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Prepared by:
UCSI University

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Martial Arts as Mental Health Interventions for Adults in Non-Clinical Settings: A Systematic Review

Abstract

Introduction: Increases in mental health challenges worldwide, such as stress, anxiety, and depression, necessitate accessible and holistic interventions. Among these, martial arts have gained attention for their potential contribution to mental health benefits, especially outside clinical settings. However, there is a limited understanding of its efficacy in adults aged 18–59 years old.

Objective: This systematic review was designed to assess the effects of martial arts practices on the mental health status of healthy adults. It also highlights methodological lacunas in the available literature to inform future research.

Methods: A systematic search was performed using standard databases PubMed, Scopus, and Google Scholar. The review included studies published between 2000 and 2023 that involved interventions in so-called 'soft' martial arts practices, such as Tai Chi, Aikido, and Qigong, and 'hard' styles, such as Karate, Taekwondo, and forms of Kung Fu/Wushu. Data extraction and synthesis were performed to identify the studies' key findings, strengths, and limitations.

Results: The review found that martial arts practices can enhance mental health outcomes. Stress, anxiety, and depression were reduced across most interventions, as well as improvements in self-esteem, emotional regulation, and quality of life. Practices with an inherent mindfulness component, such as Qigong, strongly impacted stress reduction and emotional well-being. However, significant limitations were identified, including small sample sizes, limited intervention durations, lack of diversity in participant demographics, and general inconsistencies in intervention protocols.

Conclusions: Martial arts provide a promising approach to improving mental health in non-clinical settings, offering both psychological and physical benefits. Larger, more diverse, longitudinal studies are required to strengthen this evidence base. Policymakers, healthcare providers, and community organisations should consider integrating martial arts into mental health strategies by leveraging adaptability and inclusivity. With effective implementation, martial arts can serve as sustainable and accessible interventions to enhance well-being.

Keywords: quality education, health and well-being, quality of life, health promotion, public health

Introduction

According to the World Health Organization (WHO) (2022), mental health conditions are the principal cause of disability worldwide, accounting for 15% of the global disease burden. A recent study based on surveys of more than 150,000 adults across 29 countries of varying wealth from all regions of the world reported that 50% of people will develop a mental health disorder during their lifetime (McGrath et al., 2023). So, this issue has become a global concern. However, most of those afflicted receive adequate therapy, which means millions of individuals must navigate daily life without assistance. Mental health conditions such as anxiety, depression, and excessive stress have become increasingly prevalent in recent years, including in adult populations who often struggle to balance the competing demands of work, family, and other interests (da Silva Duarte et al., 2022). Researchers and policymakers have sought innovative and accessible ways to promote mental health that are not limited to traditional clinical settings to address this silent epidemic (Samsudin et al., 2024).

Martial arts, such as Judo, Karate, and Tai Chi, have been lauded for many years for their self-defence and health benefits. It should be acknowledged that the phrase ‘martial arts’ is somewhat controversial, with definitions varying by region, intention, and heritage. For this review, we adopted a stipulative account (Bailey. 2021) as follows: “… the various skills or practices that originated as methods of combat. This definition, therefore, includes many performances, religious, or health-promoting activities that no longer have any direct combat applications but originated in combat, while possibly excluding references to these techniques in dance, for example” (Lorge, 2012, p. 3). This definition, we suggest, reflects ordinary language usage and allows both so-called ‘hard’ (or ‘external’) styles, characterised by direct, forceful movements that rely on power to overpower an opponent (for example, Karate, Taekwondo, Muay Thai), and ‘soft’ (or ‘internal’) styles, premised on using the opponent's

energy and momentum against them, employing circular movements, redirection, and minimal force to achieve control or neutralisation (for example, Tai Chi, Aikido, Baguazhang)1.

In recent years, researchers have begun to enquire into mental health outcomes associated with martial arts, which seem well-suited to such interventions because they promise multi-faceted, sustainable activities that support physical, psychological, and social well-being. Applying martial arts within this context encompasses targeted mental health promotion strategies and community-based programmes. This systematic review aims to investigate the following research question: How does martial arts practice affect the mental health of individuals aged 18–59 years without prior clinically diagnosed mental health conditions? This review seeks to contribute to a better understanding of the status of martial arts as worthwhile and distinctive resources for supporting mental health through a synthesis and critical evaluation of the available published evidence. Most studies to date have focused on three subpopulations: older adults (e.g., Miller et al., 2022; Ojeda-Aravena et al., 2021), people with existing health conditions (e.g., Fogaca et al., 2021), and children/young people (e.g., Rodrigues et al., 2023). One earlier review (Origua Rios et al., 2018) focused on physical health measures, and falls outside the present study's scope. So, there is currently a gap in the scientific literature about how martial arts might affect the mental health of healthy individuals aged 18–59 years in non-clinical settings (Valdés-Badilla et al., 2022). This review seeks to address this need by consolidating published findings from research investigating the impact of martial arts on psychological outcomes, including stress, anxiety, and depression, along with effects on positive attributes, such as self-esteem, emotional resilience, and overall well-being. This

