ABSTRACT

Background: Sleep deprivation among university students is a rising public health concern, associated with impaired neurocognitive functioning, increased fatigue, and poor academic performance. While Inspiratory Muscle Training (IMT) has demonstrated benefits in respiratory and sleep-related disorders, its application as a non-pharmacological intervention in sleep-deprived young adults remains underexplored. This study investigated conch blowing (Shankha practice) as a culturally relevant, low-cost form of IMT.

Methodology: An Experimental Clinical Trial was conducted at Brainware Diagnostic Clinic and Research Centre, Brainware University, Barasat. From 123 initially identified participants, 65 met inclusion criteria (PSQI > 5; FSS ≥ 36) and were made to perform a structured breathing exercise protocol based on conch blowing & breathing exercises. Following this, 15 participants were excluded for irregular attendance, 50 participants completed the 4-week intervention and were included in analysis. Outcome measures — Pittsburgh Sleep Quality Index (PSQI), Fatigue Severity Scale (FSS), and Trail Making Test Parts A & B (TMT-A/B) — were assessed pre- and post-intervention. Wilcoxon Signed-Rank Test was used for FSS and PSQI; Paired t-test for TMT-A and TMT-B ($\alpha = 0.05$).

Results: All four outcomes showed statistically significant improvement ($p < 0.001$). PSQI scores declined from 7.30 ± 2.49 to 3.66 ± 1.53 ($d = 2.76$); FSS from 43.44 ± 6.17 to 29.64 ± 4.58 ($d = 3.57$); TMT-A from 36.35 to 26.28 seconds ($d = 1.66$); and TMT-B from 67.15 to 42.21 seconds ($d = 0.81$). All effect sizes were large per Cohen's classification.

Conclusion: Conch blowing-induced IMT significantly improves sleep quality, reduces fatigue, and enhances neurocognitive performance in sleep-deprived young adults. The alternate hypothesis is accepted. This intervention offers a viable, accessible, and physiologically grounded approach for student wellness programs.

***Keywords**: Conch blowing, Inspiratory Muscle Training (IMT), sleep quality, fatigue, Trail Making Test (TMT), Pittsburg Sleep Quality Index (PSQI).*

TABLE OF CONTENTS

SL NO.	TOPIC	PAGE NO.
	Certificate	i.
	Declaration	ii.
	Approval Sheet	iii.
	Dedication	iv.
	Acknowledgement	v.
	Abstract	vi.
	List of Tables	vii.
	List of Graphs	viii.
	List of Figures	ix.
	List of Abbreviations	x.
1.	Chapter 1: Introduction	1
2.	Review Of Literature	10
3.	Aim And Objectives	20
4.	Methodology	22
5.	Statistical Analysis	36
6.	Results	40
7.	Discussion	46
8.	Conclusion	50
9.	Limitations And Recommendations	52
10.	References	54
11.	Annexures	
	Annexure A: Consent Form	59
	Annexure B: Evaluation Performa	63
	Annexure C: Pittsburg Quality Sleep Index (PQSI)	65
	Annexure D: Fatigue Severity Scale (FSS)	68
	Annexure E: Trail Making Test	69
	Annexure F: Master Chart	74
	Annexure G: Dsc Certificate	76