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Original Research Article

Effectiveness of the ACE Mover Method in Modifying Physical and Mental Health Behavior in College-Aged Students

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ABSTRACT

Introduction: The purpose of this study was to examine the effectiveness of the ACE Mover Method philosophy at positively modifying healthy lifestyle behaviors in college-aged students. It was hypothesized that the ACE Mover Method philosophy would elicit favorable, healthy lifestyle changes during the intervention in college-aged students. **Methods:** 47 college-aged students (age=18-29) and 1 non-traditional student (age=54) of Western Colorado University completed an eight-week intervention of health coach led-weekly meetings based on the ACE Mover Method. Physical and mental health outcomes were measured through questionnaires and in-person testing at baseline, mid-program, and post-program. **Results:** 22 out of 26 physical and mental health outcomes either positively transitioned or maintained the desired outcome from baseline to post-program. Although little statistical significance ($p > 0.05$) was found, the transitions held clinical and practical significance. Participants successfully adapted positive behavior change practices as shown through the decrease in both total barriers faced and need for external accountability. Three individual responses were analyzed, highlighting the Mover Method's flexibility to work with a variety of students. **Discussion:** The data supports the hypothesis, showing effectiveness of the ACE Mover Method in modifying college-aged students' behaviors. The length of the present study may have led to a lack of significant differences, yet the individualized approach to the Mover Method meetings potentially explains the improvements in physical and mental health outcomes and the behavior change improvements. **Conclusion:** The Mover Method serves as an avenue to elicit positive changes in college-aged students and should be considered in university programming and in any health professional-client relationship.

KEYWORDS: Behavior Change, Habits, Health Coaching, Personalized Relationships.

Introduction

While attending an institution of higher education, students experience unfamiliar hardships such as heavy academic load, increased responsibilities, financial burden, and navigating a work-life balance¹. These hardships place additional strain on the overall health and wellness of the students, which likely contributes to the continued prevalence of health-risk behaviors seen in this population. Health-risk behaviors are classified as actions taken and/or not taken that negatively influence physical, behavioral, and mental health². Examples include physical inactivity, increased sedentary behavior, poor nutrition habits, inadequate sleep quality and quantity, and poor stress management. Numerous epidemiological studies, surveys, and meta-analyses show large percentages of college-aged students displaying these behaviors^{3,4,5,6,7}. For example, in the 2021 American College Health Association shared that over 50% of the 19,000 students surveyed were not meeting the recommended weekly exercise duration and frequency³. The aforementioned health-risk behaviors contribute to poor physical and mental health outcomes; both of which have been repeatedly shown to be prevalent in college-aged students^{8,9,10,11}. Unfortunately, these health-risk behaviors and their subsequent health outcomes are associated with increased morbidity and mortality risk^{2,12,13}.

Attenuating these risks is vital to improving the long-term health forecast of these

students and can be done through primary prevention or secondary treatment options. Nearly 40% of deaths in the United States are due to behavioral causes that with proper prevention could potentially have been avoided¹⁴. Prevention is typically categorized into three types: primary, secondary, and tertiary¹⁵. Primary prevention, designed to reduce incidence of disease in apparently healthy and at-risk individuals, has proven effective at attenuating risk and reducing the overall price paid (lives, quality of life, and economic cost)¹⁵. Primary prevention includes identifying risk factors as a consequence of unhealthy lifestyle behaviors, and then modifying those behaviors positively to achieve healthy outcomes (i.e., lowering risk factors). Numerous behavior-change strategies exist and have proven beneficial at identifying stage of change to positively modify behavior of college-aged students. The Transtheoretical Model and Health Belief Model are two examples of these successful strategies^{16,17,18}. While these models can identify if students are ready to change behavior, they lack direction to administer changes in behaviors and habits. Existing interventions, such as the Fit Into College and Graduate Ready for Activity Daily programs, have produced varying outcomes when attempting to modify college-aged students behavior^{19,20}.

The American Council on Exercise's (ACE) Mover Method philosophy has successfully improved cardiometabolic health and positively facilitated lifestyle change in a

general, non-smoking population of college-aged students and community members²¹. The Mover Method uses client-centered interactions to help the client identify desired areas of change, break down barriers, and advise techniques to change habits. Although the intervention yielded significant, positive results, a limitation lies in the applicability to specific populations because the studied subject pool was greatly heterogeneous. There is no present data on how the Mover Method influences behavioral change in more homogeneous populations and specifically college-aged students. An understanding of how the Mover Method intervention works in a college-aged student population would prove beneficial, as college students could benefit from positive behavior change.

The purpose of the present study was to examine the effectiveness of the ACE Mover Method philosophy at modifying and maintaining healthy lifestyle behaviors in college-aged students. Similar to previous findings, it is hypothesized the ACE Mover Method philosophy will elicit favorable, healthy lifestyle behavior changes following the intervention for college-aged students.

Methods

Participants

One hundred and one university students (ages 18-54) students enrolled at Western Colorado University (WCU) expressed initial interest to participate in the present study with 55 participants following through and volunteering to participate.

Participants were included if they were enrolled as a part-time or full-time student at WCU for the spring 2022 semester, were willing to participate in an 8-week program, and were not pregnant or trying to get pregnant. Recruitment of the participants included word-of-mouth, hard-copy and electronic flyers, and promotional emails. Most participants (n=45) resided in Gunnison, Colorado while a small portion (n=3) were distance learners from New York (n=1), Florida (n=1), and Puerto Rico (n=1). For the participants available for in-person participation, the following locations on WCU's campus were used: High Altitude Performance (HAP) Lab, Mountaineer Field House, University Center, and Residence Halls. Other locations outside of WCU's campus include local biking or hiking trails, community events, and local coffee shops or restaurants. All participants provided informed consent prior to their involvement in the study. This study was approved through the Human Research Committee at Western Colorado University [HRC-2021-01-01-R12].

Experimental Design

All interested students voluntarily completed an online survey during the Fall 2021 semester designed to gauge interest and involvement in the study. Participants accessed the survey via promotional emails, hard-copy fliers, or direct contact with one of the members of the research team. Once completed, a health coach (HC) confirmed their eligibility of participation and

instructed the participants to expect the next communication to come the week before the Spring 2022 semester. Once all participants completed the survey, the research team divided the participants into cohorts for each HC to be responsible for based on HC availability (Figure 1).

Due to an increased risk of COVID-19 variants, Western Colorado University administration delayed in-person classes two weeks from the originally planned start date of the spring semester. This led to a two-week delay of the present study. During the two weeks of remote learning, HCs scheduled their participants' baseline testing. Figure 2 depicts the remainder of the experimental design.

Procedures

Interest Survey

Upon expressing interest in the study participants completed a seven-question online survey that included questions regarding inclusion criteria, goals for the next year, what aspects of health and wellness they want to work on, and any barriers they are facing to improving their health. One hundred and one students completed the survey.

Initial Reach Out and Questionnaires

Starting January 3rd, the HCs emailed the participants in their cohort an introduction of themselves and electronic copies of the informed consent and questionnaires. The questionnaires included are listed below with a brief explanation of their importance

(each questionnaire other than the PAR-Q was included to track changes of outcomes throughout the study):

- **PAR-Q (Physical Activity Readiness Questionnaire):** To assess the participants' ability to exercise safely in order for the HCs to confidently recommend exercise as a behavior to change;
- **Self-Reported Physical Fitness:** To understand participants' current interpretation of their physical fitness through the ranking of 5 questions on a scale of 1-5;
- **Student Mental Health Self-Assessment Questionnaire:** To understanding participants' current interpretation of their mental health through the ranking of 14 questions on a scale of 1-5;
- **Sedentary Behavior Questionnaire:** To highlight participants' sedentary behavior during an average weekday and weekend day by listing average duration of 9 categories of sedentary behavior;
- **The Simple Lifestyle Indicator Questionnaire – Diet (vegetables, fruit, fiber):** To learn the participants' weekly dietary habits as a whole and divided into specific categories;
- **The Simple Lifestyle Indicator Questionnaire – Exercise (Light, Moderate, Vigorous Intensity):** To learn the participants' weekly exercise habits in terms of frequency each intensity of exercise occurs, leading to total weekly exercise duration;
- **The Simple Lifestyle Indicator Questionnaire – Alcohol Consumption:** To learn the participants' weekly alcohol consumption in terms of number of drinks consumed.

