

# EAT2WIN: A PILOT STUDY ASSESSING ATHLETES' BEHAVIORS, ATTITUDES, AND ADHERENCE USING A MOBILE APPLICATION



J. Frederickson and G. Ho

L. Dart, PhD, RD, LD, J. L. Stevenson, PhD, RDN, LD, B. Helms, MA, RDN, CSSD, LD, A. Vanbeber, PhD, RDN, LD, FAND  
Department of Nutritional Sciences – Texas Christian University, Fort Worth, TX

## Background

- Athletes increasingly skip meals because they lack time or knowledge to prepare their own meals; mobile applications have been proposed as a potential solution to this problem.<sup>1</sup>
- Adherence to mobile app tracking may vary, but self-motivation and nutrition knowledge increase chances of behavior change while using an app.<sup>7</sup>

## Objectives

To determine if female college athletes' nutrition and fueling behaviors changed over four weeks by utilizing a mobile application for tracking fueling habits.

## Eat2Win App

Eat2Win is an app that has been designed to deliver customized food schedules to busy athletes so that they can stay adequately nourished for all activities throughout the day (training, classes, etc.).

Key features include:

- Trackers, log meals by taking pictures
- Athlete's Calorie Calculator
- Wide variety of Standard Meal Plans Guides (also includes vegan, vegetarian, and restaurant options)
- Meal reminders
- Nutrition monitors
- Free to download



