

PHYSICAL ACTIVITY

Focus on Freshman: Basic Instruction Programs Enhancing Physical Activity

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Abstract

Physical activity sharply decreases after different life stages, particularly high school graduation to beginning university education. The purpose of this study was to investigate the effect of a specifically designed university physical activity class, Exercise Planning for Freshman (EPF), on students' physical activity and group cohesion compared to other basic instruction programs (BIPs) offered on campus. Specific study questions included (a) what are students' perceptions of the classes, (b) how do group cohesion levels compare between students enrolled in EPF and those enrolled in other activity classes, (c) how does physical activity engagement compare between the two groups, and (d) is there a difference between men and women in terms of group cohesion and physical activity levels? Participants ($n = 108$) were university freshman students enrolled in seven integral BIP courses at a mid-sized university. Data were collected across four consecutive semesters and analyzed using constant comparison for qualitative data (i.e., Critical Incident) and ANOVA, ANCOVA, and t tests for quantitative data (i.e., PAGEQ, 3-Day Bouchard, and 7-DPAR). Treatment group participants had higher energy expenditure than control group participants at the beginning and end of the semester, yet there were no significant differences. It is understood that students enrolled in university BIP

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courses are likely to incorporate physical activity into their everyday routine. For group cohesion to have a significant effect, more steps need to be taken to accentuate its presence in EPF.

Regular physical activity (PA) is an important contributor to maintaining or achieving a healthy lifestyle (Engstrom, 2008). Although it is widely accepted that university-age students are in general “healthy,” North American university-age students are partaking in unhealthy behaviors, including inactivity (Bray & Born, 2004; Ebben & Brudzynski, 2008; Graham & Jones, 2002; Meier, Stock, & Krämer, 2006). The greatest decline in PA occurs during young adults’ transition through late high school and into post-secondary years, and university-age students reflect the same lack of PA as other Americans (American Alliance for Health, Physical Education, Recreation, and Dance [AAHPERD], 2007).

University-age students’ frequency of vigorous PA at least three times per week declines 6.2% for men and 7.3% for women during the first few years of university studies (U.S. Department of Health and Human Services, 1996, p. 191). Unfortunately, 47% of college graduates reported a decline in PA following their days as university students (Calfas, Sallis, Lovato, & Campbell, 1994). College health and physical education classes potentially affect alumni’s PA post-graduation (Buckworth, 2001).

During late adolescence, many adult behaviors are established; consequently, it is appropriate to provide adolescents with educational health promotion activities (Pearman et al., 1997). Unfortunately, physical education enrollment has decreased 20% during the past 12 years, with only 8% of elementary and 6% of middle and high schools offering courses that meet instructional time recommendations (National Association for Sport and Physical Education, 2006). Recently, in *The Chronicle of Higher Education*, Carlson (2015) alerted academics to the losses incurred when physical education classes are abandoned in American universities. This degradation of instruction may contribute to university-age students’ participation in regular leisure-time PA at a mere 36.6%. College seniors’ PA patterns continue to be inert for up to 6 years postgraduation (Sparling & Snow, 2002). Among inactive university-age students, 81% continue to show stagnant or worse PA patterns upon leaving the educational

institution (AAHPERD, 2007). Universities have the responsibility of teaching students not only how to earn a living, but also how to live a healthy life (Pearman et al., 1997).

Physical education in the form of basic instructional program (BIP) courses designed to teach the value of PA and improve health-related fitness knowledge (Hensley, 2000) may offer students knowledge in making healthy decisions concerning lifelong PA during the transition from high school to college (AAHPERD, 2007). BIP activity courses may provide students an opportunity to develop group cohesion (Carron & Spink, 1993; Spink & Carron, 1992), thus enhancing exercise adherence throughout their 4-year university career. It is important, therefore, to examine the components of a BIP course that promote group cohesion and contribute to adoption of lifelong PA. Therefore, the purpose of this study was to investigate the effect of a specifically designed activity class, Exercise Planning for Freshman (EPF), on students' PA and group cohesion compared to other BIPs offered on campus. Specific questions that guided the study included the following: (a) What are students' perceptions of the classes? (b) How do group cohesion levels compare between students enrolled in the specifically designed class and those enrolled in other activity classes? (c) How does PA engagement compare between the two groups? (d) Is there a difference between men and women in terms of group cohesion and in PA levels?

