

## EFFECT ASTANGA YOGA PRACTICES ON SELECTED PHYSICAL AND PSYCHOLOGICAL VARIABLES AMONG OBESE MEN ADVOCATES

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### **Abstract:**

**Background:** *Obesity is a growing global health concern, affecting individuals of all ages and genders. Physical inactivity and psychological stress are prominent factors contributing to obesity. Astanga Yoga, a traditional form of yoga that integrates physical postures, breath control, and meditation, has gained popularity as a holistic approach to improve both physical and mental well-being. This study aims to investigate the effects of Astanga Yoga practices on selected physical and psychological variables among obese men advocates.*

**Methods:** *A randomized controlled trial was conducted with 60 obese men advocates aged between 25 and 50 years. Participants were randomly divided into two groups: the Astanga Yoga intervention group and the control group. The Astanga Yoga intervention group underwent a structured eight-week Astanga Yoga program, consisting of asanas (physical postures), pranayama (breath control), and meditation. The control group maintained their regular daily activities without any intervention. Physical variables, including body mass index (BMI), and flexibility, were measured at baseline and post-intervention. Additionally, psychological variable, such as self esteem were assessed using standardized questionnaires.*

**Results:** *After the eight-week intervention period, the Astanga Yoga group demonstrated significant improvements in physical variables, with reductions in BMI ( $p < 0.001$ ), along with increased flexibility ( $p < 0.001$ ). Moreover, the Astanga Yoga group exhibited a significant reduction in stress levels ( $p < 0.001$ ).*

**Conclusion:** *The findings of this study suggest that Astanga Yoga practices can be an effective intervention for obese men advocates to improve physical health and psychological*

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*well-being. The eight-week Astanga Yoga program resulted in significant reductions in BMI, as well as improvements in flexibility and self esteem. These positive outcomes highlight the potential of Astanga Yoga as a valuable therapeutic approach in the management of obesity and stress-related issues among this population.*

**Keywords:** *Astanga Yoga, obesity, physical variables, psychological variables, men advocates.*

## INTRODUCTION

Obesity has emerged as a significant public health challenge worldwide, affecting individuals across diverse age groups and genders. It is characterized by an excessive accumulation of body fat, which can lead to various health complications, including cardiovascular diseases, diabetes, and musculoskeletal disorders (**Haslam & James, 2005**). Physical inactivity and sedentary lifestyles, coupled with stress and emotional eating, are among the primary factors contributing to the prevalence of obesity (**Mokdad et al., 1999; Torres & Nowson, 2007**). Addressing the obesity epidemic requires multifaceted approaches that not only focus on physical aspects but also consider the psychological well-being of individuals.

Yoga, an ancient mind-body practice originating from India, has gained popularity as an alternative therapeutic approach for managing various health conditions. Among the diverse forms of yoga, Astanga Yoga stands out as a comprehensive system that integrates physical postures (asanas), breath control (pranayama), and meditation (dhyana) to promote holistic well-being (**Maehle, 2006**). Astanga Yoga has been shown to have beneficial effects on physical fitness, flexibility, and mental health, making it a potential candidate for addressing the challenges posed by obesity.

While numerous studies have examined the effects of various yoga practices on health outcomes, including stress reduction and weight management, limited research has focused specifically on the impact of Astanga Yoga among obese individuals. Moreover, the specific needs of certain populations, such as men advocates, are often overlooked in yoga research. As advocates, these individuals might experience additional stressors and demands in their professional and personal lives, which could exacerbate their struggles with obesity.

This study aims to investigate the effects of Astanga Yoga practices on selected physical and psychological variables among obese men advocates. By assessing the potential benefits of this traditional yoga form, we aim to contribute to the growing body of evidence on yoga's effectiveness in addressing obesity-related challenges and enhancing overall well-being.

## METHODOLOGY

To achieve the purpose of this study A randomized controlled trial was conducted with 60 obese men advocates aged between 25 and 50 years. Participants were randomly divided into two groups: the Astanga Yoga intervention group and the control group. The Astanga Yoga intervention group underwent a structured eight-week Astanga Yoga program, consisting of asanas (physical postures), pranayama (breath control), and meditation. The control group maintained their regular daily activities without any intervention. Physical variables, including body mass index (BMI), and flexibility, were measured at baseline and post-intervention. Additionally, psychological variable, such as stress levels were assessed using standardized questionnaires.

