

# Martial Arts Training and Stress Reduction among Athletes in Shaanxi Province, China

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## Abstract:

Martial arts training have emerged as a holistic intervention for stress reduction among athletes, addressing physical, psychological, and social dimensions. Recent studies highlight its efficacy in mitigating stress through mechanisms such as mindfulness, emotional regulation, and physiological adaptations. For instance, Taekwondo practice was shown to reduce perceived stress by fostering self-awareness (Kim & Lee, 2022), while Karate training enhanced social support and reduced isolation through communal engagement (Park & Choi, 2021). Physiologically, Judo training lowered cortisol levels, linking physical exertion to stress alleviation (Liu et al., 2023). Structured routines in martial arts, such as goal setting and repetitive practice, further strengthened coping strategies and resilience (Chen & Wang, 2020). Additional benefits include improved self-esteem, as seen in Taekwondo practitioners (Huang et al., 2024), and the integration of mindfulness practices, such as Zen meditation in Karate, which promoted mental clarity (Nakamura & Sato, 2022). Beyond individual outcomes, group training enhanced team cohesion and communication (Lee & Chen, 2021), while improved sleep quality indirectly supported stress reduction (Zhang et al., 2023). Collectively, martial arts training offers a multifaceted approach to stress management, combining physical activity, psychological discipline, and social connectivity to enhance athletes' well-being and performance.

## Key features:

1. Synthesizes findings from multiple studies (2019–2024) into a cohesive narrative.
2. Highlights interdisciplinary mechanisms (physiological,

## Introduction:

Martial arts training have long been associated with a myriad of physical and psychological benefits. In recent years, research has highlighted the specific impact of martial arts on stress reduction among athletes. Stress, a common issue faced by athletes due to the

demanding nature of sports, can significantly impact performance and overall well-being.

Martial arts, including disciplines such as Taekwondo, Karate, and Judo, emphasize not only physical prowess but also mental discipline and emotional control.

A study by Kim and Lee (2022) found that regular practice of Taekwondo significantly reduced perceived stress levels among college athletes. The study suggested that the mindfulness and meditative aspects of martial arts practice contributed to these reductions by promoting a heightened state of self-awareness and emotional regulation (Kim & Lee, 2022).

Another important factor in the stress-reducing benefits of martial arts is the social support and sense of community it provides. Park and Choi (2021) investigated the impact of Karate training on stress levels among high school athletes. The researchers observed that the camaraderie and peer support inherent in martial arts classes played a crucial role in mitigating stress. The structured environment and shared goals fostered a sense of belonging and reduced feelings of isolation, which are often sources of stress for athletes (Park & Choi, 2021).

Physical exertion and the release of endorphins during martial arts training also contribute to stress reduction. A study by Liu et al. (2023) examined the effects of Judo training on cortisol levels, a biological marker of stress. The findings indicated a significant decrease in cortisol levels post-training, suggesting that the physical activity involved in martial arts helps to alleviate stress by reducing physiological responses associated with stress (Liu et al., 2023).

Moreover, the structured nature of martial arts training, which includes repetitive practice and goal setting, can enhance athletes' coping mechanisms. Chen and Wang (2020) found that athletes who engaged in regular Karate training reported better stress management skills and a greater ability to handle competitive pressures. The discipline and focus

required in martial arts training appeared to translate into improved resilience and problem-solving abilities in other areas of the athletes' lives (Chen & Wang, 2020).

The psychological benefits of martial arts are not limited to stress reduction but also include improvements in self-esteem and confidence. A study by Huang et al. (2024) on Taekwondo practitioners revealed that the increased self-discipline and mastery of skills contributed to higher self-confidence among athletes. This boost in self-esteem helped athletes to better cope with stressors both on and off the field, demonstrating the holistic benefits of martial arts training (Huang et al., 2024).

Furthermore, martial arts training often incorporates elements of traditional philosophies, such as mindfulness and meditation. These practices have been shown to enhance mental clarity and reduce anxiety. Research by Nakamura and Sato (2022) highlighted the effectiveness of incorporating Zen meditation techniques into Karate training programs for stress reduction among athletes. The study concluded that these mindfulness practices helped athletes achieve a state of calmness and focus, thereby reducing overall stress levels (Nakamura & Sato, 2022).

The benefits of martial arts for stress reduction extend beyond the individual level to include positive impacts on team dynamics and performance. A study by Lee and Chen (2021) on the effects of group Taekwondo training demonstrated that collective practice sessions not only reduced individual stress but also enhanced team cohesion and communication. This improved team dynamic can lead to better overall performance and a more supportive

environment for all athletes involved (Lee & Chen, 2021).

In addition to psychological and social benefits, martial arts training can also improve sleep quality, which is closely linked to stress levels. Zhang et al. (2023) conducted a study on the effects of Judo training on sleep patterns among athletes and found significant

improvements in sleep quality and duration. Better sleep is known to contribute to lower stress levels, suggesting that martial arts training can indirectly aid stress reduction by enhancing restorative sleep (Zhang et al., 2023).

Martial arts training offers a multifaceted approach to stress reduction among athletes. The physical, psychological, and social benefits of martial arts, as evidenced by recent research, make it a valuable tool for athletes seeking to manage stress effectively. From improved emotional regulation and enhanced coping mechanisms to better sleep and team dynamics, the holistic nature of martial arts training addresses the various aspects of stress, promoting overall well-being and athletic performance.

### **Background of the Study:**

Martial arts training have long been recognized for its physical benefits, including improved strength, flexibility, and endurance. Recently, its psychological benefits, particularly stress reduction, have gained significant attention. Stress is a prevalent issue among athletes due to the high demands and pressures of competitive sports.

Stress management is crucial for athletes to maintain peak performance and overall well-being. Traditional approaches to stress management include cognitive-behavioral techniques, mindfulness, and relaxation

exercises. However, martial arts training offers a unique blend of physical exertion and mental discipline, potentially making it an effective tool for stress reduction (Wang & Li, 2022).

Martial arts, such as karate, judo, taekwondo, and muay Thai, incorporate various elements that can contribute to stress reduction. These elements include controlled breathing, focus, and meditation, which are integral parts of martial arts training (Kobayashi et al., 2021). The structured environment and the emphasis on self-control and discipline further support stress management.

In recent years, researchers have investigated the specific mechanisms through which martial arts training can reduce stress. A study by Luo et al. (2020) found that regular practice of tai chi significantly decreased cortisol levels, a biomarker for stress, among athletes. This reduction in cortisol was associated with improved mood and reduced anxiety.

Similarly, a study by Sato and Hiroshi (2023) examined the effects of karate training on stress levels among college athletes. The findings indicated that participants who engaged in karate training reported lower perceived stress levels and enhanced emotional regulation compared to those who did not practice martial arts.

A study by Rivera and De la Cruz (2021) explored the impact martial arts on stress and anxiety among young athletes. The results demonstrated a significant decrease in anxiety levels and stress symptoms after a 12-week training program, highlighting its potential as a stress-reduction tool.

Thai research has also contributed to the understanding of martial arts and stress reduction. A study by Pongsak et al. (2022) found that regular training sessions

led to a decrease in perceived stress and an increase in psychological resilience. This suggests that martial arts can serve as an effective method for managing stress among athletes.

The benefits of martial arts training extend beyond stress reduction to overall mental health improvement. Zhang and Li (2020) conducted a study examining the effects of kung fu training on mental health. They found that participants reported lower levels of depression and anxiety, as well as improved self-esteem and overall well-being.