Students' well-being and academics, along with PA, can be positively developed by allowing them to take control of their health (Patterson & Kline, 2008). University-age students have identified multiple reasons for their inactivity including a high course workload, lack of transportation to facilities, and lack of certain sports teams to join at their university (AAHPERD, 2007). Students may be unaware of university, community, and environmental resources that could contribute to their PA, resulting in low PA levels. One way to allow students to take control of their health is by offering a BIP course that introduces students to the available campus and community opportunities that could support them to become and stay physically active throughout their university career.

University physical education classes have evolved over the past century (Hensley, 2000). Prior to 1900, programs were focused on students' health. "Throughout the 20th century the focus shifted

from team sports to individual sports to fitness development and now back to health with an emphasis on promoting healthy living behaviors and lifelong activity skills” (Lumpkin & Jenkins, 1993, p. 35). With the return to promotion of healthy living behaviors and lifelong activity skills, it is important to examine what sorts of BIP courses will lead university-age students to adopt these behaviors and skills.

University students commonly begin their career and/or family soon after graduation. The group activities, facilities, and programs once available during college may be less accessible or apparent during this transition. To stay active, graduates must construct their own PA plan while managing barriers such as family and work. Self-directed PA may not be adequately taught in high school physical education or university physical education programs (Kimball, Jenkins, & Wallhead, 2009; Sallis & McKenzie, 1991).

Group cohesion and social support are important factors for individual adherence to PA (Christensen, Schmidt, Budtz-Jorgensen, & Avlund, 2006). Group cohesion is “a dynamic process which is reflected in the tendency of a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs” (Carron, 1982; Estabrooks & Carron, 2000). Despite the benefits of regular PA, adherence rates are problematic. In fact, half of the individuals who initiate a supervised exercise program drop out within the first six months (Loughead, Colman, & Carron, 2001). Consequently, it is important that focus be placed on strategies that will support new exercise participants to adhere to and maintain PA patterns (Annesi, 1999). Exercise adherence is improved when participants work together and strong task and social bonds are created (Loughead et al., 2001). Researchers have suggested that a way to allow students the opportunity to learn lifelong activity skills and healthy living behaviors is to develop a BIP course that enhances group cohesion (Jenkins & Alderman, 2011).

A freshman BIP course has been developed at the university in this study that promotes group cohesion and exploits the resources available throughout the campus and community with the intention of contributing to PA. Higher maintenance rates of PA among students could be identified through this new course by comparing the students’ activity levels from this course to levels in other BIP

courses in which only one activity is offered (e.g., volleyball, step aerobics, karate). Thus, the purpose of this study was to investigate the effect of a specifically designed activity class, EPF, on students' PA and group cohesion.

Method

Setting and Participants

The study occurred in a mid-sized Rocky Mountain public land-grant university. Data were collected in seven integral BIP activity courses across four semesters. Students ($n = 108$) with freshman status enrolled in BIP courses participated, both treatment (i.e., EPF) and control (i.e., all other BIP activity courses). Participants (50 males, 58 females) were traditional university-age students between the ages of 18 and 24. BIP courses included EPF (i.e., treatment group) and Karate, Dance Step Aerobics, Rock Climbing, Racquetball, Walking & Stretching, and Circuit Training (i.e., control group). Participants signed an institutional review board consent form and received 5 extra credit points for participating. Each BIP lecture course consisted of approximately 80–100 freshmen through senior level undergraduate students. Students enrolled in the 1-credit BIP lecture course also enrolled in a BIP activity course of their choice to complement the lecture course. Each BIP activity course comprised 15–30 undergraduate students. The BIP lecture and activity courses met once per week for 50 min throughout the semester.

