

Self-Defence Training and Women's Mental Health: A Rapid Review on Reducing Negative Psychological States

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DOI: <https://doi.org/10.36348/sjhss.2026.v11i06.005>

| Received: 15.04.2026 | Accepted: 08.06.2026 | Published: 11.06.2026

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Abstract

Women's mental health is significantly impacted by psychological stressors such as stress, anxiety, depression, anger, self-silencing behaviour and fear of sexual assault. These negative emotions not only cause discomfort in life but also limit the freedom of expression and interaction. Self-defence is now considered a means of enhancing one's mental capability and empowerment. The current study focuses on the effects of self-defence training in lowering negative psychological states related to women's overall well-being. Seven quantitative studies meeting the inclusion criteria were systematically analysed to assess the effects of self-defence training on women. These studies were sourced from electronic databases, including ResearchGate, PubMed, Google Scholar, Scopus, and ScienceDirect, using keywords such as "self-defence training," "mental health," "women," "psychological states," "empowerment," etc. The main psychological factors considered during this study include fear, stress, anxiety, depression, anger, and self-silencing behaviour. Findings indicate that self-defence training is effective in reducing fear, stress, anxiety, depression, anger, and self-silencing behaviour. Moreover, self-defence training also increases a person's feeling of control and safety. Therefore, this review highlights the benefits of self-defence training in reducing negative psychological states, emphasising its value as a holistic approach to mental health and women's empowerment in the 21st century. Further research may focus on the long-term impact of martial arts on mental health and improve techniques to ensure maximum psychological benefits.

Keywords: self-defence training, mental health, psychological states, sexual assault, women's empowerment.

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INTRODUCTION

Mental health is a state of psychological well-being that allows people to deal with life's stresses, realise their potential, learn and work effectively, and contribute to their communities (World Health Organization, 2025a). It is essential for overall well-being, encompassing emotional, psychological, and social aspects. In the present scenario, women worldwide still face discrimination and violence, leading to negative psychological states like stress, anxiety, depression, and post-traumatic stress disorder (PTSD) due to personal, social, and environmental factors (Biswas & Ghosh, 2023; Friedberg *et al.*, 2023). These emotional burdens also restrict freedom, social engagement, and overall well-being. That leads women's mental health to be a critical public health concern (Friedberg *et al.*, 2023; Moore *et al.*, 2019).

The period of adolescence is essential for preventing gender-based violence as well as mental

disorders (Friedberg *et al.*, 2023). According to the World Health Organization (WHO), individuals aged 10-19 years suffer from mental disorders, while suicide is the third highest cause of death among individuals aged 15-29 years (World Health Organization, 2025b). The report further reveals that although mental health disorders affect both genders differently, women are more vulnerable. Besides this, adolescent mental health conditions can lead to adulthood impairment, increased healthcare costs, and global economic losses, limiting opportunities for fulfilling adult lives (World Health Organization, 2025c).

We mostly prioritise our physical health, but no one is concerned about psychological or mental health, even though it is an important factor in our daily lives. Due to social stigmatisation or a lack of knowledge, many individuals avoid addressing mental health concerns. Continuing this pattern for a long time can lead to worsening of symptoms and may contribute to serious

conditions such as Schizophrenia (psychotic disorder), Persistent Depressive Disorder (chronic depression), Obsessive-Compulsive Disorder (anxiety disorder), and Bipolar Disorder (mood disorder), which significantly impair daily functioning, cognitive abilities, and overall quality of life (WHO, 2025).

However, we need to focus on mental health and seek proper treatment for any mental health-related issues. Martial arts training, a form of self-defence, may be a cost-effective alternative to psychological therapies such as counselling or medication (Moore *et al.*, 2019). In today's world, there is a growing trend toward self-defence training, such as traditional martial arts (TMA: judo, karate, tai chi, taekwondo, etc.), modern self-defence training (MSDT), and rape aggression defence systems (RADS) (Biswas & Ghosh, 2023).

