ORIGINAL ARTICLE

Motivations, barriers, and social media volume usage influence on exercise: Similarities and differences between college athletes and nonathletes

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ABSTRACT

Exercise contributes to a healthy lifestyle. Nonetheless, many people are insufficiently active. This study investigated exercise motivation, barriers to exercise, and the impact of social media volume usage among 18-25 year olds from a Midwestern university (USA). Data was collected via survey. Overall, the sample noted the psychological and fitness sub models and the positive health and strength and endurance subscales to be most important. There was a significant difference between college athletes and nonathletes for two sub models and seven subscales. College athletes noted time constraints and nonathletes noted their lack of motivation and time constraints (equally) as top barriers. Overall, the primary barriers to exercise were rated as less impactful ($p < .001$) by the college athletes (45.3 ± 34.2) compared to nonathletes (69.2 ± 28.3). Social media usage was prevalent in our sample, and it might be differentially impacting users. Highest-volume users rated barriers to be more impactful than lowest-volume users ($p = .035$). Social media is a current-culture culprit that helps "*not enough time*" persist as a key barrier to exercise. The impacts of social media on fitness and activity need further investigation.
Keywords: Physical education, Motivational strategies, Exercise motivation inventory, Physical activity.

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INTRODUCTION

Exercise is beneficial to many domains of health (e.g., physical, mental) and lowers the risk of all-cause mortality (Centers for Disease Control and Prevention, 2022; U.S. Department of Health and Human Services, 2018). Exercise motivation is focused on understanding why people exercise, and it can be broadly categorized into intrinsic (fuelled by internal rewards; enjoyment, competence) and extrinsic (achievement of tangible rewards; appearance, social interaction) motivation (Buckworth et al., 2007; Morris et al., 2022).

In Spanish and Lithuanian university-going populations, top motivators for exercise included positive health, physical appearance, and fitness (Ednie & Stibor, 2017; Sukys et al., 2019). In university-going participants in the United States of America (USA), females indicated a greater concern with body weight and body-related motives, whereas male counterparts were more influenced by ego-related motives (e.g., challenge) (Kilpatrick et al., 2005). Participants in individual sports have higher levels of intrinsic motivation compared to participants in fitness groups, while the latter are spurred by body-related extrinsic motivation (Frederick & Ryan, 1993). In general, sport participants appear more likely to highlight intrinsic (e.g., competition, enjoyment) motivation as being important, while regular exercise participation is linked to extrinsic (e.g., health- and appearance-related) motivation (Kilpatrick et al., 2005).

Across two American universities, 173 students were surveyed from classes focused on wellness for life concepts. In total, 88 students (50.9%) noted a desire to engage in more regular exercise, and they identified better organizing their time as a key motivator to accomplish this outcome (Hare et al., 2016). It is valuable to highlight that even a single, semester-long university course focused on physical activity can bring physical benefits (Offutt et al., 2016). Among students in aerobic-activity (e.g., jogging, walking) classes, participation ($n = 46$) resulted in improvements in estimated maximal aerobic ability and grip strength ($p < .05$) (Offutt et al., 2016). For those in sport-activity (e.g., pickleball, self-defence, strength training) classes, participation ($n = 45$) resulted in improvement in vertical jump and grip strength ($p < .050$) (Offutt et al., 2016). Semester-long wellness classes have also been shown to promote enhanced perception of the value of multi-dimensional wellness for future health (Hare et al., 2016).

Barriers, actual or perceived, act in opposition to motivators, and they limit or inhibit exercise behaviour (Buckworth et al., 2007). Internal barriers (e.g., lacking willpower, not enjoying exercise) relate to an individual's personal decision-making, while external barriers (e.g., lacking access to facilities, being impeded by weather) are defined as factors beyond an individual's control (Ziebland et al., 1998). Internal and external barriers may influence singularly or collectively to deter exercise participation.