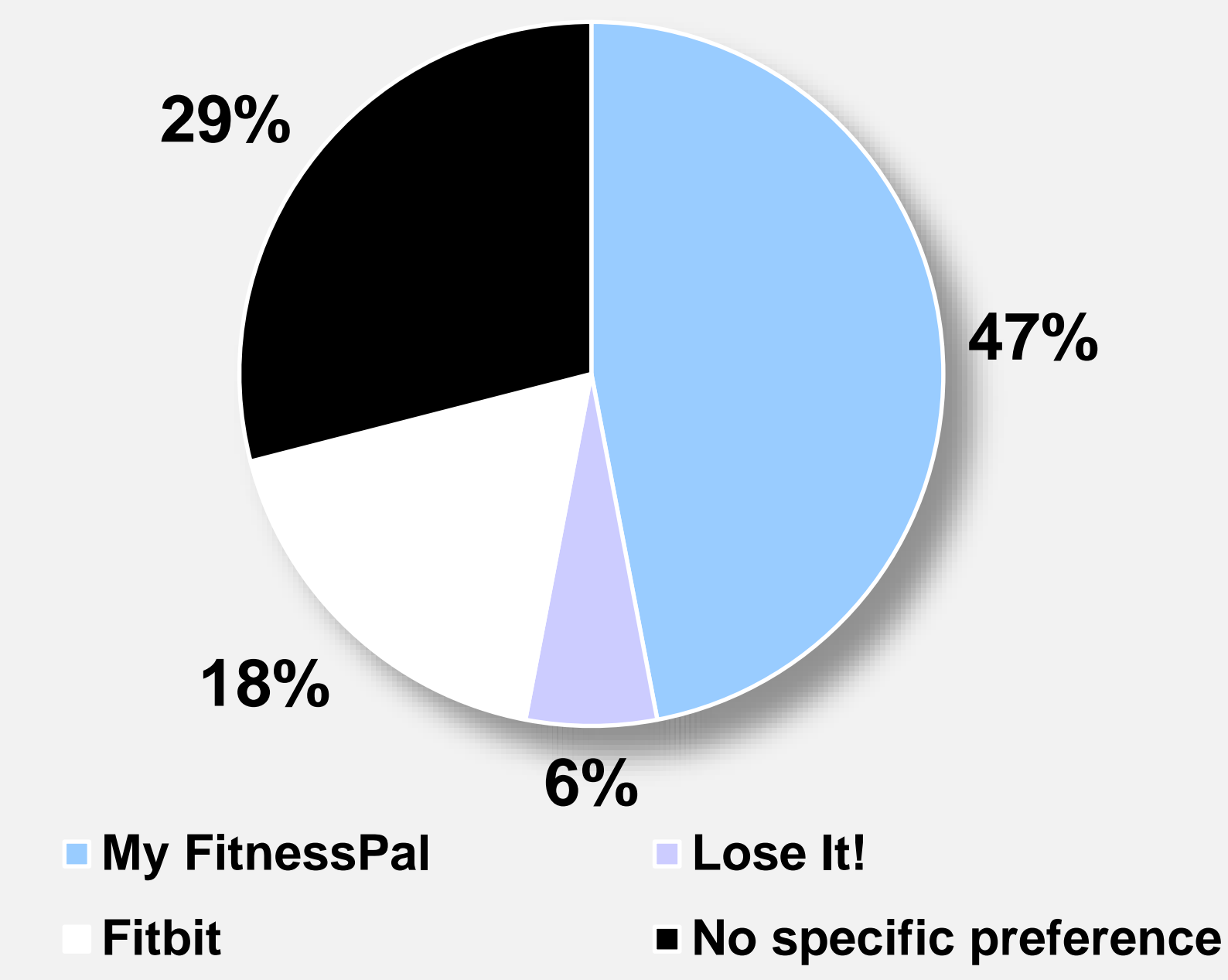
## Study Design / Methodology

- Pilot study with cohort of 17 female TCU NCAA Beach Volleyball athletes.
- Pre and post-study questionnaires examined attitudes toward mobile applications, current dietary behaviors, and frequency of fueling habits. Athletes attended a pre-study training session about utilizing the Eat2Win app.
- Data analyses included recorded frequency of application usage and athletes logged meals per/day plus impact on dietary behaviors and fueling habits.
- Study procedures approved by TCU IRB. Participant informed consent was obtained. Data were analyzed to meet study objectives (SPSS,  $p \leq 0.05$ ).

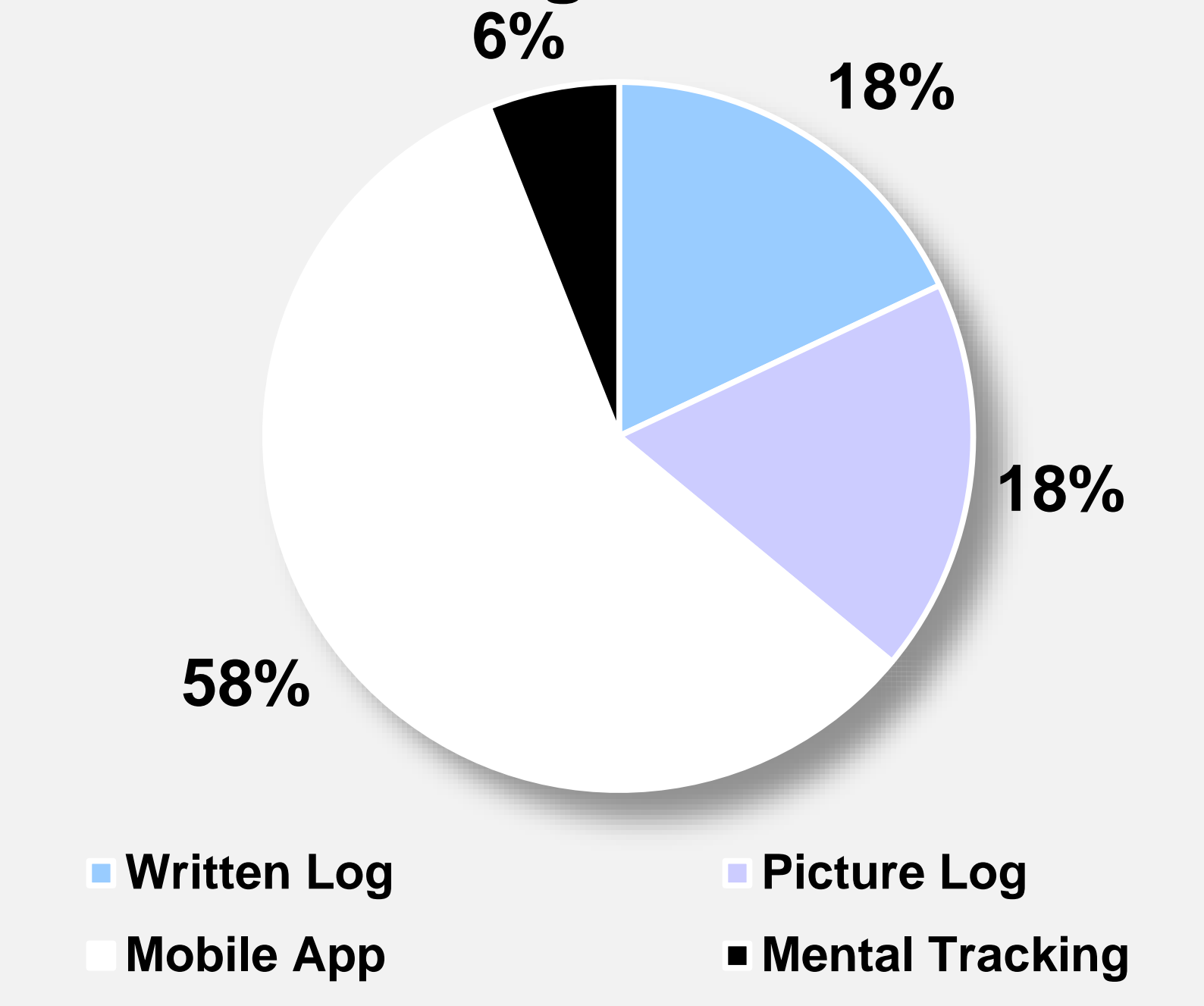
References  
1. Simpson A, Gemming L, Baker D, Braakhuis A. Do image-assisted mobile applications improve dietary habits, knowledge, and behaviours in elite athletes? A pilot study. *Sports*. 2017;5(3):60-70. doi:10.3390/sports503060. Accessed January 16, 2019.  
7. Liefers JR, Arocha JF, Grindrod K, Hanning RM. Experiences and perceptions of adults accessing publicly available nutrition behavior-change mobile apps for weight management. *J Acad Nutr Diet*. 2017;118(2):229-239.e3. doi:10.1016/j.jand.2017.04.015. Accessed September 28, 2017.