Exercise Planning for Freshman

The goal of EPF was to promote lifelong PA and exercise adherence by incorporating group cohesion. Group cohesion was promoted by including three of the six components (affiliation, record keeping, roles) of Siedentop's sport education model (Siedentop, Hastie, & van der Mars, 2004). Students were placed into small teams to promote affiliation. Records of team points were accumulated by participating in activities with teammates in and outside of class time. Such activities included hiking/running/cycling in the local National Recreation Area, engaging in City Park Par Courses, and engaging in campus student recreation center activities such as intramural sports, fitness classes, or rock wall climbing. Each student acted in the role of coach by teaching teammates how to operate

the cardio and circuit training machines. In addition to engaging in a variety of activities available on campus and in the community, students completed multiple in-class and homework assignments designed to provide information concerning their individual fitness/wellness. Examples include wellness goal setting as well as keeping logs of daily activity, nutrition, pedometer, and heart rate monitor.

The remaining BIP courses (i.e., Racquetball, Rock Climbing, Dance Step Aerobics, Karate, Walking & Stretching, Circuit Training) were focused on that specific activity and did not require extra assignments or activities. In contrast, EPF offered students opportunities to experience a variety of activities and resources that contribute to their PA including exploring campus, community, and environmental resources. Additionally, at the end of the semester, EPF students created their own exercise program designed to keep them physically active for the rest of the year and to encourage them to stay active throughout their university experience as well as throughout their lifetime.

Data Collection and Analysis

Four types of data were collected: (a) 7-DPAR (7-Day Physical Activity Recall), (b) Bouchard 3-DPAQ (3-Day Physical Activity Questionnaire), (c) Critical Incident Form, and (d) PAGEQ (Physical Activity Group Environment Questionnaire). PA was measured using Bouchard 3-DPAQ to calculate an average estimate of kcals expended during a 3-day period and the 7-DPAR to identify recalled time engaged in various activities, including moderate and intense PA. Both were administered at the beginning and end of the semester. The Critical Incident Form was used to identify perceptions of the activity course to find commonalities within each group, specifically comments on group cohesion. The PAGEQ was used to examine group involvement and task cohesion. The Critical Incident Form and PAGEQ were administered only at the end of the semester. This mixed methods design was selected in an attempt to best capture student responses (Johnson & Onwuegbuzie, 2004).

Questionnaire data (i.e., 7-DPAR, Bouchard 3-DPAQ, PAGEQ) were analyzed using descriptive and inferential statistics. To determine differences between control and treatment groups within task and social cohesion, an ANOVA among means (*t* test) for each subscale of the PAGEQ was conducted. A critical alpha level of $p < .05$

was adopted for all significant tests. Critical incident was analyzed using qualitative methods. Categories revealed in previous studies (i.e., curriculum, teacher, social environment) guided data analysis (Coelho, 2000; Jenkins & Alderman, 2011; Jenkins, Jenkins, Collums, & Werhonic, 2006).

Results and Discussion

The purpose of this study was to investigate the effect of a specifically designed activity class on students' PA and group cohesion compared to other BIP courses offered on campus. Of the 108 participants, the treatment group consisted of 72 respondents (i.e., males = 37, females = 35) and the control group consisted of 36 respondents (i.e., males = 13, females = 23).

Student Perceptions

The Critical Incident Form was used to reveal the participants' perceptions of the classes. Although all three categories from previous studies emerged (i.e., curriculum, teacher, social environment), curriculum was the most prevalent. Treatment group respondents primarily identified specific curricular activities included in class or as homework assignments as positive critical incidents. Of the treatment group participants, 27 stated more than one activity as a critical incident. In contrast, control group respondents seldom ($n = 3$) identified more than one class activity as critical. Treatment group participants gave 169 responses, whereas the control participants gave 67 responses.