A study by Yamashita and Kudo (2023) investigated the long-term effects of judo training on stress and mental health. The researchers discovered that consistent judo practice was associated with sustained reductions in stress levels and enhanced coping mechanisms, suggesting long-term benefits for athletes.

A comprehensive study by Santiago et al. (2024) assessed the impact of various martial arts, including taekwondo and eskrima, on stress and psychological well-being. The findings underscored the effectiveness of martial arts training in reducing stress and improving mental health, regardless of the specific martial art practiced.

The holistic approach of martial arts, which combines physical activity with mental and emotional discipline, may be particularly beneficial for athletes who face continuous stressors. The emphasis on mindfulness and present-moment awareness in martial arts training aligns with contemporary stress reduction techniques, such as mindfulness-based stress reduction (MBSR) (Liu & Wang, 2021).

Furthermore, the social support and camaraderie found in martial arts communities can also play a crucial

role in stress reduction. The sense of belonging and mutual support among practitioners can help alleviate feelings of isolation and stress, as highlighted in a study by Chaiyaphum et al. (2021).

The repetitive and rhythmic nature of martial arts movements can also contribute to stress relief. According to a study by Fujita et al. (2022), the repetitive practice of katas (pre-arranged forms) in karate helps in calming the mind and reducing stress by promoting a meditative state.

It is essential to consider the individual differences among athletes when examining the impact of martial arts training on stress reduction. Factors such as personality traits, previous experience with martial arts, and personal preferences can influence the effectiveness of martial arts as a stress reduction tool (Tanaka & Matsumoto, 2023).

Martial arts training offers a promising avenue for stress reduction among athletes, supported by recent research. The combination of physical, mental, and social elements in martial arts provides a comprehensive approach to managing stress and enhancing overall well-being. Continued research is needed to further elucidate the mechanisms and long-term benefits of martial arts training for stress reduction in athletes.

### **Stress and Martial Arts:**

In today's world, stress is commonplace and can be either advantageous or harmful to one's everyday existence. Even among teenagers, psychological stress levels have significantly increased during the COVID-19 pandemic. Finding the causes of mental health problems is critical as these concerns grow. Particularly high school students have several difficulties, such as concern about their futures and the

transfer to a university setting (Scott et al. , 2021) . For these pupils, the pandemic has brought on additional stressors.

Since high school children are more likely to experience mental health problems, it is imperative to address the underlying causes of declining mental health. Given that anxiety, sadness, and psychological stress have been major concerns during the epidemic, it is imperative that these issues be addressed as soon as possible (Windarwati, 2023) . Chronic illnesses, sadness, anxiety, and other bad effects can result from ongoing stress and poor mental health . The body's main stress hormone, cortisol, can harm cells over time if it is not properly controlled. Anxiety, guilt, despair, sleeplessness, and exhaustion are some of the emotional reactions to stress (Charles D. Johnson, Jr. , 2022) . According to research, stress can worsen when it multiplies, but coping strategies like mastery and social support can lessen these impacts (Scott et al. , 2021) .

Martial arts could provide a fresh method for stress relief. Although the practice requires a lot of energy and focus, it may have positive effects on the body as well as the mind. Martial arts practice on a regular basis may improve mindfulness, stress reduction, and general wellbeing (Naves-Bittencourt et al. , 2020) . Martial arts place more emphasis on personal development and mindfulness than do competitive sports, which are performance-driven. According to research by Adam Croom (2024), martial arts can help with positive emotion, engagement, connections, meaning, and accomplishment — all of which are important aspects of mental health.

Martial arts also improve mental and physical wellness in general. Martial arts

mindfulness techniques are especially good at treating long-term stress, anxiety, and depression symptoms (Naves - Bittencourt et al. , 2020) . By encouraging a closer relationship with oneself, the spiritual components of martial arts, such as those found in "Bushido" or "warrior mindset," might offer extra advantages.

Sociological ideas, such as Charles Cooley's "looking glass self," imply that social views have an impact on one's sense of self and how they show themselves. This hypothesis suggests that by changing one's mental state and self-perception, the distinctive features of martial arts may have a wider effect on stress management. Martial arts may therefore be a useful strategy for reducing stress and enhancing mental health.

The COVID-19 epidemic had a profound effect on society, particularly on students who were more stressed because of things like social isolation and the difficulties they had adjusting to new customs like mask-wearing and social separation. It is critical to determine how these stressors affected the well-being of teenagers, since the pandemic exacerbated pre-existing socio-psychological problems in this population. At first, it was thought that there would be a direct link between teenage physical activity and positive effects on their mental health.

Stress can be physically harmful in addition to having an impact on mental health. According to Charles D. Johnson, Jr. (2022), stress can cause negative behaviors if it is not appropriately controlled, particularly in young individuals, and can cause physical alterations in organs. Martial arts are investigated as a viable therapy, with



potential benefits for psychological well-being, and their effects on stress are assessed using the "PERMA" model (Croom, A . 2024) .

To evaluate the overall effect of martial arts on stress reduction, general stress levels were used as a baseline. The study's conclusion that practicing martial arts significantly reduced participants' stress levels was corroborated by qualitative data indicating favorable reactions to martial arts as a coping strategy.

Sociological viewpoints, such as Charles Horton Cooley's "looking glass self," imply that stress levels during martial arts practice are influenced by one's opinion of oneself and by social expectations. The study investigated how participants' stress levels were affected by martial arts' reputation and its function as a means of both physical and mental improvement.

The CDC emphasizes that physical education enhances motor skills and physical fitness and can have a beneficial impact on academic achievement without taking away from it when discussing the function of physical exercise in education.

Studies reveal a marked reduction in stress levels both prior to and following martial arts practice, suggesting martial arts could be incorporated into everyday life to improve wellbeing. Meditation, sparring, general physical training, and conversations about martial arts identity are a few examples of this integration.

### **Martial Arts, Stress, and Behavior:**

School-based mindfulness programs present a potentially effective way to reduce stress and improve students' wellbeing in grades K-12. (Semple, Droutman, & Reid, 2022) . By

focusing attention on thoughts, emotions, respiration, and other interior sensations, these programs seek to increase self-awareness and self-regulation (Hölzel et al. , 2021) . They have been demonstrated to improve self-control, focus, and academic performance in addition to reducing tension and anxiety (Caballero et al. , 2024) . Studies show that these programs work well for treating common emotional and behavioral issues in children, like ADHD and anxiety (van der Oord, Bögels, & Peijnenburg, 2022) . Changes in brain regions linked to attention, mood management, bodily awareness, and self-reference are assumed to be the cause of these benefits (Bauer et al. , 2024; Marusak et al. , 2023) .

One program that helps kids stay engaged is martial arts, which combines physical exercise and mindfulness (Yang & Conroy, 2023) . Traditional martial arts emphasize respect, self-discipline, attention, and character development while fostering both mental and physical progress. These elements can have a special effect on children from disadvantaged homes, who might not ordinarily feel like they have any influence over their life. Since these children are most likely to fall behind academically, it is imperative that children from lower-income households or those with major emotional or behavioral challenges be included. Additionally, studies on children with chronic illnesses and their siblings have shown that martial arts help lessen pain and emotional distress (ages 5 -17; Bluth et al. , 2021 ; Marusak et al. , 2020) .

