TJTS Turkish Journal of Traumatic Stress

DOI: https://doi.org/10.63175/tjts.73
ISSN: 3062-2336

Turkish Journal of Traumatic Stress
2026; Vol. 2, No. 3, 150-158

RESEARCH ARTICLE

Effects of Trauma-Informed Yoga on Coping with Stress, Mental Well-Being, Body Image, and Emotion Regulation in Performing Arts Students: A Pilot Randomized Controlled Study

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Received : 12.04.2026
Revised : 03.07.2026
Accepted : 16.09.2026

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ABSTRACT

Background: Traumatic experiences may negatively affect stress coping, emotion regulation, and psychological well-being. Trauma-informed approaches emphasise safety, autonomy, and the prevention of re-traumatisation, and trauma-informed yoga has emerged as a body-based intervention supporting self-regulation. Students enrolled in conservatory and performing arts programs may be particularly vulnerable to stress, as the body functions both as a tool of expression and as a subject of continuous evaluation. This study examined the effects of a trauma-informed yoga intervention on stress coping, mental well-being, body image, and difficulties in emotion regulation.

Methods: This pilot experimental study used a pretest–posttest control-group design. Participants were 29 university students (intervention n = 12; control n = 17). The intervention group received a structured trauma-informed yoga program delivered online for three weeks, five days per week. The control group received no intervention. Data were collected using self-report measures, and nonparametric analyses were conducted due to the small sample size.

Results: Baseline scores did not differ significantly between groups. Posttest results showed significantly higher coping scores in the intervention group compared with the control group, with a large effect size. Change-score analyses indicated a significant improvement in coping. Mental well-being improved significantly within the intervention group; however, between-group differences were not statistically significant. No significant changes were observed in body image or difficulties in emotion regulation.

Conclusion: Trauma-informed yoga may be a promising supportive intervention for improving stress coping and enhancing mental well-being among performing arts students. Further studies with larger samples and longer follow-up periods are needed.

Keywords: Trauma-Informed Yoga; Coping With Stress; Mental Well-Being; Emotion Regulation; Body Image.

Introduction

Traumatic experiences may threaten an individual's physical integrity, emotional security, and core assumptions about the self and the world, and their effects may extend beyond acute distress to enduring emotional, cognitive, behavioural, and interpersonal changes.[1,2] Trauma exposure has also been associated with difficulties in emotion regulation, impaired coping processes, and reduced psychological well-being.[1,2]

In response to these multidimensional effects, trauma-informed approaches have increasingly been adopted across mental health and educational settings.[3,4] These approaches emphasise safety, transparency, empowerment, and choice, while aiming to minimise the risk of re-traumatisation.[3,4] Trauma-informed yoga has emerged as a body-based intervention grounded in these principles. Unlike traditional yoga practices that may emphasize performance or idealized postures, trauma-informed yoga prioritizes participant autonomy, invitational language, predictable

Citation: Güner P., Başak NT. Effects of Trauma-Informed Yoga on Coping with Stress, Mental Well-Being, Body Image, and Emotion Regulation in Performing Arts Students: A Pilot Randomized Controlled Study. Turkish Journal of Traumatic Stress 2026;2(3):150-158.
Doi: https://doi.org/10.63175/tjts.73

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structure, and respect for bodily boundaries.[5,6]

The theoretical basis of trauma-informed yoga is supported by research on trauma physiology and autonomic nervous system regulation.[5,6,7,8] Trauma-related dysregulation has been linked to imbalances in autonomic functioning, and mind–body practices such as yoga may enhance bodily awareness, facilitate parasympathetic activation, and support adaptive stress regulation.[7,9] Previous studies have suggested that yoga-based interventions may contribute to improvements in psychological well-being and emotional functioning through mechanisms such as relaxation, increased interoceptive awareness, and enhanced self-regulation capacity.[7,9] Recent systematic reviews and meta-analyses have further demonstrated that yoga- and mindfulness-based interventions may reduce stress, anxiety, and psychological distress while supporting mental well-being among university students and other nonclinical populations.[10,11,12]

