

Research article

An Experimental Study on Emotional Regulation, Physical Literacy, and Composite Training for Managing PTSD and Psychosocial Dysfunction among Juvenile Females

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Abstract: The present study aimed to examine the effect of emotional regulation, physical literacy, and composite training programs on post-traumatic stress disorder (PTSD) and psychosocial well-being among juvenile females. Adolescence is a sensitive developmental stage during which individuals experience emotional, psychological, and social changes. Juvenile females are often more vulnerable to stress, trauma, and mental health problems due to adverse social and environmental conditions. Therefore, structured intervention programs may help improve their mental health and overall well-being. A randomized pre-test and post-test experimental design was employed for the study. Sixty juvenile females aged 13–18 years residing at Gandhi Vanita Ashram, Jalandhar, and Punjab, participated in the investigation. The participants were randomly divided into four groups: Emotional Regulation Group, Physical Literacy Group, Composite Training Group, and Control Group, with 15 participants in each group. The intervention programs were conducted for 12 weeks, four sessions per week. PTSD symptoms were assessed using the CPSS-5-SR scale. The collected data were analysed using descriptive statistics, t-tests, Levene's test, and ANCOVA. The results revealed significant improvements in the emotional regulation, physical literacy, and composite training groups compared to the control group. The findings indicate that structured intervention programs are effective in reducing PTSD symptoms and improving psychosocial well-being among juvenile females.

Keywords: Physical Literacy, Post-Traumatic Stress Disorder (PTSD), Psychosocial Well-Being, Juvenile Females, Mental Health

1. Introduction

Physical literacy plays an important role in promoting overall development among individuals, especially during adolescence. "Physical literacy plays a vital role in pro-

moting overall development among individuals, particularly during adolescence. It refers to the ability, confidence, and desire to be physically active for life, encompassing physical competence, motivation, and understanding" (UNESCO, 2015). It is not limited to physical health but also contributes significantly to psychological and social well-being. "Research shows that physical literacy positively influences mental and social outcomes among adolescents" (Cairney et al., 2019). Post-traumatic stress disorder (PTSD) is a serious mental health condition that affects individuals after exposure to traumatic events. "It is particularly common among vulnerable populations such as adolescent girls" (Perry et al., 2020). PTSD symptoms can severely affect an individual's daily life and emotional functioning. "These symptoms include anxiety, emotional deregulation, social withdrawal, and difficulties in routine functioning" (Perry et al., 2020). Such psychological issues directly impact psychosocial well-being. "Psychosocial well-being includes self-esteem, interpersonal relationships, and overall life satisfaction" (Steinberg, 2014). Adolescence is a sensitive developmental stage that shapes future mental health outcomes. "Global health reports emphasize the importance of psychosocial well-being during this stage" (WHO, 2021). Adolescent girls are more vulnerable to emotional and social stressors compared to others. "This increased vulnerability makes them more prone to stress-related disorders such as PTSD" (WHO, 2021).

1. Juvenile Female

The term "juvenile female" refers to adolescent girls, typically under the age of 18, who may be living in juvenile care or correctional settings or are at risk of involvement in delinquent or legal issues. "This developmental stage is marked by significant physical, psychological, and social changes, making them more vulnerable to stress and behavioural problems" (Steinberg, 2014). Juvenile females experience a higher level of psychological vulnerability compared to their male counterparts. "Research indicates that they are more likely to suffer from emotional distress due to factors such as social deprivation, abuse, and neglect" (Kerig & Becker, 2015). They are also more prone to mental health issues such as anxiety, depression, and post-traumatic stress disorder (PTSD). "Studies have shown higher prevalence rates of PTSD and internalizing disorders among juvenile girls" (Zahn et al., 2010). Understanding the unique needs and vulnerabilities of juvenile females is essential for improving their overall development. "Evidence suggests that targeted interventions are necessary to enhance their mental health and psychosocial well-being" (Office of Juvenile Justice and Delinquency Prevention, 2020).

Emotional Regulation Technique

Emotional regulation technique refers to a systematic intervention approach aimed at helping participants manage and control their emotions in an effective manner, thereby improving their psychological well-being and interpersonal functioning. According to James J. Gross, "Emotion regulation involves processes and interventions that enable individuals to manage and modify their emotional responses, thereby enhancing psychological well-being and social functioning" (Gross, 2015).