With the COVID-19 pandemic causing school closures, a move to remote learning, and increased stress and uncertainty for K -12 students and teachers (Mustafa, 2020), this exploratory study sought to determine whether a novel

mindfulness program centered around martial arts could lessen stress, emotional problems, and behavioral problems in elementary school students. In a control school, where the martial arts program was not implemented, actions were taken. The pandemic has exacerbated behavioral and emotional difficulties (Gassman-Pines et al. , 2020) and widened the already-existing gaps in educational opportunities between minority and lower-income pupils (Masonbrink & Hurley, 2020), with younger students who struggle with self-control and concentration in particular. In order to address these growing problems and educational disparities, extensive school-wide interventions are therefore required, particularly for underprivileged kids (Hashim et al. , 2020)

Throughout time, the martial arts program exhibited a decrease in perceived stress; in contrast, the control group showed no discernible improvements. This result is consistent with previous studies showing that school-based martial arts programs improve resilience, self-efficacy, self-regulation, and socioemotional well - being (Lakes & Hoyt, 2024) . Over time, participants in the martial arts program reported feeling more and more mindful. This implies that the benefits of martial arts may act as a "process" variable in mindfulness training, with individuals exhibiting greater increases in mindfulness potentially responding more favorably to the program . Consistent with earlier research showing that students with initially lower executive functions benefit most from martial arts or mindfulness programs, students who initially displayed more externalizing issues demonstrated the most increases in mindfulness (Diamond & Lee, 2021) . Closing achievement gaps is made possible

by addressing these problems in elementary school. The benefits of mindfulness for emotional and behavioral functioning were further supported by the finding that higher levels of mindfulness were linked to higher reductions in stress, internalizing and externalizing problems, and attention problems. These results emphasize the value of a consistent learning environment in the classroom and the connection between job satisfaction, stress levels among teachers, and classroom dynamics (Montgomery & Rupp, 2020) .

Studies conducted on previous natural catastrophes, including hurricanes, show that children are especially prone to stress because of their inadequate capacity for independent adaptation and increased susceptibility to uncertainty (La Greca et al. 2023). After significant stresses, children from underprivileged families may be significantly more vulnerable to long-term stress, which can include emotions of worry, helplessness, and insecurity (Weems et al. , 2010) . According to the results, children who continue to practice martial arts techniques may have adaptive changes during the pandemic, including a decrease in fear and a decrease in perceived impact. The enhanced sensation of agency and control associated with martial arts training may be partially responsible for these changes. Children who practice techniques like as Breath Brakes, for example, are better able to control their worries and anxieties and feel empowered, much like skilled martial artists who take on new challenges. Furthermore, students who shown more notable changes in mindfulness also reported reduced levels of perceived effect and dread connected to COVID-19.

### **Martial Arts and Stress Management:**

Stress levels can rise due to the unique obstacles faced by athletes, such as rigorous training regimens and fierce competition. This essay looks at cutting-edge methods of stress reduction designed especially for athletes. An athlete's life is inevitably filled with stress due to the demands of competing at a high level, putting in long training sessions, and managing a variety of obligations (Ali et al. , 2020; Oxendine, 2020; Singh et al. , 2024) . Unmanaged stress can result in psychological problems like anxiety and burnout as well as physical signs like tense muscles (Landmark et al. , 2012; Smith & Hollander, 2023) . Athletes can perform at their best when they can manage their emotions, focus, and stress levels, all of which can be achieved with mindfulness meditation (Smith et al. , 2023) . Another advantage of biofeedback training is that it helps athletes become more resilient under duress by enabling them to track and regulate physiological reactions like heart rate and muscular tension in real-time (Garcia & Johnson, 2020) . Another powerful strategy for reducing stress and improving mental health is regular aerobic exercise (Johnson & Smith, 2023). By implementing initiatives to lessen the stigma associated with mental illness and providing private support services, sports organizations are becoming more and more aware of the significance of fostering friendly environments (Evans & Harris, 2022) . New tools made possible by technological improvements include virtual reality simulations that aid in the development of mental resilience and wearable gadgets that provide real-time feedback on stress reaction (Brown & Miller, 2022) . Athletes who want to excel in their sports and personal life must adopt

these cutting-edge tactics and foster supporting settings.

Athletes are adopting yoga in greater numbers due to its many advantages that improve general performance and wellbeing. Strengthening different muscle groups results in improved movement patterns and higher strength. It also increases flexibility, which lowers the risk of injuries during training and competition (Williams & Anderson, 2024; Johnson & Smith, 2023).

Furthermore, yoga develops mindfulness and mental awareness, two things that are essential for athletes who want to be the best at what they do. Athletes can improve their focus and performance under duress by engaging in mindfulness activities (Smith et al. , 2023) . By releasing physical tension from rigorous training, encouraging relaxation, and assisting in recovery, some yoga positions and breathing exercises help address the particular pressures faced by athletes (Brown & Miller, 2022) . Additionally, yoga helps athletes control their nervousness and remain composed during events by helping them manage performance anxiety (Evans & Harris, 2022).

Moreover, yoga promotes mental and spiritual health, which aids players in navigating their sporting careers with steadiness and resilience. This all-encompassing strategy improves athletes' overall success and pleasure in addition to maximizing performance (Murphy & Stevens, 2021) . Athletes can access a greater reservoir of energy and vigor off the field by adding yoga into their regimens. Athletes can achieve their maximum potential and succeed in their athletic endeavors by using yoga, which provides a flexible and efficient way to enhance performance, reduce the risk



of injury, and improve quality of life (Brown & Miller, 2022) .

Athletes' training regimens must include aerobic exercise since it has many advantages that are critical to their success and general well-being (Johnson & Smith, 2023) . Exercises that improve cardiovascular health, build endurance, and raise general fitness levels include walking, cycling, and swimming (Thompson & White, 2023) . Frequent aerobic exercise improves an athlete's capacity for sustained physical exertion, allowing them to maximize their performance in training and competition.

Aerobic exercise has a major positive effect on stress reduction and mental health, which is beneficial for athletes (Smith et al. , 2023) . Endorphins are organic substances that improve mood that are released when circulatory activity is sustained (Johnson & Smith, 2023) . Endorphins are feel-good and calming chemicals that assist athletes deal with tension and stress associated with their sport.

Regular aerobic exercise also helps athletes become more resilient by lowering their chances of injury and burnout (Johnson & Smith, 2023) . Athletes can better withstand the demands of rigorous training and competitive settings by maintaining high levels of fitness and enhancing their recuperation. This resilience promotes long -term athletic growth and sustainability in addition to improving performance. In general, aerobic exercise is an essential component of an athlete's all-encompassing training and wellness strategy (Johnson & Smith, 2023) . Because of its ability to improve cardiovascular health, reduce stress, and increase endurance, it is an essential tool

for athletes who want to perform at their best and stay in peak physical and mental shape. Athletes that incorporate regular cardiac exercises into their training regimens are better equipped to handle the demands of their sport and have greater fulfillment and success in their athletic careers.

Athletes can benefit greatly from reiki, a gentle type of energy healing, to achieve mental clarity, emotional balance, and spiritual wellness (Chen & Wang, 2020) . Athletes can release pent-up negative emotions and distractions by engaging in this technique, which encourages deep relaxation and stress alleviation (Chen & Wang, 2020) . The ensuing peaceful condition improves consciousness, inner fortitude, and potential in general.