## Results

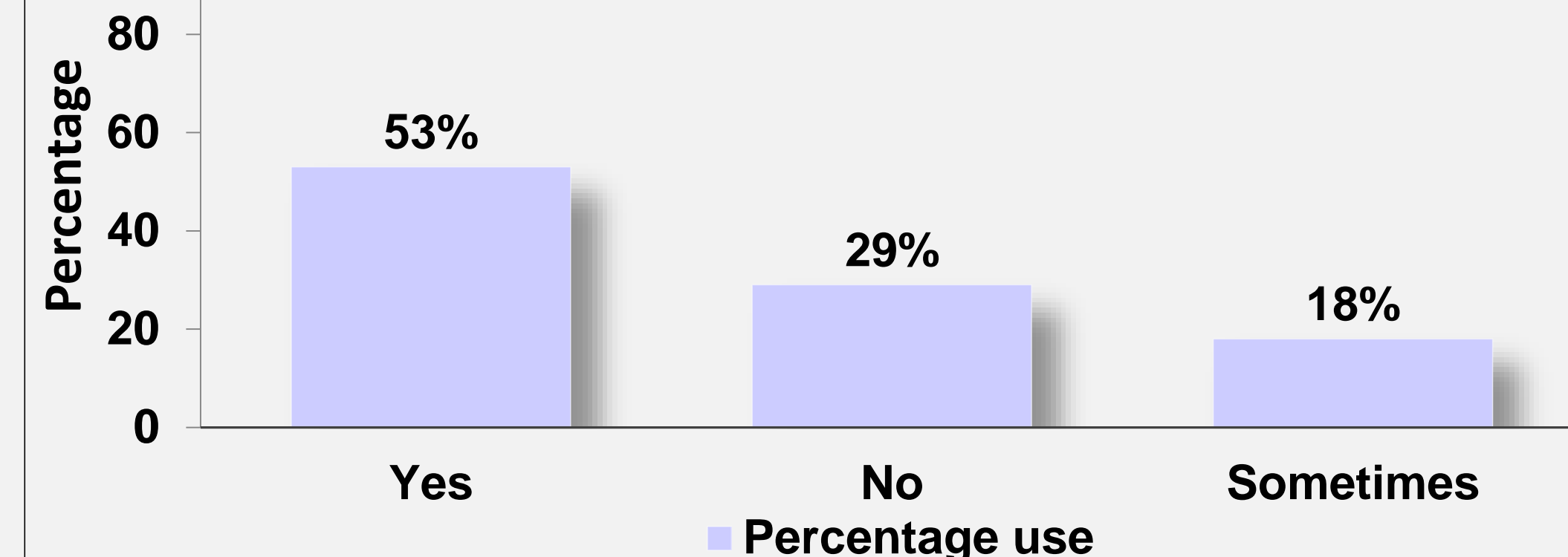
### Types of Mobile Apps Used by Athletes