[1] There are many ways of categorising martial arts. They could be grouped by country of origin (China, Japan, Korea, Brazil, etc.), heritage (modern, ancient), primary intention (sport, self-defence, self-cultivation, etc.), and others (see, for example, Draeger & Smith, 1980; Green & Svinth, 2010; Martínková & Parry, 2016).

review aims to elucidate the conditions under which martial arts may function as an effective intervention for mental health by analysing trends across various martial arts forms and practice environments. It examines the methodological constraints in the current research and aims to fill these gaps by offering a comprehensive synthesis of evidence.

Methodology

This study aimed to examine the role of martial arts in enhancing mental health among adults, focusing on studies published within the last decade (2014–2024). It followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.

Study Design and Search Strategy

A systematic search was conducted using Scopus, SPORTDiscus, Web of Science (WoS), and Google Scholar to ensure a comprehensive selection of studies. These databases were chosen because of their relevance to exercise science, psychology, and health research. A combination of keywords and Boolean operators was used to construct the search strategy. The primary search string was: “Martial arts” AND (“mental health” OR “psychological well-being” OR “anxiety” OR “depression” OR “stress”). The search was restricted to peer-reviewed articles published in English between 1 January 2014 and 22 November 2024. In addition, the reference lists of the included studies were reviewed to identify potentially relevant articles missed during the database search. This approach ensured a robust and exhaustive identification of eligible studies.

Inclusion and Exclusion Criteria

Eligibility criteria were developed to ensure the selection of studies directly addressed the research question. These criteria are summarised in Table 1.

Table 1. Inclusion and Exclusion Criteria

Category	Inclusion Criteria	Exclusion Criteria
Population	Adults aged 18 to 59 years.	Children (<18 years) or elderly (>59 years).
Intervention	Martial arts interventions (e.g., karate, taekwondo, judo, aikido, or mixed martial arts).	Studies not involving martial arts as the primary intervention
Outcome	Studies reporting mental health outcomes, such as anxiety, depression, stress, resilience, or psychological well-being.	Studies with no mental health outcomes or focusing only on physical fitness.
Language	English-language publications.	Non-English publications.
Publication Type	Peer-reviewed journal articles.	Grey literature, conference abstracts, unpublished theses.
Accessibility	Full-text articles available.	Studies with inaccessible full text.
Study Design	Quantitative, qualitative, or mixed methods studies.	Systematic reviews, meta-analyses, or other secondary research.
Timeframe	Published between 2014 and 2024.	Studies published before 2014 or after November 22, 2024.

Screening and Selection Process

The search strategy initially identified 1,045 articles. After removing the duplicates (n = 131), 914 unique articles were screened based on their titles and abstracts. Studies that did not meet the inclusion criteria, such as those unrelated to martial arts or mental health, were excluded. Following this phase, 225 articles were selected for the full-text review. During the full-text review, 199 articles were excluded because they did not focus on martial arts interventions for mental health. An additional eight studies were excluded owing to inaccessible full texts, and seven were excluded because they were review articles rather than primary research articles. Eleven studies met all inclusion criteria and were included in the final analysis. Figure 1 shows the PRISMA flow diagram of this review.

Data Extraction and Analysis

Data were systematically extracted by the first reviewer using a pre-designed data extraction template that was consistent across studies. Key information of interest included authors, year of publication, study design, sample size, participants' demographics, details of martial arts intervention type, duration, frequency of mental health outcomes measured, measurement tool, and findings. The extracted data were entered into a table for a more straightforward analysis and synthesis. The findings were summarised using narrative synthesis because of the heterogeneity of the study designs and outcome measures. Quantitative data were descriptively presented, focusing on central tendencies and effect sizes where appropriate. Qualitative findings were analysed thematically, highlighting recurring patterns and themes related to the psychological benefits of martial arts.

Quality Assessment

The quality of the included studies was evaluated by using established appraisal tools. Quantitative studies were assessed using the Cochrane Risk of Bias Tool (Table 5). No qualitative studies were included. Two reviewers independently evaluated each study, and discrepancies were resolved through discussion or consultation with a third reviewer.