Students enrolled in conservatory and performing arts programs represent a particularly vulnerable population in this context. During the university period, students experience significant academic, social, and performance-related stressors, particularly in performance-based disciplines. In these environments, the body functions both as a medium of artistic expression and as an object of continuous evaluation, potentially increasing psychological vulnerability.[13,14] Performance anxiety, repeated assessment, heightened bodily self-monitoring, and uncertainty regarding future professional opportunities may contribute to elevated stress levels and reduced well-being.[13,14]

In addition, students in performing arts disciplines are required to maintain a heightened awareness of their bodies as instruments of artistic performance. The concept of embodiment is particularly relevant in this context, as students' educational and artistic experiences are closely linked to bodily perception, movement, and expression. This context may increase somatic awareness while simultaneously exposing students to body surveillance and self-monitoring processes associated with external evaluation. Such experiences may contribute to increased psychological vulnerability and make body-based, trauma-informed interventions particularly relevant for this population.

Despite growing interest in trauma-informed and body-based interventions, research examining the effects of trauma-informed yoga in performing arts students remains limited. Existing studies have primarily focused on clinical or general populations, with relatively little attention to individuals whose training environments inherently involve bodily exposure and performance evaluation. Therefore, there is a need for research examining whether trauma-informed, body-based interventions can support coping and psychological well-being in this specific population.

Accordingly, the present pilot study aimed to examine the effects of a trauma-informed yoga intervention on stress coping, mental well-being, body image, and difficulties in emotion regulation among university students enrolled in conservatory and performing arts programs.

Method

Study Design

This study was designed as a pilot experimental study using a pretest-posttest control-group design. The study aimed to examine the effects of a trauma-informed yoga intervention on stress coping, mental well-

being, body image, and difficulties in emotion regulation among university students.

Participants

The sample consisted of university students enrolled in conservatory and performing arts programs. Participants were required to be 18 years of age or older and actively enrolled in a performance-based academic program.

A total of 34 eligible students were recruited and randomly assigned to either the intervention or control group using a computer-based randomization procedure. However, five participants assigned to the intervention group withdrew before the intervention began due to scheduling conflicts. The final sample consisted of 29 participants (intervention group, n = 12; control group, n = 17).

Participants who had engaged in regular yoga practice within the previous six months or who reported a diagnosed psychiatric disorder were excluded from the study.

Procedure

Pretest assessments were conducted online for both the intervention and control groups before the intervention. Following the pretest phase, the intervention group participated in a structured trauma-informed yoga program, while the control group continued their usual daily routines without receiving any intervention. The intervention was implemented over three weeks, five days per week, with 45-minute online sessions.

The trauma-informed yoga program was developed in accordance with trauma-informed principles, emphasizing safety, bodily awareness, autonomy, and self-regulation.[3,4,5,6] The program followed a structured progression. In the first week, the focus was on increasing body awareness and recognizing internal sensations. In the second week, the emphasis shifted to developing a sense of choice and personal boundaries. In the third week, the program aimed to integrate these skills into daily life and interpersonal contexts.

Each session included breathing exercises, gentle physical movements, body-awareness practices, and relaxation techniques designed to support autonomic regulation and enhance self-awareness.[3,4,5,6] *Examples of intervention components included grounding exercises, diaphragmatic breathing practices, gentle stretching movements, body scan activities, and guided relaxation exercises delivered using trauma-informed and invitational language.*

Posttest assessments were conducted after completion of the intervention, under conditions comparable to those of the pretest.

Attendance was monitored throughout the intervention period. All participants in the intervention group attended all scheduled sessions, resulting in a 100% adherence rate.