Participant Distribution

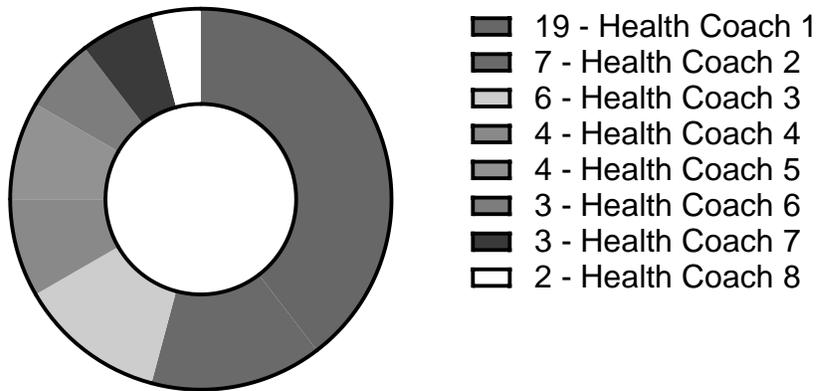


Figure 1. Participant Distribution between Health Coaches

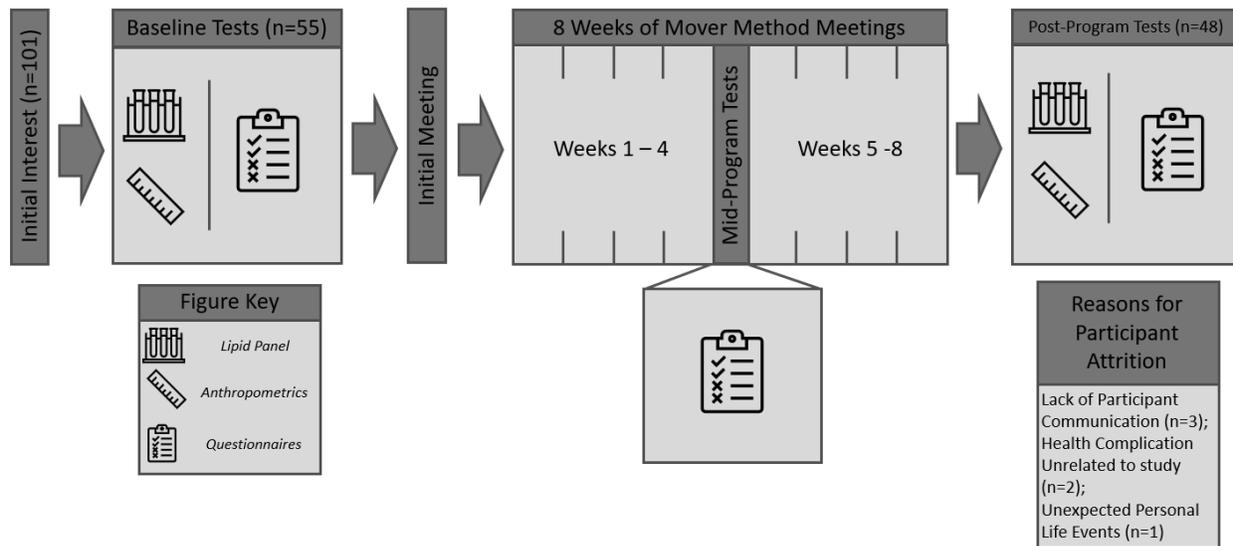


Figure 2. Experimental Design Flow Chart

Participants either sent back completed forms electronically or were instructed to bring a hardcopy during their baseline testing day. Students who did not respond to the initial email were contacted two additional times before being excluded from the study. Fifty-five students communicated effectively and were included as participants.

Testing Days

Testing days occurred twice during the program: (1st) within the first two weeks of in-person classes of the Spring 2022 semester and (2nd) within the first two full weeks of April 2022. Each testing day consisted of five, one-hour blocks with up to five participants tested in each block. In a block, each participant went through four stages.

Stage 1: Informed Consent and Questionnaires

A HC greeted participants and answered any questions regarding the documents and confirmed that all forms were completed. Extra hard copies of all documents were available in the event any participant did not previously complete them or forgot them.

Stage 2: Fasting Blood Lipid Profile

One to two HCs clarified that each participant was in a fasted state of at least eight hours. The HC, a trained technician, administered the basic blood lipid/glucose panel via fingerprick via lancet (Medipurpose, Brussels, Belgium). A capillary sample of blood (0.7-40 microliters, 2-3 drops) was collected into a heparin-

coated 40 µl capillary tube (Abbott, Abbott Park, IL). The collected sample was analyzed by LDX Cholestech analyzer (Abbott, Abbott Park, IL) revealing high density lipoprotein cholesterol (HDL-C), low density lipoprotein cholesterol (LDL-C), total cholesterol (TC), triglycerides (TG), and blood glucose (GLU). HCs ensured that each participant experienced no side effects. HCs confirmed a correctly read sample before encouraging participants to eat a small snack and continue.

Stage 3: Anthropometric Measures

One to two HCs measured the anthropometrics listed below:

- 1) Resting Heart Rate (HR) and Oxygen Saturation (SpO₂)

Subjects sat comfortably in a chair with feet on the floor and a pulse oximeter (Concord Health Supply, Skokie, IL) was placed on the index or pointer finger of the right or left hand to measure HR and SpO₂.

- 2) Resting Blood Pressure (BP)

While remaining seated from resting HR and SpO₂, a HC placed a BP cuff (Mabis Healthcare, Inc., Lake Forest, IL) on the brachial artery just above the antecubital fossa on the subject's left arm with that arm rested at heart level on the researcher's shoulder or table. The BP cuff was inflated to 220 mmHg and released at 2-3 mmHg per second while researcher listened with a stethoscope (Mabis Healthcare, Inc., Lake Forest, IL) for the first and last Korotkoff sounds indicating systolic and diastolic BP measures respectively.

3) Height and Weight

All subjects were instructed to remove their shoes and any bulky clothing for measurement. Height (cm) and weight (kg) were collected to the nearest tenth on a medical grade scale and attached stadiometer (Tanita, Arlington Heights, IL).

4) Waist Circumference

While standing, HCs asked the participant to slightly raise their shirt while the HC placed the tape measure (Stanley 30-454, Stanley Black and Decker, New Britain, CT) around the narrowest point above the umbilicus and below the xiphoid process. The participant was then instructed to place their arms at their side and take a deep breath. The HC recorded to the nearest half centimeter after the exhale of the breath. This was repeated two more times.

All anthropometric measure procedures followed previously established procedures²².

Initial Meeting with Health Coach

Health coaches conducted an initial meeting with every participant in their cohort during the first two weeks of in-person classes of the Spring 2022 semester, either before or after the participant's baseline testing – depending on the schedule of the HC and participant. These meetings took place in-person or over Zoom and lasted 20-30 minutes. The HC had the following goals for these student-centered meetings:

- Start to build rapport and trust with the participant;
- Discuss the participant's goals for the program;

- Discuss any potential barriers to improving well-being the participant currently faces or foresees facing;
- Discuss the participant's desired involvement of the HC;
- Answer any questions the participant may have;

All discussion points were recorded by the HC and then later categorized based on the underlying theme of the comment.

Mover Method Meetings

Starting the third week of in person classes of the Spring 2022 semester, participants began meeting with their HCs for weekly 10–15-minute Mover Method Meetings. These meetings were individualized to each participant's goals and needs. Health coaches were provided scenarios of the Mover Method Meetings as a part of their training. Every meeting was designed to collaboratively focus on positive lifestyle change (e.g., exercise, stress reduction, decreasing sedentary behavior, or improved diet). The HC followed these steps for each meeting:

Step 1 – Asking Open Ended Questions: The HC would ask powerful, open-ended questions to identify what the participant hoped to accomplish.

Step 2 – Breaking Down Barriers: Once the HC understood the desired goal(s), they would ask additional questions aimed at breaking down barriers the participant faces to achieving their goal(s). The HC would try to not impose their own opinions, but rather encourage the participant to honestly reflect on their own experiences. For example,

questions such as “What needs to change in order to accomplish your goal?” and “What habits do you have now that are getting in the way of your goal?” were asked.

Step 3 – Collaboration: Finally, once the HC understood the desired goals and barriers, they began collaborating on the best course of action moving forward. This included the development of SMART goals and tactics the HC could use to assist the participant (e.g., sending a reminder text halfway through the week or joining them for a workout at the gym). Similar to Step 2, the participant was encouraged to lead the discussion in hopes of feeling empowered to take ownership of their journey.

Statistical Analyses

All analyses were performed using SPSS Version 28.0 (IBM Corporation, New York, NY, USA) and GraphPad Prism 9.0. (San Diego, CA). Measures of centrality and spread are presented as mean (M) \pm standard deviation (SD) or as (M, SD). Descriptive statistics of attributes, goals, and barriers were run to create a profile for the sample population. All recorded measures on testing days (questionnaires and physiological markers) were classified as primary outcome measures. Paired-samples t-tests were used for outcomes measured at baseline and post-program (physiological markers measured during the in-person testing days). Linear mixed model repeated measures was used for all outcomes from questionnaires to compare means throughout the program based off baseline, mid-program, and post-program values. The

probability of making a Type I error was set at $p < 0.05$.

Results

Participant retention was 87%, with 48 of the original 55 participants completing the eight weeks of Mover Method meetings and the three testing requirements. Reasons for participant attrition include: no communication from participant (n=4), health complication unrelated to participation (n=2), and unexpected personal life events (n=1). No adverse effects relating to the in-person testing days or advice giving from the HCs were reported.