Figure 1. PRISMA Flowchart

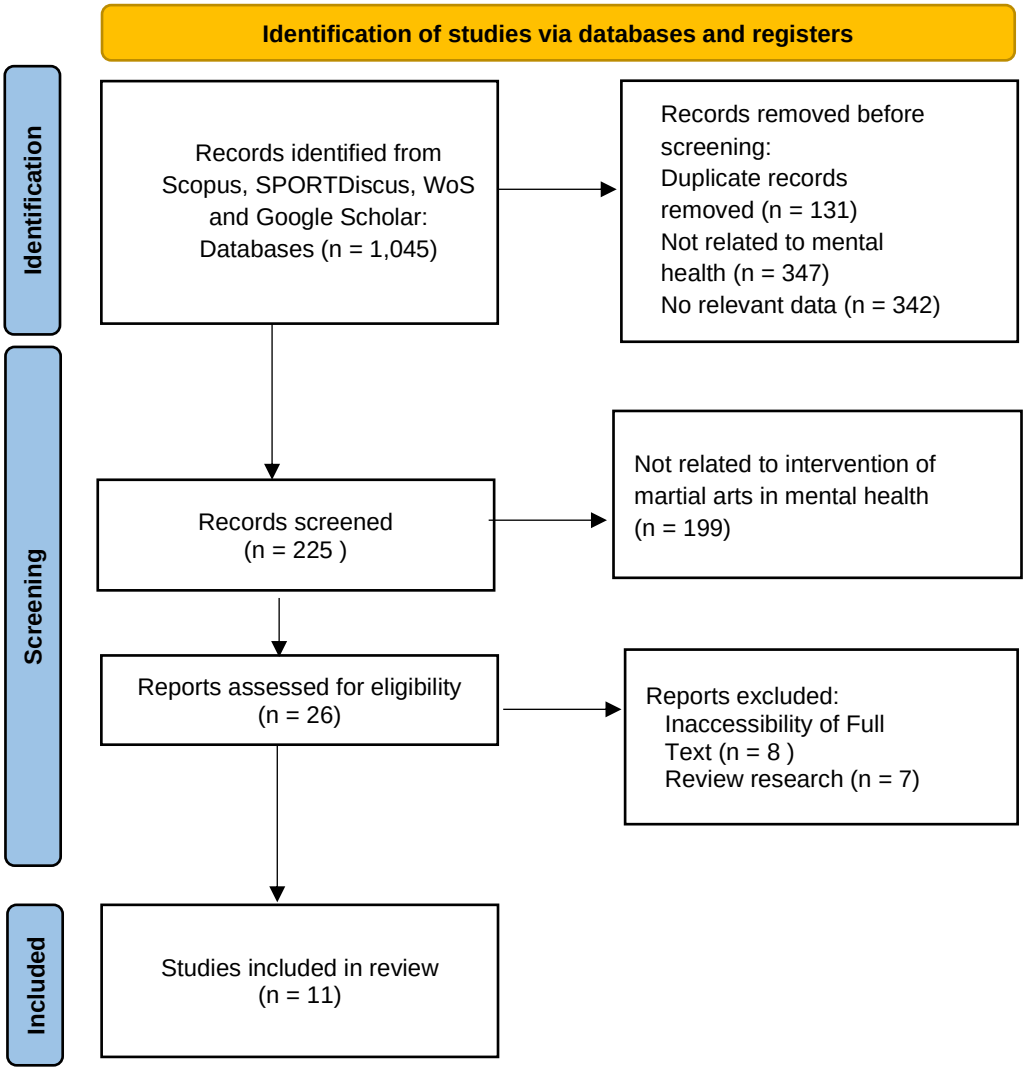


Table 2. Study Information Table

Authors	Title	Country	Objective	Type of Study
Bird et al.(2019)	Exploring the Effectiveness of an Integrated Mixed Martial Arts and Psychotherapy Intervention for Young Men's Mental Health	Ireland	To establish the impact of a 10-week programme combining mixed martial arts (MMA) and one-to-one psychotherapy on young males' mental health and determine factors that predict help-seeking behaviour in at-risk males	Qualitative study with semi-structured interviews
Caldwell et al.(2016)	Effects of Tai Chi on Anxiety and Sleep Quality in Young Adults: Lessons From a Randomized Controlled Feasibility Study	USA	To assess Tai Chi（TCC）intervention impact on anxiety and sleep quality in young adults.	RCT
Domaneschi & Ricci (2022)	I don't Teach Violence, I Teach Self-Control'; The Framing of Mixed Martial Arts Between Mental Health and Well-Being	Italy	To analyse media representations of MMA in the context of mental health and well-being, particularly following a murder case involving individuals who frequented an MMA gym.	Qualitative study
Dongoran et al.(2020)	Psychological Characteristics of Martial Sports Indonesian Athletes Based on Categories Art and Fight	Indonesia	To investigate the psychological characteristics of martial sports athletes and the differences between the art and fight categories	Quantitative Ex Post Facto Causal-Comparative study
Duarte et al.(2022)	Mood profile of regular combat sports practitioners: a cross-sectional study	Brazil	To analyse and compare mood of regular Jiu-jitsu, Kickboxing, and non-sports practitioners.	Cross-sectional study
Kabiri Dinani et al.(2019)	The Effect of Tai Chi Exercise on Stress, Anxiety, Depression, and Self-confidence of Nursing Students	Iran	To investigate the effect of Tai Chi exercise on stress, anxiety, depression, and self-confidence of nursing students.	RCT
Kotarska et al.(2019)	Selected Healthy Behaviors and Quality of Life in People Who Practice Combat Sports and Martial Arts	Poland	To determine the relationship between health behaviours and the quality of life of people who practice combat sports and martial arts (CS and MA) recreationally, along with other sports, and at a competitive level.	Cross-sectional study
Miyata et al.(2020)	Mindfulness and psychological health in practitioners of Japanese martial arts: a cross-sectional study	Japan	To examine whether practising martial arts based on Japanese traditions is associated with mindfulness and psychological health.	Cross-sectional study
Schwartz et al.(2021)	Quality of life in Brazilian martial arts and combat sports practitioners	Brazil	To investigate the quality of life of practitioners of five common martial arts and combat sports in Brazil.	Cross-sectional study