Time constraints have commonly been highlighted as a key barrier to exercise engagement (Ebben & Brudzynski, 2008; Hare et al., 2016; López de Subijana et al., 2015; Tappe et al., 1989). Lack of interest or desire (Tappe et al., 1989) and lack of support (Cowley et al., 2021; Ebben & Brudzynski, 2008; Sukys et al., 2019) among university-going students have also been noted. COVID-19 is a unique barrier that was recently and universally experienced. Among a sample from our Midwestern university, the virus created change in daily routines in the college athletes that led to elevations in symptoms of depression, anxiety, and stress (Garver et al., 2021). This finding was more prominent among females than males, and supporting qualitative data described the influence as "*disappointing*," "*frustrating*," and "*saddening*" (Garver et al., 2021). There is evidence that life stage influences barriers, and young adults are highlighted in this regard—they often experience greater independence, increased transition, and alterations in living arrangements (Vaterlaus et al., 2015). With interest, Vaterlaus and colleagues (2015) found a belief among young adults that social media use could negatively impact exercise opportunities by displacing time and serving as a distraction.

Social media and its effect on exercise motivation and exercise barriers is an emerging area of research. There are some young adults (18-25 years) who purport social media to be a motivator for exercise. These young adults report that posting pictures of themselves looking their best, or seeing pictures of others who have lost weight, are motivational (Vaterlaus et al., 2015). Evidence to the contrary also exists. Holland and Tiggemann (2017) found that women who regularly posted fitspiration photos were more likely to have maladaptive characteristics (e.g., disordered eating, body dissatisfaction) compared with women who regularly posted travel-focused photos. Fitspiration preaches health, but some creators are demonstrating increased negative characteristics for exercise. An example, among university-going participants in the United Kingdom, more time spent on social media negatively impacted body idealizations (e.g., inspiration to be thinner, distorted view of oneself) and affected exercise motivation (e.g., compulsive exercise) (Graff & Czarnomska, 2019).

This study sought to investigate motivations, barriers, and social media volume usage on exercise among individuals (college athletes vs. nonathletes) associated with a Midwestern university. Researchers hypothesized (H_1) that motivations would be dependent on the subpopulation, with college athletes swayed more toward performance-focused ideas and nonathletes toward general fitness or health, (H_2) that college athletes would find their barriers to be less impactful in terms of magnitude than nonathletes, and (H_3) that highest-volume social media users would find barriers to be more impactful than lowest-volume users when collapsed across college athlete-nonathlete categorization.

METHODS

Participants

Participants were associated with a mid-size, Midwestern university. Inclusion criteria required participants be at least 18 years of age and associated with the university in some way (e.g., student, staff). A total of 143 participants clicked into the survey. Three individuals entered but made no selections—they were removed from ongoing analysis. Further, there was limited participation by individuals over 25 years of age (n =10 total; 26 to 59 years of age). Literature has indicated that life stage impacts motivators and barriers for exercise (Vaterlaus et al., 2015); thus, results focus on the individuals 18-25 years of age (n = 130). Of the 130 individuals entering the survey, 102 (78.5%) completed the full survey, 10 (7.7%) completed 50-95% of the survey, and 18 (13.8%) completed 5-40% of the survey. There was no compensation for participation.

The average age of the sample (n = 129; 1 person did not answer) was 20.5 years (*SD* = 1.6). The sample identified primarily as female (n = 92) and white (n = 111). These and related data about sex, age, and race are noted in Table 1. Five participants had a high school education (or equivalent), 111 had some college education, ten were college graduates, one held a master's degree, and three participants did not respond. There were 56 participants who were current college athletes, 55 who were not college athletes, and 19 participants who did not respond. Asked if they were "*current exercisers*" based on recognized guidelines (Centers for Disease Control and Prevention, 2022), 97 (74.6%) selected "*yes*," 29 (22.3%) selected "*no*," and four (3.1%) did not respond.

Measures

The Exercise Motivation Inventory-2 (EMI-2) was used to assess exercise participation motives (Markland & Ingledew, 1997). The EMI-2 consists of 51 questions that require each participant to pick a number on a 6-point Likert scale. The '0' indicates "*Not true for you at all*" and '5' indicates "*Very true for you*." The EMI-2 consists of the following 5 sub models and 14 subscales (noted within parentheses) (Markland & Ingledew, 1997):

- Psychological (stress management, revitalization, enjoyment, and challenge);
- Interpersonal (social recognition, affiliation, and competition);
- Health (health pressures, ill-health avoidance, and positive health);
- Body-related (weight management and appearance);
- Fitness (strength and endurance and nimbleness).

Table 1. Selected descriptive and frequency data for the sample of 18-25 year olds (n =130).

