EP038

Gamification, Accountability and Digital Nudges: A Behavioural Approach to Improve Adherence in a Workplace Weight Loss Program

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Introduction

Obesity prevalence in Malaysia is rising. PKD Pekan health screening revealed almost **80% of staff were overweight or obese**. Despite access to the Wellness Hub, previous programs faced a **40% dropout rate**, highlighting the need for improved behavioural engagement strategies.

Objectives

To increase adherence in the workplace weight loss program among PKD Pekan employees by applying behavioural science principles – **gamification and digital nudging.**

Methodology

Single-arm study | **Jan – Mar 2026**

IFitEr module | **Wellness Hub, PKD Pekan, Pahang**

Participants, n: 25 overweight/ obese healthcare workers (Mean age: 39.86 ± 6.42), no comorbidities

Intervention for adherence to program:

Gamification

- Ranking board acts as reward system
- Progress diaries includes positive message framing

Digital Nudge

- Regular reminders for sessions, nutrition & psychological support

Outcome measures: Attendance, weight, waist circumference, fat %, muscle mass.

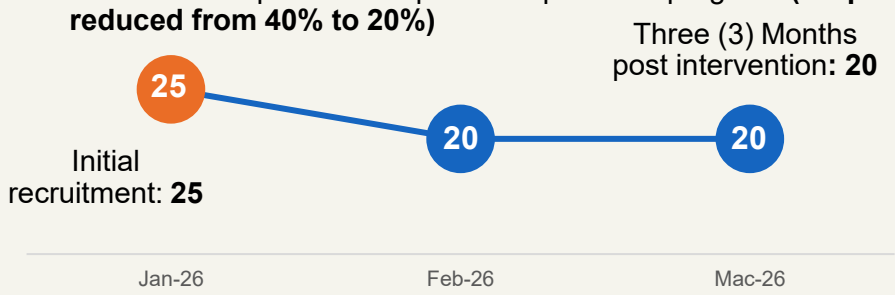
Data analysis: Univariate & bivariate (paired t-test)

Results

80%	20%	-2.34kg	-3.39cm
Adherence (20/25 retained)	Dropout (5/25)	Weight ↓ (▼2.81%)	Waist ↓ (▼3.48%)

Retention Over Time

- Sharp drop early → stable thereafter
- Adherence improved compared to previous program **(dropout reduced from 40% to 20%)**



Clinical Outcomes

There were a **statistical significant reduction (p<0.05)** after post test in (i) **weight (kg),** (ii) **waist circumference (WC)** compared to baseline.

There was changing in percentage of fat and muscle mass from baseline. However, there were no statistical significant (p>0.05)

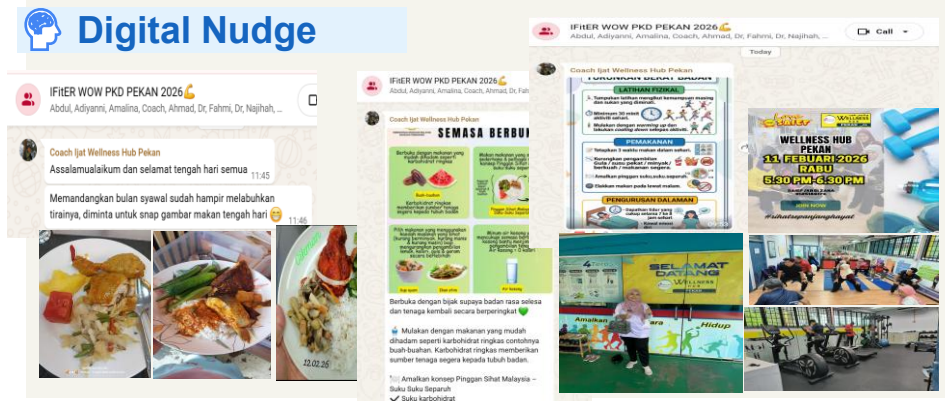
Measure	Baseline (Mean±SD)	Post-test (Mean±SD)	Significance
Weight (kg)	83.19 ± 22.62	80.85 ± 21.77	**0.000**
Waist Circ. (cm)	97.42 ± 15.33	94.03 ± 14.43	**0.015**
Fat (%)	40.88 ± 6.70	40.41 ± 8.14	**0.612**
Muscle (%)	26.42 ± 6.71	30.56 ± 16.29	**0.242**

Table 1: The numbers of variable for weight loss from baseline and 3 month post test and its statistical significant

Gamification



Digital Nudge



Discussion and Conclusion

Principles of behavioural science represent highly effective instruments for enhancing adherence within structured weight loss intervention

1. **Gamification:** competitive leaderboard and longitudinal diaries, serve as critical drivers for both initial recruitment and sustained participant engagement (3).
2. **Digital Nudges:** function as persuasive tools that facilitate consistent adherence to prescribed nutritional guidelines and physical activity regimens (2).
3. **Message Framing:** has demonstrated empirical success in augmenting physical activity levels and fostering the habit of regular self-monitoring, specifically regarding self-weighing frequency (1).

Strength: local study with provided wellness hub, psychology officer in house

Limitation: Small sample size, single-arm design

Recommendation: Continue intervention for another 3 months, recruit more participants

Conclusion: Integrating behavioural science principles significantly enhanced participation and adherence in PKD Pekan's workplace weight loss program. When adherence is achieved, clinically meaningful reductions in weight, body fat, and waist circumference follow naturally.

Acknowledgement

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