Zeng et al. (2024)	The impact of integrated health Qigong and dance exercise on cardiovascular function in middle-aged and elderly women	China	To evaluate the impact of health Qigong combined with Tibetan dance on vascular elasticity, blood lipid levels, and cardiac function in middle-aged and elderly women.	RCT
Zhang & Jiang (2023)	The effect of Baduanjin exercise on the physical and mental health of college students: A randomised controlled trial	China	To evaluate the effect of Qigong Baduanjin on the physical and mental health of female first-year college students.	RCT

Table 3. Intervention Details Table

Authors	Sample size	Female	Male	Age	Intervention name	Baseline	Follow up	Duration
Bird et al. (2019)	7 participants (5 completed)	0	7	20-35 (24.57)	Breakthrough Programme (MMA + one-to-one psychotherapy)	Pre-participation interviews before starting the 10-week programme.	Post-participation interviews after completing the 10-week programme	10 weeks (weekly MMA and psychotherapy sessions)
Caldwell et al. (2016)	75	51	24	18-40 （21.1 ± 3.5).	Tai Chi Chuan (TCC)	STAI-S (State-Trait Anxiety Inventory - State) PSQI(Pittsburgh Sleep Quality Index)	4 weeks 10 weeks (post-intervention) 2 months (post-intervention)	10 weeks (2 classes per week, 1 hour each) Out-of-class practice encouraged (30 minutes daily)
Domaneschi & Ricci (2022)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Analysis covered 4 months of media and social media discourse after the Colleferro murder
Dongoran et al. (2020)	93 (65 athlete match category and 28 athlete art category)	N/A	N/A	N/A	N/A	Psychological skills assessed across six aspects (motivation, self-confidence, anxiety control, mental preparation, team emphasis, concentration)	N/A	N/A
Duarte et al. (2022)	75 (26 jiu-jitsu, 24 kickboxing, 25 non-practitioners)	0	75	18-54	N/A	N/A	N/A	Minimum of 2 months of continuous practice
Kabiri Dinani et al. (2019)	64	N/A	N/A	Mean age: 21.50	Tai Chi Exercise	Pre-intervention scores for stress, anxiety, depression (DASS-42), and self-confidence (EPQ).	Post-intervention and at a one-month follow-up.	8 weeks with 40-minute sessions, 3 times per week.
Kotarska et al. (2019)	543	N/A	54.7%	24.49 ±7.82	Combat sports (CS) and martial arts (MA) practices.	Collected using WHOQOL-BREF questionnaire and a lifestyle survey	N/A	N/A

Miyata et al. (2020)	99 (33 practitioners of martial arts and 66 non-practitioners)	33 participants (11 practitioners, 22 non-practitioners)	66 participants (22 practitioners, 44 non-practitioners).	Practitioner Group 22-69 (44.9±12.9), Control Group 22-67 (44.5±11.6).	N/A	Psychological measures, including mindfulness (FFMQ), subjective well-being (SWBS), and depression (BDI).	N/A	Practitioners' martial arts experience ranged from 0.6 to 35 years (Mean = 14.9 years).
Schwartz et al. (2021)	922 (Brazilian jiu-jit-su123, judo 180, karate 229, kung-fu140，taekwondo 250）	0	922 young men	20 - 35 (26.4 ± 4.7)	N/A	N/A	N/A	N/A
Zeng et al. (2024)	40	40	0	45–70 years (Mean = 61.78 ± 5.74 years)	Health Qigong combined with Tibetan dance	Vascular elasticity (pulse wave velocity), blood lipid levels (TG, TC, HDL), cardiac function (CO, SV).	Before and after the 12-week intervention.	12 weeks: 3 sessions per week, 60 minutes per session (10-minute warm-up, 40-minute exercise, 10-minute cool-down).
Zhang & Jiang (2023)	78	78(83 participants were recruited, 5 participants were excluded due to health problems.)	0	18-20 (mean=19.2).	Baduanjin Exercise	Physical shape, physical function, physical fitness, and mental health indices (SCL-90 scale)	After the 12-week intervention	12 weeks: 3 days per week, 1 hour per session (10 minutes warm-up, 40 minutes Baduanjin, 10 minutes cool-down).