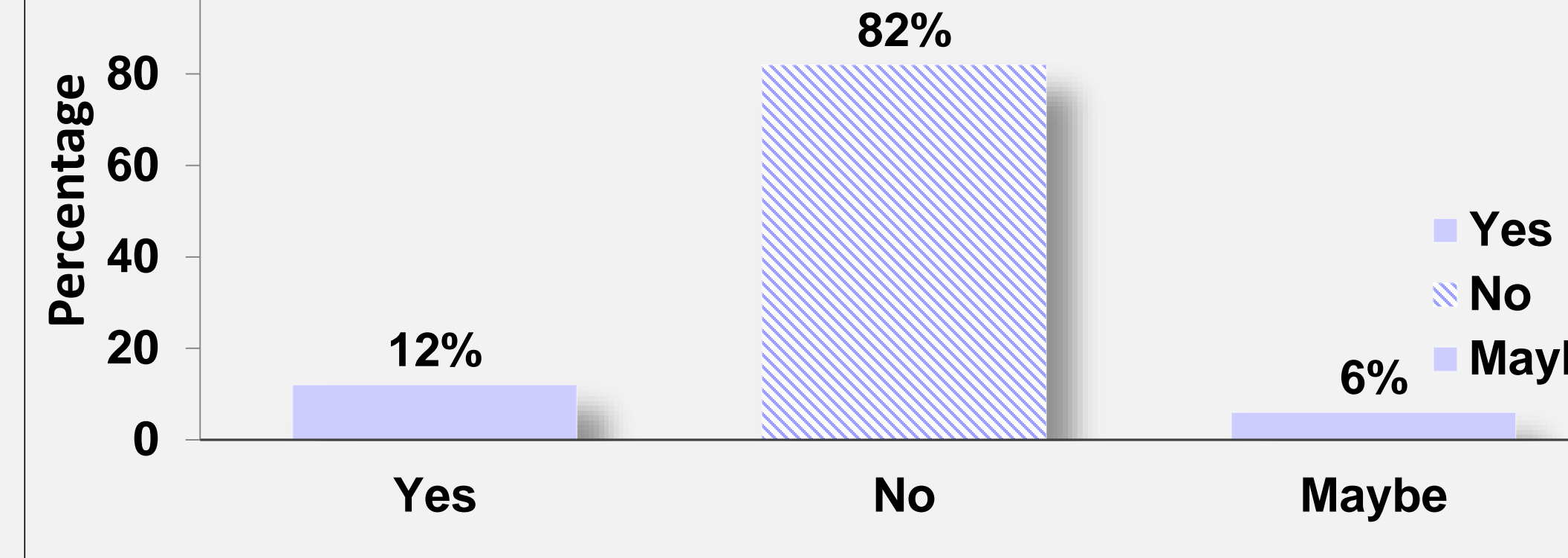
### Preferred Method of Tracking Nutrition



