ELECTRONIC FITNESS TRACKERS AND MOTIVATION TO EXERCISE

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ABSTRACT

INTRODUCTION: Physical Activity is any movement of the body that requires the muscle to do work. One possible way to track that activity is through Electronic Fitness Trackers. Fitness Trackers are wearable devices that track steps, calorie intake and expenditure, and workouts. By having a tracker, users are able see their true day-to-day activity level and can then use the tracker set goals to improve. Little prior research has been done on fitness trackers, as they are a relatively new technology, and that which has been done has focused mostly on validity of measurement. Further research is necessary to determine the effectiveness of trackers on motivating users to increase their exercise levels. PURPOSE: The aim of this experiment was to investigate the relationship between electronic fitness trackers and motivation for increasing physical activity. METHODS: 157 participants (W and M; 18-25 yrs) volunteered to participate in the survey at the Maverick Activity Center and through social media links. The survey was created on SurveyMonkey by the researchers and was administered on iPad's. RESULTS: Using an independent samples (t) test, found a p-value of 0.156 when minutes of exercise per week was compared to having a fitness tracker or not. A chi-square test found a p-value of 0.174 when relating the importance of exercise in each individual to the use of a tracker or not. A second chi-square test determined a p-value of 0.065 when relating the different types of motivation to those with and without a tracker. Frequencies analyzing those with trackers determined Fitbit as the most popular choice, and then as to why they got a tracker, showing most purchased one as a form of motivation. Frequencies analyzing those without trackers determined that most did not own one because it was not important to them, and then that most participants think that a tracker might have an effect on motivating them to exercise. CONCLUSION: The present study found no statistical evidence that fitness trackers would increase physical activity. The results show that fitness trackers were most often purchased to be motivators, but that they did not actually show an increase in physical activity above those without trackers. Those with trackers were found to exercise for health benefits, whereas those without trackers for physical appearance benefits.

BACKGROUND & PURPOSE

- Electronic fitness trackers are a relatively new technology and little research has been conducted. That which has been done has focused on the validity of measurement.
- The purpose of this experiment was to investigate the relationship between electronic fitness trackers and motivation for increasing physical activity.

METHODS

- 157 college student participants (W and M; 18-25 yrs).
- The 19 question survey was created on SurveyMonkey by the researchers and was administered on iPad's.
- The survey was taken at the Maverick Activity Center and online through social media links.

RESULTS

- An independent samples t-test obtained a p-value of 0.156 when comparing minutes of exercise per week to having or not having a fitness tracker.
- A chi-square test resulted in a p-value of 0.174 when relating the importance of exercise in each individual to the use of a tracker or not.
- A second chi-square test resulted in a p-value of 0.065 when relating the different types of motivation to those with and without a tracker, shown in Figures 1 & 2.
- Frequencies found that in those with a tracker, Fitbits were most common and they purchased one to be a motivator. Whereas those without a tracker, most did not own one because it was not important to them.

Fig 1: **Form of Motivation for Those with Tracker**

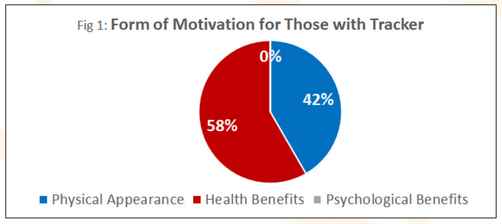


Fig 2: **Form of Motivation for Those without Tracker**

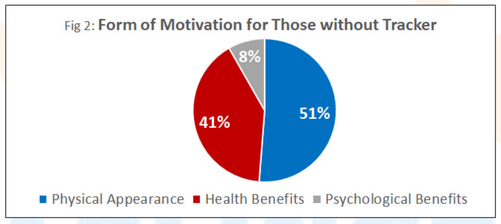
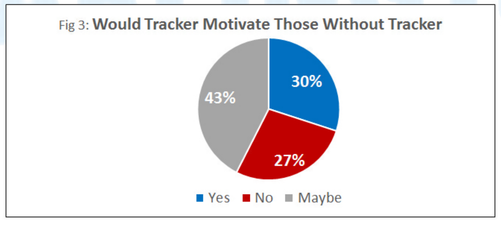


Fig 3: **Would Tracker Motivate Those Without Tracker**



DISCUSSION & CONCLUSION

- The independent t-test between minutes of exercise per week and having or not having a fitness tracker indicated no statistical significant difference.
- The chi-square test indicated no significant difference when relating the importance of exercise in an individual based on whether or not they have a tracker.
- The second chi-square test indicated no significant difference when relating the different forms of motivation for both groups although there was an approximate statistical significance.
- However a bigger population of individuals with trackers could have potentially made the second chi-square test statistically significant to apply to the population.
- Limitations include sample size of trackers and no trackers, location, and age range (18-25 yrs.).
- For future studies, more trackers will be needed to increase the chance for significance, have people in older populations as well, and have a control-experiment study.
- According to one study, the implementation of fitness trackers in addition to a weight loss program can yield more weight loss (Polzien, 2007). Further studies with trackers could prove to be beneficial for individuals.
- Based off the findings of the results of this study, there is no statistical evidence that fitness trackers alone would motivate an individual to increase physical activity, even though most fitness trackers were purchased as a motivational tool.

REFERENCES

Polzien KM, Jakicic JM, Tate DF, Otto AD. The efficacy of a technology-based system in a short-term behavioral weight loss intervention. Obesity (Silver Spring) 2007 Apr;15(4): 825–30. doi: 10.1038/oby.2007.584.