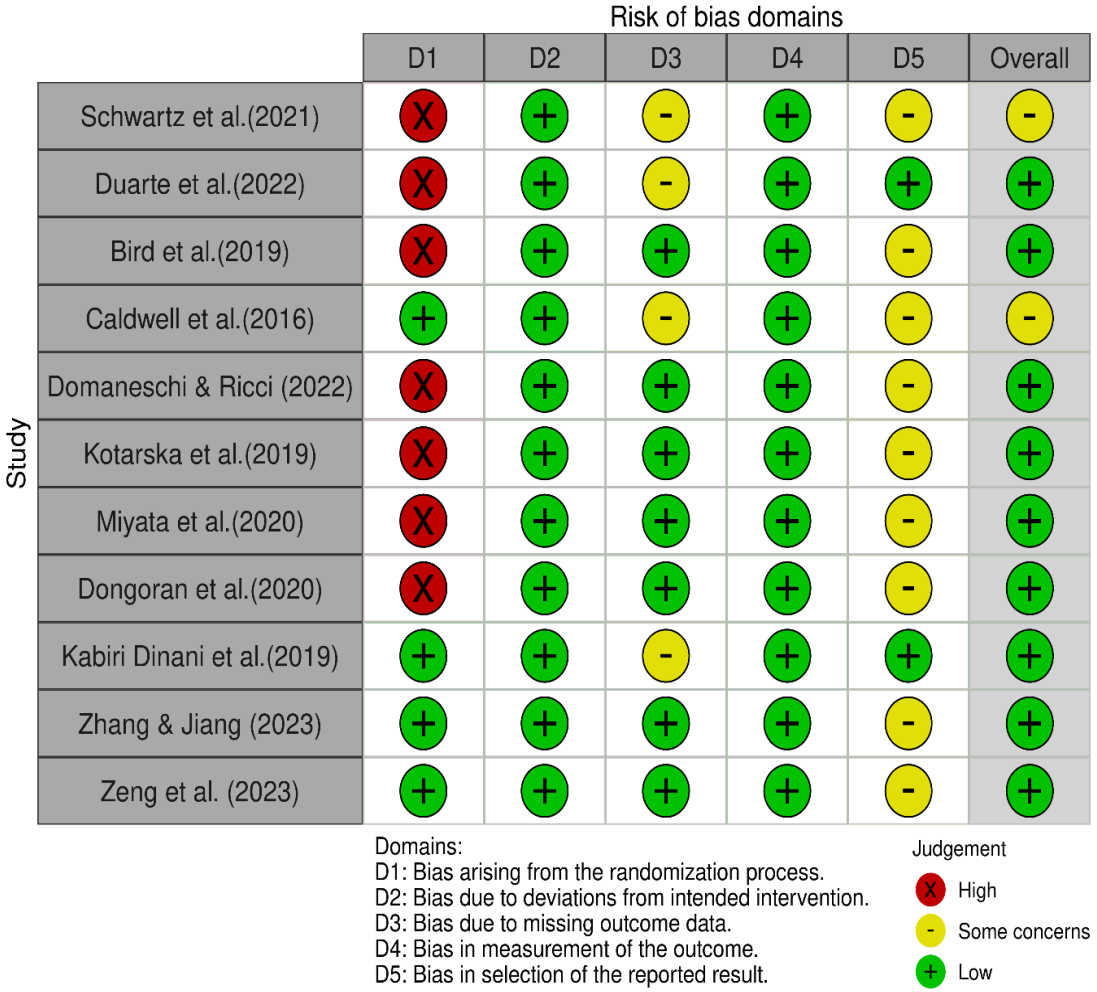
Table 4. Analysis and Results Table

Authors	Measures	Methods	Analyses	Outcome（effect/size）	P-value	Key findings
Schwartz et al.(2021)	WHOQOL-BREF: 4 domains (Physical, Psychological, Social, Environmental)	Portuguese version of the Questionnaire distributed to 922 male practitioners	Student t-test, Two-way ANOVA, Cohen's d, Partial eta-squared	Practitioners scored higher than national norms in Physical (Cohen's d: moderate-large) and Psychological (Cohen's d: moderate); trivial for Social/Environmental in some subgroups	$p < 0.05$ for most comparisons	Martial arts and combat sports practitioners reported better quality of life than the general population, with competitors scoring higher in psychological domains than recreational practitioners.
Duarte et al.(2022)	Brunel Mood Scale (BRUMS): 6 mood variables (e.g., tension, depression, vigour)	Questionnaires (Google Forms); IPAQ for physical activity	Kolmogorov-Smirnov test; t-test; MANOVA; Canonical Discriminant Analysis (CDA)	Positive mood (vigour) higher in practitioners; Negative mood (e.g., tension, depression) higher in non-practitioners	$p < 0.05$ for most mood comparisons	Regular combat sports practitioners (Jiu-jitsu and Kickboxing) had better mood profiles than non-practitioners. Combat sports improve mental health.
Bird et al.(2019)	Mental health and well-being assessed through semi-structured interviews	Qualitative repeated measures design; pre- and post-participation interviews	Thematic analysis of pre- and post-intervention interviews	Improvements in mental health, well-being, coping skills, self-esteem, and overall confidence; reduced depressive symptoms	N/A	Combining mixed martial arts (MMA) and one-to-one psychotherapy improves mental health in young males, reduces stigma, and facilitates help-seeking behaviour through a structured, masculine setting.
Caldwell et al.(2016)	STAI-S: To assess state anxiety levels PSQI: To evaluate sleep quality (7 components)	Randomised controlled feasibility trial Three groups: TCC group Enhanced TCC group Control group (received a handout on	Intention-to-Treat (ITT) Analysis Per-Protocol Analysis (for adherent participants) Repeated measures mixed models controlling for baseline scores Hedges' g and p-values for effect sizes and significance testing	Anxiety: TCC groups showed reductions in anxiety over time (Hedges' $g = 0.3–0.5$, not always statistically significant). Sleep Quality: Global PSQI scores improved significantly for TCC groups compared to controls at 10 weeks (Hedges' $g = 0.7$) and 2 months (Hedges' $g = 1.0$). Components showing improvement: Sleep latency, disturbances, and daytime dysfunction.	Sleep Quality (PSQI): Significant improvements in sleep quality were observed for the TCC groups at 10 weeks and 2-month follow-up ($p < 0.05$). Anxiety Levels (STAI-S): Anxiety levels	TCC is a promising intervention for improving sleep quality and reducing anxiety in young adults. Enhanced TCC group (with DVD) demonstrated better adherence to out-of-class practice. Participants with greater practice time reported lower anxiety levels and better sleep quality.

