Original Article

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Yoga Reduces Body Shape Dissatisfaction Among Young Adults

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Abstract

Background: Body shape dissatisfaction is frequently experienced by young adults and may negatively impact mental well-being. Yoga is increasingly recognized as a non-pharmacological intervention to support body image and self-acceptance. This study aimed to assess the effectiveness of yoga in reducing body shape dissatisfaction among young adults.

Methods: A pre-post experimental study was conducted in 2022 among young adults experiencing body shapes dissatisfaction, selected through purposive sampling. The Body Shape Questionnaire-34 (BSQ-34) was used to measure dissatisfaction, with a total score >80 indicating dissatisfaction. Participants were randomly assigned to a yoga intervention group or a control group. The intervention group practiced Yoga Asana (posture) and Pranayama (breathing) three times per week for ten weeks via online sessions. The BSQ-34 was distributed before and after intervention. Data were analyzed using paired t-test and SPSS version 22.0.

Results: A total of 477 participants from a faculty of medicine in Jakarta, Indonesia were included; 45.3% were identified as dissatisfied with their body shape. In the yoga group, the BSQ-34 score significantly decreased after the intervention ($p<0.05$), indicating reduced dissatisfaction. In contrast, the control group showed a slight increase in average BSQ-34 score.

Conclusion: Practicing Yoga Asana and Pranayama significantly reduce body shape dissatisfaction among young adults. Therefore, yoga may serve as a healthy choice that helps improve body image and overall mental well-being in young adults.

Keywords: Body shape dissatisfaction, yoga, young adults

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Introduction

One of the negative effects of poor body image is body shape dissatisfaction, which has become a prevalent issue among young adults.[1,2] Numerous descriptive studies conducted in Malaysia and Semarang have shown a high prevalence of body dissatisfaction among young adults.[3,4] Dissatisfaction with body shape can arise from various biological, psychological, and social factors.[5] These interconnected factors disrupt an individual's perception and understanding of the ideal body, leading to distorted body image and feeling of inadequacy about one's appearance.[6]

An inability to accept one's body can negatively impact quality of life, especially among young people.[4,7] Body shape dissatisfaction may eventually influence both physical and mental health, contributing to issues such as eating disorders, low self-esteem, stress, anxiety, depression, obesity,

diabetes, and even suicidal thoughts.[2,7,8]

Strengthening protective factors such as self-compassion and mindfulness practices has been shown to help prevent and manage body shape dissatisfaction.[7] These factors can reduce body-related self-criticism and promote self-acceptance, positively influencing how individuals perceive and think about their bodies.[2,9,10] Yoga, which combines physical movements with mindfulness and breathing techniques, is believed to enhance these protective factors. Yoga can control the release of neurotransmitters like serotonin, which plays a role in correcting distorted body image perception. Furthermore, yoga promotes the activation of theta and alpha brain waves, both of which support enhanced mindfulness and focused attention, which are two elements in reducing body shape dissatisfaction.[11]

Given the significant impact of body shape dissatisfaction on the quality of life in young adults, this issue warrants serious attention.[13,14] Furthermore, the ongoing debate regarding the effectiveness of yoga in addressing body image concern further underscores the need for this study.[1] Therefore, this study aimed to investigate the impact of yoga on reducing body shape dissatisfaction among medical students.

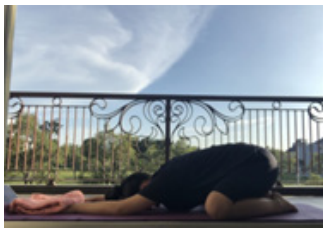
Methods

This quantitative study used a pretest-posttest quasi-experimental design conducted in 2022 among pre-clinical medical students at Atma Jaya Catholic University academic year 2021–2022 who were identified as having body shapes dissatisfaction. Data collection was conducted online using a Microsoft Form, which included informed consent, demographic questions, screening questions, and the Body Shape Questionnaire-34 (BSQ-34). The online approach was adopted due to the COVID-19 pandemic, which restricted offline data collection.