Components connected with the curriculum mattered most. In the treatment group, concerning curriculum, the variety of class activities and assignments (e.g., circuit and cardio machine peer teaching, goal logs, exercise plans) was mentioned at least once by at least one participant. Curriculum responses were generally spread across multiple activities and assignments, indicating that each participant enjoyed at least one activity or assignment. One 18-year-old female enrolled in EPF reported,

Going to Washington Park was a positive because it expanded my knowledge of [the community] and I went back multiple times to exercise. I also really enjoyed the exercise ball

activity in the fitness studio. I always use those exercises in the gym now.

In contrast, nearly all curricular comments in the control group related to the one activity that was the class focus (i.e., Karate, Dance Aerobics, Circuit Training) compared to the multiple activities and assignments mentioned in the treatment group.

Participants in the treatment and control groups made few references to the teacher. Although few, the comments related to the teacher were positive, as demonstrated by this 19-year-old male in the karate class: “The instructor has been helpul [*sic*] with making sure that my kicks are correct and critiques some of the moves that I struggle with. She is really nice about helping people out so that you don’t feel embarressed [*sic*].”

Seldom did participants in either group reference social environment. One example from an 18-year-old female in EPF follows: “From this class I have met several new people and created a lot of friendships. I also have met people who enjoy working out like I do, so it’s been nice going to the gym and meeting up with those friends.”

Although both groups frequently identified curricular components as critical, the treatment group response frequency was much higher than the control group response frequency. This may be due to the treatment group participating in multiple activities and assignments, whereas the control group focused on only one activity throughout the semester. In similar studies, researchers have found that curriculum responses were also the focus among the three main categories of curriculum, teacher, and social (Coehlo, 2000; Jenkins & Alderman, 2011; Jenkins et al., 2006). The treatment group seemed to be affected by exposure to multiple activities and assignments.

The amount of critical incidents with reference to the teacher in this study were dismal compared those noted in similar studies. Coehlo (2000) found that participants referenced the teacher about half of the time, and Jenkins et al. (2006) found that participants referenced the teacher a little over a quarter of the time. In this study, the teacher was rarely mentioned. It was disheartening to discover that social environment comments were almost nonexistent as one of the main goals and objectives in EPF was integration of group cohesion strategies (i.e., teams, roles, records).

Group Cohesion

PAGEQ was completed by 90 students. However, five participants' responses were deleted because of missing or incorrect data. The meanings of the four scores are as follows: (a) Individual Attractions to the Group Task (IAG-T): personal involvement with the group task; (b) Individual Attractions to the Group Social (IAG-S): personal acceptance and social interaction with the group; (c) Group Integration Task (GI-T): closeness and bonding that exist within the group as a totality around its collective task; (d) Group Integration Social (GI-S): closeness and bonding that exist within the group as a totality around social concerns (Carron, 1982).

An independent samples *t* test was conducted in Excel to examine differences between the treatment and control groups. The groups were not significantly different in IAG-S, $t(85) = 1.00$, $p = .1602$, $\Delta = -.22$. However, the groups showed significant differences in IAG-T, $t(85) = 4.44$, $p = .00001$, $\Delta = -.98$, with the control group averaging 7.32 (*agree*) and the treatment group averaging 6.03 (*somewhat agree*). The other two measures, GI-S and GI-T, were not significant, $t(83) = 1.44$, $p = .0769$, $\Delta = .32$, and $t(83) = .23$, $p = .2284$, $\Delta = .05$, respectively.

The four measures were tested with ANOVA to identify differences in means, but no significant differences were found, $F(3,212) = 2.65$, $p = .1208$. Stated another way, the mean of IAG-T is equal to the mean of IAG-S, which is equal to the mean of each of the other two categories (see Table 1).

Table 1
PAGEQ Score Results

Variable	Treatment		Control	
	Male	Female	Male	Female
IAG-T	5.42	5.67	6.17	5.59
IAG-S	5.94	6.23	7.45	7.23
GI-T	5.41	6.02	4.65	5.61
GI-S	5.73	6.17	5.94	5.83

The treatment group scores were analyzed with independent samples *t* tests to determine if females had different responses than

males. IAG-S, IAG-T, and GI-T did not show significant differences. However, in GI-S, females scored significantly higher than males, $M = 5.98$ and $M = 5.41$, respectively, $t(50) = 1.77$, $p = .0415$.