		anxiety management)			decreased in the TCC groups, but some results were not statistically significant ($p > 0.05$).	
Domaneschi & Ricci (2022)	Discourse on mental health, well-being, and pedagogy within Mixed Martial Arts (MMA)..	Thematic analysis of Italian legacy media and Facebook group (UFC Italia) discussions.	Thematic coding and categorising discursive frames (e.g., violence vs. self-control).	N/A	N/A	Media framed MMA as a double-edged discipline: promoting mental health and self-control while emphasising violent risks. MMA fans and practitioners highlighted the need for psychological support and ethical teaching.
Kotarska et al.(2019)	WHOQOL-BREF questionnaire: Physical, psychological, social, and environmental domains	Diagnostic survey method, non-parametric statistics, Kruskal-Wallis test, Mann-Whitney test.	Effect size: E^2R (Kruskal-Wallis), Glass rank biserial correlation (rg), Cramér's V.	Competitive practitioners scored highest in physical, psychological, and environmental quality of life (large effect sizes for GIII vs. GII).	Significant for various comparisons (e.g., $p < 0.05$ for quality of life domains across groups).	Competitive practitioners (GIII) had better health behaviours and higher quality of life across multiple domains compared to recreational (GI) and complementary sports groups (GII).
Miyata et al.(2020)	FFMQ: Dispositional mindfulness; SWBS: Subjective well-being; BDI: Depression levels.	Self-reported questionnaires, t-tests for group comparisons, correlation, and multiple regression analyses	Independent t-tests for group differences, Pearson's and Spearman's correlations, stepwise multiple regression.	Martial arts practitioners had significantly higher mindfulness (Cohen's $d = 0.76$), subjective well-being (Cohen's $d = 1.19$), and lower depression (Cohen's $d = 0.43$).	Statistically significant differences between practitioners and non-practitioners for most scales ($p < 0.05$).	Martial arts practitioners exhibited higher mindfulness, greater well-being, and lower depression than non-practitioners. Longer practice duration and frequency correlated with improved psychological outcomes.
Dongoran et al.(2020)	Psychological Skills Inventory for Sports (PSIS-R-5): 44 items across six psychological aspects.	Surveys distributed to national training camp athletes; validated through expert review and reliability testing.	Independent sample t-tests; normality (Kolmogorov-Smirnov test) and homogeneity (Levene's test).	No significant differences in psychological characteristics between fight and art categories ($p = 0.452$).	$p = 0.452$ (no significant difference).	Psychological characteristics of Indonesian martial sports athletes were categorised as "high" overall. No significant differences were observed between fight and art categories, but specific traits like motivation were rated higher in the fight category.