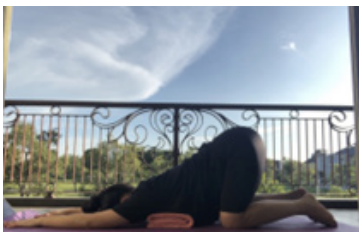
Participants were excluded if they regularly practiced yoga or other form of exercise (such as aerobic gymnastics, running, weightlifting, etc.), had a diagnosed mental disorder confirmed by a mental health specialist, were undergoing psychological and/or psychiatric therapy (including psychotherapy and pharmacotherapy), or had physical disabilities or health conditions that limited participation. Ethical approval for this study was granted by the Ethics Review Committee of the Faculty of Medicine and Health Sciences, Atma Jaya Catholic University of Indonesia (No. 01/01/KEP-FKIKUAJ/2022).

The BSQ-34 was used to assess participants' attitudes toward body shape. This questionnaire consisted of 34 items and has been translated into Indonesian, demonstrating a Cronbach's alpha of 0.9, indicating high reliability.[15] Scores range from 34 to 204, with scores above 80 indicating body shape dissatisfaction.

Participants with a BSQ-34 score >80

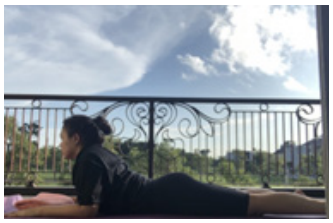


Step 1: Wide Child Position



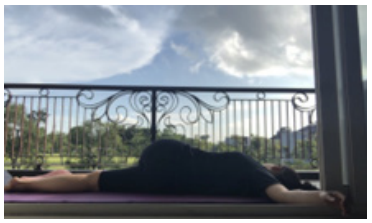
Step 2: Melted Heart

Step 3: Open Wings (Left)



Step 4: Sphinx Pose

Step 5: Seated Butterfly



Step 6: Recline Twisted

Figure 1 Yoga Poses Practiced by Participants

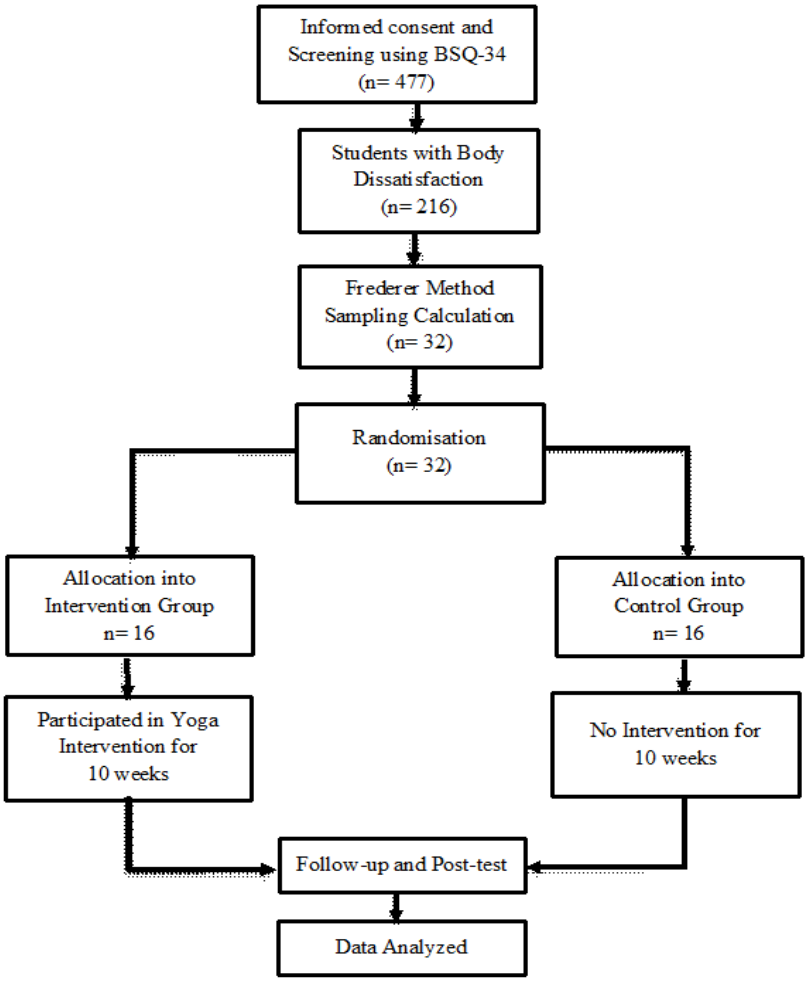


Figure 2 Flowchart of Participant Recruitment and Sampling Process

were selected using purposive sampling, guided by the Federer formula for sample size determination. All selected participants met the inclusion criteria of experiencing body shape dissatisfaction and agreed to participate in the yoga intervention program. They were randomly assigned into two groups: an intervention group and a control group, each consisting of 16 participants.