Measures

Sociodemographic Information Form: A researcher-developed sociodemographic information form was used to collect descriptive data. The form included items related to age, gender, academic year, department, exercise habits, prior yoga experience, yoga practice within the last six months, psychiatric diagnosis history, and previous participation in psychological support or trauma-related interventions.

Warwick–Edinburgh Mental Well-Being Scale (WEMWBS): Mental well-being was assessed using the Warwick–Edinburgh Mental Well-Being Scale (WEMWBS).[15] The WEMWBS is a self-report instrument developed to assess positive aspects of mental health, including psychological functioning and subjective well-

being. The scale consists of 14 items rated on a 5-point Likert scale ranging from 1 (“none of the time”) to 5 (“all of the time”). Total scores range from 14 to 70, with higher scores indicating greater mental well-being. The scale assesses both hedonic and eudaimonic components of well-being, including positive affect, satisfying interpersonal relationships, and positive psychological functioning. The WEMWBS has been widely used in both clinical and non-clinical populations and has demonstrated good psychometric properties.[15]

Body Image Quality of Life Inventory (BIQLI): Body image was assessed using the Body Image Quality of Life Inventory (BIQLI).[16] This instrument evaluates the impact of body image on various domains of an individual’s life, including emotional, social, and functional areas. The BIQLI consists of items assessing how body image influences quality of life across different contexts. Participants rate each item on a Likert-type scale, indicating whether their body image has a positive or negative impact on specific areas of life. Higher scores indicate a more positive body image-related quality of life, whereas lower scores reflect a more negative impact. The instrument provides a comprehensive evaluation of the functional consequences of body image perceptions.[16]

Difficulties in Emotion Regulation Scale – Short Form (DERS-16): Difficulties in emotion regulation were measured using the Difficulties in Emotion Regulation Scale – Short Form (DERS-16).[17] The DERS-16 is a multidimensional self-report instrument designed to assess various aspects of emotion regulation difficulties. The scale consists of 16 items rated on a 5-point Likert scale ranging from 1 (“almost never”) to 5 (“almost always”). It assesses multiple domains, including a lack of emotional awareness, a lack of emotional clarity, difficulties with impulse control, difficulties engaging in goal-directed behaviour, and limited access to effective emotion regulation strategies. Higher scores indicate greater difficulties in emotion regulation. The DERS-16 has demonstrated good reliability and validity in both clinical and non-clinical samples.[17]

Brief COPE Inventory: Stress coping strategies were assessed using the Brief COPE Inventory.[18] The Brief COPE is a self-report measure developed to assess a broad range of coping responses to stress. The instrument includes multiple subscales representing different coping strategies, including problem-focused, emotion-focused, and avoidance-based coping. Each item is rated on a 4-point Likert scale ranging from 1 (“I haven’t been doing this at all”) to 4 (“I’ve been doing this a lot”). The Brief COPE assesses both adaptive and maladaptive coping strategies and is widely used in stress and coping research.[18]

Data Analysis

Due to the small sample size, nonparametric statistical methods were used. Between-group comparisons of change scores (Δ = posttest − pretest) were conducted using the Mann–Whitney U test, while within-group comparisons were performed using the Wilcoxon signed-rank test. Effect sizes were calculated to determine the magnitude of the observed differences.

Ethics Approval

Ethical approval for this study was obtained from the İstanbul Bilgi University Human Research Ethics Committee (Project No: 2025-20507-190). All participants were informed of the study's purpose and procedures and provided written informed consent before participation. Participation was voluntary, and participants were informed that they could withdraw from the study at any time without

any consequences. Confidentiality and anonymity of the data were ensured throughout the study. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Results

Participant Flow

A total of 34 students were assessed for eligibility and randomly assigned to either the intervention group (trauma-informed yoga) or the control group. Five participants assigned to the intervention group withdrew before the intervention began due to scheduling conflicts. The final sample consisted of 29 participants (intervention group, n = 12; control group, n = 17). Participant flow is presented in the CONSORT flow diagram (Figure 1).