Kabiri Dinani et al.(2019)	DASS-42: Depression, Anxiety, Stress Scale; EPQ: Eysenck Personality Questionnaire (self-confidence)	Randomised assignment, with data collection at three stages: pre-test, post-test, and follow-up.	Independent t-test, repeated measures ANOVA, LSD post hoc test for comparisons.	Significant reductions in depression ($p = 0.02$), anxiety ($p = 0.01$), and stress ($p = 0.008$); improved self-confidence ($p < 0.001$).	All outcomes showed significant differences ($p < 0.05$) between the case and control groups post-intervention and follow-up.	Tai Chi significantly reduced stress, anxiety, and depression while improving self-confidence in nursing students. Tai Chi is recommended as a low-cost, effective intervention for mental health improvement.
Zhang & Jiang (2023)	Physical Health: Body mass index (BMI), blood pressure, vital capacity, flexibility, balance, and strength tests. Mental Health: Symptom Checklist-90 (SCL-90): assessing somatisation, depression, anxiety, etc.	Randomised parallel-group design; outcomes assessed pre- and post-intervention.	Paired t-tests and ANCOVA; significance set at $p < 0.05$.	Significant improvements in BMI ($p < 0.05$), vital capacity ($p < 0.05$), flexibility ($p < 0.05$), and mental health indices ($p < 0.05$) in the Baduanjin group.	$p < 0.05$ for significant changes in most physical and mental health metrics between groups.	Baduanjin improved body composition (e.g., BMI), physical function (e.g., flexibility, strength), and mental health (e.g., reduced anxiety, depression) compared to the control group. Recommended as a practical intervention for college students' health.
Zeng et al. (2024)	Cardiovascular Function: Pulse wave velocity (PWV), blood lipid levels (TG, TC, HDL), cardiac output (CO), and stroke volume (SV).	Simple randomisation into experimental and control groups; pre- and post-tests conducted	Paired sample t-tests, non-parametric tests, mean ± SD comparisons using SPSS 25.0 software.	Significant improvements in vascular elasticity ($P = .02$ for left ankle, $P = .00$ for right ankle), blood lipids (TG, TC decreased, HDL increased, $P < .01$), and cardiac function (CO and SV improved, $P < .01$).	All key improvements in the experimental group were statistically significant ($P < 0.05$).	Health Qigong combined with Tibetan dance significantly improved vascular elasticity, reduced blood lipids, and enhanced cardiac function in middle-aged and elderly women. Recommended for cardiovascular disease prevention.

Table 5. Risk of Bias Assessment



Discussion

The adult population, which is reasonably healthy and does not suffer from clinical conditions, remains under-researched, resulting in gaps regarding the cross-applicability of martial arts approaches. Researchers have tended to focus their attention on people with specific conditions or impairments, typically overlooking adults without medical problems who are seen as a stable, low-risk group. There are problems associated with this situation. Not the least of these risks are missed opportunities for preventive health actions. These limits understanding of effective strategies to prevent and manage illness (Nguyen & De Looper, 2024). The sheer enormity of the prevalence of mental health problems, such as depression and anxiety disorders, among all sub-populations and in all regions suggests there is an urgent need for such information.

Overall, the studies reviewed here endorse the claim that martial arts are supportive of the mental health of adults in non-clinical settings. Across diverse studies, martial arts practices consistently demonstrated improvements in mental health outcomes, including reductions in stress, anxiety, and depression and enhancements in self-esteem, emotional regulation, and psychological well-being (Bird et al., 2019; Caldwell et al., 2016; Dinani et al., 2019). Notably, different styles of martial arts yielded distinctive benefits. ‘Soft’ martial arts, such as Tai Chi and Qigong, were particularly effective in reducing stress and fostering emotional balance due to their focus on mindfulness, controlled breathing, and slow, deliberate movements (Caldwell et al., 2016; Zeng et al., 2024). In addition, ‘hard’ martial arts, including Karate, Taekwondo, and Mixed Martial Arts, enhanced confidence, focus, assertiveness, and mental endurance (Kotarska et al., 2019; Miyata et al., 2020; Bird et al., 2019). This finding is especially noteworthy as previous research has prioritised softer styles.