The intervention group participated in the Atma Jaya Yoga Intervention Studies (AJYOGIS) program, practicing yoga at home three times a week, with each session lasting 45 minutes. Additionally, joint online yoga sessions with instructors were conducted every two weeks. The yoga routine included a series of asanas such as Wide Child's Pose, Melted Heart, Open Wings (right and left), Sphinx, Seated Butterfly, Reclined Twists (right and left), and concluded with Savasana (relaxation) (Figure 1). Each session ended with self-affirmation messages focused on acceptance, connection, self-affection, appreciation, and empowerment. The intervention was monitored using weekly logbooks, individual check-ins, and online group sessions.

Prior to bivariate analysis, the Shapiro-Wilk test was performed to assess data normality. Data were analyzed using the paired t-test for within-group comparisons and the independent t-test for between-group comparisons. All analyses were conducted using SPSS version 22.0, with a significance level set at $p < 0.05$.

Results

A total of 579 students were invited to participate in the screening process. Of these, 477 completed the questionnaire, and 216

Table 1 Body Shape Questionnaire-34

Questions	1	2	3	4	5	6
1.Has feeling bored made you brood about your shape?						
2.Have you been so worried about your shape that you felt you ought to diet?						
3.Have you thought that your thighs, hips or bottom are too large for the rest of you?						
4.Have you been afraid that you might become fat (or fatter)?						
5.Have you worried about your flesh not being firm enough?						
6.Has feeling full made you feel fat?						
7. Have you felt so bad about your shape that you cried?						
8. Have you avoided running because your flesh might wobble?						
9. Has being with thin women made you feel self-conscious about your shape?						
10. Have you worried about your thighs spreading out when sitting down?						
11. Has eating even a small amount of food made you feel fat?						
12. Have you noticed the shape of other women and felt that your own shape compared unfavourably?						
13. Has thinking about your shape interfered with your ability to concentrate (e.g. watching television, reading, listening to conversations)?						
14. Has being naked (e.g. when bathing), made you feel fat?						
15. Have you avoided wearing clothes that make you particularly aware of your body shape?						
16. Have you imagined cutting off fleshy areas of your body?						
17. Has eating sweets, cakes, or other high calorie food made you feel fat?						
18. Have you not gone out to social occasions (e.g. parties) because you felt bad about your shape?						
19. Have you felt excessively large and rounded?						
20. Have you felt ashamed of your body?						
21. Has worry about your shape made you diet?						
22. Have you felt happiest about your shape when your stomach was empty (e.g. in the morning)?						
23. Have you thought that your body shape is due to a lack of self-control?						
24. Have you worried about others seeing rolls of fat around your waist or stomach?						
25. Have you felt that it is unfair that other women are thinner than you?						
26. Have you vomited to feel thinner?						
27. When in company, have you worried about taking up too much space (e.g., sitting on a sofa or bus seat)?						
28. Have you worried about your flesh being dimply (e.g., cellulite)?						
29. Has seeing your reflection (e.g. in a mirror or shop window) made you feel bad about your shape?						
30. Have you pinched areas of your body to check how much fat there is?						
31. Have you avoided situations where people could see your body (e.g., communal changing rooms or swimming pools)?						
32. Have you taken laxatives to feel thinner?						
33. Have you felt particularly self-conscious about your shape when around other people?						
34. Has worry about your shape made you feel you ought to exercise?						

Note: 1= never, 2= rarely, 3=sometime, 4=often, 5=very often, 6= always

Table 2 Sociodemographic and Clinical Characteristics of Participants with Body Dissatisfaction in the Intervention and Control Groups.

Characteristics	Intervention (n=16) n (%)	Control (n=16) n (%)
Gender, n (%)		
Female	14(87.5)	16 (100)
Male	2 (12.5)	0 (0)
Age, n (%)		
Mean ± SD	19.13 ± 1.10	19.07 ± 0.98
Body mass index (BMI)		
Mean ± SD	25.75 ± 3.75	23.00 ± 3.10
Underweight	0 (0)	1 (6.2)
Normal	5 (31.3)	8 (50)
Overweight	1 (6.2)	3 (18.8)
Obese	10 (62.5)	4 (25.0)
BSQ-34 score		
Mean ± SD*	107.50 ± 20.80	102.60 ± 14.50

Note: *BSQ-34 score ranges from 34 to 204. A score above 80 indicates body dissatisfaction.