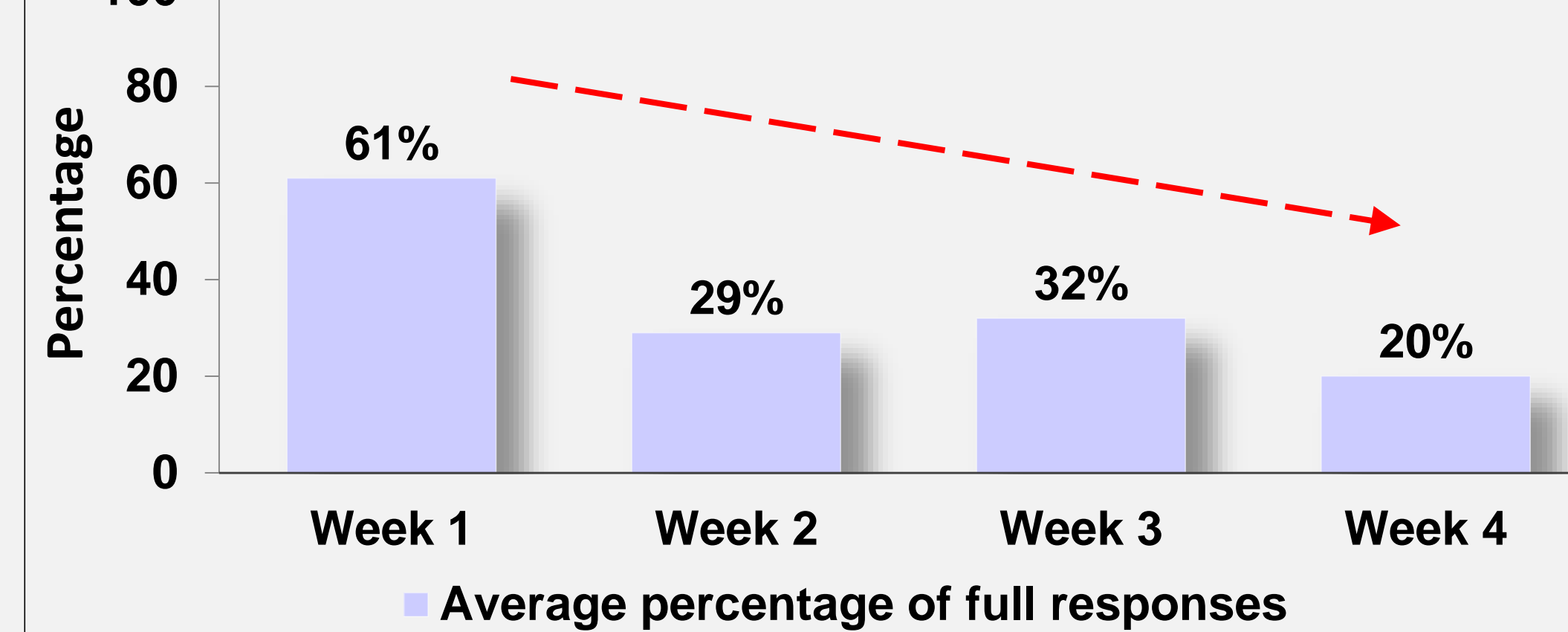
### Percentage of Athletes Who Use Mobile App to Track Nutrition Habits BEFORE Using Eat2win App