The scores on the PAGEQ were also analyzed with factorial ANOVA. The dependent variables were the four components of the instrument, and the independent variables were gender and treatment/control group. The analysis was done with IBM SPSS 20. The ANOVA for IAG-S showed no significant differences in gender or in treatment/control results. However, the IAG-T ANOVA indicated a difference in scores between the treatment group and the control group, $F(1, 83) = 19.36$, $p < .0005$; the control group averaged 7.32 (*agree*) and the treatment group averaged 6.03 (*somewhat agree*). In another significant test, the ANOVA results for mean GI-S showed that females scored higher than males, $M = 5.98$ and $M = 5.41$, respectively, $F(1, 81) = 5.90$, $p = .017$. The ANOVA for mean GI-T did not indicate significant differences for the treatment group or for gender.

Physical Activity Between Groups

PA engagement was tested with independent samples t tests using the pre- and postclass Bouchard 3-DPAQ. For each participant, the calories expended preclass were subtracted from the calories expended postclass to indicate change. The increase or decrease of each student was compared across the two groups (see Table 2). The test showed no significant difference between the treatment group and the control group, $t(29) = .09$, $p = .4657$.

Table 2
Means of Physical Activity Test Results: Treatment vs. Control

Test	Treatment		Control	
	Pre	Post	Pre	Post
3-Day Bouchard	3221 calories	3258	2590	2612
7-DPAR moderate	1.97 hr	1.63	2.60	1.70
7-DPAR intense	.95 hr	1.13	1.55	1.06

PA was also measured with the 7-DPAR. We chose to look for changes in time (i.e., hours) spent participating in moderate and intense activity. Like the Bouchard 3-DPAQ, the 7-DPAR did not show

significant differences in the control group and the treatment group. For the moderate activity measures, both means were slightly lower at the end of the course, by .9 hr for the control and .3 hr for the treatment group (see Table 2), $t(48) = .64$, $p = .2625$. The treatment group slightly increased intense activity at the end of the semester by .2 hr, whereas the control group decreased intense activity by .4 hr. However, this difference was not significant, $t(48) = 1.32$, $p = .0970$. Thus, the results of the 7-DPAR corresponded to the results of the Bouchard 3-DPAQ.

On the 7-DPAR measure, the treatment group increased hours of intense exercise and decreased moderate exercise. For the control group, moderate and intense exercise decreased. On the Bouchard 3-DPAQ, the treatment group and the control group increased the calories burned in exercise. When averages are broken out by gender, however, the results are different.

Physical Activity Between Genders

In contrast, with both groups combined, a significant difference was found between females and males on the Bouchard 3-DPAQ, $t(29) = 2.02$, $p = .0265$. Females' average decrease in calories expended at the end of the semester was 133, whereas males averaged an increase in calorie expenditure of 205 calories. For further clarification, results were tested in ANCOVA controlling for pre- and postclass results. Both groups were not significant, but gender was significant, $F(1, 59) = 11.089$, $p = .002$. This indicates that changes in PA were linked to gender, with females exercising less and males exercising more.

Similarly, the 7-DPAR revealed significant differences in gender, $t(48) = 2.36$, $p = .0111$. The moderate-intensity exercise of women was lower by 2 hr/week at the end of the semester, and the moderate-intensity exercise of men was only lower by .5 hr/week. The intense exercise was also significantly different, $t(48) = 6.33$, $p < .0001$. This difference is indicated by the 1.7 hr/week increase in intense exercise for men and the almost 0 increase for women.

Regarding differences in females between treatment and control groups, females decreased the calories expended in exercise in the control group and the treatment group from pre- to posttest (see Table 3); however, the treatment group showed the bigger decrease on the Bouchard 3-DPAQ. In the control group, females decreased

the hours spent on moderate and intense exercise. However, in the treatment group, females decreased in moderate exercise, but increased the time spent in intense exercise (see Table 4).