Self-defence training (SDT) not only enhances personal protection but also improves physical and mental fitness, and develops social qualities (Biswas & Bandyopadhyay, 2025). Traditionally, self-defence was used as a physical training for improving physical capacity, but due to its beneficial or effective nature, it is nowadays used as a hands-on practice for improving psychological condition. It is a practical application that can promote self-efficacy, confidence, and self-esteem by reducing fear, stress, and anxiety. Previous research shows that this type of training can promote self-defence skills, self-efficacy, confidence, self-esteem, socialisation, physical health, mindfulness, and a healthy lifestyle (Greco *et al.*, 2019; Jansen *et al.*, 2016; Knight, 2021; Lorenzo-Lima & Rosario, 2025; Moore *et al.*, 2019). It also reduces stress, anxiety, fear and incidents of sexual assault, especially for women (Adeogun *et al.*, 2018; Hollander & Cunningham, 2020). This training enhances self-belief and empowers women, especially those with extensive SDT experience (Hollander, 2016). So, SDT is crucial for maintaining safety and improving psychological benefits, especially for women.

There have been numerous experimental and review studies on the physical and psychological benefits of SDT. Psychological effects involve both the improvement of positive psychological states, such as self-efficacy and self-confidence, and the reduction of negative psychological states, such as stress, anxiety, and fear. Negative psychological states can be defined as psychological maladjustments characterised by conditions such as stress, anxiety, and depression (Lyngdoh *et al.*, 2021). All of which negatively affect an individual's mental state, feelings of safety, response to threats, daily functioning, and overall well-being. In terms of women's mental health and self-defence, there are certain negative psychological conditions, such as fear of being attacked, lack of self-confidence, vulnerability, and lack of assertiveness, that can hinder their ability to protect themselves from any harm (Ball & Martin, 2012; Biswas & Ghosh, 2023; Brecklin &

Ullman, 2005). However, there is limited literature on the effectiveness of SDT in improving negative psychological states within a single framework.

The following study conducted a rapid review on the effects of SDT in reducing negative psychological states across the female lifespan. Therefore, the purpose of this review study was to determine the effectiveness of SDT in reducing fear, stress, anxiety, depression, anger, and self-silencing behaviour among adolescent girls and adult women.

METHODOLOGY

A rapid review was conducted to assess the existing research on the effect of reducing negative psychological states of self-defence training.

Data Sources & Search Strategies

The literature data were primarily collected through electronic databases such as computers and manual searches from various primary sources, including journal articles, book chapters, theses, and dissertations. Based on the current research objective, a systematic literature search was conducted using the following databases: ResearchGate, PubMed, Google Scholar, Scopus, and Science Direct. Various keywords and search terms were used to find relevant studies. The main keywords included "self-defence training," "martial arts," "mental health," "negative psychological states," "stress," "anxiety," "fear," "depression," "self-silencing behaviour," "women," "adolescence," and the terms were used "outcomes," "effects," "impacts." All of these keywords were combined using Boolean operators like 'AND' and 'OR' to improve search results.

Inclusion Criteria

The present study followed these specific inclusion criteria:

- i. Studies with self-defence or martial arts training were the primary independent variable.
- ii. Studies that evaluated negative psychological states such as stress, anxiety, depression, anger, and fear of sexual assault as dependent variables.
- iii. Studies involving adolescent girls (10-19 years) and adult women (20 years and above).
- iv. Studies involving experimental, pre-post-test, randomised controlled trials, controlled clinical trials, and cross-sectional designs.

Exclusion Criteria

The following types of studies were excluded from the review:

- i. Studies that did not describe their study design in detail.
- ii. Studies that are not written in English.

Study Selection Process

The study selection was completed in several stages and followed the PRISMA guidelines (Page *et al.*, 2021), as shown in the PRISMA flow diagram (Figure 1). Initially, all searched article titles and abstracts were

checked for relevance. Articles were excluded that did not meet the inclusion criteria. Then, full-text articles were screened for relevance and adherence to the inclusion criteria. Finally, the remaining articles that met the inclusion criteria were evaluated.