Variable	Characteristic	Frequency	Percent
Sex	Female	92	70.8
	Male	35	26.9
	No response	3	2.3
	Prefer not to answer	0	0
Age (years)*	18	10	7.8
	19	24	18.6
	20	39	30.0
	21	26	20.2
	22	15	11.6
	23	8	6.2
	24	4	3.1
	25	3	2.3
Race	White	111	85.4
	Black	8	6.2
	Latino	4	3.1
	Asian	3	2.3
	Undisclosed/Other	4	3.1

*Note. *One participant did not disclose age.*

Scores are calculated by finding the average for each subscale and sub model. All scores are summative, and none are reverse coded or scored.

In the EMI-2, specifically, but in other areas of the survey, the '0' indicated something such as, "N*ot true for you at all.*" To protect from unanswered questions, or skipped questions erroneously becoming "*0*" responses, the research team set the default response of some questions to "*-1*." This meant the participant had to drag the scale from "*-1*" to their desired answer. As an example, the directions for each set of EMI-2 questions consisted of the following language, "*Move the slider away from -1*" to indicate which number (0 to 5) is true for you personally. Questions with a -1 response were deemed invalid and eliminated. Therefore, the n's associated with various results reflect a number less than 130—the number of participants included in the main results.

The exercise barriers chart was adapted from previous researchers (Ebben & Brudzynski, 2008). The chart in the present study consisted of 20 items that could prevent an individual from exercising. Four examples spanning the range of items included, "*There is not enough time in the day to exercise*," "*I dislike exercising in public*," "*Weather conditions deter me from exercise*," and "*I really do not know how to set up a program or use equipment in the correct and effective ways*." Participants reviewed all 20 items and then typed their top three barriers in a textbox just below the chart. After the participant picked their top three barriers, they ranked the "*magnitude*" of how much that particular barrier impacted their exercise choices by using a drag and drop visual analogy scale ranging from 0-100. The '0' represented "*Never*" and the '100' represented

"*Always*." The "*magnitude*" related to how strongly, frequently, or both, that barrier was perceived to be by the respondent. Participants ranked the magnitude of each of their top three barriers separately.

Questions regarding social media were placed near the end of the survey. Sample questions included, "*Do you use social media to get workout inspiration?*" and "*How much time do you spend on the specific social media or internet sites you see below? (If available, feel free to check screen time data on your phone to give the best answers possible): Facebook, Instagram, Snapchat, TikTok, YouTube*." Participants selected from among six choices (e.g., "*Not applicable to me*," "*1 hour per week*," "*3 hours per week*") for each specific social media or internet site. Overall usage was summed, and participants were categorized into tertiles (highest-, middle-, and lowest-volume) for comparison.

Procedures

The University of Central Missouri Institutional Review Board approved the study prior to the start of data collection. The survey was made available in the late spring of 2023 and administered through Qualtrics. Participants were able to complete the survey at any time, on any device, and at the location of their choosing. They were directed to the survey through various means including flyers and emails.

Participants began the survey by completing an informed consent form and confirming that they were at least 18 years of age. After consenting, participants completed the survey questions. There were five demographic questions. Thereafter, the 51 questions of the EMI-2 began (Markland & Ingledew, 1997). The questions were broken into three sets to reduce the likelihood of monotony and focus in answering. The first set of EMI-2 questions contained 18 queries. Between the first and second set of EMI-2 questions, participants responded to questions regarding sport participation or primary mode of exercise. The second set of EMI-2 questions contained 15 queries. Between the second and third set of EMI-2 questions, participants were given a chart containing 20 barriers. They were instructed to pick their three main barriers and then rank the impact each had on their exercise participation. Questions regarding social media usage and the related influence on exercise were placed thereafter. When the third set of EMI-2 questions (the final 18 questions) was completed, a screen confirmed completion and thanked them for their responses.

Analysis

Researchers utilized IBM SPSS version 28.0 for all analyses including frequencies, descriptives, and tests of significance. To compare between groups (e.g., college athletes vs. nonathletes, females vs. males, highest- vs. lowest-volume usage) independent samples t-tests were conducted. Levene's tests were utilized to test for equality of variances. Unless otherwise noted, data are presented as means ± standard deviation ($M \pm SD$). Statistical significance was set at $p < .05$.

RESULTS

Time to complete the survey

The mean duration to complete the survey was skewed greatly by several extreme outliers (e.g., 434,594 s; 170,815 s). When outliers were removed, the mean duration to complete the survey was approximately 487 s (n = 121) (M = 487.3, SD = 314.0).