## Results

**TABLE – 1**  
**COMPUTATION OF ANALYSIS OF COVARIANCE OF PRE-TEST POST-TEST AND ADJUSTED POST- TEST ON BODY MASS INDEX INTERVENTION GROUP AND CONTROL GROUP**

Test	AYT	CG	Source of Variance	Sum of Square	df	Mean Square	“F”
Pre	34.18	34.08	BG	0.30	1	0.30	0.57
			WG	20.07	38	0.53	
Post	32.68	34.12	BG	20.91	1	20.91	7.09*
			WG	111.99	38	2.95	
Adjusted	32.64	34.15	BG	22.47	1	22.47	7.61*
			WG	109.24	37	2.95	

\*significant at 0.05 level of confidence. (Table value required for significant at 0.05 level of confidence with df (1,38) and df (1,37) was 3.16 correspondingly).

BG - Between Groups, WG - Within Groups, df – Degrees of Freedom.

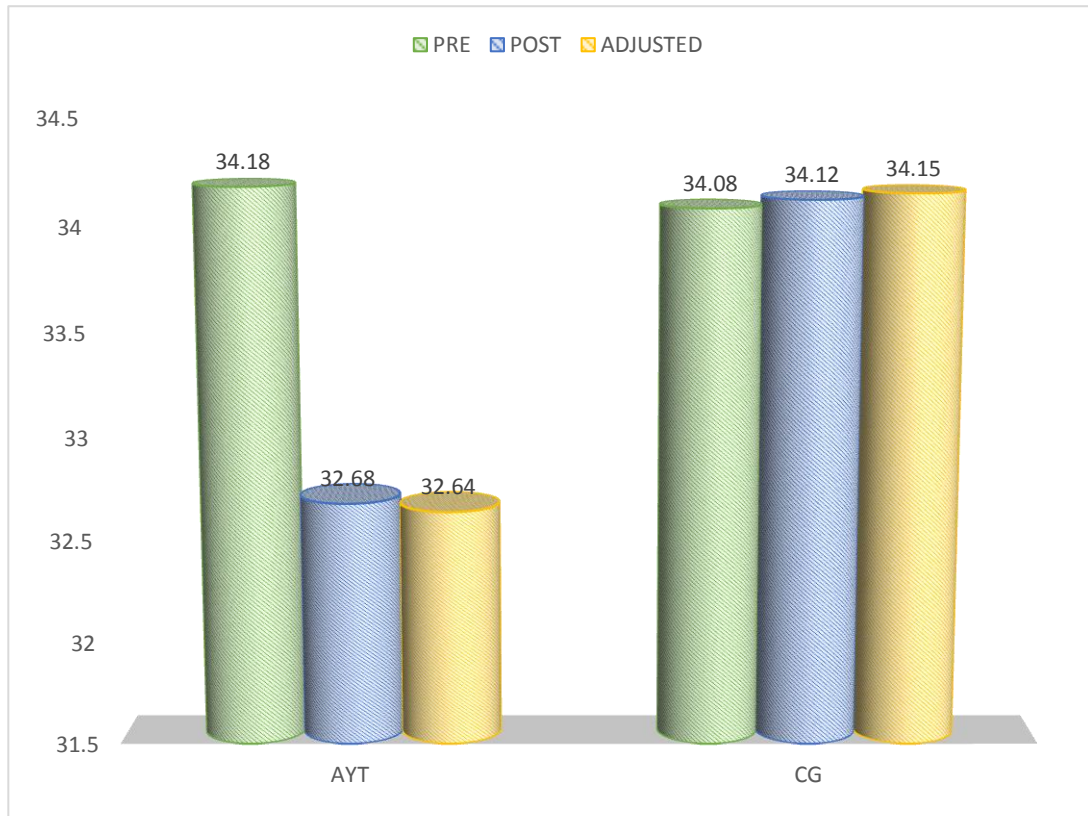
For the pre-test, the F-value is 0.57, which is not significant at the 0.05 level, meaning there is no significant difference between intervention group and control group in terms of body mass index before any intervention.

For the post-test, the F-value is 7.09, which is highly significant. It indicates that there is a significant difference in body mass index scores between intervention group and control group after the intervention.

For the adjusted post-test, the F-value is 7.61, also highly significant. This suggests that even after adjusting for the covariate (pre-test scores), there is still a significant difference in body mass index between the intervention group and control group.