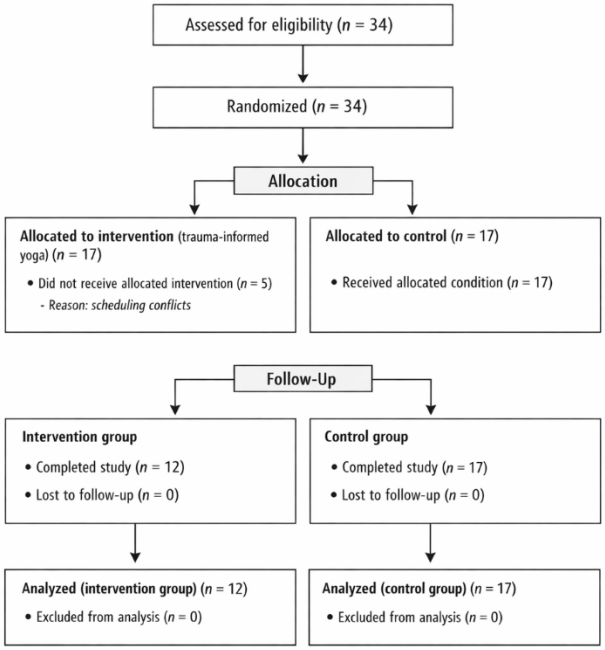

Figure 1. *CONSORT 2010 flow diagram of participant recruitment, allocation, follow-up, and analysis.*

Baseline Characteristics

Baseline demographic characteristics are presented in Table 1. There were no statistically significant differences between the intervention and control groups in terms of age (p = 0.421), gender (p = 1.000), marital status (p = 0.498), year of study (p = 0.395), regular exercise (p = 0.236), previous yoga experience (p = 0.471), or yoga practice within the previous six months (p = 1.000).

Table 1. Baseline demographic and clinical characteristics of the participants

Variable	Intervention (n = 12)	Control (n = 17)	p
Age, mean ± SD, y	24.08 ± 2.87	23.35 ± 2.74	0.42
Gender, n (%)	Women 9 (75.0); Men 3 (25.0)	Women 13 (76.5); Men 4 (23.5)	1.00
Marital status, n (%)	Single 12 (100)	Single 15 (88.2); Married 2 (11.8)	0.50
Year of study	Years 1–4	Years 1–4	0.40
Regular exercise, n (%)	Yes 6 (50.0); No 6 (50.0)	Yes 4 (23.5); No 13 (76.5)	0.24
Previous yoga experience, n (%)	Yes 6 (50.0); No 6 (50.0)	Yes 6 (35.3); No 11 (64.7)	0.47
Regular yoga in the last 6 months (%)	No 12 (100)	No 17 (100)	1.00

Abbreviation: SD, standard deviation.
Note: Continuous variables were analysed using the Mann–Whitney U test; categorical variables were analysed using Fisher's exact test or permutation χ^2 test as appropriate.

Pretest Comparisons

Pretest comparisons of outcome variables are presented in Table 2. No statistically significant differences were observed between the intervention and control groups for mental well-being (p = 0.126), body image (p = 0.610), difficulties in emotion regulation (p = 0.947), or coping scores (p = 1.000).

Table 2. Between-group comparisons of pretest scores

Scale	Intervention, mean ± SD	Control, mean ± SD	p	Hedges g
WEMWBS	42.67 ± 5.23	47.06 ± 7.63	0.13	-0.63
BIQLI	16.58 ± 7.76	18.06 ± 7.60	0.61	-0.19
DERS-16	45.67 ± 5.66	45.76 ± 5.34	0.95	-0.02
Brief COPE	60.17 ± 4.69	60.88 ± 5.62	1.00	-0.10

Abbreviations: BIQLI, Body Image Quality of Life Inventory; DERS-16, Difficulties in Emotion Regulation Scale-16; WEMWBS, Warwick–Edinburgh Mental Well-Being Scale.