During the process of assessing normality of the data, one participant’s results were identified as an outlier and removed from the within-group analyses. The outlier’s results will be discussed in the *Individual Responses* section of the Results.

Physical Health Outcomes

Anthropometrics

The anthropometric data over the course of the eight weeks for all, male, and female participants are presented in Table 2. Based on the paired-samples t-tests, there were no statistically significant differences between baseline testing and post-program testing ($p > 0.05$).

Blood Work

or all participants, males, and females there were no statistically significant differences between baseline testing and post-program testing for HDL-C, TC, TG, and GLU ($p > 0.05$).

For all participants and females there were no statistically significant differences between baseline testing and post-program testing for LDL-C as well ($p > 0.05$). For males, there was a statistically significant decrease in mean LDL-C from baseline to post-program ($p < 0.05$).

The blood work data over the course of the eight weeks for all, male, and female participants are presented in Table 3.

Exercise and Fitness

To interpret exercise and fitness change, SRPF (self-reported physical fitness), Total Exercise Score, Light Intensity Exercise Score, Moderate Intensity Exercise Score, and Vigorous Intensity Exercise Score were measured. These data over the course of the eight weeks for all, male, and female participants varied in statistical significance and are presented in Table 4.

Lifestyle

To interpret lifestyle change, Weekday Sedentary Behavior, Weekend Sedentary Behavior, Diet (vegetables, fruit, and fiber), and Alcohol Consumption were measured. These data over the course of the eight weeks for all, male, and female participants varied in statistical significance and are presented in Table 5.

Mental Health Outcomes

To interpret change in mental health outcomes, SRMH (self-reported mental health) and Life Stress were measured. These data over the course of the eight

weeks for all, male, and female participants varied in statistical significance and are presented in Table 6.

Mover Method Meeting Trends

Initial Meetings

The responses in the “A” (asking open ended questions) portion of the ABCs during the initial meeting were the types of goals the participants hoped to focus on, and totaled 130. The goal categories and count distribution were as follows: Exercise (33.59%), Nutrition (16.03%), Mental Health (16.79%), Sleep (8.40%), Academics (6.87%), and Lifestyle (17.56 %).

The responses in the “B” (breaking down barriers) portion of the ABCs during the initial meeting were the current and potential barriers to achieving goals, and totaled 101. The barrier categories and count distribution were as follows: Motivation (33.66%), Lack of Knowledge/Understanding (12.87%), Lack of Time (20.79%), Financial (5.94%), Health (6.93%), and Other (19.80%). Answers classified as ‘Other’ included: self-conscious at the gym, accountability, imposter syndrome, and distractions.

The responses in the “C” (collaboration) portion of the ABCs during the initial meeting were accountability-based collaboration efforts, and totaled 48. The collaboration categories and count distribution were as follows: Only the Weekly Meetings (45.10%), Dispersed Check-Ins (once or twice a week) (21.57%),

and Occasional Check-Ins (three or four times per week) (33.33%).

Weekly Meetings

Over the eight weeks of meetings, the topics discussed in the “A” portion of the ABCs were counted and distributed into these categories, followed by their week-one total, week-eight total and percent change: Started a New Goal (19, 2, +850%), No Progress on a Current Goal (13, 13, 0%), Progress on a Current Goal (44, 52, 15.38%), Other (0, 0, 0%). Answers classified as ‘Other’ included “successfully working around barriers” and “accidentally stopped vaping” and were discussed in weeks 2-7.

Over the eight weeks of meetings, the topics discussed in the “B” portion of the ABCs were counted and distributed into these categories, followed by their week-one total, week-eight total and percent change: Total Barriers (62, 33, -88%), Motivation (22, 8, -175%), Lack of Knowledge/Understanding (7, 1, -600%), Lack of Time (16, 13, -23.07%), Health (6, 3, -100%), Current Environment (6, 7, 14.28%), and Other (5, 0, unapplicable). Answers classified as ‘Other’ included “more tired from working out”, “no foreseeable barriers this week”, “Spring break”, “fear of attending the gym alone”, “unexpected variables”, “unexpectedly busy week”, “procrastination”, and “lack of energy”.

Over the eight weeks of meetings, the topics discussed the “C” portion of the ABCs were counted and distributed into these

categories, followed by their week-one total, week-eight total and percent change: Create New Goal (36, 7, -414.28%), Progress Current Goals (36, 47, 23.40%), Text Reminders (15, 3, -400%), Programming (2, 0, unapplicable), and In-Person Assistance (6, 1, -500%).

Individual Responses

Participant 5’s characteristics are presented in Table 7, Physical Health Outcomes are presented in percent change with Figures 3 & 4, and Mental Health Outcomes are presented in percent change with Figure 5.

Participant 26’s characteristics are presented in Table 7 and Physical Health Outcomes are presented in percent change with Figure 6, and Mental Health Outcomes are presented in percent change with Figure 7.

The Outlier Participant’s characteristics are presented in Table 7, Physical Health Outcomes are presented in percent change with Figures 8 & 9, and Mental Health Outcomes are presented in percent change with Figure 10.

Percent of Participants in the Lowest Quartile for Outcomes

Figures 11-15 depicts the change in percent of total participants in the lowest quartile from baseline to post-program for the following outcomes respectively: anthropometrics, blood work, exercise and fitness, lifestyle, and mental health outcomes.

Table 1. Participant Characteristics

	All (n=45*)	Male (n=16)	Female (n=29)
Age	22.16 ± 2.79	22.00 ± 1.97	22.25 ± 3.19
Year in School	First Year: 2	First Year: 0	First Year: 2
	Second Year: 10	Second Year: 5	Second Year: 5
	Third Year: 7	Third Year: 1	Third Year: 6
	Fourth Year: 18	Fourth Year: 8	Fourth Year: 10
	First Year Grad: 3	First Year Grad: 1	First Year Grad: 2
	Second Year Grad: 5	Second Year Grad: 1	Second Year Grad: 4
Living Situation	On-Campus: 21	On-Campus: 8	On-Campus: 14
	Off-Campus (Gunnison): 20	Off-Campus (Gunnison): 8	Off-Campus (Gunnison): 12
	Distance Learner: 3	Distance Learner: 0	Distance Learner: 3

* Not including 2 incomplete forms and 1 outlier

Table 2. Physical Outcome Measures: Anthropometrics

	Baseline			Post-Program		
	All	Male	Female	All	Male	Female
Body Mass (kg)	71.02 ± 15.86	78.94 ± 17.48	66.04 ± 12.70	71.11 ± 15.12	74.55 ± 16.06	68.76 ± 14.35
Waist Circumference (cm)	79.78 ± 11.37	84.88 ± 12.12	76.57 ± 9.77	79.94 ± 10.06	80.73 ± 9.92	79.42 ± 10.33
Resting Heart Rate (bpm)	78.55 ± 15.05	78.88 ± 18.61	78.33 ± 12.70	75.34 ± 11.55	79.13 ± 14.10	72.87 ± 9.04
Systolic BP (mmHg)	113.45 ± 11.30	116.00 ± 10.58	111.85 ± 11.63	113.55 ± 9.67	113.60 ± 8.39	113.52 ± 10.60
Diastolic BP (mmHg)	73.57 ± 7.74	75.00 ± 7.04	72.67 ± 8.15	71.89 ± 9.49	71.20 ± 7.04	72.35 ± 10.92
MetS z-score	-0.55 ± 0.66	-0.27 ± 0.48	-0.71 ± 0.70	-0.57 ± 0.75	-0.45 ± 0.82	-0.66 ± 0.70
MetS Criteria	1.22 ± 1.00	1.50 ± 0.94	1.04 ± 1.02	0.89 ± 1.02	0.86 ± 0.95	0.90 ± 1.09

Note: MetS = Metabolic Syndrome

Table 3. Physical Outcome Measures: Blood Work

	Baseline			Post-Program		
	All	Male	Female	All	Male	Female
HDL cholesterol (mg·dl ⁻¹)	48.10 ± 19.49	38.80 ± 9.73	53.92 ± 21.87	50.49 ± 18.35	45.64 ± 18.59	53.71 ± 17.90
LDL cholesterol (mg·dl ⁻¹)	106.97 ± 31.01	112.38 ± 30.26	103.06 ± 31.81	95.62 ± 28.56	94.00 ± 31.60†	96.33 ± 28.04
Total Cholesterol (mg·dl ⁻¹)	165.85 ± 34.48	161.07 ± 35.93	168.83 ± 33.97	165.91 ± 31.09	164.64 ± 37.27	166.76 ± 27.18
Triglycerides (mg·dl ⁻¹)	89.05 ± 39.51	82.67 ± 32.60	93.04 ± 43.45	97.49 ± 52.07	92.86 ± 59.43	100.57 ± 47.84
Blood Glucose (mg·dl ⁻¹)	88.68 ± 6.95	89.43 ± 6.03	88.25 ± 7.53	89.38 ± 4.69	89.64 ± 6.07	89.20 ± 3.59

