



The Effect of an Acute Exercise Bout on Juul Cravings in College-Aged Students



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Introduction

Electronic cigarettes (e-cigarettes) are compact battery-powered devices that deliver nicotine and other additives in aerosol form. Juul, a brand of e-cigarettes and vaporizers, have recently become popular given their discreet size, high nicotine content, and flavored aerosols. Juul devices are popular among middle school and high school aged students and are marketed as alternatives to traditional cigarettes in the general population. Juul devices have been shown to be successful in a smoking cessation program; however, negative health effects like respiratory disease and reduced cellular function exist.

Although the prevalence of Juuling is increasingly a public health concern, there is limited research investigating potential solutions for this e-cigarette epidemic, particularly as high school users progress through their college years. Previous research has demonstrated through the QSU-brief questionnaire that an acute bout of exercise can mitigate traditional cigarette cravings, at various time points after the exercise session and possibly even the next morning, and it is possible that this model may be applied to Juuling as well. Further, traditional exercise interventions have primarily included aerobic exercise intervention, whereas resistance exercise has not been widely employed.

Purpose

- To examine the relationship between an acute bout of exercise and Juul cravings in sedentary, habitual Juul using college students
- Observe whether there is a displayed onset of the first craving in the morning after a bout of exercise

Subjects

- N = 6
 - 18-24 years old, current SRU student
 - No desire to quit Juuling within the next month
 - Inactive according to ACSM guidelines
 - No physician clearance needed to exercise based on ACSM screening protocol

Methods

Visit 1:

- Non-Exercise
 - QSU-Brief completed at baseline, after 15 minutes of sitting quietly, and after another 10 minutes of sitting quietly

Visit 2:

- Aerobic Exercise bout
 - Walk on treadmill at 40-50% HRR for 15 minutes
 - QSU-Brief completed at the beginning of the session, immediately after walking, and 10 minutes after sitting quietly

Visit 3:

- Resistance Training bout
 - Two sets of 12-15 repetitions performed on five different exercise machines, lasting approximately 15 minutes
 - QSU-Brief completed at baseline, immediately after exercise, and 10 minutes after sitting quietly
- Follow-up questions and were sent to participants via e-mail
- Two-way, multifactorial repeated measures ANOVA
 - Treatment x Time

1. I have a desire for my Juul right now.						
1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree
2. I have an urge for my Juul.						
1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree
3. I could control things better now if I could smoke.						
1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree
4. I would do almost anything for my Juul right now.						
1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree
5. Smoking would make me less depressed.						
1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree



Results

Table 1. Participant Information

Age (yrs)	Juul History (mos)	Start Age (yrs)
20.8 ± 1.3	15.7 ± 6.5	19.5 ± 1.2

Figure 1. Response to QSU-Brief Question 1

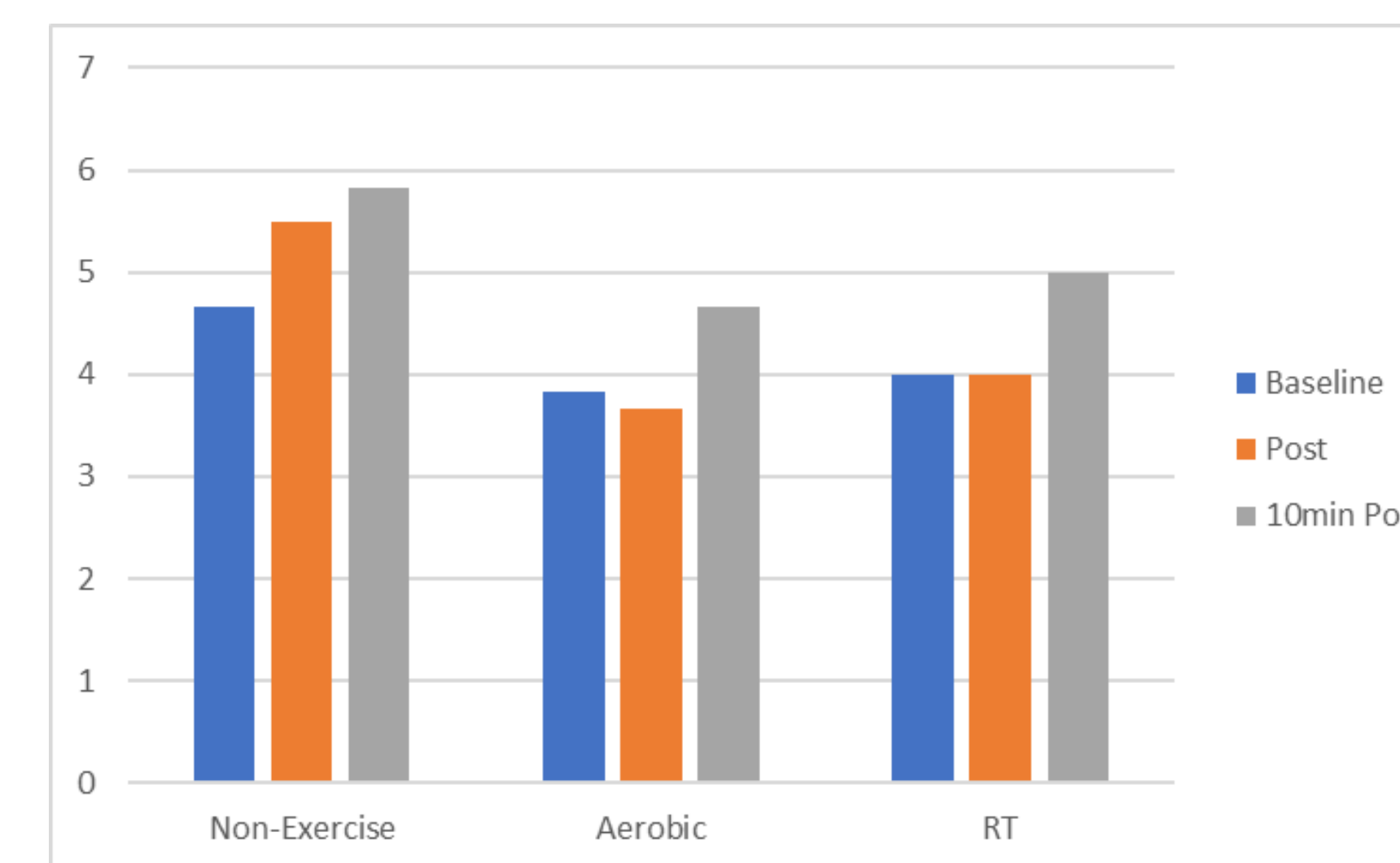


Figure 2. Response to QSU-Brief Question 2

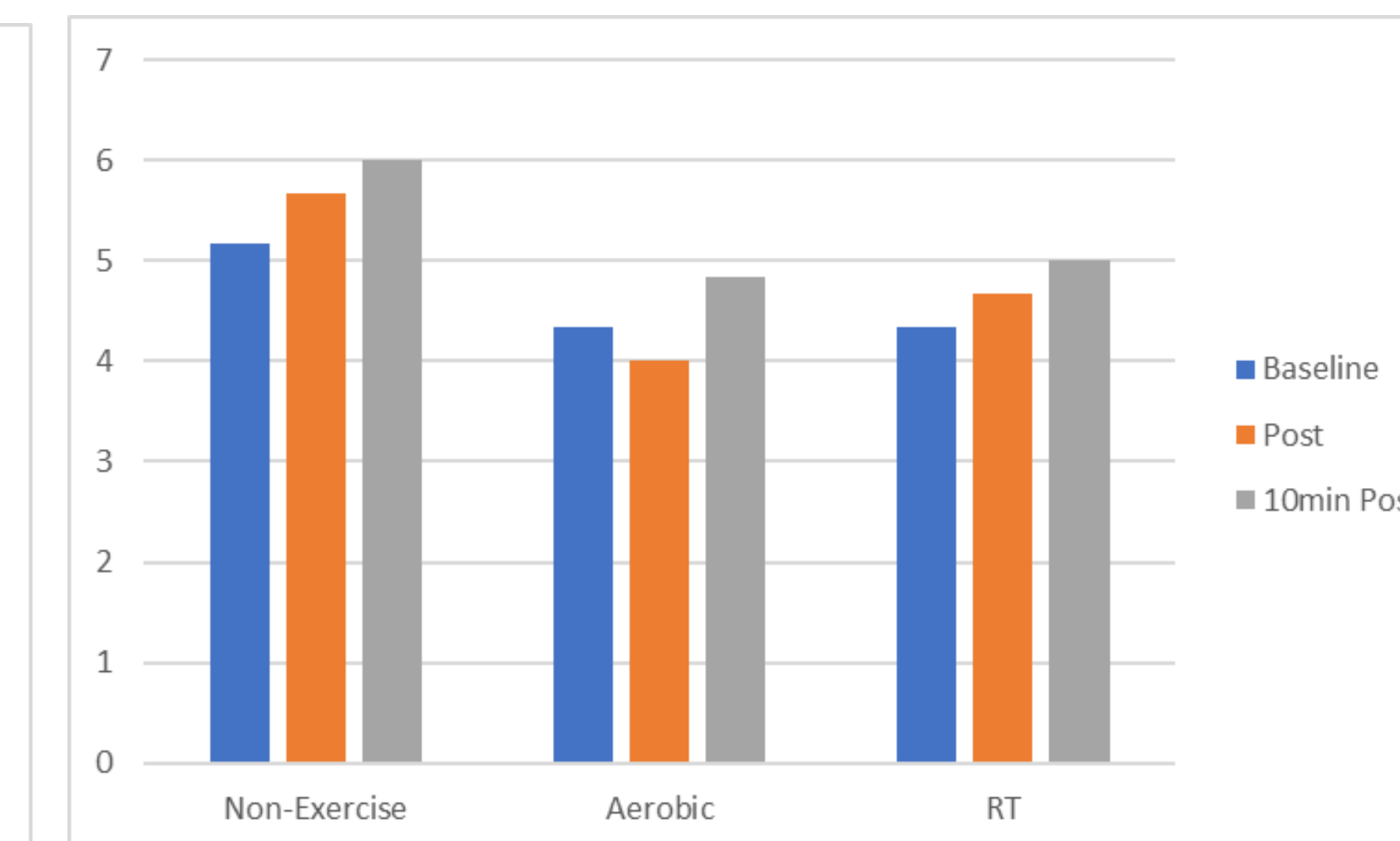


Figure 3. Change in Desire to Juul

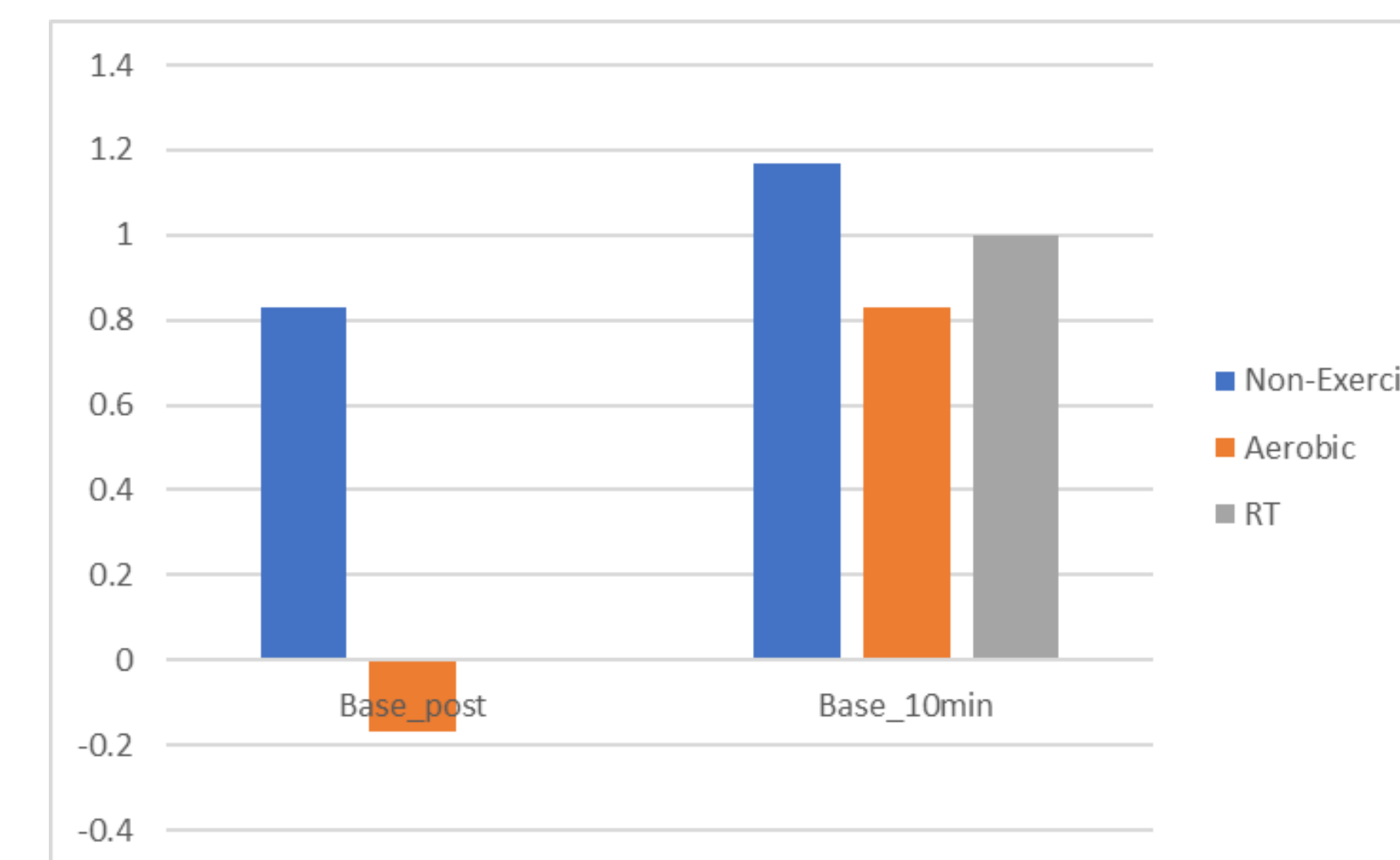