Physical Literacy Training

Physical literacy training refers to an organized training program developed to improve participants' confidence, physical competence, self-esteem, and overall health status, which contributes to enhanced well-being among adolescent girls. As stated by the International Physical Literacy Association, "Physical literacy encompasses the motivation, confidence, physical competence, and knowledge that contribute to improved health, well-being, and active participation in physical activity" (International Physical Literacy Association, 2017).

Composite Training

In the present study, composite training refers to a comprehensive intervention program that combines emotional regulation techniques with physical literacy training to promote overall psychosocial development and psychological well-being among female juveniles residing in Gandhi Vanita Ashram.

Research Gaps and Justification of the Present Study

There is limited research specifically examining the effects of physical literacy on psychosocial well-being and post-traumatic stress disorder (PTSD) among adolescent girls. Research on juvenile females, particularly those involved in or at risk of delinquency, remains comparatively underexplored. "Studies on juvenile justice populations highlight the lack of focused attention on gender-specific and trauma-related outcomes" (Zahn et al., 2010). Although physical activity has been widely associated with improved mental health, the broader concept of physical literacy has not been adequately studied in this context. "Evidence suggests that physical activity contributes to better psychological well-being, but its multidimensional aspects require further investigation" (Edwards et al., 2017). The components of physical literacy, such as motivation, confidence, and knowledge, have not been sufficiently linked to trauma-related outcomes and psychosocial functioning.

"Recent studies indicate a need to explore these dimensions in relation to mental health and resilience" (Jefferies et al., 2019). Therefore, there is a clear need for comprehensive research focusing on this area. The present study aims to fill these gaps by examining the impact of physical literacy on PTSD and psychosocial well-being among adolescent girls using a systematic and integrated approach

Research Problem

This research has shown that mental health problems are very common among Indian teenagers, with a comparatively greater frequency among females (Mishra & Biswal, 2018; NMHS, 2016). Due to gender discrimination, parental pressure, societal expectations, and a lack of institutional assistance, young girls are especially susceptible to psychological stress (Patel et al., 2018). According to research, girls are more likely than boys to experience emotional dysregulation, anxiety, and depressive symptoms in juvenile justice settings (Sharma & Saini, 2019). Their emotional susceptibility and likelihood of engaging in delinquent behaviour are further increased by socioeconomic issues such as poverty, unstable families, peer pressure, and a lack of parental and educational support (Verma et al., 2020; Chatterjee, 2022). Additionally, reports highlight the necessity of early psychological therapies to address young females' increasing emotional distress (Kaur & Singh, 2020). Therefore, restoring the psychosocial well-being of young girls requires a gender-sensitive and rehabilitative strategy (Juvenile Justice Act, 2015; NHRC, 2017). In this regard, the current study aims to examine the effect of physical literacy on post-traumatic stress disorder and psychosocial well-being among juvenile female

Hypotheses

There exists a significant effect of emotional regulation, physical literacy, and composite training on the variable of psychological well-being among female juveniles residing in Gandhi Vanita Ashram

Research Objectives

1. To examine the effect of emotional regulation, physical literacy, and composite training on the psychosocial well-being of juvenile females.