Note: HDL = High Density Lipoprotein; LDL = Low Density Lipoprotein

† significant difference between baseline and post-program

Table 4. Physical Outcome Measures: Exercise and Fitness

	Baseline			Mid-Program			Post-Program		
	All	Male	Female	All	Male	Female	All	Male	Female
Self-Reported Physical Fitness Score	14.99 ± 2.51	15.71 ± 2.43	14.63 ± 2.51	16.20 ± 2.79*	17.07 ± 1.69	15.74 ± 3.16*	16.19 ± 3.49†	16.38 ± 4.50	16.07 ± 2.81†
Exercise Score (Total)	12.07 ± 5.28	11.13 ± 6.09	12.57 ± 4.83	13.95 ± 4.34*	15.50 ± 3.82*	13.15 ± 4.44	14.09 ± 4.68†	14.44 ± 5.50†	13.89 ± 4.22
Exercise Score (Light Intensity)	3.19 ± 1.60	3.00 ± 2.04	3.29 ± 1.36	3.37 ± 1.70	3.71 ± 1.90	3.19 ± 1.59	3.95 ± 1.41†	3.63 ± 1.50	4.15 ± 1.35~
Exercise Score (Moderate Intensity)	4.10 ± 1.46	3.57 ± 1.60	4.36 ± 1.34	4.59 ± 1.69	5.15 ± 1.51*	4.30 ± 1.73	4.42 ± 1.98	4.63 ± 2.50	4.30 ± 1.64
Exercise Score (Vigorous Intensity)	5.07 ± 3.35	5.36 ± 3.15	4.93 ± 3.48	6.00 ± 2.92	6.64 ± 2.41	5.67 ± 3.15	5.72 ± 2.91	6.19 ± 2.79	5.44 ± 3.00

Note: * Significant difference between baseline and mid-program; † significant difference between baseline and post-program; ~ significant difference between mid-program and post-program; p < 0.05

Table 5. Physical Outcome Measures: Lifestyle

	Baseline			Mid-Program			Post-Program		
	All	Male	Female	All	Male	Female	All	Male	Female
Sed Beh: Weekday (min)	593.72 ± 350.90	495.00 ± 287.81	646.61 ± 374.53	562.39 ± 375	452.14 ± 194.50	619.56 ± 432.97	493.93 ± 254.37	540.00 ± 338.44	465.6 ± 187.6 ^{†~}
Sed Beh: Weekend (min)	711.63 ± 390.05	627.00 ± 302.36	756.96 ± 427.95	627 ± 244	624.64 ± 218.13	629.44 ± 260.36	575.71 ± 235.87	625.31 ± 240.04	545.2 ± 232.7 [†]
Diet Score (Vegetables)	2.26 ± 1.19	2.79 ± 1.12	2.00 ± 1.15	2.05 ± 1.16	2.43 ± 1.34	1.85 ± 1.03	2.35 ± 1.09	2.69 ± 1.25	2.15 ± 1.0
Diet Score (Fruit)	2.52 ± 1.33	2.50 ± 1.51	2.54 ± 1.26	2.44 ± 1.18	2.71 ± 1.33	2.30 ± 1.10	2.40 ± 1.28	2.69 ± 1.45	2.22 ± 1.2
Diet Score (Fiber)	1.86 ± 1.72	1.71 ± 1.98	1.93 ± 1.61	1.93 ± 1.27	2.43 ± 1.34	1.67 ± 1.18	1.93 ± 1.37	1.69 ± 1.45	2.07 ± 1.3
Al Con (drinks/week)	3.03 ± 3.92	4.47 ± 5.33	2.27 ± 2.72	2.64 ± 3.88	3.94 ± 5.56	1.90 ± 2.28	2.95 ± 3.71	3.44 ± 4.59	2.19 ± 3.1

Note: * Significant difference between baseline and mid-program; † significant difference between baseline and post-program; ~ significant difference between mid-program and post-program; p < 0.05. Sed = Sedentary, Beh = Behavior, Al = Alcohol, Con = Consumption.

Table 6. Mental Health Outcomes

	Baseline			Mid-Program			Post-Program		
	All	Male	Female	All	Male	Female	All	Male	Female
Self-Reported Mental Health	45.45 ± 6.65	46.64 ± 6.99	44.86 ± 6.51	46.95 ± 6.81	49.79 ± 6.45	45.48 ± 6.64	49.42 ± 6.66 ^{†~}	50.56 ± 6.22 ^{†~}	48.74 ± 6.94 ^{†~}
Life Stress	2.79 ± 1.02	3.07 ± 1.21	2.64 ± 0.91	2.89 ± 1.03	3.86 ± 0.86	2.39 ± 0.71	3.02 ± 1.08	3.69 ± 0.87	2.63 ± 1.01

Note: * Significant difference between baseline and mid-program; † significant difference between baseline and post-program; ~ significant difference between mid-program and post-program; p < 0.05

Table 7. Individual Response Participants' Characteristics

	Participant 5	Participant 26	Outlier Participant
Sex	Male	Female	Male
Age	25	22	54
Year in School	Senior	2 nd Year Graduate	Junior
Living Situation	Off Campus (Gunnison)	Distance Learner	On Campus

Table 8. Health Coach Benefits

Health Coach	What are some things you learned?	How has your involvement helped your grow as a student, researcher, person, leader, or mentor?
1	I learned that just listening can have a huge impact	I have grown as a person by learning from those I was helping. I think as a researcher it's helped me be more flexible.
2	I learned about Hawaiian culture, and I learned about Puerto Rican culture.	It has helped me become better at asking open ended questions.
3	I learned the seven second pause without filling in for the subject, so they were able to speak for what they wanted to work through in their goals	This study taught me to be a little bit more comfortable outside of my comfort zone in making these new friendships with my subjects and being someone they could rely on through the study.
4	I have learned that sometimes outside forces does effect goals, but usually planning for those and not beating yourself up during or after helps keep progress going.	I have matured in my time as a researcher and I have a better understanding of time management, individual leadership, and I am more confident in myself to change my own behavior.
5	I learned how to give a walk test, take blood pressure, measure people, I learned about hydrostatic weighing and what the different lipids in our blood are/ mean. I also learned a lot about habits (obviously) and how to start new ones or change old ones. I learned how to communicate with subjects and how to listen.	It helped me grow in all those areas. I think it especially helped me feel more confident sharing the knowledge that I know, with my teammates and my subjects. I definitely grew as a student, I had a lot of deadlines that I was not used to having to keep track of, and also meeting with different people every week made me have to keep a schedule which I know really enjoy. It also really grew my team member skills as well, I have not ever been in a team like that and I actually really enjoyed it.
6	Being a part of the study required me to consider the way that I was framing questions. I tried to make sure that my questions were not suggestive, that they were open-ended, and that they would encourage reflection. Having to practice this with several participants on a weekly basis allowed me to refine the skill. I learned that people's journeys to achieve a goal are all pretty similar. We plan for change but are often met with unexpected setbacks that slow our progress. "Progress is not linear", is a I that I saw play out in real life each week	I believe that my involvement with this study reshaped the way that I view goal setting. Each week I had to remind others that making small changes was the best approach a goal. In doing so I was more conscious of the small but significant choices that I was making on a day-to-day basis. In reminding others how to be patient, persistent, and gentles with themselves, I was often able to remind myself of the same.
7	How important communication is for behavior change. Obviously, everyone will respond to a slightly different motivation style to enact change. But every person I worked with talked about how talking about the goals with someone made it feel more real and thus easier for them to work on that goal.	It has improved confidence when talking to individuals about, really anything. This whole semester was really just a training in active listening and how not to give be all end all advice someone has to follow, but more being able to give people the space and slight push in the right direction to find things one their owe. I thought that would be a more challenging task, but it turned out to be rather easy.