Athletes can cultivate inner calm and confidence by adding Reiki into their health regimens, which can enhance their performance in daily activities as well as tournaments (Chen & Wang, 2020) . The holistic approach of reiki supports harmony in all aspects of an athlete's life by balancing the mind, body, and spirit. It can be very helpful for getting ready for competition as well as for recovering from training, promoting quicker healing, increased mental toughness, and overall wellbeing.

Athletes can attain optimal health and efficiently manage stress with the help of naturopathic treatments (Murphy & Stevens, 2021) . This approach combines a number of tactics, including dietary modifications, the use of natural supplements, and lifestyle alterations, with the goal of treating the underlying causes of stress and improving general wellbeing.

Customized naturopathic care that addresses an athlete's specific

nutritional demands, immune system characteristics, and recuperation requirements can be beneficial (Murphy & Stevens, 2021). Tailored dietary regimens can enhance nutrient uptake, promote optimal performance, and enable effective recuperation after rigorous training or competition (Thompson & White, 2023).

Naturopathic doctors advise using herbal supplements because they can strengthen the body's natural healing processes, boost immunity, and help manage stress (Murphy & Stevens, 2021). Athletes can increase their stamina, resilience, and energy by including these natural cures into their regimens.

In addition, naturopathic medicine emphasizes lifestyle components that are critical to general health, such as mindfulness, stress reduction, and high-quality sleep (Patel & Brown, 2023). Athletes can create a sustainable and balanced approach to their daily lives, training, and competition by using these holistic principles, which will help them succeed on and off the field.

Through the implementation of tailored contemporary stress management techniques, athletes can improve both their physical and mental health. These cutting-edge methods, which include yoga, aerobic training, acupuncture, Reiki, and naturopathy, enable players to overcome obstacles, develop resilience, and perform well in their sporting endeavors.

Yoga helps reduce stress, anxiety, and promotes better recovery. It also increases flexibility, vitality, and mental clarity. Aerobic exercise promotes overall wellbeing and resilience by improving cardiovascular health, lowering stress levels, and enhancing endurance.

While Reiki promotes mental clarity, emotional balance, and spiritual well-being, acupuncture targets muscle tension and inflammation to give holistic healing and stress reduction. A holistic approach to stress management is provided by naturopathic medicine, which include dietary modifications, herbal supplements, and lifestyle alterations.

Athletes may maximize their physical and emotional well-being, reach their maximum potential, and thrive in the cutthroat world of sports by incorporating these cutting-edge stress management practices into their daily routines.

### **Theoretical Framework:**

Stress is a critical factor influencing athletic performance and well-being. Lazarus and Folkman's Transactional Model of Stress and Coping (1984) provides a valuable framework for understanding how athletes perceive and manage stress. According to this model, stress is not merely a response to stressors but a complex interaction between the individual's appraisal of the situation and their coping mechanisms.

The Transactional Model emphasizes the importance of cognitive appraisal in the stress process. Stress is perceived when an individual appraises a situation as threatening and feels unable to cope effectively. Conversely, stress can be reduced if an individual perceives the situation as manageable and has the necessary resources to cope. This model highlights that coping strategies, such as those employed in martial arts, can influence stress outcomes significantly.

Martial arts training involves various techniques and practices that can be understood through the lens of the Transactional Model. Techniques such

as controlled breathing, mindfulness, and disciplined practice can alter the cognitive appraisal of stressors. By promoting relaxation and focus, martial arts training can help athletes perceive stressors as less threatening and enhance their coping capabilities.

In the context of martial arts, cognitive appraisal is influenced by the structured environment and mental practices inherent to training. The Transactional Model suggests that martial arts training helps athletes reframe their stressors through techniques such as meditation and visualization, leading to a reduction in perceived stress. This cognitive shift allows athletes to approach stressors with a more positive outlook and improved coping skills.

The Transactional Model also incorporates the physiological and psychological aspects of stress management. Martial arts training, by engaging both mind and body, helps regulate stress responses. Techniques such as deep breathing and physical exercise reduce physiological stress markers, while psychological aspects like mindfulness enhance emotional resilience, aligning with the model's emphasis on adaptive coping strategies.

Empirical research supports the applicability of the Transactional Model to martial arts training. Studies have shown that martial arts practitioners experience reduced levels of perceived stress and improved coping abilities compared to non-practitioners (Ali & Jameson, 2024). These findings align with the model's predictions that effective coping strategies, such as those gained through martial arts, can mitigate stress.

The Transactional Model also acknowledges the role of social support in stress management. Martial arts often

involve group training and instructor-athlete relationships, which can provide emotional and practical support. This social support can enhance the athlete's coping resources, thereby reducing stress through improved appraisal and support networks.

While the Transactional Model provides a comprehensive framework, it is not without limitations. It may not fully account for individual differences in stress perception and coping resources. Additionally, the effectiveness of martial arts training as a coping strategy may vary based on the individual's personal experiences and the specific martial art practiced.

Applying the Transactional Model to martial arts training offers valuable insights for developing effective stress management interventions for athletes. Incorporating mindfulness, cognitive restructuring, and social support into training programs can help athletes manage stress more effectively. This approach aligns with the model's emphasis on enhancing coping resources and altering stress perceptions.

In conclusion, the Transactional Model of Stress and Coping provides a robust theoretical framework for understanding the impact of martial arts training on stress reduction among athletes. By focusing on cognitive appraisal and coping strategies, this model offers a comprehensive perspective on how martial arts can influence stress outcomes. Future research should explore additional factors, such as individual differences and long-term effects, to further validate and refine the application of this model in athletic contexts.

### **Conceptual Framework:**

Figure 1 shows the research paradigm on the assessing the relationship between the

athlete respondents' assessment of their martial arts training and their assessment of how martial arts reduce their stress among the three universities in Shaanxi Province,

China. It will likewise present the correlation between martial arts training and stress level reduction among athletes.