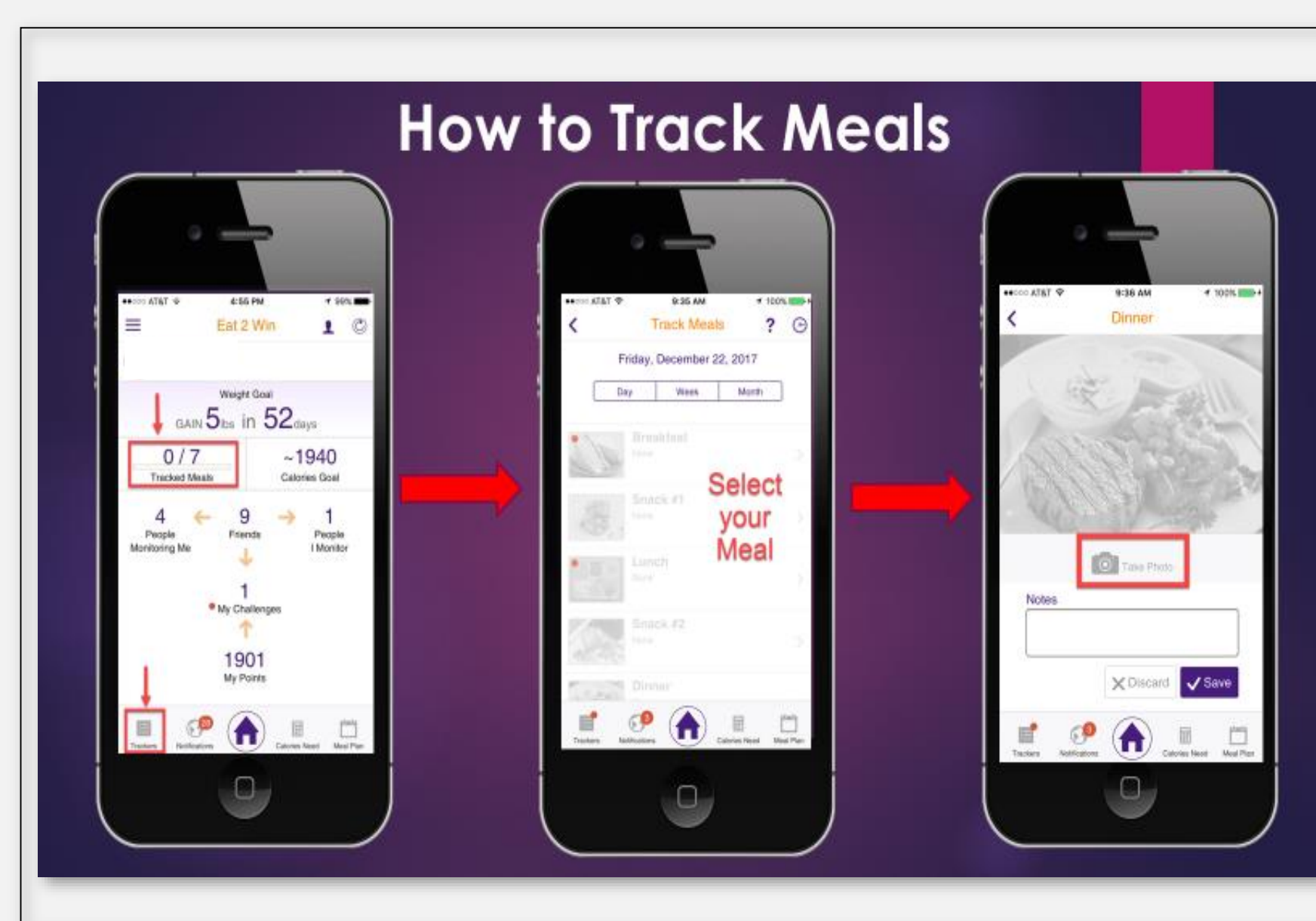
### Percentage of Athletes Who Will Use Mobile App to Track Nutrition Habits AFTER Using Eat2win App