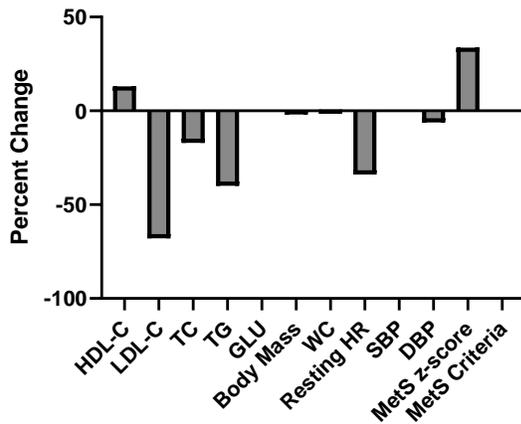


Figure 1. Participant 5's Physical Outcome Measures: Blood Work and Anthropometrics

Note: All outcomes were in the desired range both at baseline and post-program

HDL-C = High Density Lipoprotein Cholesterol; LDL-C = Low Density Lipoprotein Cholesterol; TC = Total Cholesterol; TG = Triglycerides; GLU = Blood Glucose; WC = Waist Circumference; HR = Heart Rate; SBP = Systolic Blood Pressure; DBP = Diastolic Blood Pressure; MetS = Metabolic Syndrome

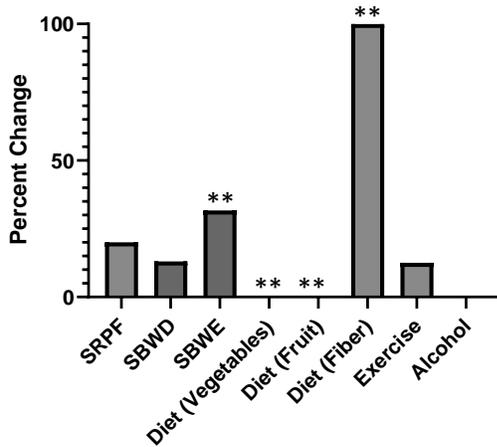


Figure 2. Participant 5's Physical Outcome Measures: Exercise and Lifestyle

Note: ** outcomes were not in desirable ranges both at baseline and post-program

SRPF = Self-Reported Physical Fitness; SBWD = Sedentary Behavior Weekday; SBWE = Sedentary Behavior Weekend

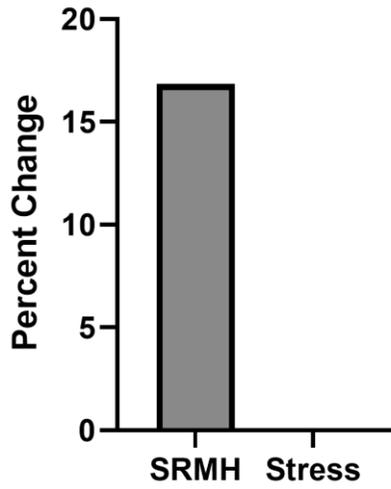


Figure 3. Participant 5's Mental Health Outcomes

Note: All outcomes were in the desired range both at baseline and post-program

SRMH = Self-Reported Mental Health

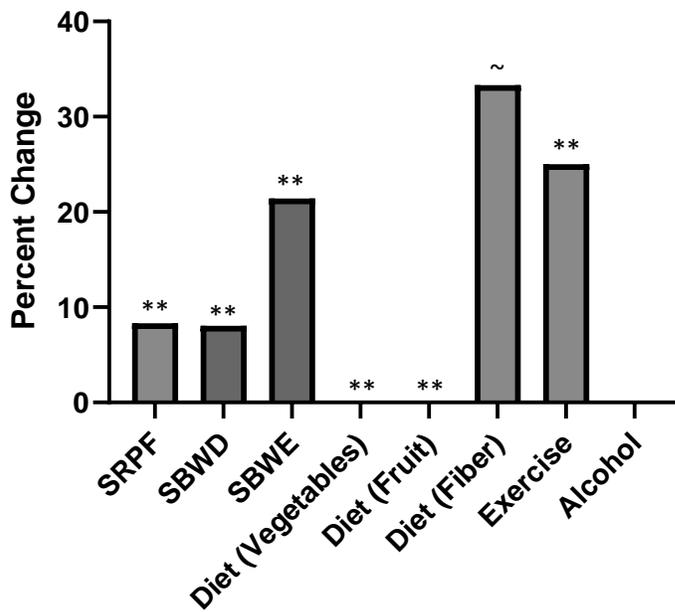


Figure 4. Participant 26's Physical Health Outcomes

Note: ~ Outcomes were not in desirable ranges for baseline; ** outcomes were not in desirable ranges both at baseline and post-program

SRPF = Self-Reported Physical Fitness; SBWD = Sedentary Behavior Weekday; SBWE = Sedentary Behavior Weekend

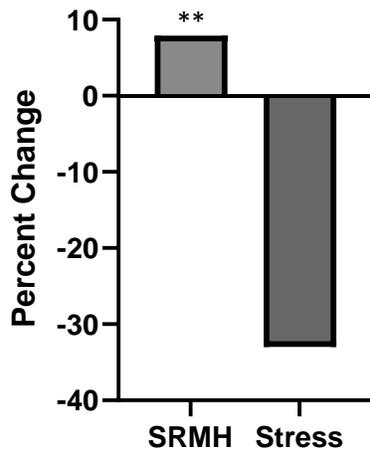


Figure 5. Participant 26's Mental Health Outcomes

Note: ** outcomes were not in desirable ranges both at baseline and post-program

SRMH = Self-Reported Mental Health

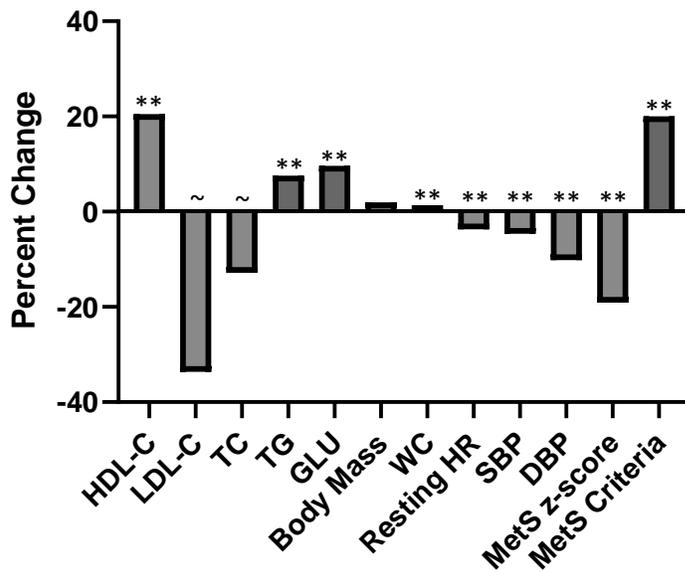


Figure 6. The Outlier's Physical Health Outcomes: Blood Work and Anthropometrics

Note: ~ Outcomes were not in desirable ranges for baseline; ** outcomes were not in desirable ranges both at baseline and post-program

HDL-C = High Density Lipoprotein Cholesterol; LDL-C = Low Density Lipoprotein Cholesterol; TC = Total Cholesterol; TG = Triglycerides; GLU = Blood Glucose; WC = Waist Circumference; HR = Heart Rate; SBP = Systolic Blood Pressure; DBP = Diastolic Blood Pressure; MetS = Metabolic Syndrome

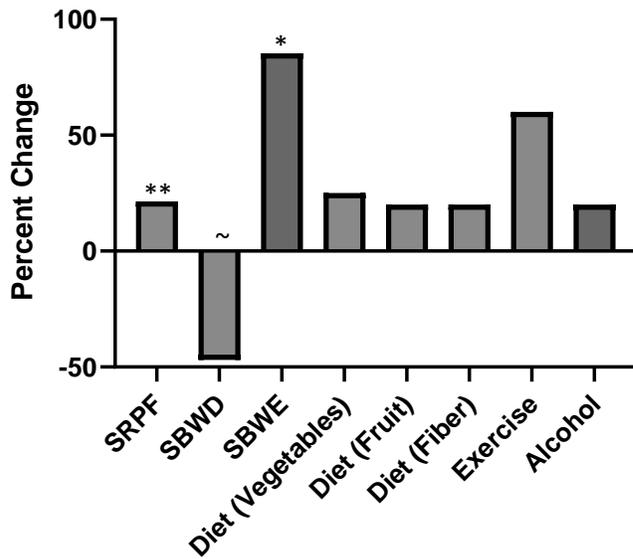


Figure 7. The Outlier's Physical Health Outcomes: Exercise and Lifestyle

Note: ~ Outcomes were not in desirable ranges for baseline; * Outcomes were not in desirable ranges for post-program; ** outcomes were not in desirable ranges both at baseline and post-program
 SRPF = Self-Reported Physical Fitness; SBWD = Sedentary Behavior Weekday; SBWE = Sedentary Behavior Weekend

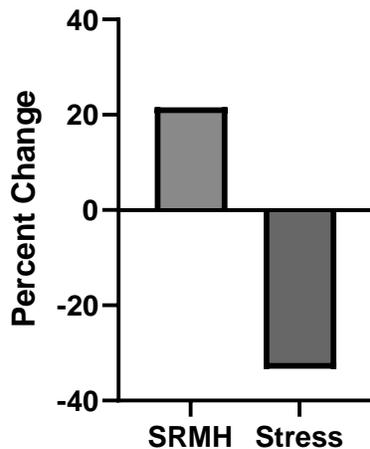


Figure 8. The Outlier's Mental Health Outcomes

Note: ~ Outcomes were not in desirable ranges for baseline
 SRMH = Self-Reported Mental Health

