the PSE total score among middle school girls at pre-test, post-test 1, and post-test 2.

Ho6: There was no significant difference in sport competence scores of PSE among middle school girls at pre-test, post-test 1, and post-test 2.

Ho7: There was no significant difference in physical conditioning scores of PSE among middle school girls at pre-test, post-test 1, and post-test 2.

Ho8: There was no significant difference in bodily attractiveness scores of PSE among middle school girls at pre-test, post-test 1, and post-test 2.

Ho9: There was no significant difference in physical strength scores of PSE among middle school girls at pre-test, post-test 1, and post-test 2.

Ho10: There was no significant difference in physical self-worth scores of PSE among middle school girls at pre-test, post-test 1, and post-test 2.

1.5 Significance of Study

This part was divided into theoretical significance and practical significance. The detailed explanation is as follows.

1.5.1 Theoretical Significance

This study has several theoretical contributions. First, it extends existing research on the exercise and self-esteem (EXSEM) model of positive body image in adolescents to focus specifically on the effects of Latin dance (Jankauskiene & Baceviciene, 2022). While physical exercise has been linked to improved self-esteem and body image, the specific effects of different types of physical activity still need to be better understood. By examining the effects of Latin dance, the study adds to a growing body of literature on the relationship between physical activity, self-esteem, and body image associated with dance.

Second, the study extends research on Latin dance by examining its potential effects on physical self-esteem and social physique anxiety. Although Latin dance has been found to have physical health benefits (Soltero et al., 2022), its effects on psychological outcomes have received less attention. It has been proved that adolescent middle school girls are prone to social physique anxiety and low self-esteem (Balluerka et al., 2023). The study of Latin dance intervention can provide a new theoretical basis for alleviating social physique anxiety and improving physical self-esteem. This study contributes to our understanding of the potential psychological benefits of Latin dance.

Third, the study addresses a gap in the literature on the effects of Latin dance on middle school girls. Although Latin dance is prevalent among adolescents, few studies have examined its effects on this population. By focusing on middle school girls, this study provides an insight light on the possible advantages of Latin dancing for this age group.

1.5.2 Practical Significance

The practical significance of the study's conclusions is numerous. First, the results can inform the development of interventions to improve adolescent girls' body image and self-esteem. Latin dance may be a promising intervention for promoting positive body image and self-esteem, especially for girls reluctant to engage in traditional physical activity.

Second, the results can inform the development of school-based dance programmes. Many schools offer traditional forms of physical activity, such as sports teams and fitness classes, but may not offer dance programmes. For example, this study is a 12-week Latin dance intervention. If the intervention is effective, a 12-week Latin dance course could be a valuable supplement to physical activity courses and physical education teachers in schools, especially for girls who may be more interested in dance than other forms of physical activity.

Third, the results can inform the development of community-based dance programmes. Latin dance programmes could be offered in community centers or other settings to promote physical activity and positive body image among adolescent girls.

1.6 Delimitation

The study was delimited in the following aspects:

In this study, focus on middle school girl, so the finding are more related to them, and cannot be generalise to other gender and age group. The selected population is all students with no dance background, so the results do not apply to those with dance backgrounds.

Latin dance training and routine physical exercise were used to examine the influence of Latin dance on the mental health of Chinese middle school girls. Latin dance includes five dances: rumba, cha-cha-cha, cowboy, samba, and bullfight. Only rumba and cha-cha were used as experimental interventions in this study. Because these two dances are basic or essential, they are more suitable for beginners to learn than other dances. The study focused only on Latin dance as the intervention, and it is unclear if different types of dance or physical activity could produce similar effects or if the effects observed were specific to Latin dance.

1.7 Limitations

The following are the study's limitations.

1. Data from the questionnaire survey is based on the respondents' self-reporting on the questionnaire items provided. Therefore, the reliability of data depends on the sincerity and determination of respondents. However, by briefly

explaining the significance of the study, mainly the honest answers about each item in the questionnaire, and by ensuring the confidentiality of the respondent's answers, the researchers managed to control the issue and minimise the impact of the results.