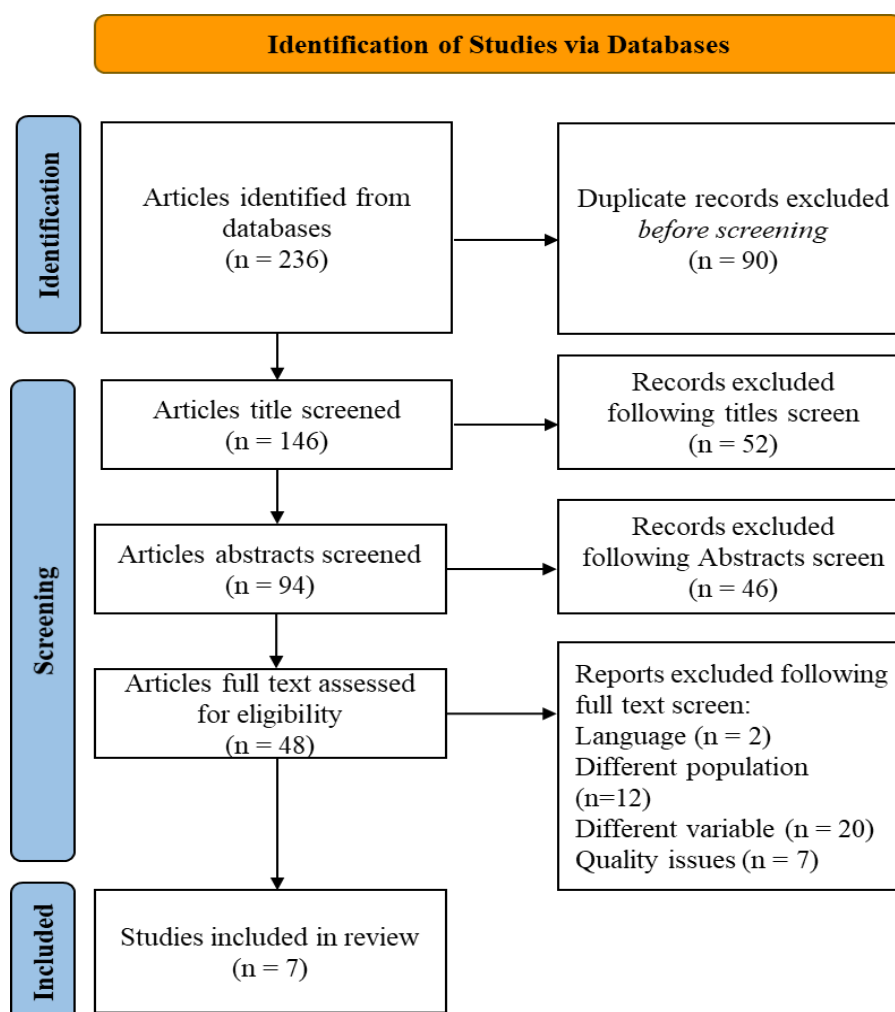


Figure 1: PRISMA flow diagram for article selection

Quality Assessment of Studies

All studies were critically evaluated using the Mixed Methods Appraisal Tool (MMAT), version 2018 (Hong *et al.*, 2018) for methodological quality assessment. The MMAT was chosen for this study because it included multiple study designs in a single review. This scale consists of five categories of study designs: qualitative research, randomised controlled trials, non-randomised studies, quantitative descriptive studies, and mixed methods studies. Therefore, this scale covers all included study designs, such as quantitative non-randomised studies (e.g., controlled clinical trials and quasi-experimental designs) and quantitative descriptive studies (e.g., cross-sectional studies). The MMAT scale consists of five questions per category, and the evaluation process begins with an initial screening followed by design-specific criteria with response options of “yes,” “no,” and “can’t tell.” All the articles

were evaluated independently by three reviewers, and the majority of studies met MMAT criteria, which indicates moderate to high methodological quality.

RESULTS

In this review, a total of seven studies were examined. All studies used quantitative methods, including four quasi-experimental designs (Clanton, 2004; Hollander, 2014; Hollander & Cunningham, 2020; Sinclair *et al.*, 2013), two cross-sectional designs (Azoulay, 2005; Biswas & Chatterjee, 2018), and one controlled clinical trial (Ball & Martin, 2012). Overall, the studies involved 1594 participants, including 1545 females. The majority of participants were university students, with others being school students and the general population. The participants’ ages ranged from 12 to 77 years, with most participants adults, along with some adolescents and older adults.

