

Immediate Effects of a Single Tabata Session on Total Mood Disturbance in Young Adults

Dr. Anjali Sharma¹, Dr. Seemi Retharekar²

¹Associate Professor Suryadatta Institute of Health Sciences- College of Physiotherapy, Pune

²Principal, Suryadatta Institute of Health Sciences- College of Physiotherapy, Pune

Email address: anjali.sharma@suryadatta.edu.in

Abstract—Background: Physical activity is well known for its positive impact on both physical and mental health. Among various exercise forms, high-intensity interval training (HIIT) has gained popularity due to its time efficiency and potential psychological benefits. The Tabata protocol is a structured HIIT method involving short bursts of intense activity followed by brief recovery periods. **Objective:** This study aimed to examine the immediate impact of a single Tabata session on total mood disturbance (TMD) among physiotherapy students. **Methods:** A pre-post experimental approach was adopted involving 47 participants. Mood status was evaluated using the Profile of Mood States (POMS) scale before and immediately after a Tabata session. The exercise protocol included eight cycles of 20 seconds of high-intensity activity followed by 10 seconds of rest. Normality of data was assessed using the Shapiro-Wilk test, and due to non-normal distribution, the Wilcoxon signed-rank test was applied. **Results:** The mean TMD score decreased from 2.77 ± 19.83 before exercise to -6.19 ± 20.57 after the session, indicating an improvement in mood. The average change was -8.96 ± 22.52 (95% CI: -15.57 to -2.34). Statistical analysis revealed a significant difference ($V = 294.5$, $p = 0.007$). The calculated effect size (Cohen's $d = -0.40$) suggested a small to moderate impact. **Conclusion:** A single session of Tabata exercise was effective in significantly reducing mood disturbance, highlighting its usefulness as a quick and efficient strategy to enhance psychological well-being in young adults.

Keywords— Tabata training, HIIT, mood disturbance, POMS, physiotherapy students.

I. INTRODUCTION

Regular physical activity plays a crucial role in maintaining both physical fitness and emotional well-being. In recent years, high-intensity interval training (HIIT) has emerged as an efficient exercise method that delivers significant benefits within a short duration. One widely used HIIT format is the Tabata protocol, originally developed by Izumi Tabata, which consists of repeated cycles of intense activity and brief rest periods.

Mood states are an important component of psychological health and can be effectively assessed using standardized tools such as the Profile of Mood States (POMS). This scale provides a composite score known as Total Mood Disturbance (TMD), which reflects overall emotional status.

Although previous research has shown that exercise can positively influence mood, there is limited evidence regarding the immediate psychological effects of short-duration, high-intensity workouts like Tabata. Therefore, this study was conducted to explore the acute effects of a single Tabata session on mood disturbance among undergraduate physiotherapy students.

II. METHODOLOGY

Study Design: A single-group pre-post experimental design was used.

Participants: A total of 47 physiotherapy students aged 18–25 years participated voluntarily.

Procedure: Participants completed the POMS questionnaire before and after a Tabata session consisting of eight cycles of 20 seconds of high-intensity exercise with 10 seconds rest.

Outcome Measure: Total Mood Disturbance (TMD).

Statistical Analysis: Shapiro-Wilk test and Wilcoxon signed-rank test were used with significance set at $p < 0.05$.

III. RESULTS

Variable	Pre	Post	Mean Diff	95% CI	Test	Statistic	p	Effect
TMD	2.77 ± 19.83	-6.19 ± 20.57	-8.96 ± 22.52	$(-15.57 \text{ to } -2.34)$	Wilcoxon	294.5	0.007	-0.40

Significant reduction in TMD observed post intervention.

IV. DISCUSSION

A single Tabata session significantly improved mood. This may be due to endorphin release and psychological satisfaction after exercise.

V. CONCLUSION

Tabata is an effective short-duration exercise for improving mood in students.



REFERENCES

Tabata et al. (1996); Berger & Motl (2000); Ekkekakis (2013).