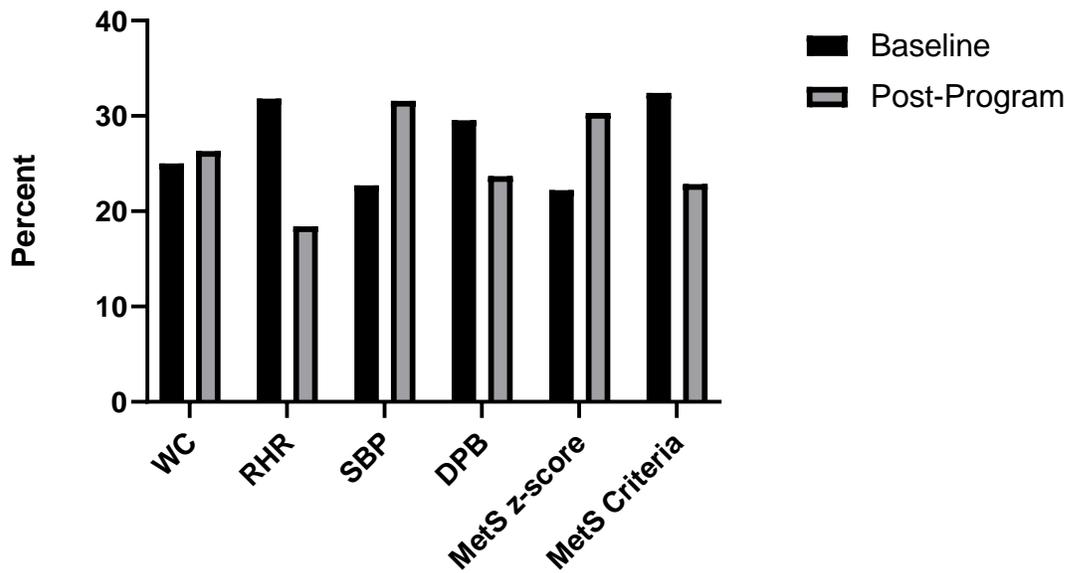


Figure 9. Percent of all Participants in the Lowest Quartile of Physical Health Outcomes: Anthropometrics

Note: WC = Waist Circumference; RHR = Resting Heart Rate; SBP = Systolic Blood Pressure; DBP = Diastolic Blood Pressure; MetS = Metabolic Syndrome

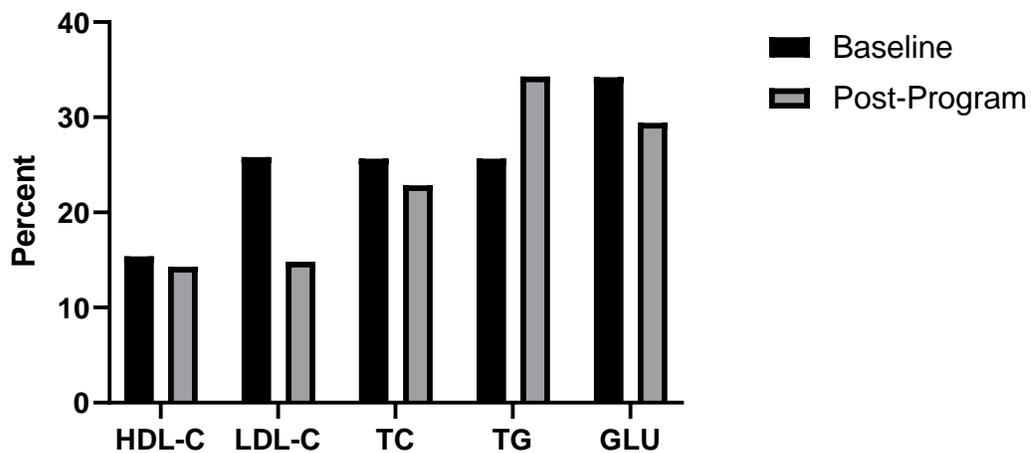


Figure 10. Percent of all Participants in the Lowest Quartile of Physical Health Outcomes: Blood Work

Note: HDL-C = High Density Lipoprotein Cholesterol; LDL-C = Low Density Lipoprotein Cholesterol; TC = Total Cholesterol; TG = Triglycerides; GLU = Blood Glucose

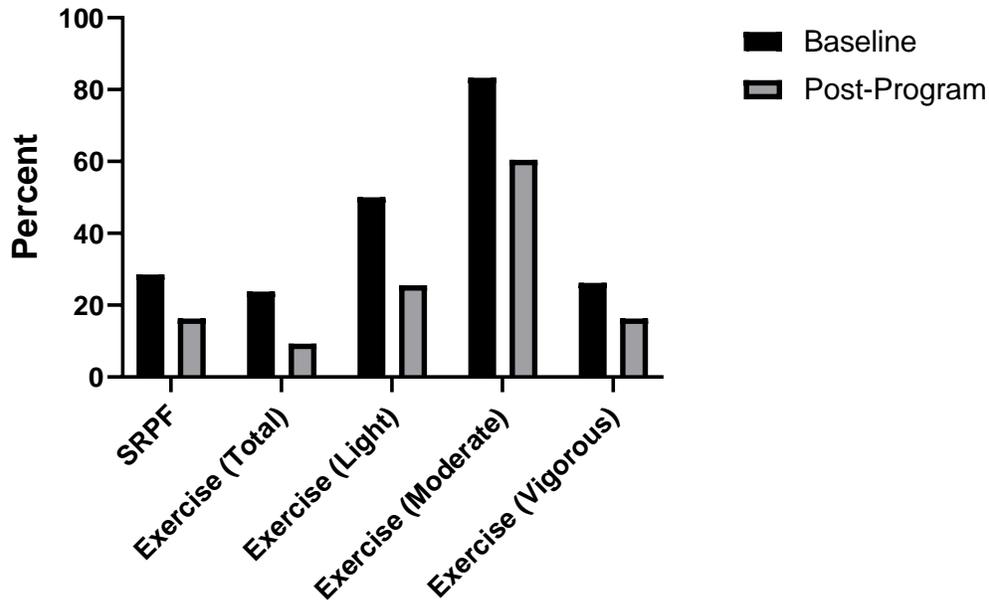


Figure 11. Percent of all Participants in the Lowest Quartile of Physical Health Outcomes: Exercise and Fitness

Note: SRPF = Self-Reported Physical Fitness

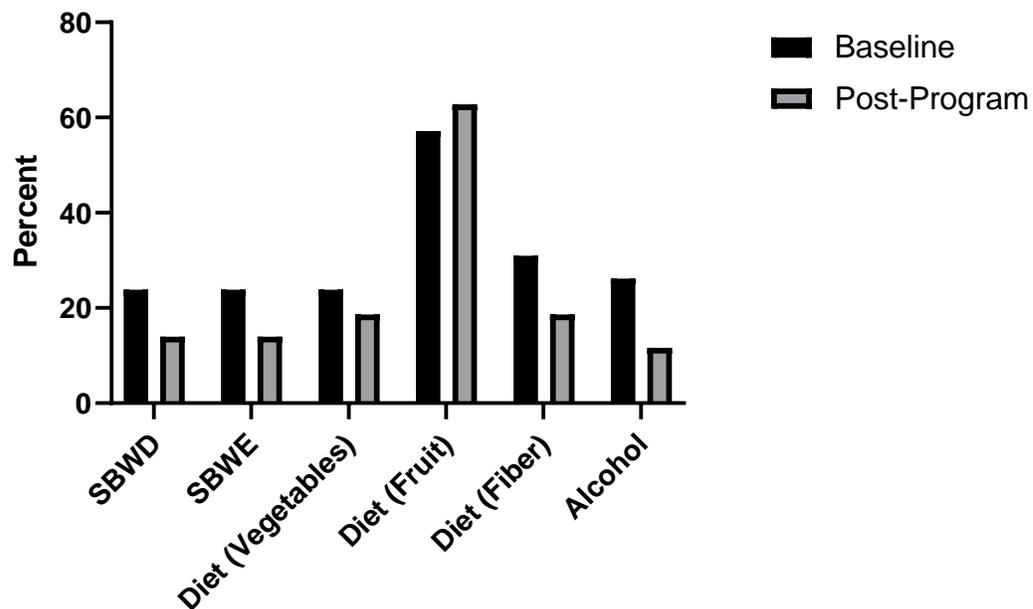


Figure 12. Percent of all Participants in the Lowest Quartile of Physical Health Outcomes: Lifestyle

Note: SBWD = Sedentary Behavior Weekday; SBWE = Sedentary Behavior Weekend

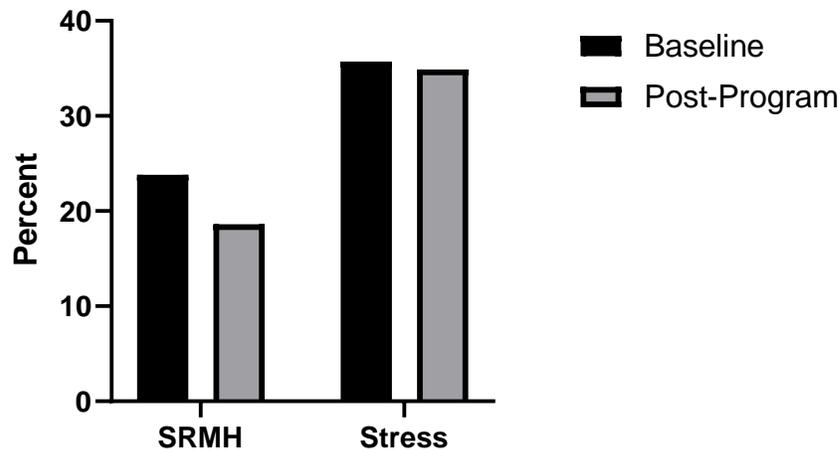


Figure 13. Percent of all Participants in the Lowest Quartile of Mental Health Outcomes

Note: SRMH = Self-Reported Mental Health

Discussion

To our knowledge, the present study is the first to investigate the ACE Mover Method's effectiveness of modifying behavior in college-aged students. The main findings of this novel study shed light on the Mover Method's ability to (1) promote positive trends for both physical and mental health outcomes, (2) increase college-aged students' ability to create and complete goals, while encouraging intrinsic motivation, and (3) be a viable option for behavior change for a variety of students. Also, the present study revealed the reality of the Mover Method meetings, creating a clearer picture for how these conversations are carried out and what topics are discussed. Finally, it was found that the HCs experienced great benefits from their involvement. These findings support the practical use of the Mover Method on university campuses and invite

exciting possibilities for programming and implementation.