Table 3 Comparison of Pre-test and Post-test BSQ-34 Scores Within the Intervention and Control Groups.

Group	Pre-test Mean ± SD	Post-test Mean ± SD	P-value
Intervention	107.31 ± 21.04	81.19 ± 22.20	0.003*
Control	102.06 ± 14.52	106.56 ± 15.77	0.262

Note: *Significant if $p < 0.05$.

Table 4 Mean Differences in BSQ-34 Scores Before and After Intervention Between the Yoga and Control Groups

Group	n	Mean Difference (SD)	P-value
Intervention	16	11.5 (10.91)	0.002*
Control	16	32 (21.72)	

Note: *Significant if $p < 0.05$.

students (45.3%) were identified as having body shape dissatisfaction based on BSQ-34 scores exceeding 80. From this pool, 32 participants were selected and randomized equally into the intervention and control groups, with 16 participants in each.

The majority of participants were female, accounting for 87.5% in the intervention group and 100% in the control group. The mean age was comparable between groups at approximately 19 years. Notably, the proportion of participants classified as obese was higher in the intervention group (62.5%) compared to the control group (25%) (Table 2).

The results showed a significant decrease in BSQ-34 scores within the intervention group following the yoga intervention, from a mean±SD of 107.31±21.04 at baseline to 81.19±22.20 post-intervention (p=0.003). In contrast, the control group exhibited no significant change in BSQ-34 scores, increasing slightly from 102.06±14.52) to 106.56 ±15.77 (p=0.262) (Table 3).

Further analysis of the mean change in BSQ-34 scores between groups revealed a significantly greater reduction in the intervention group (mean difference= 32.00, SD ±21.72) compared to the control group (mean difference=11.50, SD ±10.91), with a p-value of 0.002 (Table 4). This result indicates that yoga had a substantial effect in reducing body shape dissatisfaction among participants.

Discussion

Dissatisfaction with body shape, as an implication of poor body image, is prevalent among young adults, including college students, and can negatively impact quality of

life, affecting both physical and mental well-being. This study demonstrated that a 10-week yoga intervention, consisting of 45-minute sessions three times per week, effectively reduced body shape dissatisfaction among medical students.

These findings are consistent with prior studies. Research conducted in the United States involving a 12-week Vinyasa yoga intervention among female college students demonstrated a significant reduction in body shape dissatisfaction. Participants reported spending less time and energy on negative thoughts related to their appearance, which improved their body satisfaction.[2] Similarly, a study from Maastricht University in the Netherlands using a 10-week Hatha yoga intervention showed reduced self-objectification and increased self-compassion and body appreciation, contributing to improved body image.[12] Another study in the United States involving an 8-week yoga program also reported reductions in appearance-related distress and preoccupation with body image.[16] In the UK, even a shorter, 4-week intervention involving Vinyasa, Anusara, and Iyengar yoga significantly reduced body shape dissatisfaction in female students.[17]

Yoga is thought to reduce body shape dissatisfaction through two primary mechanisms: activation of the parasympathetic nervous system and enhancement of protective psychological factors such as mindfulness and self-compassion.[2,18] The practice of controlled breathing (pranayama) and asanas activates the parasympathetic system, inducing relaxation and reducing stress.[19] This physiological response can influence serotonin levels, a neurotransmitter associated with mood regulation and body image perception. Additionally, yoga promotes the synchronization of mind and breath, which enhances alpha and theta brain wave activity, both associated with mindfulness and a heightened state of awareness.[20] Through mindfulness, individuals become more attuned to their body's functionality rather than its appearance, thereby reducing self-objectification. Increased mindfulness fosters self-compassion, allowing individuals to adopt a kinder, more accepting view of themselves, which directly contributes to reduced body dissatisfaction.[7,16,21]

This study has several limitations. The participants were drawn exclusively from medical students, limiting the generalizability of the findings to other populations of young adults. Furthermore, the intervention design did not fully account for participants' varying schedules and lifestyles, which could have influenced adherence. Finally, the influence of additional factors such as media exposure, prior knowledge, or body image education was not assessed.

In conclusion, this study suggests that regular yoga practice, incorporating both asanas and pranayama over ten weeks, can significantly reduce body shape dissatisfaction among medical students. Yoga may serve as an accessible, holistic approach to improving body image and enhancing the overall quality of life in young adults.

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