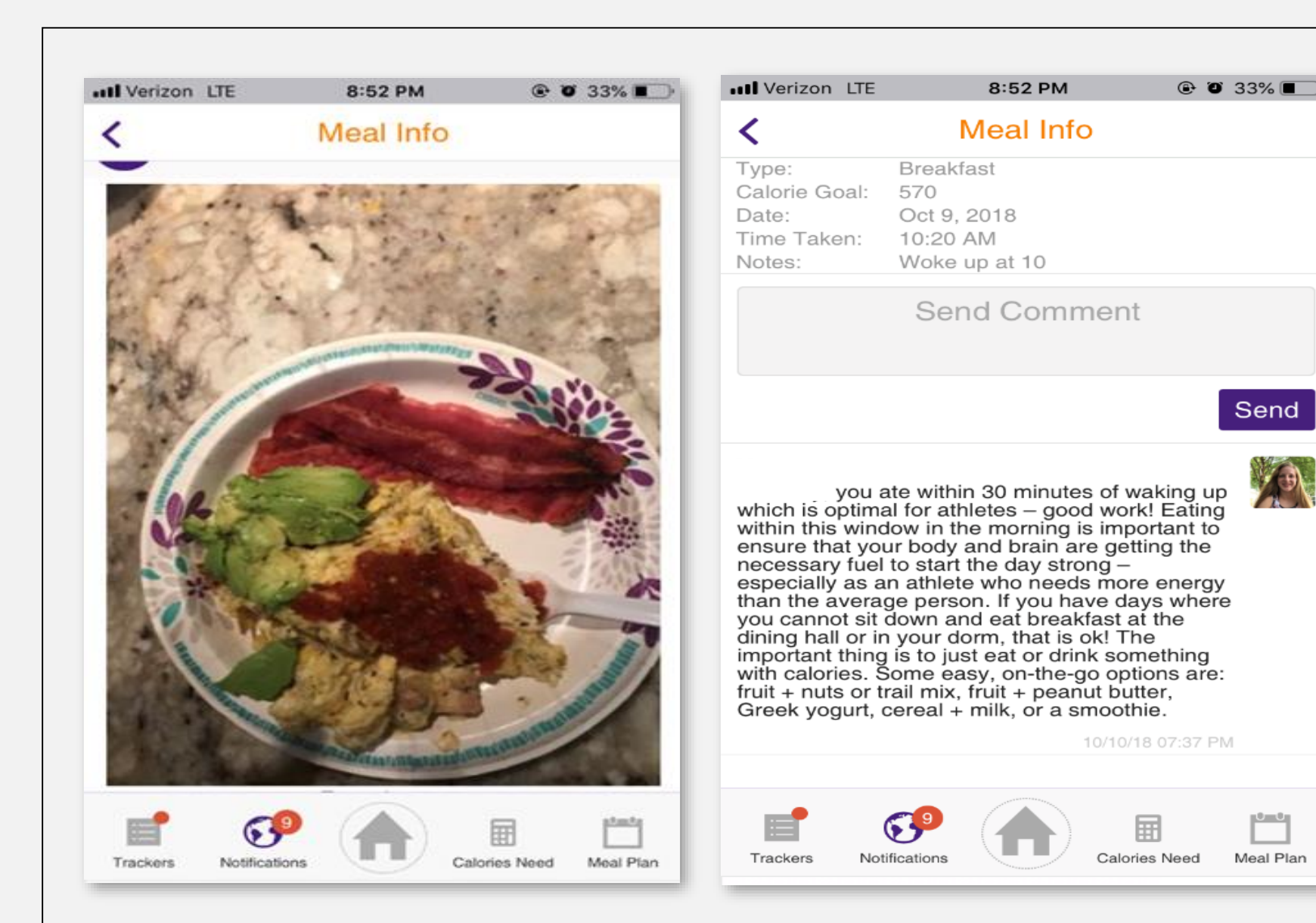
### Average Percentage of Full Responses from Athletes per Week