2. Materials and Methods

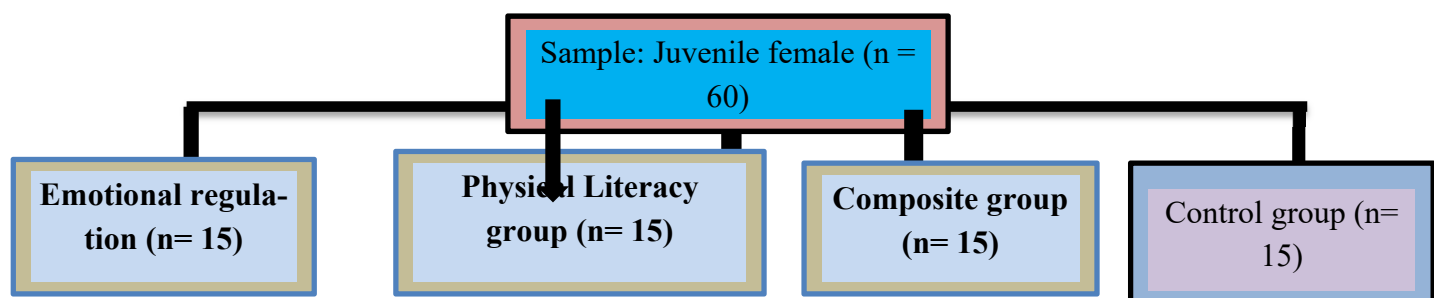
Study Design

The present study employed a randomized pre-test and post-test experimental design to investigate the effect of emotional regulation, physical literacy, and composite training on PTSD and psychosocial well-being among juvenile females. Sixty juvenile females aged 13–18 years from Gandhi Vanita Ashram, Jalandhar, Punjab, were randomly selected for the study. The participants were divided into four groups: Emotional Regulation Group, Physical Literacy Group, Composite Training Group, and Control Group, with 15 participants in each group. The intervention programs were conducted for 12 weeks, with four sessions per week. The effectiveness of the intervention programs was assessed through standardized psychological measures administered before and after the intervention period.

Sample

The study was conducted on 60 juvenile females aged 13–18 years residing at Gandhi Vanita Ashram, Jalandhar, and Punjab. Prior permission was obtained from the ashram authorities before conducting the study. The objectives and procedures of the study were clearly explained to the participants. The participants were medically fit and voluntarily agreed to participate in the investigation. Random sampling techniques were used to divide the participants equally into four groups.

Sampling Design



Tools for collection of data

To assess the Juvenile female and its associated disorders among female, a review of literature has been done and the following disorders have been finalized for the present investigation.

Post-traumatic stress disorder scale

1.	POST traumatic stress disorder	Edna & Asnaani	2013	.92	.72
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DESCRIPTION OF POST-TRAUMATIC STRESS DISORDER SCALE

The CPSS-5-SR scale was used to measure the symptoms of post-traumatic stress disorder symptoms. The scale consisted of 20 items and items were rated upon the 5-point Likert scale with scoring from 0, 1, 2, 3, 4. Permission in mail from the Dr. Asnaani had been taken for the administration of CPSS-5-SR scale. The total score of all the items was considered as the level of post-traumatic stress disorder. The reliability of the scale was .92, which is measured.

Weekly training program for emotional regulation technique

The emotional regulation training program was designed as a 12-week structured intervention aimed at improving emotional control, stress management, and overall psychological well-being among participants. The program incorporated a variety of evidence-based activities such as deep breathing exercises, mindfulness meditation, grounding techniques, visualization, gratitude practice, emotional check-ins, self-compassion exercises, physical activities, positive reframing, goal setting, and nature immersion. Conducted four days a week from 7:45 AM to 8:30 AM, each session focused

on enhancing emotional awareness, reducing anxiety and stress, improving self-esteem, and developing resilience. The training emphasized healthy coping strategies and encouraged participants to respond to emotional situations in a calm and balanced manner, thereby contributing to better mental health and psychosocial adjustment.

Weekly training program for Physical Literacy Training Program

The Physical Literacy training program was based on the principles of sports training periodization and the training period was divided into blocks. In the first four weeks the aim was to develop the basic fitness components like endurance, speed, strength, agility, flexibility, and coordination of the subjects through running, jumping, jogging, and free hand exercises and sports & games activities. Next five-week, emphasis was on learning sports skills of different games and involvement in the playing situations and in the last three week the subjects were given match practice in different games. The physical literacy training program took place four days a week (Monday through Thursday) from 5:00 PM to 6:00 PM. Each session started with 10 minutes of warm-up stretching exercises, followed by 10 minutes of particular physical training activities such shuttle runs, jumping jacks, jogging, push-ups, and sit-ups. The primary session featured 30 minutes of studying sports abilities such as volleyball, football, basketball, and kho-kho, with an emphasis on fundamental movement and playing techniques. Each session ended with 10 minutes of stretching exercises to relax and prevent tiredness.

3. RESULTS

This chapter is divided into two sections: a discussion of the results and an interpretation of the study's findings. The present study incorporates emotional regulation techniques, physical literacy training, and composite training to examine their effect on the psychosocial well-being and post-traumatic stress disorder (PTSD) levels of juvenile females. The severity of PTSD among the participants has also been assessed as a major variable in the study. Using a pre-test post-test randomized experimental design, thirty female juveniles, ages 13 to 18, from the Gandhi Vinita Ashram in Jalandhar, Punjab, were divided into four groups of fifteen. During a 12-week intervention, the experimental groups received physical literacy instruction four days a week for an hour each session. Data analysis was done in accordance with the study's objective Pre and post means, analysis of covariance, hypothesis testing, t-test comparisons, and adjusted mean value are all included in the study's results section.