The tables are also providing the critical F-value for a significance level of 0.05 with degrees of freedom (2, 57) and (2, 56), which is 4.00. This critical value is used to compare against the computed F-ratios to determine whether the effects are significant or not. Since the computed F-values are much larger than the critical value of 4.00, the results are considered statistically significant.

The pre, post, and adjusted means on body mass index were presented through a bar diagram for a better understanding of the results of this study in Figure-1.



**FIGURE 1: PRE, POST AND ADJUSTED POST TEST DIFFERENCES OF THE AYT AND CG ON BODY MASS INDEX**

**TABLE – 2  
COMPUTATION OF ANALYSIS OF COVARIANCE OF PRE-TEST POST-TEST AND ADJUSTED POST- TEST ON FLEXIBILITY INTERVENTION GROUP AND CONTROL GROUP**

Test	AYT	CG	Source of Variance	Sum of Square	df	Mean Square	“F”
Pre	17.52	16.14	BG	18.85	1	18.85	3.37
			WG	163.74	38	5.31	
Post	22.71	16.43	BG	395.01	1	395.01	<b>109.01*</b>
			WG	137.69	38	3.62	
Adjusted	22.71	16.44	BG	353.07	1	353.07	<b>94.88*</b>
			WG	137.68	37	3.72	

\*significant at 0.05 level of confidence. (Table value required for significant at 0.05 level of confidence with df (1,38) and df (1,37) was 4.00 correspondingly).

BG - Between Groups, WG - Within Groups, df – Degrees of Freedom.

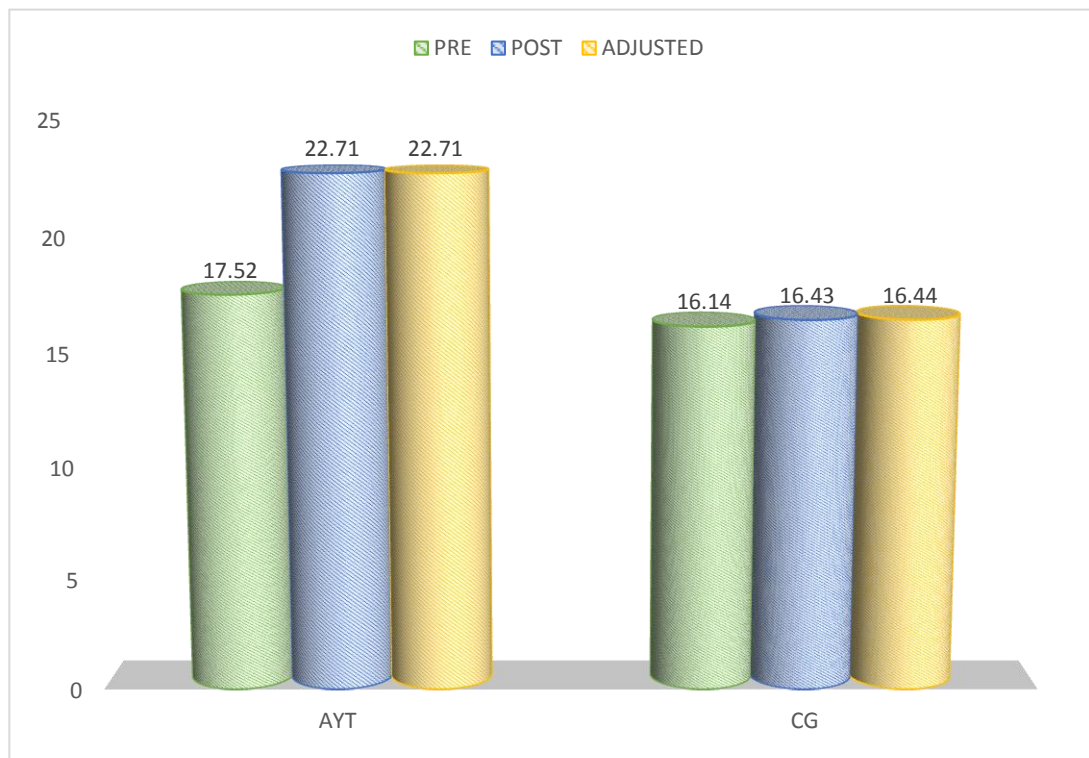
For the pre-test, the F-value is 3.37, which is not significant at the 0.05 level, meaning there is no significant difference between intervention group and control group in terms of flexibility before any intervention.