How and why did the Physical Outcome Measures change?

Anthropometrics and Blood Work

Both the Anthropometric and Blood Work categories of physical health outcomes did not change between baseline and post-program values. Upon further interpretation, the mean anthropometric values of WC, RHR, SBP, DBP, MetS z-score, and MetS criteria for all participants, males, and females were in the desired clinical ranges according to the CDC²⁴. The lack of changes over time in these values should be considered positive because they represent maintenance. Similarly, out of the five measures of blood work, mean values for LDL-C, TC, TRG, and GLU in all participants, males, and females started and finished in the desired clinical

ranges. At baseline, average male HDL-C came out at $38.80 \pm 9.73 \text{ mg}\cdot\text{dl}^{-1}$, which is below the desired value for males of $40 \text{ mg}\cdot\text{dl}^{-1}$. Over the eight weeks, an increase to $45.64 \pm 18.59 \text{ mg}\cdot\text{dl}^{-1}$ occurred. A meaningful rise because this outcome ended in the desired clinical range. For the remaining blood work measures, an identical interpretation of maintenance is applied as with the anthropometric values.

Exercise and Fitness

The self-reported physical fitness and exercise scores positively increased from baseline to post-program. The increase of SRPF highlights the participants' feeling of increased fitness. The mid-program and post-program values were similar, yet both were higher than at baseline. This may suggest that the majority of the participants were building their exercise habits from nothing, then began working on exercise consistency in the second half of the study. The increase in exercise score represents an increase in amount of time spent exercising during the week or an increase in frequency in moderate or vigorous intensity exercise, as those aspects of the questionnaire held more weight to the overall score. Separating exercise score into the three intensity options (light, moderate, and vigorous) provides little additional insight into the overall exercise trends. The increase of light intensity exercise frequency with no change in moderate and vigorous intensity from baseline to post-program may again suggest participants were new to exercise

or returning to exercise after a break. Light intensity exercise provides an easy entry into exercise and an opportunity to build confidence in exercise habits. If more participants started the study with a greater foundation of exercise or if the study duration was longer, there may have been more significant increases in the moderate and vigorous intensity exercise scores.

Lifestyle

Values categorized under lifestyle outcomes transitioned from baseline to post-program similar to the other physical health outcomes – movement in a positive direction. For all participants, both average weekday and weekend sedentary behavior decreased by two hours. Compared to previously reported sedentary behavior ranges in college-aged students, weekday sedentary behavior of the participants in the present study transitioned from below average to average. When separated by sex, female participants significantly decreased both weekday and weekend sedentary behavior from baseline to post-program. This may be due to females starting with much more sedentary time compared to males, offering greater room for improvement.

There were no statistical or practical differences in all diet categories from baseline to post-program. For all participants, self-reported vegetable and fruit intake remained average through the

study, while fiber intake remained slightly below average the recommended weekly intake²⁵. Females positively transitioned from below average fiber intake to average intake from baseline to post-program, according to the same, previously mentioned recommendations. Similar to the anthropometrics and blood work, this consistency in diet may be viewed as maintenance and considered a positive outcome because diet did not significantly worsen.

Similarly, alcohol consumption did not change. This maintenance is positive because the weekly alcohol consumption of the present study was much lower than the recommended limits for males and females²⁵. Compared to other 4-year higher education institutions in the United States, the average alcohol consumption of the present study's participants of 3 drinks falls in the 65th percentile²⁶.

How and why did the Mental Health Outcomes change?

Measured mental health outcomes were self-reported mental health and life stress. For all participants, SRMH significantly increased over the eight weeks from an average score of 45.45 ± 6.65 to 49.42 ± 6.66 . When separated, male and female participants also increased their scores significantly. These increases show a higher frequency of positive mental health behaviors, based on the interpretation of the questionnaire. The participants' mental health potentially increased for

reasons such as: accomplishing personal goals, meeting with someone regularly to chat about their goals or experiencing physical health outcome improvements such as exercise or sleep.

Life stress score transitioned positively throughout the study, with average score increasing from 2.79 ± 1.02 to 3.02 ± 1.08 . The Simple Lifestyle Questionnaire, which is what the present study's questionnaire is based upon, interprets a score less than 3 as most at risk. With this interpretation, the transition seen takes the participants out of the highest risk category. It is important to consider that an increase of life stress score may not relate to less stress in the participants' daily lives, but rather a heightened ability to manage their stress. Both should be considered positive outcomes; however, the latter represents behavior change outcomes better. Another important consideration for both the SRMH and life stress outcomes is the potential effect of seasonal affective disorder (SAD). SAD is a type of depression that commonly emerges with the changing of the seasons, with the greatest prevalence occurring with winter²⁷. The present study began in January 2022 (winter) and concluded in April 2022 (spring). The changing of the seasons may have influenced the positive transitions seen with mental health. Anecdotally, April is considered one of the hardest months in Gunnison, CO due to the windy, muddy weather and lack of ability to recreate outside, so SAD might

have been a constant throughout the study rather than lessening if the study took place in another location.

What are potential explanations for all outcomes and trends?

The previously discussed outcomes varied in statistical significance, potentially explained by frequent occurrences of positive maintenance, an individualized approach to behavior change, and study duration. A lack of statistical change supports the idea that these outcomes maintained from baseline to post-program. 18 of the 20 outcomes which maintained their values were classified within the desired ranges while only weekend sedentary behavior and diet (fiber) maintained below average status. The maintenance of the values in desired ranges could be attributed to the effectiveness of the Mover Method because overall, the participants' health did not worsen.

The personalized approach of the Mover Method, although beneficial for individuals, may have impacted the intervention's change to group means. Rather than creating a 'one-size-fits-all' program with a direct aim of positively influencing outcomes in eight weeks, the present study listened to each participant, appreciated and trusted the goals they wanted to work on, and assisted in the completion of those goals. The motivation behind this model was to encourage intrinsic motivation by setting the

participants up for success early and often. When assisting others with behavior change, is it recommended the participant/client formulate the goals and roadmap as opposed to the HC²⁸. The Initial Meetings section of the Results represents this individualized approach by depicting the range and multitude of the participants' goals. 55 participants began with study with 130 goals over six different categories. Although it can be argued that working on any of these goal categories would improve every aspect of health and wellness, it is not guaranteed that a participant focusing on diet would improve their exercise and fitness outcomes, as an example. This applies to any of the goal categories and outcomes not directly associated with those categories, supporting the insignificant differences seen in group means.

Finally, eight weeks is a short length of time to meet and build rapport with an individual, start new habits, change behaviors, and experience positive outcomes from the new behaviors. The time constraints of the university semester, on top of the two-week delay of in-person classes, potentially explains why the Mover Method intervention yielded little significant differences. An extended timeline may produce greater improvements for the physical health outcomes that maintained in the average or below average categories of their desired ranges. It is not expected that the outcomes which maintained in their

desired ranges, such as the anthropometrics and blood work, to improve with a longer study duration, yet continued maintenance would be expected because of the reasons discussed above.

How to interpret the initial and weekly meeting data?

Initial Meetings

Data from the initial meetings shed light on the participants' expectations and hopes for their involvement in the study. The "A" portion of these meetings revealed the participants' lofty aspirations with each participant averaging over two separate goals they hoped to work on. Their desire to accomplish goals told the research team that the participants were eager to improve their physical and mental health, which we could infer means WCU's students have been longing for an avenue to focus on their wellness. The high volume of baseline goals also exhibits the participants' inability to identify their 'limiting factor goals' (LFG). LFG's are goals recognized by the participants and HCs as the singular goal interfering with the participant's ability to accomplish other, different goals. The participants' ability to identify their LFGs will be discussed in a following section. The "B" and "C" portions of the initial meetings highlights the over 100 barriers the participants anticipated as well as a majority of the participants needing additional external accountability outside the weekly meetings.