Exercise motivation

Fundamental results for the included sample (n = 130) revealed that two sub models for the EMI-2 were deemed near-equally most important, the psychological sub model (M = 3.6/5.0, SD = 1.0) and the fitness sub model (*M* = 3.5/5.0, *SD* = 1.0). The most important subscales were positive health (*M* = 4.3/5.0, *SD* = 0.8) and strength and endurance (*M* = 4.1/5.0, *SD* = 1.1).

EMI-2 sub models and subscales

An independent-samples t-test was used to compare the mean EMI-2 sub model and subscale scores between college athletes and nonathletes. There was no significant difference between for the psychological, health, or fitness sub models (*p* > .05). There were significant differences for the interpersonal and body-related sub models (Table 2).

There was no significant differences between college athletes and nonathletes for the stress management, social recognition, health pressures, positive health, appearance, strength and endurance, or nimbleness subscales (*p* > .05). However, there were significant differences for the revitalization, enjoyment, challenge, affiliation, competition, ill-health avoidance, and weight management subscales (Table 2).

Table 2. Reporting of the significant differences between college athletes vs. nonathletes for Exercise Motivation Inventory-2 (EMI-2) sub model and subscale scores.

Sub model	**Subscale**	**College athletes (M ± SD)**	**Nonathletes (M ± SD)**	**Levene's Test of equal variances assumed**	***p*-value or t (degrees of freedom) and *p*-value**
Psychological	-	-	-	-	*p* > .05
	Revitalization	3.7 ± 1.0	3.3 ± 1.2	Yes	t (95) = 1.982, *p* = .050
	Enjoyment	3.9 ± 1.0	3.3 ± 1.4	No	t (85.289) = 2.584, *p* = .011
	Challenge	3.8 ± 1.1	3.2 ± 1.2	Yes	t (93) = 2.410, *p* = .018
Interpersonal	-	3.3 ± 0.9	2.2 ± 0.9	Yes	t (64) = 4.874, *p* < .001
	Affiliation	3.2 ± 1.3	2.3 ± 1.3	Yes	t (78) = 2.972, *p* = .004
	Competition	4.1 ± 1.1	2.4 ± 1.5	No	t (73.771) = 5.782, *p* < .001
Health	-	-	-	-	*p* > .05
	Ill-health avoidance	3.0 ± 1.4	3.7 ± 1.1	No	t (73.771) = -2.749, *p* = .008
Body-related	-	2.9 ± 1.2	3.7 ± 1.0	Yes	t (67) = -3.035, *p* = .003
	Weight management	2.9 ± 1.4	3.8 ± 1.1	Yes	t (77) = -3.462, *p* < .001
Fitness	-	-	-	-	*p* > .05

Note: The EMI-2 is the work of Markland and Ingledew (1997).

EMI-2 results between sexes

An independent-samples t-test was used to explore the EMI-2 sub models and scales between females and males (collapsed across the sample). Zero participants choose "*prefer not to answer*" or "*other*" for sex, but three participants skipped the response. Accordingly, up to 127 participants were included in this analysis, with the exact subject number being dependent on completion of the EMI-2 survey questions. Overall, there was no significant differences for any of the sub models or subscales between sexes (*p* > .05). Nonetheless, the ill-health avoidance subscale was trending towards significance (females: *M* = 3.5, *SD* = 1.2; males: *M* = 3.0, *SD* = 1.4; t (85) = 1.96, *p* = .053).

Barriers to exercise

Recall that participants reviewed a list of 20 items (i.e., actual or perceived barriers) and then typed their top three barriers in a textbox. Collapsed across the sample, a tally of responses revealed the following barriers were most impactful: "*I need to do better at managing my time to exercise more often*" (n = 40), "*I am not motivated to exercise*" (n = 31), "*There is not enough time in the day to exercise*" (n = 31), "*Weather conditions deter me from exercising*" (n = 23), and "*I would exercise but I am just lazy*" (n = 23). The tally appears higher than the n = 130 sample because each person identified up to three barriers. Table 3 provides frequency data for the first, second, and third most common barriers for the college athletes and nonathletes.

Table 3. First, second, and third most common barriers to exercise and frequency of the barrier for college athletes vs. nonathletes.