Posttest Comparisons

Posttest comparisons between groups are presented in Table 3. Participants in the

intervention group had significantly higher coping scores compared with those in the control group (68.33 ± 10.02 vs 58.94 ± 6.15, p = 0.008; Hedges g = 1.06). No statistically significant between-group differences were found for mental well-being (p = 0.487), body image (p = 0.076), or difficulties in emotion regulation (p = 0.838).

Table 3. Between-group comparisons of posttest scores

Scale	Intervention, mean ± SD	Control, mean ± SD	p	Hedges g
WEMWBS	50.17 ± 7.24	48.47 ± 8.25	0.49	0.21
BIQLI	13.25 ± 9.69	19.29 ± 7.10	0.08	-0.74
DERS-16	45.50 ± 10.77	46.47 ± 6.04	0.84	-0.11
Brief COPE	68.33 ± 10.02	58.94 ± 6.15	0.008	1.06

Abbreviations: BIQLI, Body Image Quality of Life Inventory; DERS-16, Difficulties in Emotion Regulation Scale-16; WEMWBS, Warwick–Edinburgh Mental Well-Being Scale.

Change-Score Comparisons

Between-group comparisons of change scores (posttest - pretest) are presented in Table 4. Coping scores improved significantly in favour of the intervention group (+8.17 ± 9.93 vs −1.94 ± 4.02, p < 0.001; Hedges g = 1.39). No statistically significant between-group differences were found for mental well-being (p = 0.154), body image (p = 0.255), or difficulties in emotion regulation (p = 0.889).

Table 4. Between-group comparisons of change scores (posttest − pretest)

Scale	Intervention, mean ± SD	Control, mean ± SD	p	Hedges g
WEMWBS	+7.50 ± 9.54	+1.41 ± 8.52	0.15	0.66
BIQLI	-3.33 ± 10.82	+1.24 ± 4.09	0.26	-0.58
DERS-16	-0.17 ± 13.20	+0.71 ± 5.45	0.89	-0.09
Brief COPE	+8.17 ± 9.93	-1.94 ± 4.02	**<0.001**	1.39

Abbreviations: BIQLI, Body Image Quality of Life Inventory; DERS-16, Difficulties in Emotion Regulation Scale-16; WEMWBS, Warwick–Edinburgh Mental Well-Being Scale.

Within-Group Comparisons

Within-group comparisons are presented in Table 5. A statistically significant improvement in mental well-being was observed within the intervention group (p = 0.028; r = 0.64). No statistically significant within-group changes were observed for body image (p = 0.446) or difficulties in emotion regulation (p > 0.99). In the control group, no statistically significant changes were observed for mental well-being (p = 0.530), body image (p = 0.180), or difficulties in emotion regulation (p = 0.635).

Table 5. Within-group pretest–posttest comparisons (Wilcoxon signed-rank test)

Scale	Intervention p	Intervention effect size (r)	Control p	Control effect size (r)
WEMWBS	0.028	0.64	0.53	0.15
BIQLI	0.45	0.22	0.18	0.33
DERS-16	>0.99	0.00	0.64	0.12

Abbreviations: BIQLI, Body Image Quality of Life Inventory; DERS-16, Difficulties in Emotion Regulation Scale-16; WEMWBS, Warwick–Edinburgh Mental Well-Being Scale.
Note: Coping (Brief COPE) was primarily analysed using between-group change scores; therefore, it is not included in the within-group comparison table.

Discussion

The findings of this pilot experimental study indicate that trauma-informed yoga may be effective in improving stress coping among conservatory and performing arts students. The most prominent finding was a significant improvement in coping scores in the intervention group compared with the control group, with a large effect size. This suggests that trauma-informed yoga may enhance adaptive coping by supporting self-regulation processes and increasing individuals' capacity to respond to stressors more effectively.[3,4,5,6] The present findings are consistent with recent evidence indicating that yoga- and mindfulness-based interventions may strengthen coping resources and support psychological functioning in educational and nonclinical populations[10,11,12]

The observed improvement in coping can be interpreted within the framework of trauma-informed care and mind–body integration.