Various self-defence training methods were used in the studies' intervention, including Martial Arts (n=2) (Azoulay, 2005; Clanton, 2004), Modern Self-defence Training (n=1) (Ball & Martin, 2012), Traditional Martial Arts - Karate (n=2) (Ball & Martin, 2012; Biswas & Chatterjee, 2018), Judo (n=1) (Biswas & Chatterjee, 2018), specific self-defence training (n=3) (Hollander, 2014; Hollander & Cunningham, 2020; Sinclair *et al.*, 2013). Among the seven studies, four studies (Azoulay, 2005; Biswas & Chatterjee, 2018; Hollander, 2014; Hollander & Cunningham, 2020) included a control group with participants who did not engage in any activity, while two studies (Ball & Martin, 2012; Sinclair *et al.*, 2013) used an active control group. The control groups were either sedentary, untrained, or engaged in other forms of training (such as life skills training or stress management). Training duration ranged from 3 to 10 weeks with 2 to 3 hours per week, while some studies had follow-ups for up to a year. A few studies involved participants with 1 to 3 years or more of training experience. Most studies focused on measuring sexual assault (n=5). Additionally, some studies examined multidimensional fear (n=1), including

general fear, fear of being alone, fear of theft, stranger vulnerability, and life-threatening fear. Other outcomes measured included self-silencing (n=1), women's empowerment (n=1), assessing righteous anger and optimism or control over the future, and mental health (n=1), which encompassed somatic symptoms, anxiety or insomnia, social dysfunction, and severe depression.

Among seven studies, the majority revealed that the intervention group had a significant reduction in fear of assault (Clanton, 2004; Hollander, 2014; Sinclair *et al.*, 2013), more correct knowledge about sexual assault, and less self-silencing (Hollander & Cunningham, 2020). Aside from that, one study found a large reduction in life-threatening fear (Ball & Martin, 2012), while another found a significant reduction in righteous anger with increased levels of control (Azoulay, 2005). Furthermore, one study found significant improvements in mental health, including somatic complaints, anxiety or insomnia, and severe depression (Biswas & Chatterjee, 2018). An overview of selected studies that explore the effects of self-defence training on negative psychological states is presented in Table 1.

Table 1: Overview of Studies on Self-Defence Training and Negative Psychological States

Author(s) & Year	Study Design	Participants (Number, Age, Sex & Group)	Intervention	Training Length	Outcome Measures	Findings
Clanton (2004) (Clanton, 2004)	Quasi-experimental (one-group pre-post)	N = 96 male and female university students (47 female) Age: 18-26 years	Martial arts	8 weeks	Fear of assault	Significantly reduced fear of assault
Azoulay (2005) (Azoulay, 2005)	Cross sectional	N = 97 females (mostly university students) OG - n = 54 CG - n = 43 Age: 18 years and over	Martial arts (OG)	Trained: less than 3 years and 3 years & above	Righteous anger and optimism/sense of control over the future	Significantly reduced levels of Righteous Anger and improved degrees of control
Ball and Martin (2012) (Ball & Martin, 2012)	Controlled clinical trial	N = 69 female university students TG1 - n = 32 TG2 - n = 10 CG - n = 27 (active) Age: 18-61 years	Modern self-defence training (TG1), traditional martial arts - karate (TG2)	8 weeks (once a week for 2 hours, resulting in 16 contact hours)	Multidimensional fear (general fear, fear of being alone, fear of theft, stranger vulnerability, & life-threatening fear), and sexual victimisation & assault	TG1 significantly reduced in life-threatening fear
Sinclair <i>et al.</i> (2013) (Sinclair <i>et al.</i> , 2013)	Quasi-experimental (two-group pre-post)	N = 522 female high school students TG - n = 402 CG - n = 120 (active) Age: 14-21 years	Specific self-defence training	6 weeks (2 hours weekly) followed by 2 hours of refresher sessions every 3, 6, 9, and 10 months	Sexual assault	Significantly reduced sexual assault

Note: N/n = number; TG = treatment group; OG = observation group; CG = control/comparison group.

