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**EXTENDED  
ABSTRACT**

# Acute Effects of Intermittent Fasting With Aerobic Exercise on Weight Loss among Government Sector Workers With Obesity

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## I. INTRODUCTION

Obesity remains a pressing public health issue, particularly among sedentary occupational groups. While intermittent fasting and aerobic exercise have individually shown benefits for weight management, their combined acute effects remain underexplored. This study evaluates weight loss outcomes among government sector workers with obesity, comparing intermittent fasting alone versus its combination with aerobic exercise over a short intervention period.

## II. METHODS

Twelve obese government workers were selected through the KBS “The Biggest Loser” program and divided equally into two groups. Over four weeks, both groups practiced daily 16:8 intermittent fasting, while one group added aerobic exercise three times a week. Weight and BMI were measured pre- and post-intervention using a stadiometer to assess the impact of the intervention.

## III. RESULTS AND DISCUSSION

The intermittent fasting-only group lost an average of 3.1 kg over four weeks. All participants showed consistent weight reduction, likely due to reduced caloric intake from the 16:8 fasting method. The results suggest intermittent fasting alone is effective for short-term weight loss in obese individuals.

Participants who combined intermittent fasting with aerobic exercise lost an average of 2.78 kg. This slight reduction compared to the IF-only group may reflect compensatory factors such as increased appetite or muscle retention. While aerobic activity may support overall health, its short-term additive effect on weight loss was minimal in this study.

The IF-only group slightly outperformed the IF + AE group (3.1 kg vs. 2.78 kg), with no statistically significant difference ( $p = 0.671$ ). The clinical difference was negligible. Thus, the combination of fasting and exercise did not produce a synergistic effect within the four-week timeframe, though both approaches proved effective for weight reduction.

TABLE I  
GROUP DESCRIPTIVE

|                  | Group        | Mean   | Median | SD    | SE   |
|------------------|--------------|--------|--------|-------|------|
| Pre-Weight (kg)  | Control      | 106.67 | 95.50  | 21.76 | 8.88 |
|                  | Experimental | 100.52 | 97.35  | 12.98 | 5.30 |
| Post-Weight (kg) | Control      | 103.57 | 92.70  | 20.76 | 8.48 |
|                  | Experimental | 97.73  | 94.50  | 12.94 | 5.28 |
| Pre-BMI          | Control      | 38.43  | 37.30  | 6.48  | 2.64 |
|                  | Experimental | 37.37  | 38.35  | 2.76  | 1.13 |
| Post-BMI         | Control      | 37.32  | 36.55  | 6.25  | 2.55 |
|                  | Experimental | 36.35  | 37.40  | 2.97  | 1.21 |
| $\Delta$ Weight  | Control      | 3.08   | 3.15   | 1.27  | 0.52 |
|                  | Experimental | 2.78   | 2.55   | 1.09  | 0.45 |
| $\Delta$ BMI     | Control      | 1.10   | 1.15   | 0.42  | 0.17 |
|                  | Experimental | 1.02   | 0.95   | 0.35  | 0.14 |

TABLE II  
INDEPENDENT T-TEST (BETWEEN GROUPS)

| Assessment  | Group        | Pre            | Post           | <i>P</i> -value |
|-------------|--------------|----------------|----------------|-----------------|
| Weight (kg) | Control      | 106.67 ± 21.76 | 103.57 ± 20.76 | 0.671           |
|             | Experimental | 100.52 ± 12.98 | 97.73 ± 12.94  |                 |
| BMI         | Control      | 38.43 ± 6.48   | 37.32 ± 6.25   | 0.716           |
|             | Experimental | 37.37 ± 2.76   | 36.35 ± 2.97   |                 |

Weight loss,  $t(10) = 0.438$ ,  $p = 0.671$ , BMI,  $t(10) = 0.374$ ,  $p = 0.716$ .

## IV. CONCLUSIONS

In a four-week intervention, intermittent fasting alone matched or slightly outperformed its combination with aerobic exercise in weight loss outcomes. The lack of added benefit from exercise suggests fasting is the key short-term driver.

Longer studies are needed to evaluate the combined interventions' roles in sustained obesity management.

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