2. The duration of the Latin dance intervention in this study was 12 weeks. Long-term interventions may produce different results, and whether the effects observed in this study will be sustained over time is still being determined. A longer follow-up period would help better understand whether the observed changes persist.
3. Only a single experimental group was included, so there was no directly comparable control group. This limits the ability to attribute observed changes exclusively to the Latin dance intervention, as other external factors might have influenced the outcomes. However, efforts were made to mitigate this limitation by ensuring rigorous pre- and post-intervention assessments and by using validated measures to capture changes in SPA and PSE. Additionally, thorough statistical analyses were conducted to account for potential confounding variables, and the findings were interpreted within the context of this design constraint.

1.8 Definition of Terms

This study will use specific terms to represent the investigated variables. The term was explained according to the terminology and operational definition listed below.

1.8.1 Latin Dance

Terminology: The dances associated with bullfighting, cowboys, samba, cha cha cha, and rumba are examples of the sports dance known as Latin dance, which has its roots in Latin America (Coutinho et al., 2023). Latin dance steps are flexible. With the beat of the music, the dancer's body increases strength, speed, and posture to highlight the beauty of the human body (Horton & Robledo, 2023). Bright, powerful music is used in Latin dance. Rhythm, ardour, audacity, romantic flair, and beneficial effects on mental and physical well-being (Liu et al., 2023). Traditional aerobic training lacks the unique dimension of human engagement and interactivity that Latin dance brings (Wanke et al., 2023).

Operational: Latin dance includes five dances: Rumba, Cowboy, Samba, Cha Cha Cha, and Bullfight. This study only has Rumba and Cha Cha Cha because these two dances are basic or essential. They are more suitable for beginners to learn than other dances (Tang et al., 2022).

1.8.2 Social Physique Anxiety (SPA)

Terminology: Social Physique Anxiety (SPA) is the term used to describe discomfort or fear that one's physical appearance may be unfavourably interpreted by others (Abdollahi et al., 2023). Social Physique Anxiety (SPA) is a unique form of negative body image conceptualized as part of the emotional dimension (Zartaloudi et al., 2023). Based on ideas of impression management and self-presentation, social physique anxiety is a social psychological variable. It represents a person's perceived anxiety or concern about how their body appears to others when they believe that they are being judged by them (Fu et al., 2022; Policardo et al., 2023).

Operational: Social Physique Anxiety (SPA) has four sub-domains to represent. This study uses Social Physique Anxiety Total Score (SPATS), Negative Evaluation (NE), Self-Performance (SP), and Social Comparison (SC) to reflect Social Physique Anxiety.

1.8.3 Physical Self-Esteem (PSE)

Terminology: Physical self-esteem (PSE), which consists of both descriptive and evaluative elements, is a person's sense of who they are in physical environments. Studies have revealed that physical conditioning and bodily attractiveness are important sub-dimensions of physical self-esteem (She et al., 2023). Young people's total self-esteem and mental health depend on their physical self-esteem, which can include their perception of their physical beauty and athletic aptitude (Martín-Talavera

et al., 2023). In addition, a person's perception of their body may be susceptible to changes in physical activity levels (Benitez-Sillero et al., 2023).

Operational: Physical Self-esteem (PSE) has six sub-domains. The sub-domains are: Perceived (1) Physical Self-esteem Total Score (PSETS), (2) Sport Competence (SPC), (3) Physical Conditioning (PC), (4) Bodily Attractiveness (BA), (5) Physical Strength (PS), and (6) Physical Self-Worth (PSW).

1.8.4 Middle School Girls

Terminology: Middle school girls typically refers to female students in middle school, a stage of education in China typically covering grades 6-9 for students aged 11-15 (Rong et al., 2022). These girls usually transition from elementary to high school and are at a critical developmental stage. Middle school girls may be experiencing physical, emotional, and social changes and may face new challenges in their academic and personal lives as they navigate the middle school environment (Qi et al., 2020).

Operational: All of the study's subjects were female middle school students from the Qingpu and Pudong campuses of Shanghai United International School, aged between 12 and 14, with no prior dance experience.

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