Figure 4. Change in Urge for Juul

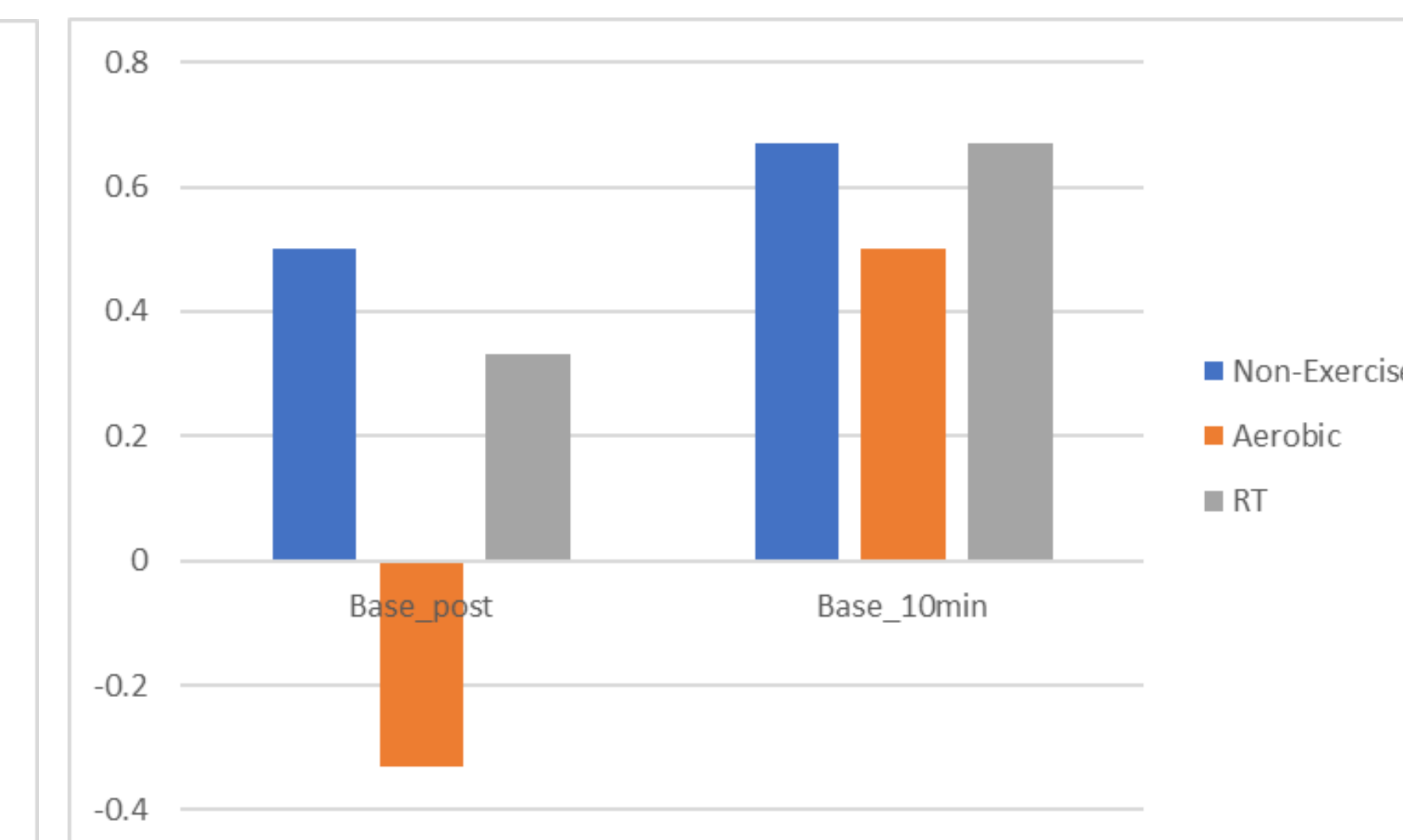


Table 2. Responses to Email Follow Up

Email Follow-Up	Time to Urge (mins)	Time to Use (mins)	Range (mins)
Non-Exercise	15.3 ± 16.4	18.6 ± 17.1	0-45
Aerobic	13.3 ± 16.9	17.7 ± 17.6	0-45
RT	14.5 ± 22.9	18.0 ± 21.8	0-60

*Responses to QSU-brief and Email follow-up questions were not statistically significant

Conclusion

- An acute bout of exercise does not appear to affect college-aged students' Juul urges
- More data will need to be collected as part of this pilot study
- Recruitment methods in the future will need to address student barriers of being identified as a "Juuler" and the negative stigma that is assumed to be associated with this behavior