Table 1 (continued)

Author(s) & Year	Study Design	Participants (Number, Age, Sex & Group)	Intervention	Training Length	Outcome Measures	Findings
Hollander (2014) (Hollander, 2014)	Quasi-experimental (two-group pre-post)	N = 286 female university students TG - n = 117 CG - n = 169 Age: 18-53 years	Specific self-defence training	10 weeks: 3 hours of self-defence training and 1.5 hours of group discussion per week over a 1-year follow-up period	Sexual assault experience and assailant types	Significantly reduced sexual assault experience and assailant types
Biswas & Chatterjee (2018) (Biswas & Chatterjee, 2018)	Cross sectional	N = 141 female school students OG1 - n = 57 OG2 - n = 32 CG - n = 52 Age: 12-27 years	Karate (OG1) and judo (OG2)	Trained: 1-3 years	Mental health (somatic symptoms, anxiety/insomnia, social dysfunction, and severe depression)	Significantly better (except for social dysfunction)
Hollander and Cunningham (2020) (Hollander & Cunningham, 2020)	Quasi-experimental (two-group pre-post)	N = 383 females TG - n = 194 CG - n = 189 Age: 18-77 years	Specific self-defence training	9-hour: 3 weekly 3-hour sessions with a 1-year follow-up	Experiences of sexual assault, knowledge about sexual assault, self-silencing	Significantly less sexual assaults, more accurate knowledge about sexual assault, and less self-silencing

Note: N/n = number; TG = treatment group; OG = observation group; CG = control/comparison group.

DISCUSSION

This review study was examined to determine the impact of self-defence training (SDT) on females' mental health, with a focus on reducing negative psychological states. The findings of studies (Table 1) demonstrate that SDT is consistently associated with a reduction in negative psychological states, including fear, stress, anxiety, depression, anger, and self-silencing behaviour across both adolescent girls and adult women. However, the nature and expression of these emotions vary across developmental stages.

Among the reviewed studies, one of the most notable psychological effects of SDT is the reduction in fear of sexual assault. This is a common problem faced by women in their daily lives that leads to chronic anxiety, reduced freedom of movement, and decreased quality of life (Friedberg *et al.*, 2023). According to Clanton (2004), the fear of physical and sexual assault among women is significantly higher than men. However, participation in SDT can reduce the fear of being assaulted while building up self-esteem, inner strength and confidence to resist assault (Ball & Martin, 2012; Hollander, 2004). From the obtained results, especially some structured interventions' effects, such as the "No Means No Worldwide" self-defence programme

and "WomenStrength" courses, indicate that the SDT enhances situational awareness, threat recognition, and behavioural readiness in potentially risky situations (Hollander, 2014; Hollander & Cunningham, 2020; Sinclair *et al.*, 2013). Moreover, from the perspective of self-efficacy theory (Bandura, 1997), increased perceived control over threatening situations reduces psychological vulnerability and fear. Notably, the reduction is not only perceptual but also behavioural, as evidenced by decreased rates of sexual violence among trained participants (Hollander & Cunningham, 2020; Sinclair *et al.*, 2013).

In addition to fear reduction, the present review demonstrates that SDT plays an important role in decreasing stress, anxiety, and depression. The strict discipline and repetitive nature of martial arts practices, such as karate and judo, may contribute to enhanced mindfulness, improved emotional control, and reduced stress levels (Jansen *et al.*, 2016; Moore *et al.*, 2019). According to the study by Biswas and Chatterjee (2018), participants who engaged in karate and judo training for 1-3 years showed significant improvements in mental health, including reduced levels of anxiety and depression, along with enhanced psychological resilience.

Another important psychological outcome observed in this review is the regulation of anger and improvement of emotional control. Azoulay (2005) found that adult women who practice martial arts have lower levels of anger and better control over emotional responses. Consequently, there is an improvement in impulsive aggression and emotional stability. This suggests that SDT helps the transformation of maladaptive emotional expression into controlled and constructive behaviours.

A key contribution of this review is the identification of SDT's role in reducing self-silencing behaviour. It typically happens in fear of being victimised, and is strongly associated with depression, low self-esteem, and psychological distress among females. According to Hollander & Cunningham (2020), SDT increases assertiveness and verbal resistance, helping individuals create personal boundaries and express themselves more confidently.