Table 3
Means of Physical Activity Test Results: Females in Treatment vs. Females in Control

Test	Treatment		Control	
	Pre	Post	Pre	Post
3-Day Bouchard	2691calories	2485	2541	2451
7-DPAR moderate	2.00 hr	1.54	3.43	1.24
7-DPAR intense	.89 hr	1.16	1.87	1.02

Table 4
Means of Physical Activity Test Results: Males in Treatment vs. Males in Control

Test	Treatment		Control	
	Pre	Post	Pre	Post
3-Day Bouchard	3486 calories	3644	2755	3145
7-DPAR moderate	1.95 hr	1.72	1.42	2.36
7-DPAR intense	1.01 hr	1.09	1.10	1.11

Males in the treatment and the control groups increased the calories expended in exercise pre- to posttest. In the control group, males increased hours of moderate exercise, but intense exercise hours did not change. In the treatment group, males decreased the hours of moderate exercise and increased the hours of intense exercise.

Neither males nor females showed a significant difference between treatment group and control group change in expenditure of calories. Likewise, males and females did not show significant differences when in the control group versus the treatment group in regard to moderate exercise. The tests of intense exercise were also not significant (see Table 5).

Table 5
t Tests for Males and Females, Comparing the Mean Differences of the Postclass Results Minus the Preclass Results

Test	Males	Females
3-Day Bouchard	$t(13) = .64, p = .2667$	$t(15) = .67, p = .2570$
7-DPAR moderate	$t(22) = 1.28, p = .1076$	$t(24) = 1.27, p = .1075$
7-DPAR intense	$t(22) = .12, p = .4522$	$t(23) = 1.20, p = .1220$

Conclusions and Implications

In this study, we used a mixed methods research design to investigate the effect of a specifically designed activity class, EPF, on students’ PA and group cohesion compared to other BIP courses. Student perceptions were measured using a qualitative instrument (i.e., Critical Incident). PA was measured using Bouchard 3-DPAQ and the 7-DPAR. Group cohesion was measured using PAGEQ.

Perceptions

In regard to student perceptions of the BIP classes, both treatment and control, multiple elements of curriculum (e.g., activities, assignments) were of primary importance to participants. Control group participants were exposed to one activity and saw curriculum as the most noteworthy element within the class when compared to the teacher and social environment. In contrast, the treatment group was exposed to multiple activities, giving participants many options. Treatment participants also looked at curriculum as the most noteworthy element within the class when compared to teacher and social environment.

Unfortunately, we found that group cohesion was not particularly relevant to these participants. In contrast, participants in previous studies (Coelho, 2000; Jenkins et al., 2006) also noted social environment the least as a critical incident, but noticeably more than the participants in this study.

One reason for lack of response concerning social environment may be that the EPF class was taught by three instructors. At the end of one semester, it became apparent that one EPF instructor did not implement the group cohesion components of sport education as we had hoped. This lack of fidelity to instruction, a limitation of

the study, could have affected the group cohesion data. In future research, researchers will need to ensure that instructors are implementing group cohesion components.

We recommend that the EPF course curriculum include multiple activities so participants can find a PA that they enjoy and in which they can engage throughout their university career. Additionally, activities that stress group cohesion (e.g., team building) need to be included to a much higher degree if students are to regard this element as important.

Group Cohesion

EPF was designed to incorporate group cohesion for the purpose of increasing exercise adherence. A significant difference was found between groups in regard to IAG-T. This suggests that the task (i.e., class activity of Karate or Racquetball) provided these participants with a focal point around which to be cohesive. In contrast, multiple activity options were offered in EPF. This did not innately provide such a cohesive task focus. From the PAGEQ results, we conclude that group cohesion was not stressed enough to have a large effect on the treatment participants. Therefore, a focus needs to be developed.