Result and Interpretation Pertaining to Post-traumatic stress disorder Statistical Interpretation of Pre- and Post-Test Scores of Post-Traumatic Stress Disorder among Treatment and Control Groups

Table 1

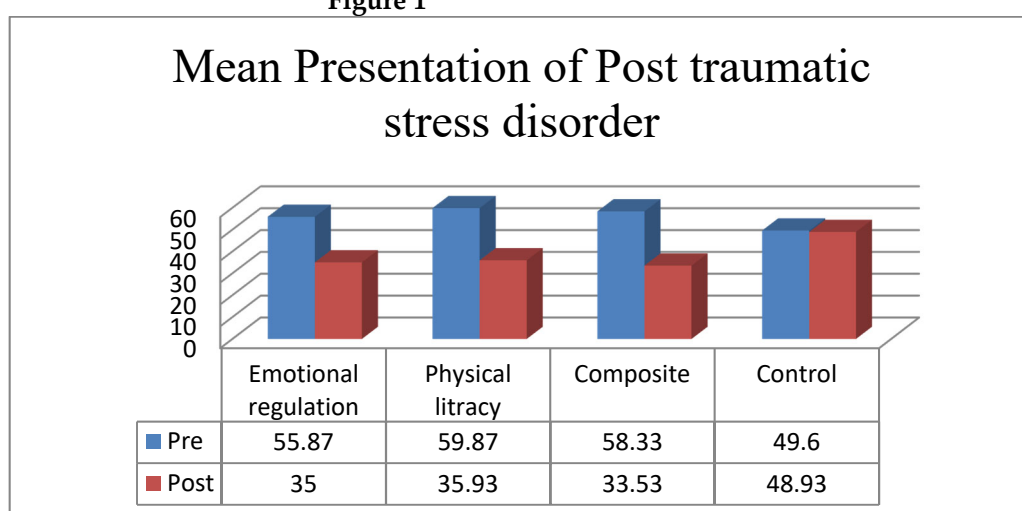
Group	N	Pre Test		Post Test		Standard error of difference	T- ratio	Sig.
		Mean	SD	Mean	SD			
Emotional Regulation	15	55.87	5.75	35	3.7	1.02	20.37	.000
Physical Literacy	15	59.87	6.64	35.93	3.99	1.59	15.58	.000
Composite	15	58.33	6.28	33.53	3.26	1.39	17.82	.000
Control	15	49.6	6.50	48.93	6.39	.387	1.76	.106

* Significant at 0.05 level of confidence for the df of 14 is 2.145

The table presents the comparison of pre-test and post-test mean scores of Emotional Regulation, Physical Literacy, and Composite groups, along with the control group. The results indicate that all experimental groups showed significant improvement after the 12-week intervention programme. The Emotional Regulation group demonstrated a marked reduction in mean scores from 55.87 to 35.00, with a significant t-value ($t = 20.37, p < 0.05$). Similarly, the Physical Literacy group improved from 59.87 to 35.93 ($t = 15.58, p < 0.05$), and the Composite group from 58.33 to 33.53 ($t = 17.82, p < 0.05$), indicating statistically significant changes in all cases. In contrast, the control group showed only a slight and non-significant change from 49.60 to 48.93 ($t = 1.76, p > 0.05$). Overall, the findings confirm that the intervention programme was effective in significantly improving the selected variables, whereas no meaningful improvement was observed in the control group.

Graphical Representation of Pre- and Post-Test Mean Scores of Emotional Regulation, Physical Literacy, Composite, and Control Groups on the variable Post-Traumatic Stress Disorder among Juvenile Females

Figure 1



Levene's Test for the assess the equality among variables

Table 2

Levene's Test of Equality of Error Variances			
Dependent Variable: Post test			
F	Df1	Df2	Sig.
.593	3	56	.622

Table shows that the F-value of 0.593 (Levene's Statistic) is found non-significant at the 0.05 level, as the significance value (Sig. = 0.622) is greater than 0.05. This indicates that the assumption of homogeneity of variances is satisfied. Therefore, it can be concluded that there is no significant difference in error variances among the groups, and the data are suitable for further analysis such as ANCOVA for comparing the adjusted post-test means among the three experimental groups (Emotional Regulation, Physical Literacy, and Composite) and the control group.