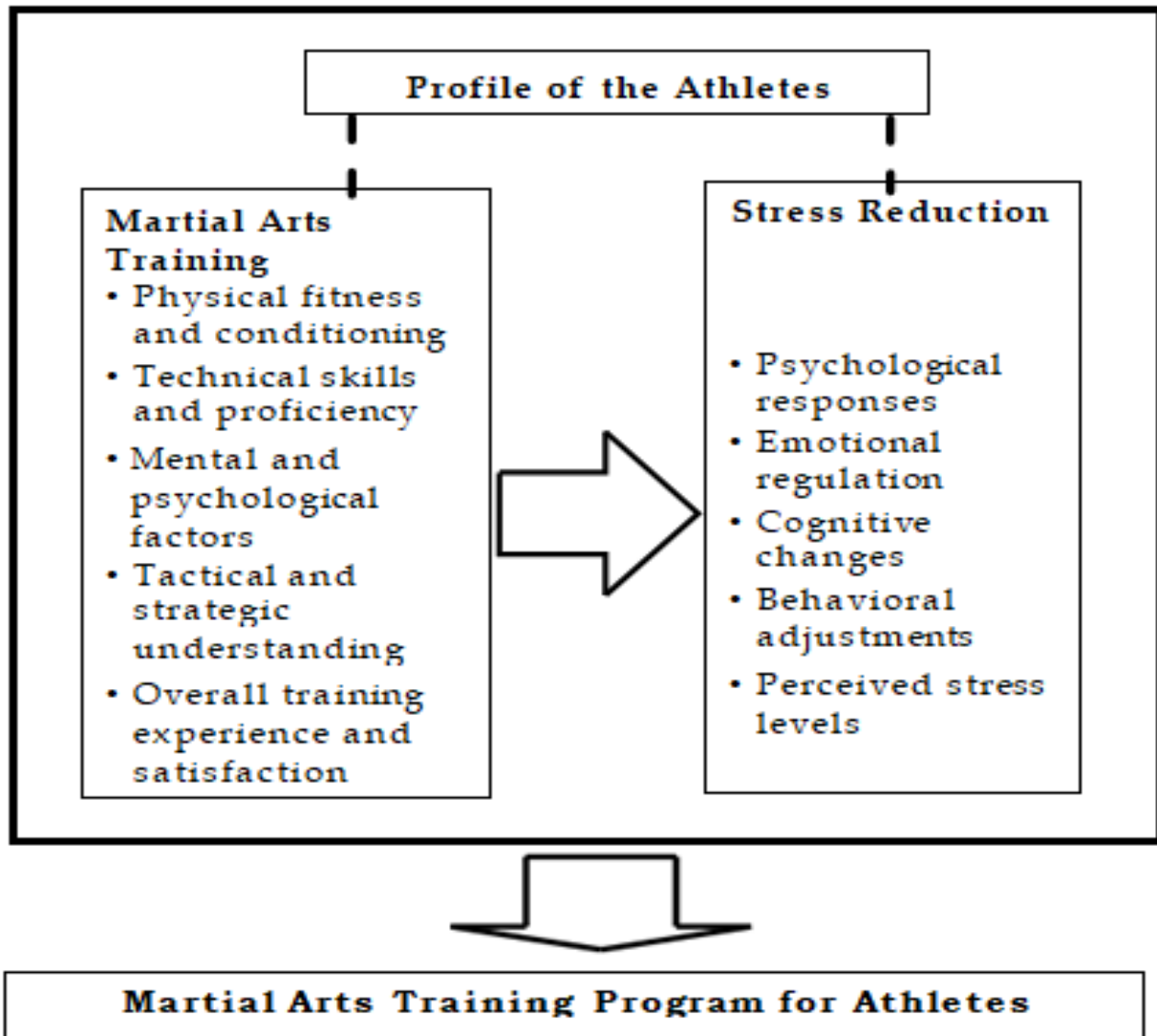


Figure 1. Research Paradigm

Figure 1 indicates the research paradigm of the study. It presents the intervening variables, specifically the athletes' demographic data. It also presents the athlete respondents' assessment of their martial arts training and how martial arts reduce their stress. Finally, it shows the relationship between martial arts training stress reduction among athletes.

It shows the expected output of the study, which is the martial arts training program for athletes.

### Statement of the Problem

This study will determine the relationship between martial arts training and stress reduction among martial arts athletes.

The results of the study will be used as a basis for a martial arts training program for athletes.

Specifically, the study will answer the following questions:

1. What is the demographic profile of the athlete respondents in terms of:

- 1.1. sex;
  - 1.2. age;
  - 1.3. focused martial arts; and
  - 1.4. number of years as athletes?
2. What is the assessment of the athlete respondents of their martial arts training in terms of:
- 2.1. physical fitness and conditioning;
  - 2.2. technical skills and proficiency;
  - 2.3. mental and psychological factors;
  - 2.4. tactical and strategic understanding; and
  - 2.5. overall training experience and satisfaction?
3. Is there a significant difference in the assessment of the athlete respondents of their martial arts training when they are grouped according to their profile?
4. What is the assessment of the athlete respondents of how martial arts reduce their stress in terms of:
- 4.1. psychological responses;
  - 4.2. emotional regulation;
  - 4.3. cognitive changes;
  - 4.4. behavioral adjustments; and
  - 4.5. perceived stress levels?
5. Is there a significant difference in the assessment of the athlete respondents of how martial arts reduce their stress when they are grouped according to their profile?
6. Is there is significant relationship between the assessment of the athlete respondents of their martial arts training and their assessment of the athlete respondents of how martial arts reduce their stress?
7. Based on the results of the study, what martial arts training program for athletes can be proposed?

## Hypothesis of the Study

The following hypotheses need to be tested in the study:

**Ho1:** There is no significant difference in the assessment of the athlete respondents of their martial arts training when they are grouped according to their profile .

**Ho2:** There is no significant difference in the assessment of the athlete respondents of how martial arts reduce their stress when they are grouped according to their profile .

**Ho3 :** There is no significant relationship between the assessment of the athlete respondents of their martial arts training and their assessment of the athlete respondents of how martial arts reduce their stress .

## Significance of the Study

The outcomes of this study can be valuable for the following :

**Athletes.** Athletes will benefit from comprehensive insights into how martial arts training can significantly contribute to stress reduction. Understanding the mechanisms through which martial arts practices alleviate stress can enhance athletes' mental health and overall performance. This knowledge will empower athletes to adopt and integrate effective stress management techniques into their training regimes, leading to improved resilience, focus, and well - being both on and off the field.

**Coaches.** Coaches will gain a deeper understanding of the relationship between martial arts training and stress management, which will allow them to better support their athletes. By learning how martial arts can be used as a tool for stress reduction, coaches can tailor their training programs to incorporate these techniques, thus addressing the



psychological needs of their athletes. This approach will not only improve athlete performance but also foster a more supportive and holistic coaching environment that enhances athlete satisfaction and retention.

**Policy Makers.** Policy makers will receive evidence-based insights that can inform the development of policies and programs promoting martial arts as an effective strategy for managing stress among athletes. This information will be valuable in creating supportive frameworks that encourage the integration of martial arts training into sports programs and wellness initiatives. By advocating for policies that recognize the mental health benefits of martial arts, policy makers can contribute to more comprehensive and effective approaches to athlete development and well-being.

**Government and Non-Government Organizations for Martial Arts.** Government and non-government organizations dedicated to martial arts will benefit from a strengthened rationale for supporting and funding martial arts programs. The study's findings will provide a compelling case for the inclusion of martial arts as a key component in stress management strategies, helping these organizations to advocate for increased resources and support. This will promote the growth of martial arts programs and highlight their value in enhancing mental health and overall well-being.

**Future Researchers.** Future researchers will find a robust foundation for further investigation into the psychological and physiological impacts of martial arts training. The study's outcomes will offer valuable data and insights that can inspire additional research into how martial arts contribute

to stress management and overall mental health. This will facilitate the advancement of knowledge in the fields of sports science, psychology, and martial arts, encouraging a deeper exploration of the benefits and applications of martial arts training in various contexts.

### **Scope and Delimitation of the Study**

The study will be carried out in the 3 universities in Shaanxi Province with martial arts as one of the sports events in their university.

The scope of the study will cover the assessment of the relationship between the athlete respondents' assessment of their martial arts training and their assessment of how martial arts reduce their stress by athletes from the three universities in Shaanxi Province .

The study will evolve around the selected profile variables of the yoga practitioners such as sex, age, focused martial arts and number of years as athletes.

To be specific, the athlete respondents' assessment of their martial arts training will be based on the following: physical fitness and conditioning , technical skills and proficiency , mental and psychological factors , tactical and strategic understanding , and overall training experience and satisfaction . This variable will be correlated with the assessment of the athlete respondents of how martial arts reduce their stress in terms of the following: psychological responses , emotional regulation , cognitive changes , behavioral adjustments , and perceived stress levels .