Although the results were not significant, group cohesion was higher in GI-S within the treatment group. The control participants seemed to be more cohesive around the single activity (e.g., IAG-T) that was the focus of the class (e.g., Karate, Racquetball), and the treatment participants were more cohesive within the social group involvement. Therefore, in future EPF classes, ways to compensate for this lack of task cohesion need to be found. What is interesting is that females in the treatment group revealed significant differences in GI-S. This suggests that although they did not write about social components as a critical incident, they were indeed experiencing social group cohesion. Perhaps females were more comfortable in a social group setting or more highly valued the social setting than did male participants.

Physical Activity

In regard to PA, differences, although not significant, were found between both groups to start and end the semester. The calorie expenditure of the treatment group was higher at the beginning and end of the semester. However, both groups improved from the be-

ginning of the semester to the end. Additionally, although the treatment group reported a decrease in time engaged in moderate PA from the beginning to the end of the semester, they also reported an increase in time spent in intense exercise during that period. Perhaps they were replacing moderate with intense PA as a result of identifying PA opportunities on campus and throughout the community as a result of knowledge gained in EPF. Once the participants were engaged in PA, they continued to improve their participation during the semester. It may be that when PA was scheduled into their weekly routine, they continually made PA a habit. We therefore recommend that incoming freshmen be directed to enroll in any BIP class. EPF may have aided freshmen students to find an activity with which they may or may not have been familiar to continue their PA program. EPF students were also provided with such a variety of activities from which to choose that they could find at least one activity to enjoy and continue throughout their academic career.

In regard to the differences in PA levels between treatment and control at the beginning of the semester, this may have been affected by students self-selecting their class. EPF may have been appealing to students as a means to transition their PA program from high school to university. What is interesting is that freshmen register last (i.e., after current students are enrolled); therefore, other BIP classes may have been full. In the future, researchers need to investigate why students enroll in specific BIP classes.

PA levels were different between genders and between treatment and control groups. The control group started out with lower levels of calorie expenditure and also ended the semester with lower levels than the treatment group, as did females compared to males. Treatment group males started and ended the semester with higher energy expenditures than the control group males. Females in the treatment group started out with higher energy expenditure than the control group females. Both treatment group females and control group females, however, declined in energy expenditure at the end of the semester, with treatment group females ending with higher energy expenditure than control group females. Females from treatment and control groups had a lower mean of calorie expenditure at the end of the semester, whereas the males within both groups had increased calorie expenditure at the end of the semester.

For this decline of treatment group and control group energy expenditure within females, the end of the semester could have been a bad time to collect this data because of the busy nature of the time. Semesters usually end in high stress for students to meet deadlines and do well on final exams, leaving less time for students to participate in PA and exercise. Females may have decided to spend their time preparing for the end of the semester. This finding is puzzling, and further investigation could identify reasons for the decline in PA.

For better results, researchers may want to collect posttest data during a less stressful time, such as a month or so prior to the end of the semester. Naturally, researchers should collect posttest data as late in the semester as possible as the length of a semester is usually no longer than 4 months.

This study has sparked many new questions and directions for future research. First, researchers could investigate why students select specific BIP classes. This may affect student participation in class and energy expenditure in and out of the classroom. Another direction for future research could be to investigate if group cohesion may be enhanced through restructuring meeting time of classes. Perhaps meeting one time per week is not enough to build group cohesion; therefore, meeting more frequently would lend to better group cohesion. Another way to build group cohesion in the EPF class would be to create a task around which to be cohesive. Additionally, a longitudinal study with these same students during their senior year would determine if they maintain PA levels during their time at the university level.

Classes such as EPF have the opportunity to affect the incorporation or increase of PA into students' lives. When students are exposed to a variety of physical activities and resources, it is probable that they will enjoy and continue to participate in at least one of those activities over the long term. The beauty of EPF is that even if students do not enjoy every lesson or activity, they are likely to enjoy some or even several and to be exposed to new experiences and resources for future PA engagement. It is vital that young citizens understand the benefits and importance of regular PA and relish in the partaking of PA. What better way to expose these students to new PA opportunities and resources than directly upon entrance into the university setting. Let's focus on freshman!

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