Barrier	College athletes	Nonathletes
First	"I need to do better at managing my time to exercise more" (n = 19)	"I am not motivated to exercise" and "I need to do better at managing my time to exercise more" (both, n = 21)
Second	"Weather conditions deter me from exercising" (n = 15)	-
Third	"I do not have an exercise partner to go with" and "I would exercise but I am just too lazy" (both, n = 13)	"There is not enough time in the day to exercise" (n = 20)

The magnitude of each barrier was rated from '0' [Never] to '100' [Always] based on how strong, frequent, or both, that barrier was perceived to be. The data violated Levene's Test for Equality, and adjustments were made. Overall, in accordance with H_2, the independent samples t-test revealed that college athletes (*M* = 45.3, *SD* = 34.2) deemed their primary barrier to be less impactful than nonathletes deemed their primary barrier (*M* = 69.2, *SD* = 28.3), t (89.657) = -3.750, *p* < .001. The same was true for the secondary (college athletes: *M* = 35.3, *SD* = 28.5 vs. nonathletes: *M* = 54.0, *SD* = 27.1; t (93) = -3.280, *p* = .001) and tertiary (college athletes: *M* = 28.3, *SD* = 22.2 vs. nonathletes: *M* = 46.9, *SD* = 25.2; t (90) = -3.755, *p* < .001) barriers.

Social media use

Investigation revealed that out of 130 participants, 78 participants (60.0%) reported using social media to gain workout inspiration, 27 participants (20.8%) did not, and 25 participants (19.2%) did not respond. There was a wide range of weekly social media usage reported (2-63 hr), and the included sample of 105 participants averaged 25.0 (*SD* = 12.2) hr a week. An independent-samples t-test revealed there was no significant difference between time spent on social media for college athletes and nonathletes, *p* > .05. However, when participants were collapsed and divided into tertiles based on weekly social media usage, an interesting finding arose. The highest-volume users (n = 32) averaged 39.0 (*SD* = 8.8) hr a week and the lowest-volume users (n = 29) averaged 13.0 (*SD* = 4.3) hr a week. As a directional t-test, in accordance with H_3, highest-volume users rated their barriers (*M* = 54.8, *SD* = 23.9) to be more impactful than lowest-volume users (*M* = 43.3, *SD* = 23.6), t (59) = -1.852, *p* = .035.

DISCUSSION

The sample included 130 participants who overwhelmingly identified as female, white, and educated beyond high school. Of those noting the designation, 56 participants were current college athletes and 55 were not. The sample was predominated by "*current exercisers*" (n = 97). Summarized, researchers hypothesized (H_1)

that motivations would be dependent on the subpopulation, (H_2) that college athletes would find their barriers to be less impactful than nonathletes, and (H_3) that highest-volume social media users would find barriers to be more impactful than lowest-volume users. There is data to support each hypothesis.

Collapsing data across groups, two sub models—the psychological sub model and the fitness sub model—were most important in the present sample. For the subscales, positive health and strength and endurance were most important. Previous researchers have investigated exercise motivation in university-going populations and found similar results. Sukys et al., (2019) identified health and fitness as chief motivators for their sample, while Ednie and Stibor (2017) found positive health to be a top motivator among their cohort. Ebben and Brudzynski (2008) found the top motivators of in their sample to be health, fitness, stress reduction, and more. The fact that researchers across different universities, with use of different survey tools, and from pre-pandemic to post-pandemic timepoints have found health and fitness to be key motivators for traditional, college aged samples speaks to the potential wide-spread impact and staying power of these motivators for this population.

College athletes were more motivated by the interpersonal sub model, as well as the revitalization, enjoyment, challenge, affiliation, and competition subscales, compared with nonathletes. Nonathletes were more motivated by the body-related sub model, as well as the ill-health avoidance and weight management subscales, compared with the athletes. We interpret these findings to fall in line with our hypothesis (H_1). Performance-focused ideas (college athletes: interpersonal sub model, revitalization, enjoyment, challenge, affiliation, and competition subscales) and general fitness or health (nonathletes: body-related sub model, ill-health avoidance and weight management subscales) are well-represented by the responses of our sample. Kilpatrick and colleagues (2005) have previously found that individuals who participated in sports were more intrinsically motivated (e.g., competition, affiliation, and challenge) compared to those engaging in regular exercise routines. Our findings are in concurrence such that college athletes ranked the interpersonal sub model and competition, affiliation, challenge, and enjoyment subscales higher than nonathletes. These findings are undergirded by the work of Frederick and Ryan (1993) who emphasized that individuals in sports are intrinsically driven due to autonomy. Our sample, like Frederick and Ryan (1993), also found nonathletes to rank the body-related sub model higher than college athletes. We speculate that nonathletes who exercise may become more cognizant of their body and thus are driven to activity for extrinsic attributes (e.g., weight management, ill-health avoidance) noted in the present study. The aggregated data suggests that a different source of motivation may compel nonathletes (swayed towards appearance) compared with athletes (swayed by intrinsic and extrinsic attributes of sport) to their various engagements.