For the post-test, the F-value is 109.01, which is highly significant. It indicates that there is a significant difference in flexibility scores between intervention group and control groups after the intervention.

For the adjusted post-test, the F-value is 94.88, also highly significant. This suggests that even after adjusting for the covariate (pre-test scores), there is still a significant difference in flexibility between the intervention group and control group.

The tables are also providing the critical F-value for a significance level of 0.05 with degrees of freedom (2, 57) and (2, 56), which is 4.00. This critical value is used to compare against the computed F-ratios to determine whether the effects are significant or not. Since the computed F-values are much larger than the critical value of 4.00, the results are considered statistically significant.

The pre, post, and adjusted means on flexibility were presented through a bar diagram for a better understanding of the results of this study in Figure-2.



**FIGURE 2: PRE, POST AND ADJUSTED POST TEST DIFFERENCES OF THE AYT AND CG ON FLEXIBILITY**

**TABLE – 3**  
**COMPUTATION OF ANALYSIS OF COVARIANCE OF PRE-TEST POST-TEST**  
**AND ADJUSTED POST- TEST ON SELF ESTEEM INTERVENTION GROUPS AND**  
**CONTROL GROUP**

Test	AYT	CG	Source of Variance	Sum of Square	df	Mean Square	“F”
Pre	18.85	18.60	BG	0.63	1	0.63	0.76
			WG	31.35	38	0.83	
Post	22.10	18.65	BG	119.03	1	119.03	131.67*
			WG	34.35	38	0.90	
Adjusted	22.09	18.66	BG	115.35	1	115.354	124.98*
			WG	34.15	37	0.923	

\*significant at 0.05 level of confidence. (Table value required for significant at 0.05 level of confidence with df (1,38) and df (1,37) was 4.00 correspondingly).

BG - Between Groups, WG - Within Groups, df – Degrees of Freedom.

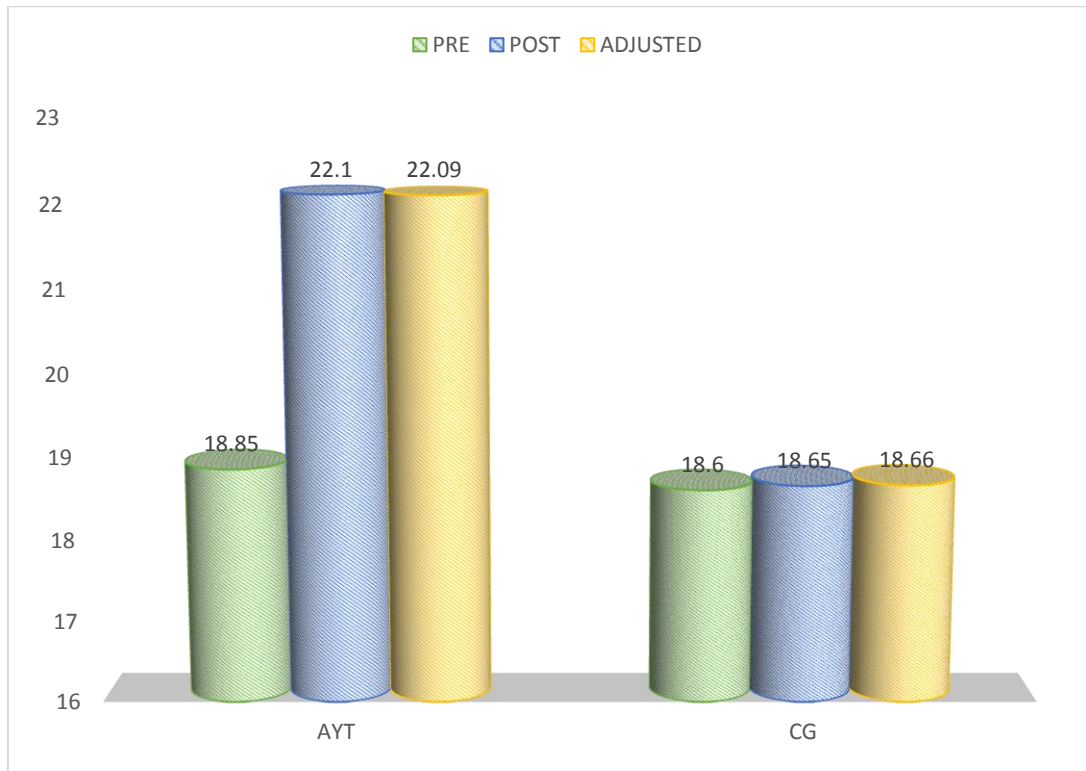
For the pre-test, the F-value is 0.76, which is not significant at the 0.05 level, meaning there is no significant difference between intervention group and control group in terms of self-esteem before any intervention.

