

Decreasing Personal Response Effort for Improved Workout Attendance

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Introduction

Subject:

- 21-year-old female undergraduate student.

Background Information:

- The subject aimed to increase weekly workouts to maintain physical and mental health.
- Exercise was shown to positively improve anxiety, depression, high rates of stress and muscle declination. (Keller & Engelhardt, 2014; Mikkelsen et al., 2017)
- Recommended two to five times per week for aerobic exercises and two to three times per week for muscular exercises. (Miller et al., 2016)

- Using antecedent modifications, such as reduced response effort and stimulus control, to increase target behavior

Target Behavior: increasing the undergraduate student's workout attendance

- Measured with several iPhone application: "Latch" app, "YouFit" app, and "Health" app. (Latchable Inc., 2024; YF FC Operations LLC, 2024; Apple Inc., 2024)

Methods

Design:

- Single subject reversal design (ABCB)

Baseline (9/9/24-10/6/24)

- Objective: collect naturalistic data on student's workout behavior by recording weekly attendance
- No interventions applied; natural behavior observed.

Treatment 1 (10/7/24-10/27/24):

- Antecedents: subject wrote down workout goal for that day on a piece of paper; subject placed athletic clothes on the corner of the bed with workout goal on top of it.

Treatment 2 (10/28/24-11/17/24):

- Antecedent: the subject placed athletic clothes on the corner of the bed.

Reversal to Treatment 1 (11/18/24- 12/8/24):

- Antecedents: subject wrote down workout goal for that day on a piece of paper; subject placed athletic clothes on the corner of the bed with workout goal on top of it.

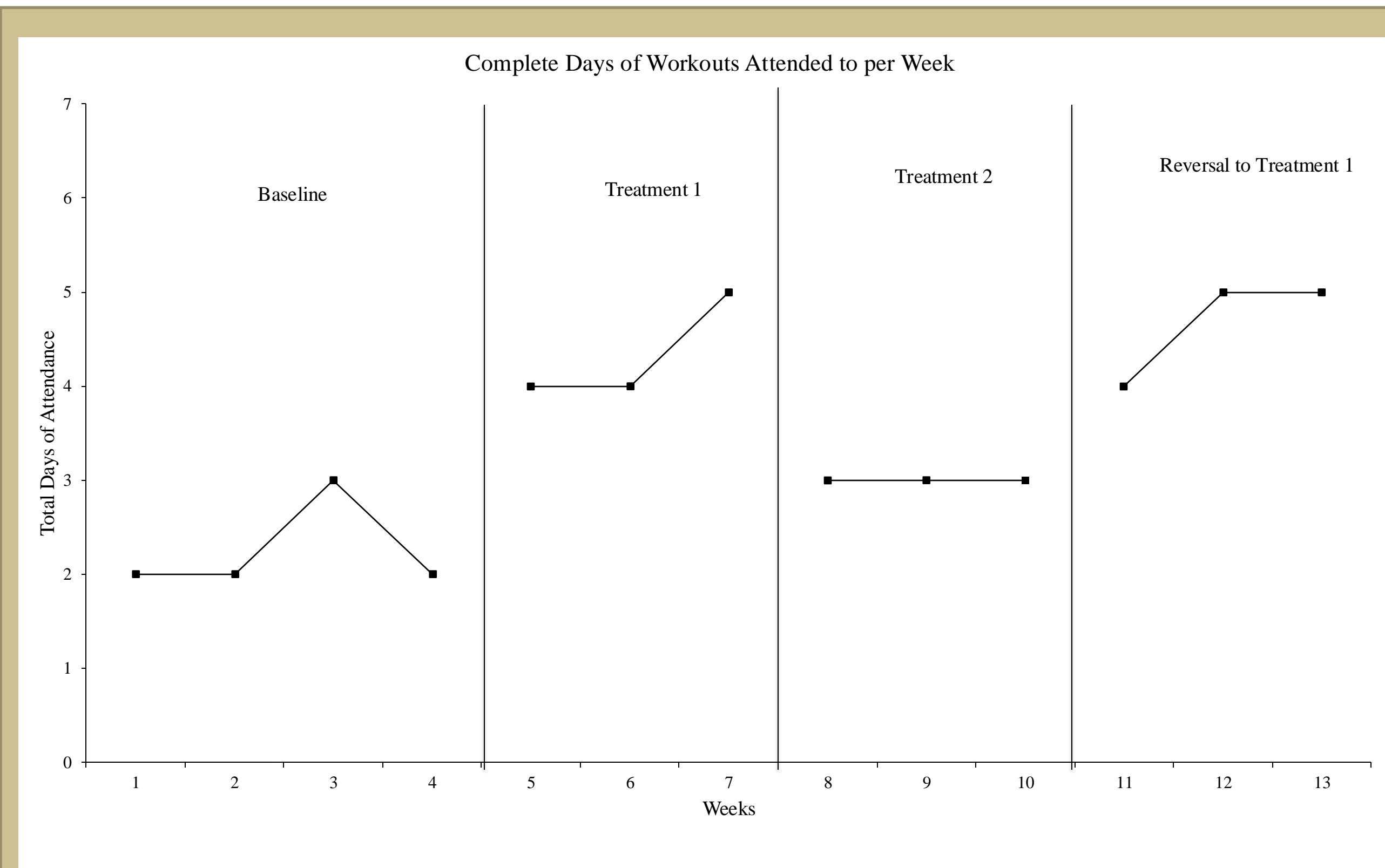


Figure 1: The figure depicts the cumulative number of workouts attended per week for each experimental phase. Important to note that the goal was to attend the gym an average of five-times per week; this was only achieved during Treatment 1 and the reversal to Treatment 1.

