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**EXTENDED  
ABSTRACT**

# Impact of Intermittent Fasting on Mental Abilities Among UiTM Seremban’s Students

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## I. INTRODUCTION

Intermittent fasting (IF) is widely studied for its physical health benefits; its cognitive implications remain underexplored—especially among university students. This study investigates how IF affects concentration, mental processing speed, and cognitive control among UiTM Seremban students, using the Stroop test. The findings aim to contribute localized insights into the mental performance outcomes of fasting individuals within the Malaysian student population.

## II. METHODS

Sixteen UiTM Seremban students were divided into fasting ( $n = 8$ ) and non-fasting ( $n = 8$ ) groups. The fasting group followed a 16:8 intermittent fasting schedule for four weeks. All participants completed the Stroop test twice, once during fasting and once after eating. Stroop performance was measured by accuracy within one minute. Statistical analysis involved paired t-tests for within-group comparisons and independent t-tests for between-group comparisons.

## III. RESULTS AND DISCUSSION

Fasting participants showed stable concentration levels, with mean Stroop scores of 97.4 (fasting) and 97.8 (post-meal). The difference was not statistically significant,  $t(15) = -0.702$ ,  $p = 0.494$ , indicating that intermittent fasting did not impair concentration among UiTM Seremban students.

Stroop speed remained constant across all trials, as it was a timed one-minute test. Accuracy scores were consistently high, suggesting that intermittent fasting did not affect participants’ general mental performance or processing efficiency during the task.

Cognitive control under fasting conditions remained intact. No impairment was observed when participants responded to incongruent stimuli. In fact, fasting participants showed a slight improvement trend in accuracy, suggesting intermittent fasting may support inhibitory control and mental clarity in short-duration cognitive tasks.

Performance differences between fasting and non-fasting groups were not significant in either session ( $t(14) = 0.546$ ,  $p = 0.594$ ;  $t(14) = -0.239$ ,  $p = 0.814$ ). However, fasting participants consistently performed slightly better on average,

suggesting fasting may offer minor cognitive advantages without impairing function.

Lastly, descriptive analysis showed high Stroop accuracy across both sessions, with mean scores of 97.4 and 97.8. The data were normally distributed, as confirmed by Shapiro-Wilk tests ( $p > 0.05$ ).

TABLE I  
DESCRIPTIVE STATISTICS FOR STROOP TEST SCORES ACROSS BOTH SESSIONS

Session	N	Mean	SD	Min	Max	Shapiro-Wilk p
First Session	16	97.4	1.62	94.2	100	0.658
Second Session	16	97.8	1.48	95.1	100	0.810

TABLE II  
STROOP ACCURACY SCORES AND T-TEST RESULTS FOR FASTING AND NON-FASTING PARTICIPANTS

Session	Group	Mean (M)	SD	t	p
First Session	Fasting	97.4	1.85		
	Non-Fasting	96.8	1.62	0.546	0.594
Second Session	Fasting	97.8	1.38		
	Non-Fasting	97.5	1.47	-0.239	0.814
Fasting group Only	(Before vs After Eating)	97.4 vs 97.8		-0.702	0.494

Note:  $t$  and  $p$  values are shown only for relevant comparisons.

Table II shows that all comparisons using t-tests yielded non-significant results ( $p > 0.05$ ), indicating no meaningful differences in Stroop accuracy between fasting and non-fasting groups, or within the fasting group before and after eating.

#### IV. CONCLUSIONS

Intermittent fasting did not negatively affect concentration, processing speed, or cognitive control among UiTM Seremban students. Although no statistically significant effects were found, fasting participants consistently performed slightly better. These findings suggest intermittent fasting may be cognitively safe and even slightly beneficial for students during short-term fasting periods.

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