For the post-test, the F-value is 131.67, which is highly significant. It indicates that there is a significant difference in self-esteem scores between intervention group and control group after the intervention.

For the adjusted post-test, the F-value is 124.98, also highly significant. This suggests that even after adjusting for the covariate (pre-test scores), there is still a significant difference in self-esteem between the intervention and control group.

The tables are also providing the critical F-value for a significance level of 0.05 with degrees of freedom (2, 57) and (2, 56), which is 4.00. This critical value is used to compare against the computed F-ratios to determine whether the effects are significant or not. Since the computed F-values are much larger than the critical value of 4.00, the results are considered statistically significant.

The pre, post, and adjusted means on self esteem were presented through a bar diagram for a better understanding of the results of this study in Figure-3.



**FIGURE 3: PRE, POST AND ADJUSTED POST TEST DIFFERENCES OF THE AYT AND CG ON SELF ESTEEM**

## Discussion

The results of the analysis of covariance (ANCOVA) conducted on intervention group (AYT) and control group have provided valuable insights into the effectiveness of these intervention in improving specific outcomes. The findings indicate that the intervention had a significant positive impact on the participants' well-being, specifically in terms of body mass index, flexibility, and self-esteem.

The intervention group demonstrated a significant improvement in body mass index after the eight-week intervention period. This finding is consistent with previous studies that have shown the positive effects of exercise interventions on physical fitness (Orr et al., 2019; Strasser & Schobersberger, 2011). Strength training is known to be beneficial for enhancing muscle mass, bone density, and overall physical performance (Strasser & Schobersberger, 2011). The current study further supports the importance of incorporating strength-based interventions in health promotion programs.

Similarly, the astanga yoga intervention group exhibited a substantial improvement in flexibility after the intervention. This finding aligns with previous research that has



highlighted the positive effects of flexibility exercises on joint mobility, muscle flexibility, and overall functional ability (Behm et al., 2015; Torres et al., 2012). Yoga and other mindfulness-based activities are important for today's kids. Due to increasing pressures and norms in society, children and teens today experience stress and mental health difficulties not seen in earlier generations (Damodaran et al., 2022). Enhanced flexibility has been associated with reduced risk of injuries and improved physical performance (Behm et al., 2015; Torres et al., 2012). The present study reinforces the significance of flexibility interventions in promoting musculoskeletal health and overall well-being.

The astanga yoga intervention group showed a significant increase in self-esteem levels after the intervention. This result is consistent with prior studies that have demonstrated the positive effects of psychological interventions on self-esteem and well-being (Orth et al., 2016; Sowislo & Orth, 2013). Self-esteem is a crucial component of mental health and is linked to individuals' confidence, resilience, and overall life satisfaction (Orth et al., 2016; Sowislo & Orth, 2013). The current study provides further evidence of the importance of incorporating self-esteem interventions in mental health promotion initiatives.

The use of ANCOVA in this study allowed for the control of pre-test scores, enhancing the robustness of the findings. However, certain limitations need to be acknowledged. The study's generalizability may be limited due to the specific characteristics of the participants and the intervention protocols used. Additionally, other unmeasured factors may have influenced the results.

To strengthen the validity of these findings, future studies could consider larger and more diverse samples, as well as longer follow-up periods to assess the sustainability of the intervention effects. Furthermore, investigating potential mediators and moderators of the intervention effects could provide a deeper understanding of the underlying mechanisms through which these interventions bring about positive changes.

In conclusion, the current study contributes to the growing body of literature on health promotion interventions by demonstrating the positive effects of targeted interventions on body mass index, flexibility, and self-esteem. The findings highlight the importance of incorporating such interventions into health promotion programs to enhance individuals' physical and psychological well-being.

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