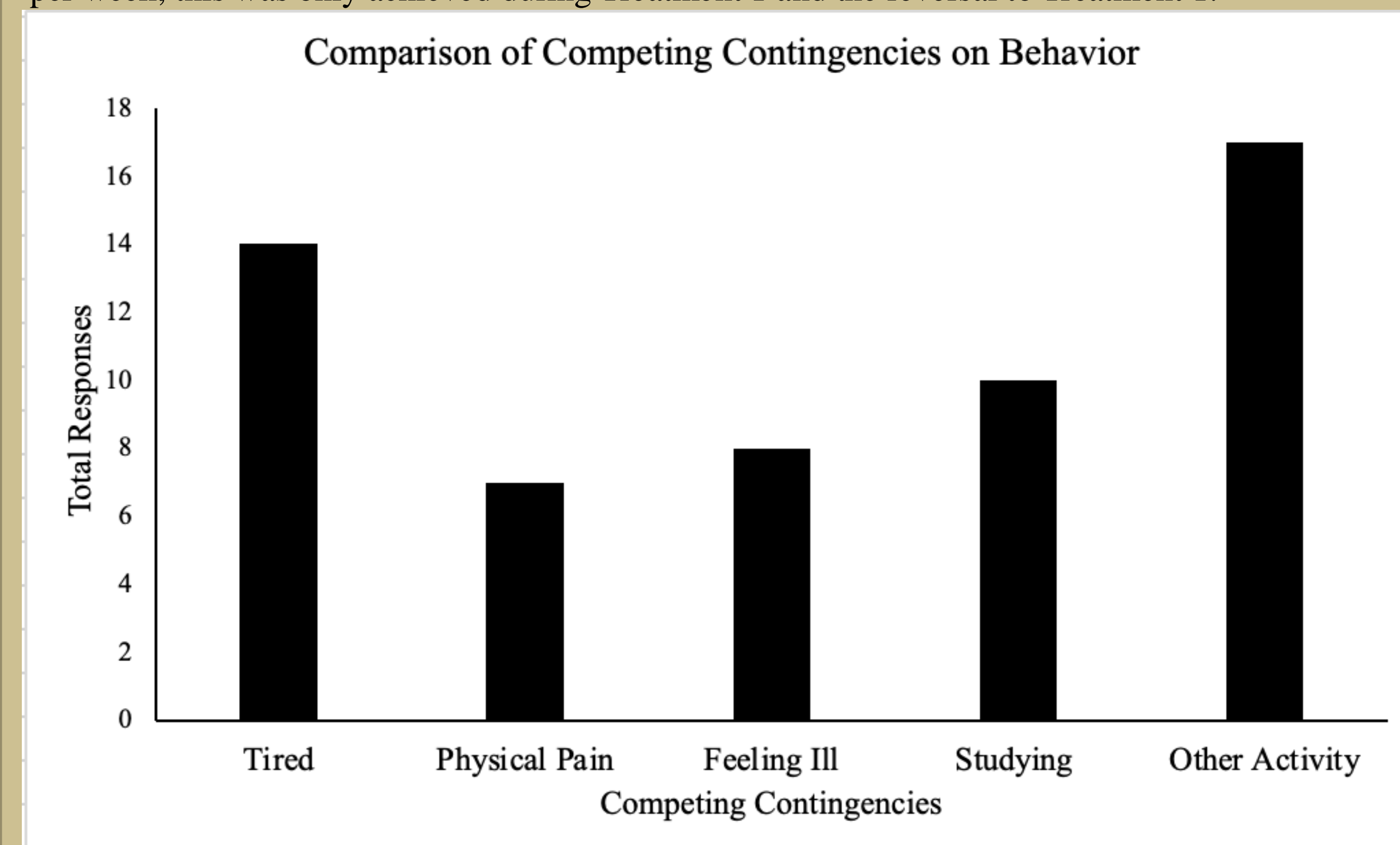


Figure 2: The figure above is a cumulative bar graph of the average weekly competing contingencies across all experimental phases.

Results

- **Baseline Phase:** The student completed a total of 9 workouts, with an average of 2.25 days per week across four weeks.
- **Treatment 1:** The student was sick during week 6 (10/14/24-10/20/24), but managed to complete a total of 13 workouts, with an average of 4.3 days per week across three weeks. An increase from baseline.
- **Treatment 2:** The student completed a total of 9 workouts, with an average of 3 days per week across three weeks.
- **Reversal to Treatment 1:** The student completed a total of 14 workouts, with an average of 4.6 days per week across three weeks.

Discussion

Limitations:

- Previous ABA knowledge, awareness of collecting data on oneself and designing the treatment for oneself.

Implications:

- Antecedent-based interventions (stimulus control and reduced response effort) are effective in increasing desired behavior.
- Methods can be generalized to other behaviors, such as reading a book or calling a relative.

Future Directions:

- Evaluate long-term maintenance and sustainability of behavior change.
- Compare the effectiveness of stimulus control versus reduced response effort in increasing behavior.

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