Weekly Meetings

Interpreting the weekly conversations presented the best look into how the participants were modifying behavior over the eight weeks. From week one to eight, participants expressed they were facing drastically reduced number of total barriers, as well as barriers relating to motivation and lack of time – the two largest barriers recorded in the initial meetings. Interpretation of this data could go one of two directions: (1) participants were literally having less barriers in their daily lives or (2) their ability to navigate and remove barriers improved. With the current data, it is impossible to know which of the two options is reality. Similar to the discussion regarding life stress, it is the hope that the second interpretation is true because the ability to feel the weight of barriers less shows growth in behavior change.

The remaining positive outcomes from the weekly meeting data come from the Collaboration aspects of the conversations. Over the eight weeks, participants were requesting less in-person assistance, text reminders, and programming while also increasing occurrences of goal progression. These data present a reduced need for external accountability, potentially representing that participants were driven by intrinsic motivation more at week eight compared to week one. Furthermore, the data showed a great decrease in participants starting new goals while simultaneously

progressing current goals more frequently. The decrease of new goals can be attributed to the increased intention to focus on LFGs. Having the participants work on their LFGs allowed them to find success in accomplishing goals, leading to the increased progression of goals seen in the Collaboration portion of the meetings.

Understanding these positive transitions in behavior change practices returns the focus back to the peer-to-peer relationships. Participants likely felt comfortable with and trusted their HCs, as seen through the success of participants accomplishing their goals early on. Before the heightened intrinsic motivation, it can be assumed that the extrinsic motivation created from positive relationships between participant and HC assisted in goal completion. Anecdotally, participants felt like they did not want to 'let their health coach down' because of the relationship formed, leading to early successes that ultimately progressed toward increased motivation or a decline in lack of motivation as a barrier. Furthermore, all HCs were briefly trained in behavior change strategies based on the research of James Clear²⁸. Key tenets of this training included the 4 Laws of Behavior Change (1) make the habit obvious, (2) make the habit attractive, (3) make the habit easy, and (4) make the habit satisfying. Additional training highlighted the importance of starting with one habit at a time and remembering to praise the good. Through this informal

training, HCs felt more comfortable assisting in behavior change without being trained professionals of the field. It can be argued that HC confidence and use of the behavior change tactics directly lead to the improvements in the participants' ability to change their behaviors.

Why did the percent of participants in the lowest quartile for outcome measures change from baseline to post-program?

Figures 11-15 offer an extended look into the effectiveness of the Mover Method on physical and mental health outcomes by analyzing participants of the lowest quartile. The limit for the lowest quartile was determined by the baseline data, and the percent represents how many participants fell below that limit at baseline and post-program. Upon analyzing the physical health outcomes for all participants, fewer participants were in the lowest quartile at post-program for 18 of the 24 outcomes. With mental health outcomes for all participants, fewer participants were in the lowest quartile at post-program for both outcomes.

With a majority of the outcomes finishing the study with fewer participants in the lowest quartile, it can be inferred that the students who were struggling the most at baseline, transitioned to a more positive place. This does not guarantee that every participant who left the lowest quartile moved into the desired range for the outcome. However, transitioning in a positive direction is a great start,

especially considering the short duration of the study. One of the largest takeaways from the quartile data is in reference to the mental health outcomes. Encouragingly, students struggling with mental health the most transitioned to a more positive place mentally over the eight weeks. The same explanations for improved mental health of all participants could be applied here as well.

What do the individual responses mean for utilizing the Mover Method?

Separating out individual responses demonstrates the Mover Method's flexibility to work with a variety of students. The individuals chosen as case studies for this interpretation stood out by offering insight into diverse characteristics representing the larger student body. Over the study's duration, participant 5, an already healthy individual, not only began exercising consistently and accomplishing his goals, the majority of his physical and mental health outcomes improved as well. His involvement shows that healthy individuals are able to grow and adapt additional healthy behaviors.

Participant 26 began and concluded the study outside the desired ranges for most of her outcomes. After the eight weeks, she experienced both positive and negative changes in her physical and mental health outcomes. Increased workload as the semester progressed potentially explains the negative changes seen in sedentary time and stress. Based

on anecdotal stories and conversations, it can be argued that participant 26 benefited greatly from her involvement, albeit not seeing the desired outcome improvements. In the final meeting with participant 26, she mentioned that the small goals (exercising on the treadmill twice a week, mini 5-min-workouts, and spending time outside) became part of her routine and that she was confident in her ability to continue those habits after the study concluded. This exciting anecdotal data suggests this intervention can succeed with not only distance students, but also individuals starting from little-to-no healthy behaviors.

The final individual analyzed was determined as an outlier due to his classification as a non-tradition student and his age (54 years old). Although excluded from group analysis, this individual's data provides great insight into the effectiveness of the Mover Method with non-traditional students. Although over half of this participant's physical and mental health were not in the desired ranges, he did successfully transition into the desired ranges for LDL-C, TC, weekday sedentary behavior, and self-reported mental health. Similarly, he did experience positive improvements in the majority of his outcomes. His results and anecdotal data can be interpreted as successfully modifying behaviors as a non-traditional student.

How to apply the Mover Method now?

The present study provides exciting evidence supporting the Mover Method's effectiveness in positively modifying physical and mental health behavior in college-aged students – accepting the proposed hypothesis. These data open the door for ample opportunities integrating and applying the Mover Method on campuses and universities. A potential proposal for this integration would be to offer an introductory course for first-year students pairing them with a HC who leads weekly Mover Method meetings throughout the semester. The first-year students would be set up to experience the benefits highlighted above (physical and mental health outcomes and behavior change practices) as well as offered the opportunity to learn the importance of wellness and how it applies to their collegiate experience. The HCs, most likely upperclassmen, would receive meaningful, hand-on experience with wellness and behavior change, while learning and growing as a student and professional – taken from the HC's personal experiences from the present study as seen in Table 8. An alternative use for the Mover Method in university settings would be to integrate this model into student-ran wellness initiatives that are currently supported and effective. Rather than introducing an additional program, adding on to what is already working, may be a more efficient option. Considering the success of the present study with limited behavior change

training for the HCs, integrating a short, yet efficient, behavior change-based Mover Method training into the training agendas for current initiatives should be possible.

Using the Mover Method as a research intervention may have brought additional hesitations or anxiety for the participants, knowing they are in a study. Limiting the feel of a research study, while still quantifying success of the intervention by collecting data, is the next question to successfully integrating the Mover Method to university campuses.

Another roadblock when referencing the present study for a Mover Method-based program, is considering the difference between volunteering and required participation. All participants of the present study volunteered, beginning their process with a base interest for improving their health and an intent to change behaviors; both are qualities that set up the present study for success. Required participation in a university setting does not guarantee equal excitement and initiative for behavior change. A reason for this hesitation to improve physical and mental health through behavior change may be a lack of awareness for the benefits of healthy behaviors. It is likely that students superficially understand the benefits of wellness, yet do not grasp the extent to which healthy behaviors may impact their physical and mental health. Raising

awareness for the benefits of healthy behaviors should be considered a top priority for those interested in student wellness, and the Mover Method is a quick and easy model to use.

How could the present study improve and set up future research?

A major limitation of the present study was a lack of diversity in participants. Over 85% of the participants involved identified as White/Caucasian. This leads to a potential misinterpretation of results based on the student demographics of other universities attempting to utilize the Mover Method. Similarly, the present study lacks data on the sexual orientation of the participants. Due to these limitations, the results do not successfully represent every student. Improving the diversity of the participants involved would shed light into the Mover Method effectiveness for a greater variety of students. Additional limitations that were previously discussed include: duration of the study, lack of robust behavior change training, the season in which the study took place, and the individualized approach to behavior change. As previously stated, the last limitation example became a great strength when considering the success of participants adapting behavior change behaviors.

Future research should attempt to address the limitations of this novel study while continuing to use the Mover Method to its full potential by keeping conversations

individualized to each participant.

Conclusion

The ACE Mover Method is a quick and easy approach to personalized programming and behavior change. The present study highlighted the Mover Method's ability to assist college-aged students in consistently accomplishing goals, working around barriers, and starting habits that elicit positive physical and mental health outcomes. Although all college-aged, the participants who experienced benefits varied in year in school, living situation, and baseline physical and mental health. This emphasizes the Mover Method's flexibility to work for anyone. Finally, this novel study shed light on the benefits the HCs received from their participation.

These results and interpretations invite exciting possibilities for uses of the ACE Mover Method. Through the use of the ABCs, Mover Method benefits should continue to be explored in populations of different age, ethnicity, and sexual orientation. Similarly, the ABCs offer an approach for health and exercise professionals to create a relationship with clients that encourages intrinsic motivation and behavior change. Whether through personal training, athletic performance coaching, or health coaching, the ACE Mover Method should be used to facilitate the positive outcomes both the client and coach desire.

Competing interests

This investigation was supported financially by the American Council on Exercise (ACE). The American Council on Exercise (ACE) was not involved in development of the study design, data collection and analysis, or preparation of the manuscript. There are no other potential conflicts of interest related to this article.

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