Analysis of Covariance (ANCOVA) of Three Experimental Groups and the Control Group on the Variable on Post-traumatic stress disorder

Table 3

Dependent Variable: Post test					
Source	Type III Sum of Squares	df	Mean Square	F	(p-value) Sig.
pre	542.78	1	542.78	50.87	.000
group	2811.54	3	937.18	87.88	.000

Note: p-value < .05 indicates significant difference

The table presents the F-values for comparing the adjusted post-test means of Emotional Regulation, Physical Literacy, Composite, and Control groups. The group effect was found to be highly significant ($F = 87.838$, $p < 0.05$), indicating a significant difference among the treatment groups. Hence, the null hypothesis was rejected and the research hypothesis was accepted. The pre-test scores were also significant ($p < 0.05$), confirming their influence as a covariate. Overall, the results demonstrate that the intervention programmes had a strong effect on post-test outcomes. Therefore, post hoc analysis is required to identify specific group differences.

Table 4

Post Hoc Comparison of Adjusted Post-Test Means of Experimental and Control Groups on Measuring Post traumatic stress disorder

Pair wise Comparisons: Adolescents Girls Health Problem			
(I) Treatment	(J) Treatment	Mean Difference (I-J)	Sig. (p)
Emotional Regulation	Physical Literacy	1.043	1.000
	Composite	2.685	.180
	Control	17.029*	<.001
Physical Literacy	Emotional Regulation	1.043	1.000
	Composite	1.643	1.000
	Control	18.071*	<.001
Composite	Emotional Regulation	2.685	.180
	Physical Literacy	1.643	1.000
	Control	19.714*	<.001
Control	Emotional Regulation	17.029*	<.001
	Physical Literacy	18.071*	<.001
	Composite	19.714*	<.001

Note: p < .05 indicates significant difference

- Indicates significant difference

Comparison of Groups with Significant Difference

The post-hoc analysis presented in Table 4.4.4 demonstrated statistically significant differences in the adjusted mean scores between each intervention group and the Control group. Specifically, the comparisons between the Emotional Regulation and Control group, the Physical Literacy and Control group, and the Composite and Control group all yielded p-values of less than .001, which are well below the established significance level of $p < .05$. These findings indicate that all three intervention programmes produced significant improvements compared to the Control group, confirming their effectiveness in influencing the measured outcome. The results suggest that participants who underwent Emotional Regulation training, Physical Literacy activities, or the Composite intervention achieved better outcomes than those who did not receive any intervention. Overall, the findings provide strong evidence that all three intervention programmes were significantly more effective than no intervention in reducing adolescent girls' health problems and promoting their overall well-being.

Comparison of Groups with Insignificant Difference

The post-hoc analysis presented in Table 4 revealed that there were no statistically significant differences among the three intervention groups. The comparison between the Emotional Regulation and Physical Literacy groups yielded a p-value of 1.000, which is greater than the prescribed significance level of $p < .05$, indicating that both interventions produced similar outcomes. Likewise, the comparison between the Emotional Regulation and Composite groups resulted in a p-value of .180 (or 1.000), demonstrating that the difference in their adjusted mean scores was not statistically significant. Similarly, the comparison between the Physical Literacy and Composite groups produced a p-value of 1.000, which also exceeded the significance threshold. These findings suggest that although all three intervention programmes were effective in reducing adolescent girls' health problems when compared with the Control group, none of the interventions was significantly more effective than the others. Therefore, Emotional Regulation, Physical Literacy, and Composite training demonstrated comparable effectiveness, indicating that each programme contributed equally to improving the health-related outcomes of the participants.