The studies examined a variety of interventions targeting young to middle-aged adults. These interventions were generally associated with improved mood profiles, increased resilience, and better quality of life among practitioners (Bird et al., 2019; Kotarska et al., 2019; Vergeer et al., 2021). Specific approaches that combined physical techniques with psychological components, such as integrating martial arts with psychotherapy, proved particularly beneficial. For example, a mixed martial arts program combined with individual therapy demonstrated significant reductions in stigma and improved coping skills in young men (Bird et al., 2019).

Beyond individual benefits, martial arts also contribute significantly to the cultural and social dimensions of mental health. These practices are often rooted in cultural traditions and philosophies, offering a medium for participants to engage with their heritage and foster a sense of identity. Programmes embedded within community contexts, such as Qigong paired with traditional movement practices, have been shown to enhance psychological health, strengthen social cohesion, and reduce feelings of loneliness (Vergeer & Biddle, 2021). By engaging in shared rituals and practices, participants often build a sense of belonging and mutual support, essential for combating social isolation and promoting well-being.

The communal nature of martial arts programmes, such as group-based Tai Chi sessions in public parks or martial arts schools that emphasise collective learning, highlights their role as tools for community building. These settings encourage interpersonal interaction, shared goals, and collective achievements, creating supportive networks extending beyond the training environment (Zeng et al., 2024). This is particularly valuable in urbanised or isolated populations, where traditional forms of social interaction may be limited. Additionally, martial arts allow for cultural expression and preservation. For instance, practices like Capoeira and

Wushu integrate music, storytelling, and philosophy, enabling participants to connect with their cultural roots while adapting to modern contexts. Such practices can be especially impactful for diasporic communities, where martial arts are a bridge between maintaining cultural heritage and engaging in new social environments (Cagas et al., 2022). This dual role of cultural continuity and social adaptation underscores the versatility of martial arts as a culturally sensitive mental health intervention.

Significant limitations in the existing body of research have also become apparent. Many studies relied on small sample sizes and short intervention periods, limiting the generalizability and sustainability of their findings. There was also a lack of demographic diversity, with underrepresentation of marginalised groups and limited exploration of cultural adaptations. Methodological inconsistencies, such as varied intervention protocols and reliance on self-reported data, further constrained the robustness of conclusions. Additionally, few studies investigated the long-term effects of martial arts practice or explored the physiological mechanisms underlying the observed benefits.

Despite these limitations, the review highlights the adaptability and accessibility of martial arts, making them suitable for diverse populations and contexts (Liu & Jiang, 2021). Martial arts programmes can be tailored to meet participants' physical and psychological needs, offering a cost-effective and non-stigmatising approach to mental health promotion (Bird et al., 2019; Rippe, 2021). The findings underscore the need for more rigorous, standardised, and longitudinal research to fully understand the potential of martial arts as a comprehensive mental health intervention (Zeng et al., 2024). Nevertheless, the current evidence strongly supports the integration of martial arts into public health strategies, community initiatives, and therapeutic programmes to foster well-being, resilience, and social connection (Bird et al., 2019).

Conclusion

This systematic review aimed to assess martial arts practice's effects on healthy adults' mental health by reducing stress, anxiety, and depression and improving emotional resilience and quality of life. In most practices, martial arts appear to have favourable mental health outcomes. The 'soft' martial arts, like Tai Chi and Qigong, emphasise slow, flowing movements, meditation, and controlled breathing to bring relaxation and balance. On the other hand, the 'hard' martial arts, represented by Karate, Taekwondo, and Kung Fu/Wushu, emphasise dynamic, high-impact movements involving hitting, kicking, and blocking, which require strength, speed, and self-control. Hard and soft styles of martial arts have specific benefits. Soft martial arts are associated with stress relief and emotional control, while hard martial arts enhance confidence, focus, and assertiveness. Such observations make martial arts versatile and inclusive in that different styles may serve specific mental health needs.

The present review also aimed to identify methodological gaps in the existing literature to inform future research. Notable limitations include small sample sizes, short intervention periods, lack of demographic diversity, and heterogeneity in the design of the interventions. Such methodological flaws underline the need for more powerful, longitudinal, and standardised studies to understand the long-term and culturally specific impact of martial arts on mental health. Despite these limitations, evidence strongly supports the integration of martial arts into community health initiatives, therapeutic programmes, and public health strategies. Their dual benefits for mental and physical health and their non-stigmatising and culturally resonant nature position martial arts as holistic and cost-effective solutions for promoting well-being. Policymakers, healthcare providers, and community organisations should prioritise the development of martial arts programmes to improve mental health, foster social cohesion, and address the gaps in traditional mental health services.

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