## Tracking Meals Demonstration



## Example: Meal Log Comment



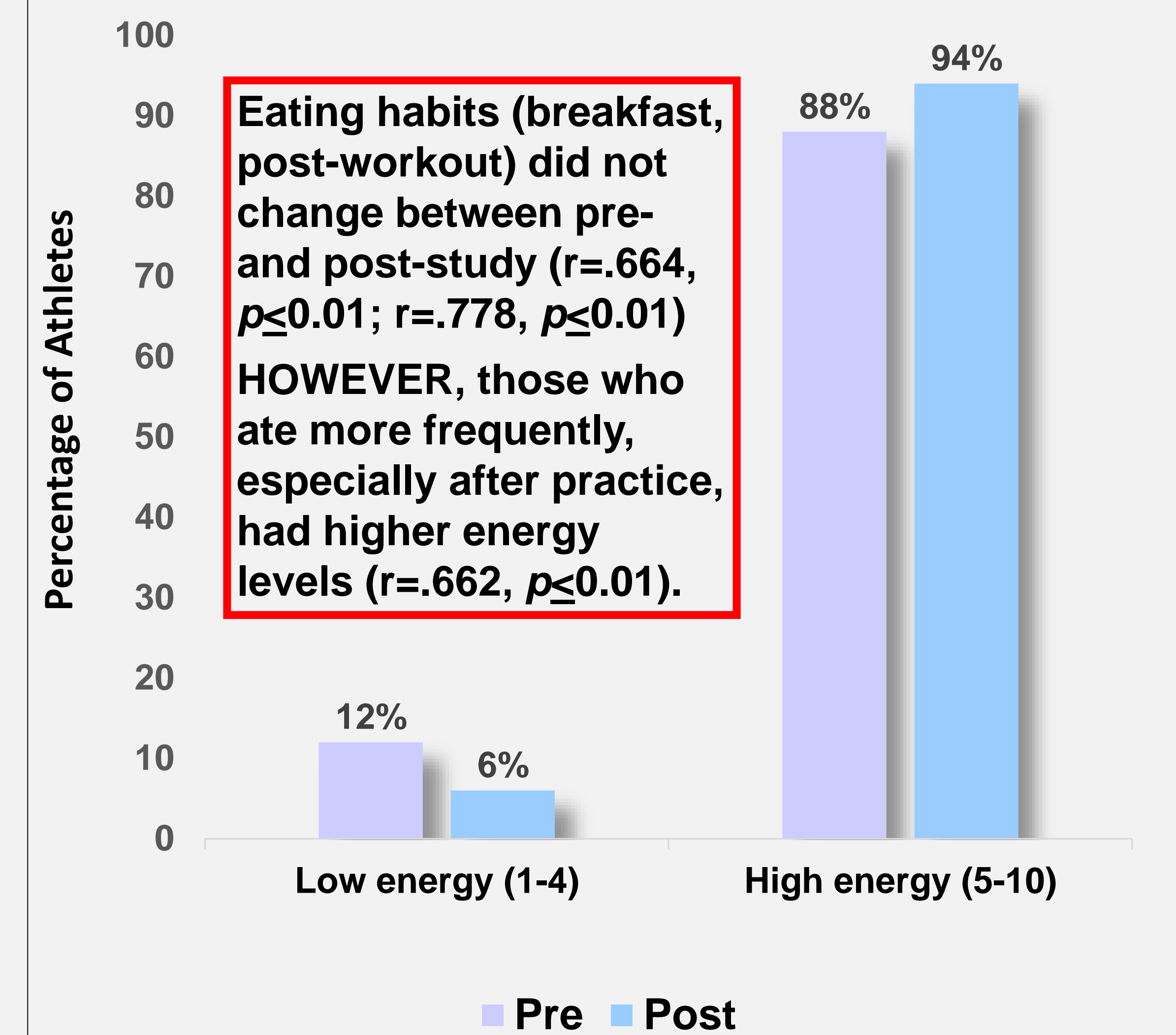
## Sample of Comments to Meal Logs

Inside Time Frame	Outside Time Frame
<p><b>MWF morning (5:15-6:15 AM) – Pre-Workout</b> "You ate close enough to your workout keep yourself fueled – good work!"</p>	<p><b>MWF morning (outside range) – Pre-Workout</b> "It looks like you did not eat close enough to your workout to be properly fueled up! As a reminder, the goal before workouts is to eat something within 1 hour before your workout for optimal energy!"</p>
<p><b>TTh afternoons (12:00-2:00 PM) – Pre-Workout</b> "You ate close enough to your workout to keep yourself fueled – good work! Keep up the good timing!"</p>	<p><b>TTh afternoons (outside range) – Pre-Workout</b> "It looks like you did not eat close enough to practice to fuel up! As a reminder, the goal is to either eat a snack within 1 hour before or a meal within 2 hours before practice. So tomorrow, try to eat closer to practice time."</p>

## Negative Responses Toward App

- Did not work very well most of time
- Not enough storage
- Took up too much time
- Slow, inconvenient and redundant
- App stopped opening on phone even after re-downloading
- Lot of glitches, difficult and time-consuming
- Not convenient, not reliable, not easy to use
- Crashed a lot and was super slow, outdated

## Energy Levels (1-10)



## Discussion

- Athletes did not like the Eat2Win app because it was inconvenient and did not function properly.
- Athletes energy levels did not change over the course of the study, nor did their fueling habits.
- A consistency in habits indicates athletes had pre-established habits which were not influenced by using the app.

## Conclusions

- Study results emphasize the importance of implementing user-friendly mobile apps for athletes that are time-use efficient and offer calorie-counting and picture logging functions to promote change in dietary and refueling practices.
- Future studies should consider if and how behavior change increases nutrition knowledge and if that influences athletes to make healthier fueling choices.