Furthermore, some research suggests that SDT not only enhances physical skills but also serves as an effective psychological intervention by promoting positive psychological states and reducing negative ones (Hollander & Cunningham, 2020; Moore *et al.*, 2019). Overall, the findings suggest that SDT has significant positive implications for the mental health of females, as it reduces negative psychological states such as fear, stress, anxiety, depression, anger, and self-silencing tendencies while enhancing psychological resources such as self-efficacy, self-confidence, and resilience.

According to Bandura (1997), the combination of physical activity, skill acquisition, and mastery experiences is a key factor in the development of self-efficacy. Therefore, participation in SDT allows individuals to learn and effectively apply self-defence skills and develop more confidence in dealing with challenging situations, thereby reducing fear, stress, and anxiety. In addition, its nature helps to improve regulatory capacity and encourages individuals to express their feelings more freely.

Psychological vulnerability in females exhibits across their lifespan, though the sources of vulnerability differ. Adolescent girls experience intense emotional volatility, rapid hormonal changes, and high rates of internalising disorders such as anxiety and depression, due to puberty, body image issues, gender-role pressures, peer pressure, and academic stress. Adult women also demonstrate vulnerability to psychological distress due to career demands, relationships, social expectations, and broader life responsibilities. While both groups are susceptible to negative psychological states, these tend to be more intense and developmentally driven in adolescents, whereas in adulthood they are often more chronic but comparatively better regulated (Levkovich *et al.*, 2025; Yoon *et al.*, 2022).

Thus, early participation in SDT during adolescence may help prevent the development of chronic psychological issues, while continued engagement in adulthood may support long-term emotional regulation and well-being. Finally, SDT facilitates a transition from maladaptive to adaptive psychological states in women and focuses on their personal safety and overall well-being. Thus, by reducing negative psychological states, SDT enhances mental strength, confidence, and overall quality of life among females.

Practical Implications

Therefore, apart from enhancing defensive skills, self-defence training (SDT) serves as an essential tool for psychological empowerment among females. From a practical perspective, the findings of this review are important for public health, education, and women's empowerment initiatives. It can be stated that SDT may become an important part of women's mental health and empowerment programs. The inclusion of the SDT in school and university curricula, community-based programs and mental health programs may provide a cost-effective and accessible strategy for improving women's psychological well-being (Moore *et al.*, 2019). Especially, these kinds of programs may be useful in underprivileged communities, where there is a lack of professional assistance in terms of mental health problems. Therefore, SDT has strong potential to be adopted as a preventive as well as promotive mental health strategy.

Strength and Limitations

The present rapid review has several key strengths. First, existing literature on the effects of self-defence training (SDT) in reducing negative psychological states among females was reviewed. Research in this area has received limited attention within a single conceptual framework. This review included both adolescent girls and adult women, thus giving a more comprehensive insight into SDT and its effect at various stages of the female lifespan. Furthermore, the reviewed studies used multiple forms of SDT, such as traditional martial arts (karate, judo, or others), modern self-defence techniques, and specific self-defence programs, which added more practical value to the results. Also, the authors adhered to a systematic approach during the research by applying the PRISMA protocol and evaluating the methodological quality of studies according to the MMAT (2018). In addition to these strengths, this study also has several limitations, including the small number of articles, variations in study design and duration, lack of longitudinal research, lack of random sampling, and very few follow-up assessments, which may have influenced the study results.

Suggestions for Future Research

Future research may be conducted using a standardised self-defence training (SDT) protocol, which can serve as a model protocol for different practitioner groups or specific age groups, such as adolescents or adults. In addition, combining SDT with behaviour modification sessions, educational programmes, and broader social empowerment may enhance its psychological effectiveness and overall impact on women's well-being and empowerment.

CONCLUSION

In conclusion, the present review study highlights that self-defence training (SDT) is an effective strategy for reducing negative psychological states among females. Self-defence training emerges as a holistic intervention that addresses both psychological and social dimensions of well-being by reducing fear, stress, anxiety, depression, anger, and self-silencing behaviour, while enhancing self-efficacy and empowerment. Self-defence training not only equips individuals with practical skills for personal safety but also enhances a sense of control and empowerment, which is essential for mental well-being. Overall, SDT can be viewed as a solution to problems related to psychology and society. Therefore, it can be considered a valuable strategy for promoting mental health, empowerment, and overall quality of life.

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