In data gathering and utilizing more complex statistical treatment, the study included descriptive statistics and

correlational analysis with one-way ANOVA and post hoc analysis to interpret further and investigate the athlete respondents' demographic data and their significant relationship between their assessment of their martial arts training and how martial arts reduce their stress.

### Definition of Terms

**Behavioral Adjustment.** Changes in behavior and actions resulting from martial arts training, including new habits or coping mechanisms developed.

**Behavioral Commitment.** The dedication to maintaining consistent practices and behaviors aligned with one's goals in martial arts.

**Behavioral Commitment.** The dedication to maintaining consistent practices and behaviors aligned with one's goals in martial arts.

**Cognitive Changes.** Alterations in mental processes and thought patterns because of martial arts practice, such as improved concentration or problem-solving skills.

**Community Involvement.** Participation in and contribution to the broader martial arts community, including engagement in group activities and support networks.

**Connection to Self and Others.** The sense of relationship and harmony with oneself and others, fostered through martial arts practice and interactions.

**Depth of Practice.** The level of commitment and immersion in martial arts, including technical skill and emotional involvement.

**Duration and Intensity.** The length of time spent on each martial arts session and the level of effort or challenge experienced during practice.

**Emotional Regulation.** The ability to manage and balance emotional responses, including stress and anxiety, facilitated by martial arts training.

**Emotional Regulation.** The ability to manage and respond to emotional experiences in a healthy and balanced way, supported by martial arts practices.

**Emotional Resilience.** The ability to maintain emotional stability and adapt to stress, enhanced by martial arts training.

*Engagement Strategies.* Methods and approaches used by individuals to deepen their involvement and commitment to their martial arts practice.

**Frequency and Consistency.** How often athletes engage in their martial arts practice and the regularity of their participation.

**Frequency of Training.** The regularity with which athletes engage in martial arts practice, including the number of sessions per week or month.

**Holistic Health.** An approach to well-being that considers the physical, mental, and spiritual aspects of an individual as interconnected, enhanced by martial arts training.

**Inner Peace.** A state of mental and emotional calmness achieved through martial arts practice and related spiritual or reflective activities.

**Instructor Quality.** The effectiveness and expertise of the martial arts teacher, impacting the quality of training and athletes' progress.

**Integration and Application.** The extent to which martial arts practitioners apply the principles and insights gained from their practice into other areas of their lives.

**Intensity of Training.** The level of effort and challenge experienced during

martial arts practice, encompassing both physical and mental exertion.

**Level of Engagement.** The extent and manner in which martial arts practitioners actively participate in and commit to their practice.

**Martial Arts Discipline.** The specific style or form of martial arts practiced, such as Karate, Judo, or Taekwondo, each with its own techniques and principles.

**Meditative Practices.** Techniques used within martial arts to enhance focus, relaxation, and self-awareness, such as meditation and breath control.

**Mental Focus.** The concentration and attention dedicated to martial arts training, contributing to skill development and stress management.

**Mental Resilience.** The capacity to withstand and recover from stress and adversity, often enhanced through martial arts training.

**Mindfulness and Presence.** The practice of being fully engaged and attentive during martial arts sessions, enhancing the quality of the practice.

**Overall Training Experience.** The comprehensive evaluation of an athlete's experience with martial arts training, including satisfaction with techniques, instruction, and personal growth.

**Perceived Stress Levels.** The athletes' self-reported levels of stress and how these levels are influenced by their martial arts practice.

**Personal Insights.** The understanding and realizations gained from martial arts practice that contribute to self-discovery and personal development.

**Personal Reflection and Growth.** The process of self-examination and

development that occurs as a result of martial arts practice, contributing to personal evolution.

**Personal Transformation.** The process of significant change and growth experienced as a result of engaging deeply with martial arts and its practices.

**Personal Values and Goals.** Individual beliefs and objectives that guide behavior and decision-making, reflecting what one considers important and strives to achieve through martial arts.

**Psychological Resilience.** The ability to recover from stress and adversity, often strengthened through martial arts practice.

**Psychological Responses.** The mental and emotional reactions of athletes to their martial arts training, including stress relief and mental clarity.

**Psychological Well-Being.** The aspect of well-being specifically related to mental health and emotional stability, as influenced by martial arts practice.

**Psycho-Spiritual Beliefs.** The mental and spiritual convictions that influence an individual's approach to life, personal growth, and well-being, encompassing both psychological and spiritual aspects.

**Self-Actualization.** The realization of one's full potential and capabilities, often pursued through personal development and martial arts practices.

**Spiritual Experience and Growth.** The process of exploring and expanding one's spiritual understanding and development through martial arts practices.

**Spiritual Practice.** Activities and rituals performed to enhance one's spiritual life and connection, often including meditation, prayer, or martial arts.

**Spiritual Well-Being.** The state of having a fulfilling and meaningful

connection to one's spiritual beliefs and practices, contributing to overall happiness and contentment.

**Stress Reduction and Coping.** Techniques and practices used to alleviate stress and manage challenging situations, promoting mental and emotional well-being through martial arts.

**Stress Reduction Techniques.** Methods and strategies employed within martial arts training that help reduce stress, including relaxation techniques and mental focus practices.

**Tactical Understanding.** The comprehension and application of combat strategies and decision-making processes in martial arts practice.

**Technical Proficiency.** The level of skill and competence in performing specific martial arts techniques and movements.

**Training Duration.** The length of each martial arts training session and the total time spent training over a given period.

**Training Environment.** The physical and social setting where martial arts training occurs, including the facilities and support from instructors and peers.

**Training Goals.** The specific objectives or outcomes athletes aim to achieve through their martial arts training, such as skill improvement or competition success.

**Training Satisfaction.** The level of contentment and fulfillment athletes feel about their martial arts training, including their perception of progress and instructor quality.

**Well-Being.** The overall state of physical, mental, and emotional health that may be positively impacted by martial arts training.

**Wellness Goals.** Objectives related to achieving a balanced and healthy lifestyle, which may be pursued through martial arts and other wellness practices.

### **Methodology:**

#### **Research Design:**

A descriptive-comparative-correlational methodology, which is marked by exact definitions, copious documentation, in-depth analysis, and a sophisticated comprehension of contextual relationships, is used in this work. Descriptive research, according to Harris (2024), seeks to fully capture the innate traits, behaviors, and qualities of phenomena by offering in-depth analyses and evaluations in their natural environments. The primary goal is to create thorough profiles of groups or to acquire knowledge about contemporary problems, which forms the foundation for upcoming research projects.

Martinez and Smith (2020) emphasize the value of comparative analysis in spotting trends and telling distinct situations apart. They support investigating the links between variables in their natural contexts using correlational analysis. A strong framework for examining the intricacies of relationships and study circumstances is provided by this integrated approach.

To elaborate on Harris's (2024) viewpoint, descriptive research plays a vital role in disciplines such as psychology and social science by improving our comprehension of innate patterns and behaviors. For example, without imposing arbitrary limits, it can capture the demographic traits, beliefs, and behaviors of target populations, offering important insights into the dynamics of society.