Trauma-informed yoga emphasizes safety, autonomy, and non-judgmental awareness, which may help individuals reconnect with bodily sensations and develop a more regulated stress response.[3,4,5,6] Previous research indicates that body-based interventions may strengthen coping resources by increasing interoceptive awareness, improving emotional regulation, and enhancing perceived control over stress responses.[7,9,19] These mechanisms may be particularly relevant for individuals exposed to high levels of performance-related stress.

Mental well-being improved significantly within the intervention group, although no statistically significant difference was observed between groups. *Therefore, the findings related to mental well-being should be interpreted with caution.* This finding suggests that trauma-informed yoga may have a supportive effect on psychological well-being, but that the relatively small sample size may have limited the ability to detect between-group differences. This interpretation is consistent with findings from recent systematic reviews suggesting that mindfulness- and yoga-based interventions may contribute to improvements in psychological well-being and emotional functioning among university students, although the magnitude of effects may vary across studies and intervention formats [10,11,12] Similar patterns have been reported in previous studies, where improvements in well-being were observed within intervention groups but did not always reach statistical significance in between-group comparisons.[7,13] These effects have been attributed to mechanisms such as relaxation, reduced physiological arousal, increased mindfulness, and enhanced emotional awareness.

No significant changes were observed in body image or in difficulties with emotion regulation. These findings may be explained by the relatively short duration of the intervention and the complexity of these constructs. Body image and emotion regulation are shaped by long-standing cognitive, emotional, and social processes and may require longer-term or more intensive interventions to demonstrate measurable change [16,17] Given the three-week duration of the intervention, a longer intervention period might have produced different outcomes in these domains. Previous research suggests that improvements in these domains through mind–body interventions tend to emerge gradually over time, particularly when interventions are sustained over longer periods.[19]

Overall, the findings provide preliminary evidence that trauma-informed yoga may be a promising supportive intervention for improving stress coping and supporting mental well-being among performing arts students. Further controlled studies are needed to confirm these findings and to better understand the mechanisms of action.

Strengths and Limitations

The present study contributes to the literature in several ways. First, it focuses on an under-researched population-students enrolled in conservatory and performing arts programs-who are exposed to unique stressors related to performance, evaluation, and bodily awareness. Second, the use of a controlled, pretest–posttest design strengthens the internal validity of the findings. Third, the inclusion of multiple outcome variables, including coping, mental well-being, body image, and emotion regulation, provides a comprehensive evaluation of the potential effects of trauma-informed yoga.

Several limitations should be acknowledged. *The small sample size, particularly in the intervention group (n = 12), limits statistical power and the generalizability of the findings.* The

relatively short duration of the intervention may have restricted the detection of changes in more stable psychological constructs such as body image and emotion regulation. The use of self-report measures may introduce response bias, and the online delivery format may have influenced engagement and adherence.

Conclusion

Trauma-informed yoga appears to be a feasible and potentially effective intervention for improving stress coping among conservatory and performing arts students. *However, given the small sample size, the findings should be interpreted cautiously.* While the findings related to mental well-being are promising, further research with larger samples and longer intervention periods is needed. The absence of significant changes in body image and emotion regulation suggests that these outcomes may require more intensive or sustained interventions.

Acknowledgment: None

Funding: This research received no specific grant and financial support from any funding agency in the public, commercial, or not-for-profit sectors.

Conflict of Interest: The authors declare that there is no conflict of interest.

Ethical Approval: Ethical approval for this study was obtained from the İstanbul Bilgi University Human Research Ethics Committee (Project No: 2025-20507-190).

Informed Consent: Informed consent was obtained from all participants.

Use of AI for Writing Assistance: Not declared.

Peer-review: Externally peer-reviewed.

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