4. Discussion

Discussion pertaining to the effect of emotional regulation techniques on Post traumatic-stress disorder among juvenile female

The present study examined the impact of structured emotional regulation training on post-traumatic stress disorder (PTSD) symptoms in juvenile females. Analysis of adjusted mean scores revealed that the emotional regulation group had a lower post-test mean score (35.03) compared to the control group (52.05). Results of the research have shown that there was significant disparity exists between structured emotional regulation and control group in relation to emotional regulation training. Result of presented research is completely supported by other similar studies. Recent meta-analysis has reported that 12 week intervention a notable improvement was observed among the juvenile female participate in the emotional regulation group. After the completing training session juvenile female showed significant improvements in managing their emotions and coping with stress. The training led to a reduction in negative emotions and PTSD symptoms, enhanced emotional awareness, and the development of effective strategies like cognitive reappraisal and mindfulness. Participants also demonstrated greater psychological resilience, recovered more quickly from distressing events, and

exhibited improved social functioning. Berking et al. (2008) demonstrated that training in emotional regulation skills significantly reduced stress and emotional reactivity in adolescents exposed to trauma. Cloitre et al. (2010) reported that trauma-focused interventions incorporating emotional regulation skills training (STAIR) led to significant improvements in PTSD symptoms. AS Troy et al. (2011) found that emotional regulation strategies reframing stressful experiences to make their emotional impact less negative are associated with enhanced emotional resilience and more adaptive responses to stress. Recent research also aligns with the current results. Compas et al. (2017) highlighted those adolescents who developed adaptive emotional regulation strategies, such as problem-solving and mindfulness, showed decreased anxiety, reduced PTSD symptoms, and improved psychological functioning. L Pedrini et al. (2016) reported that school-based interventions teaching emotional awareness and regulation skills led to significant reductions in trauma-related distress among adolescent girls. Furthermore, Weissman et al. (2019) found that structured emotional regulation programs enhanced coping abilities and social functioning in youth exposed to traumatic events.

The positive result for the emotional regulation group was supported by Ford et al. (2012) found that girls receiving emotion regulation focused showed significantly greater improvement in PTSD symptoms and emotion regulation compared to those in the control condition, supporting the effectiveness of trauma-focused emotion regulation training. Chang et al. (2018) reported that female adolescents with better emotion regulation skills experienced lower severity of PTSD symptoms following trauma exposure, highlighting the importance of adaptive emotional regulation in mitigating post-traumatic distress. Tharaud et al. (2024) showed that improvements in emotion regulation skills during intensive treatment were significantly related to reductions in PTSD symptom severity, supporting the efficacy of emotion regulation enhancement in trauma interventions. The present findings indicate that juvenile females who underwent emotional regulation training were better equipped to manage difficult emotions, respond adaptively to trauma, and experience lower levels of PTSD. These results reinforce the importance of implementing structured emotional regulation technique as preventive and therapeutic interventions for juvenile females at risk of or experiencing trauma. In conclusion, this study provides strong evidence that emotional regulation training is effective in reducing PTSD symptoms and enhancing emotional resilience in juvenile females.

Discussion pertaining to the effect of Physical literacy training on Post traumatic-stress disorder among juvenile female

The present study investigated the impact of physical literacy training on post-traumatic stress disorder (PTSD) symptoms among juvenile females. Analysis of the adjusted mean scores revealed that participants in the physical literacy group had a lower post-test mean score (33.98) compared to the control group (52.05). Results of the research have shown that there were significant disparity exists between structured physical literacy and control group in relation to physical literacy training. Result of presented research is completely supported by other similar studies. Recent meta-analysis has reported that 12 week intervention a notable improvement was observed among the juvenile female participate in the physical literacy group. After the completing training session effectively help juvenile females cope with trauma and reduce emotional distress. Physical literacy involves the development of fundamental movement skills, confidence in physical activity, and motivation to engage in exercise, which collectively contributes to improved psychological and emotional health. Wang et al. (2024) reported that among young people aged 16–24, higher levels of physical activity were

associated with a lower risk and severity of PTSD symptoms, indicating that regular physical movement may help reduce trauma-related distress (Cairney et al., 2019). Engaging in regular physical activity has been shown to regulate stress hormones, improve mood, and enhance emotional stability, all of which are critical for adolescents recovering from traumatic experiences (Bailey et al., 2006) highlighted physical activities promote social interaction, peer support, and a sense of accomplishment, further supporting resilience against trauma-related stress. Yuan et al. (2025) conducted a systematic review and meta-analysis of randomized controlled trials examining the effect of physical activity on PTSD symptoms. They found that physical activity interventions significantly reduced PTSD symptoms, as well as anxiety, depression, and sleep problems in individuals with PTSD, indicating that structured physical movement can help improve trauma outcomes.