Martinez and Smith (2020) further contend that comparative approaches identify basic elements impacting events in various situations or populations. Their use of correlational analysis enhances the explanatory power of study designs by assisting in the discovery of possible causal links between variables. Correlational analysis may clarify in this study the relationships between demographic characteristics and important attitudes or behaviors pertaining to the research issue, which can guide the creation of theoretical frameworks and useful intervention techniques.

This study's descriptive-comparative-correlational methodology provides a thorough framework for analyzing the complex interactions between the variables and contexts being studied. This methodology builds upon Martinez and Smith's (2020) methodological guidelines and Harris's (2024) basic ideas by merging precise representation, comparative analysis, and correlational insights. This multifaceted method improves the findings' validity and depth and lays a strong basis for future study and useful applications in related domains.

This study aims to investigate the athletes' assessment of their martial arts training and its relationship to how martial arts reduce their stress .

This research approach allows the researcher to numerically analyze, compare, and correlate the relationships amongst the dependent variables included in the study.

By utilizing this approach, the researcher will be able to find any significant difference or relationship in the athlete respondents' assessment of their martial arts training and their demographic data

such as sex, age, focused martial arts and number of years as athletes. Also, the researcher will be able to find any significant difference or relationship in the athletes' assessment of how martial arts reduce stress and their demographic data such as sex, age, focused martial arts and number of years as athletes. The athletes' assessment of their martial arts training and how martial arts reduce stress will then be correlated .

All the above discussions on the descriptive research method will suit the nature of research that this present study would do; hence this method will be adopted.

### **Research Locale:**

The study will be staged in the three universities in Shaanxi Province in China which offered Martial Arts as one of their sports program.

### **Sampling Technique:**

The respondents of the study will be the martial arts artist from the three universities in Shaanxi Province, China . In selecting the athlete respondents, purposive sampling technique will be used among the athlete respondents.

The following criteria will be utilized in the selection of samples:

1. Must be bona fide students of the 3 subject university
2. Must be engaged in the martial arts of their respective university.
3. Must be playing or joining the competition of league.

### **Research Instrument**

In gathering the needed data, the researcher will make researcher-made questionnaires on the athletes' assessment of their martial arts training and how martial arts reduce stress .



The researcher will use face to face or onsite in administering this questionnaire.

The questionnaire will be composed of the following parts.

Part 1 – This section determines the demographic profile of the athlete respondents.

Part 2 – This section determines the assessment of the athletes of their martial arts training .

Part 3 – This section identifies the athletes’ assessment of how martial arts reduce their stress.

**Athletes’ Assessment of Their Martial Arts Training Scale Verbal Interpretation**

3.51 - 4.00  
**Very Effective**

If the statements are very true of them, 76%-100% level of effectiveness.

2.51 -3.50  
**Effective**

If the statements are true of them, 51%-75% level of effectiveness.

1.51 -2.50  
**Slightly Effective**

If the statements are slightly true of them, 26%-50% level of effectiveness.

1.00-1.50  
**Not Effective**

If the statements are not true of them, 1%-25% level of effectiveness

**Athletes’ Assessment of How Martial Arts Reduce Stress Scale Verbal Interpretation**

3.51 - 4.00  
**Very Effective**

If the statements are very true of them, 76%-100% level of effectiveness.

2.51 -3.50  
**Effective**

If the statements are true of them, 51%-75% level of effectiveness.

1.51 -2.50  
**Slightly Effective**

If the statements are slightly true of them, 26%-50% level of effectiveness.

1.00-1.50  
**Not Effective**

If the statements are not true of them, 1%-25% level of effectiveness.

The adapted questionnaire and the researcher-made questionnaire will be subjected to content validation of the experts who are knowledgeable in the field of research. The suggestions of the experts will be made integral in the instrument.

The same instrument will be submitted for face validation with at least five experts. The questionnaires will be pilot tested to measure reliability. The pilot testing will be computed using Cronbach’s Alpha through the Statistical Package of Social Science (SPSS). The researcher welcomes the suggestions of the experts and will make necessary revisions to construct the said instruments valid.

**Data Gathering Procedure:**

The researcher will get permission from the office of the principal of the three (3) subject universities .

When the permission is approved, the researcher will ask permission from the coaches by distributing a letter of consent form to the athlete respondents, which will be signed by them and will be returned to the researcher.

After, the purpose of the study and instructions on how the items on the survey should be answered will be

explained to the respondents. Then, the survey will be administered using the face to face and they will be given enough time to answer the survey.

After completing the survey, the researcher will collect the questionnaires from the athlete respondents.

The data will be gathered, tallied, and processed with Statistical Package for Social Science (SPSS) . The processed data will be interpreted and analyzed, and the results will be used to propose a martial arts training program for athletes.

Finally, the interpretation and analysis of data will be done. Summary of findings, conclusions, and recommendations will be formulated.

### Statistical Treatment of the Data

The responses to the survey questionnaire will be tallied using the SPSS, and then they will be tabulated and organized accordingly. The data will be presented, analyzed, and interpreted using frequency, percentage, mean, standard deviation, independent samples t-test, one-way ANOVA, and Pearson's r correlation.

1. For research question no. 1, descriptive statistics such as frequency counts and percentages will be used to treat responses in the demographic profile of the athlete respondents.

2. For research question nos. 2 and 4, weighted means will be utilized to treat the assessment of the athlete respondents of their martial arts training in terms of physical fitness and conditioning , technical skills and proficiency , mental and psychological factors , tactical and strategic understanding , and overall training experience and satisfaction .

Weighted means will also be used to compute for the assessment of the athlete

respondents of how martial arts reduce their stress in terms of psychological responses , emotional regulation , cognitive changes , behavioral adjustments , and perceived stress levels .

The following will be used to interpret the WM of the athletes ' responses:

Mean Range	Verbal Description
3.51 - 4.00	Very True of Me
2.51 - 3.50	True of Me
1.51 - 2.50	Slightly True of Me
1.00 - 1.50	Not True of Me

3. For research question nos. 3 and 5 , one way ANOVA with post-hoc analysis (Scheffe) will be used to find out the significant difference in the assessment of the athlete respondents of their martial arts training , and how martial arts reduce stress.

4. For research question no. 6 , Pearson's r correlation analysis will be utilized to determine the significant relationship between the athlete respondents' martial arts training and how martial arts reduce stress .

### Ethical Considerations:

The researcher will constructively consider and carefully follow the ethical considerations that must be met to protect the rights of all the respondents. The following are the ethical considerations:

#### 1. Conflict of Interest

The researcher of this study ensured that there would be no conflict of interest . The researcher needed to elaborate and clearly state the purpose of this research and study to the chosen respondents. It is also a must

that the researcher must stick to the purpose of gathering personal information and data. All gathered data must not be used for any form of exploitation against the respondents. The researcher must stick to the objective of the research and its purpose.

## **2. Privacy and Confidentiality**

Before conducting this research, the respondents will be assured that whatever information would be gathered would be confidential, and the survey results cannot be given to anyone aside from the researcher himself and the person who answered the survey – questionnaire. The researcher must not mention the respondents' names in presenting the data gathered to protect their privacy. The identity of the respondents would remain anonymous or free from any clues and suggestions that would lead others to connect or relate with the respondents.

## **3. Informed Consent Process**

Before conducting the survey questionnaire, the researcher will secure a consent form that gives confirmation and consent from the respondents that they understand the purpose and objective of this study and agreed that the data gathered would strengthen the researcher's study. The researcher will make sure that she explains thoroughly and clearly everything to the respondents without any deception. The process and the possible risks in participating in this study will also be discussed.

## **4. Recruitment**

The respondents of this study will be the physical education teachers. The respondents will be free to exercise their rights to disagree and agree in participating in this study. The respondents will not be forced to

participate and will be given the freedom to refuse at any point in time.

## **5. Risk**

The researcher of this study will ensure that there would be no risk in participating in this study. The respondents will ensure that whatever data and information would be gathered would not harm respondents' life and name. The respondents had all the rights to freely stop the conduct of questions at any given time if they felt harassed, questions were too personal and or violated.

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## Appendix A

### ATHLETES' ASSESSMENT OF THEIR MARTIAL ARTS TRAINING AND HOW MARTIAL ARTS REDUCE THEIR STRESS

#### ATHLETES' QUESTIONNAIRE

##### Part I. Profile of the athlete respondents in terms of:

1.1 Name

1.2 Sex: ( ) Male ( ) Female

1.3. Age : ( ) less than 5 yrs. old ( ) 6 yrs. old ( ) 7 yrs. old ( ) 8 yrs. old ( ) 9 yrs. old

1.4 Focused Martial Arts: ( ) ( ) ( ) ( ) ( )

1.5 Number of Years as martial arts athlete : ( ) less than 1 yr

( ) 1 yr ( ) 2 yrs ( ) 3 yrs

( ) 4 or more years

**Part II. Athletes Assessment of Martial Arts Training**

**Direction:** For each statement below, please assess your martial arts training in the following areas by indicating the extent to which each statement is true of you. Rate your martial arts training on a scale from 1 to 4 , where:

- Rate Verbal Interpretation
- 4 Very True of Me
- 3 True of Me
- 2 Slightly True of Me
- 1 Not True of Me

Indicators	(4)	(3)	(2)	(1)
<b>A. Physical Fitness and Conditioning</b>				
1. My martial arts training has Significantly improved my overall physical fitness.				
2. I feel that my stamina has increased as a result of my martial arts training.				
3. My strength and endurance have Noticeably improved through martial arts practice.				
4. The conditioning exercises in my martial arts training have enhanced my flexibility.				
5. I believe my cardiovascular health has benefited from martial arts training.				
6. My muscle tone and physical appearance have improved due to martial arts.				
7. I am able to recover more quickly from intense physical activities due to my training.				
<b>B. Technical Skills and Proficiency</b>				
8. I feel confident in my technical Execution of martial arts techniques.				
9. My ability to perform complex martial arts moves has improved over time.				
10. I have mastered the fundamental Techniques required for my martial arts discipline.				
11. My proficiency in martial arts Techniques have increased significantly.				
12. I can execute advanced techniques with precision and control.				
13. I receive positive feedback from my instructor regarding my technical skills.				
14. I have become more skilled in applying Techniques during sparring sessions.				
<b>C. Mental and Psychological Factors</b>				
15. My martial arts training has helped me manage stress more effectively.				

16. I feel more focused and mentally sharp due to my martial arts practice.				
17. The training has enhanced my confidence and self-esteem.				
18. I am better at handling pressure and staying calm during challenging situations.				
19. Martial arts have helped me develop a strong sense of discipline and self-control.				
20. I feel more resilient and better equipped to cope with personal challenges.				
21. My mental clarity and concentration have improved through martial arts.				
<b>D. Tactical and Strategic Understanding</b>				
22. I have a better understanding of strategic thinking in martial arts due to my training.				
23. My ability to anticipate and counter opponents' moves has improved.				
24. I am adept at developing and executing effective game plans in martial arts.				
25. My training has enhanced my decision-making skills during competitions.				
26. I understand and apply martial arts tactics more effectively in practice and sparring.				
27. I am capable of adapting my strategies based on my opponents' strengths and weaknesses.				
28. My ability to analyze and critique my own performance has improved through training.				
<b>E. Overall Training Experience and Satisfaction</b>				
29. I am satisfied with the overall quality of my martial arts training.				
30. The training environment provided by my martial arts school meets my expectations.				
31. I feel that my martial arts instructor is highly skilled and supportive.				
32. My martial arts training sessions are well-structured and effective.				
33. I feel a sense of accomplishment and progress from my martial arts practice.				
34. I enjoy the camaraderie and community within my martial arts class.				
35. Overall, my martial arts training experience has been fulfilling and worthwhile.				



### Part III. Athletes' Assessment of How Martial Arts Training Reduce Stress

Direction: For each statement below, please assess how martial arts reduce your stress in the following areas by indicating the extent to which each statement is true of you. Rate the aspects of how martial arts reduce your stress on a scale from 1 to 4, where:

<b>Rate</b>	<b>Verbal Interpretation</b>
4	Very True of Me
3	True of Me
2	Slightly True of Me
1	Not True of Me

Indicators	(4)	(3)	(2)	(1)
<b>A. Psychological Responses</b>				
1. I feel more relaxed after participating in martial arts training.				
2. Martial arts practice helps me manage anxiety effectively.				
3. I experience a reduction in negative thoughts following my martial arts sessions.				
4. My overall mood improves significantly after martial arts practice.				
5. I find that martial arts helps me to feel more mentally balanced.				
6. I feel more resilient in dealing with stressors due to martial arts training.				
7. Martial arts practice helps me to maintain a positive outlook on life.				
<b>B. Emotional Regulation</b>				
8. I am better at controlling my emotions after engaging in martial arts.				
9. Martial arts helps me to stay calm during emotionally charged situations.				
10. I notice an improvement in my ability to handle frustration due to martial arts.				
11. I feel more emotionally stable after practicing martial arts.				
12. My emotional responses are less extreme after my martial arts training.				
13. Martial arts has helped me develop healthier emotional coping mechanisms.				
14. I can better manage my anger and irritability thanks to martial arts practice.				
<b>C. Cognitive Changes</b>				
15. My ability to concentrate improves after martial arts training.				
16. I find that martial arts help me to think more clearly in stressful situations.				
17. I am better at problem-solving as a result of my martial arts practice.				
18. Martial arts training enhances my cognitive flexibility and adaptability.				
19. I feel more mentally sharp and focused following martial arts sessions.				
20. My decision-making skills have improved due to my martial arts practice.				
21. I experience fewer intrusive thoughts and distractions because of martial arts.				
<b>D. Behavioral Adjustments</b>				

22. I engage in healthier lifestyle habits as a result of my martial arts training.				
23. I am more likely to take proactive steps to manage stress due to martial arts.				
24. Martial arts have led me to adopt a more disciplined approach to my daily routine.				
25. I find that I am more consistent in managing stress through regular martial arts practice.				
26. I am more likely to use relaxation techniques learned in martial arts in my daily life.				
27. Martial arts practice has improved my ability to handle challenging situations calmly.				
28. I notice a reduction in maladaptive behaviors (e.g., overeating, substance use) as a result of my training.				
<b>E. Perceived Stress Levels</b>				
29. My overall stress levels have decreased due to regular martial arts practice.				
30. I feel less overwhelmed by daily stressors since starting martial arts.				
31. Martial arts have significantly reduced my feelings of stress and tension.				
32. I experience a lower level of stress in my personal and professional life due to martial arts.				
33. I perceive myself as more capable of handling stress since engaging in martial arts.				
34. My stress responses have become less intense thanks to martial arts practice.				
35. I feel that martial arts are an effective tool for reducing my stress levels.				