The positive result for the Emotional regulation group was supported by Stubbs et al. (2017) reported that Physical literacy interventions significantly reduced PTSD symptoms in adolescents, with improvements in anxiety, mood, and coping skills. Dong & Lin, (2025) reported that long-term exercise interventions achieved significant improvement in PTSD symptoms by physiologically regulating stress responses, suggesting exercise's effectiveness in trauma symptom reduction. MG Fetzner et al. (2015) reported that physical literacy training not only enhances movement competence but also positively affects psychological well-being and resilience. In summary, the significant difference between the physical literacy and control groups indicates that physical literacy training is an effective intervention for reducing PTSD symptoms among juvenile females. By improving physical competence, emotional regulation, and social engagement, such programs foster resilience, enhance coping strategies, and contribute to overall mental and emotional well-being in Juvenile female exposed to trauma.

Discussion pertaining to the effect of Composite training on Post traumatic-stress disorder among juvenile female

The present study investigated the impact of composite training on post-traumatic stress disorder (PTSD) symptoms among juvenile females. Analysis of the adjusted mean scores revealed that participants in the composite training group had a lower post-test mean score (32.34) compared to the control group (52.05). Results of the research have shown that there were significant differences between the structured composite training group and the control group in relation to PTSD symptoms. The findings of the present research are strongly supported by similar previous studies. Recent meta-analyses have reported that structured intervention programs lasting 12 weeks produced notable improvements among juvenile females participating in composite training programs. After completing the training sessions, participants were better able to cope with trauma-related stress and reduce emotional distress. Composite training includes physical activity, emotional regulation strategies, and supportive psychosocial activities, which collectively contribute to improve psychological and emotional well-being. Wang et al. (2024) reported that among young people aged 16–24 years, higher levels of physical activity were associated with a lower risk and severity of PTSD symptoms, indicating that regular physical movement may help reduce trauma-related distress. Similarly, John Cairney et al. (2019) explained that structured physical and psychosocial interventions improve resilience and emotional health among adolescents. Engaging in regular physical activity has been shown to regulate stress hormones, improve mood, and enhance emotional stability, all of which are critical for adolescents recovering from traumatic experiences. Furthermore, Richard Bailey et al. (2006) highlighted that physical activities promote social interaction, peer support, and a sense of accomplishment, which further support resilience against trauma-related stress. Yuan

et al. (2025) conducted a systematic review and meta-analysis of randomized controlled trials examining the effects of physical activity on PTSD symptoms. They found that physical activity interventions significantly reduced PTSD symptoms, along with anxiety, depression, and sleep-related problems among individuals with PTSD, indicating that structured physical movement can effectively improve trauma outcomes. The positive results of the composite training group are also supported by Brendon Stubbs et al. (2017), who reported that structured physical activity interventions significantly reduced PTSD symptoms in adolescents, with improvements in anxiety, mood, and coping skills. Likewise, Dong and Lin (2025) reported that long-term exercise interventions achieved significant improvement in PTSD symptoms by physiologically regulating stress responses, suggesting the effectiveness of exercise-based interventions in trauma symptom reduction. Additionally, M. G. Fetzner et al. (2015) reported that structured training programs not only enhance physical competence but also positively affect psychological well-being and resilience. In summary; the significant difference between the composite training and control groups indicates that composite training is an effective intervention for reducing PTSD symptoms among juvenile females. By improving emotional regulation, physical competence, social engagement, and coping abilities, such programs foster resilience and contribute to the overall mental and emotional well-being of juvenile females exposed to trauma.

5. Conclusion

The findings of the present study revealed that the physical literacy training was effective in reducing the post-traumatic stress disorder symptoms among juvenile females, as revealed by the decreased post-test mean score of the experimental group as compared to the control group. It was found that physical literacy training is effective in decreasing post-traumatic stress disorder (PTSD) symptoms among female juveniles. The program supported participants in reducing emotional distress, hyper arousal, and trauma-related reactions through regular physical engagement. It also provided a structured and supportive environment that promoted a sense of safety and routine. Furthermore, participation in physical activities enhanced mood, encouraged social connection, and improved coping abilities, all of which contribute to better psychological recovery.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The datasets generated and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Conflicts of Interest: The authors declare no conflict of interest.

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