Focused on post-pandemic research, our findings align with the outcomes of Vučković and colleagues (2022). These researchers measured motivation in college students and found that previous/current athletes rated the majority of the EMI-2 subscales (e.g., revitalization, enjoyment, challenge, social recognition, positive health, appearance, strength and endurance, nimbleness, and stress management) significantly higher than noncompetitors/nonathletes. There is considerable overlap—their data and ours identified revitalization, enjoyment, challenge, affiliation, and competition to be higher in athletes vs. nonathletes (Vučković et al., 2022).

While previous researchers have noted differences in motivation between females and males (Ednie & Stibor, 2017; Kilpatrick et al., 2005; Sukys et al., 2019), we did not find significant differences for any subscale or sub model between sexes. However, the ill-health avoidance subscale was trending toward it, with females ranking it higher (i.e., more important) than males (p = .053). A vital aspect of our work was that we afforded participants the opportunity to select sex from non-binary options and none chose to do so. Providing this data ("*zero participants choose 'prefer not to answer' or 'other' for sex*") is in line with emerging focus on the sex-data gap (Garver et al., 2023) and improved representation and inclusion in exercise-science research (Davis et al., 2024, Navalta et al., 2024). We urge others to provide similar details in their works—in this case, zero is data to acknowledge.

Common in the literature (Cowley et al., 2021; Ebben & Brudzynski, 2008; Hare et al., 2016; López de Subijana et al., 2015; Sukys et al., 2019; Tappe et al., 1989), the current sample highlighted time-focused (paraphrased as "*better at managing my time*" and "*not enough time in the day*") barriers and an overall lack of motivation (paraphrased "*not motivated*" and "*I am just lazy*") as impediments. Specific to the athletes, perhaps they identify time management issues due to their dual-focus on both academics and athletics. There was no question posed to the college athletes in the current study about their feelings toward these competing demands; thus, we can only speculate it may have been influential. We do know our college athletes felt that they needed to manage their time more effectively and that lacking an exercise partner was an accompanying barrier, a result not recognized by the nonathlete counterparts. Athletes may be accustomed to camaraderie and team-based relationships and have an engrained reliance on it. Nonathletes stated their most common barrier as lacking motivation, but they further followed the main trend of the study by noting that they needed to better manage their time. For nonathletes, exercise may not be as high of a priority as it is not tied to their daily or near-daily habits through required practices or games. This may be why many nonathletes lack motivation or do not make time in their day to complete physical activity.

College athletes and nonathletes chose their top three barriers from the same list. When ranking the perceived magnitude of the barriers, an interesting finding arose. College athletes deemed all three of their top barriers to be significantly less impactful than nonathletes deemed their respective top three barriers. This supports our hypothesis (H_2). Maybe college athletes do not or cannot let barriers hinder them from exercise or perhaps they find their motivations to be more compelling, in some way. We should not dismiss that this might be a finding related solely to lack of choice—a non-negotiable, set schedule and following a coach's instruction. Regardless, a brief search of the literature failed to reveal other studies that have asked this subsample about the "*magnitude*" of their perceived exercise barriers. We urge others to investigate this finding using a similar method.

We hypothesized (H_3) that social media volume usage may relate to perceived impact of barriers based on previous research (Graff & Czarnomska, 2019; Holland & Tiggemann, 2017). Our highest-volume users (n = 32) averaged 39.0 hr weekly, which is 5.6 hr each day. The lowest-volume users (n = 29) averaged 13.0 hr weekly, which is 1.9 hr each day. In accordance with H_3, the highest-volume users rated their barriers to be more impactful than lowest-volume users (Table 3). This is particularly problematic when aligned with the fact the sample highlighted time-focused barriers (e.g., "*better at managing my time*") as their main concern. Time-focused barriers can only be addressed through effective allocation of the 24-hr that each of us is given daily. Time has been an oft-cited barrier across the history of studies focused on exercise barriers, and the current researchers believe that social media is a current-culture culprit that helps "*not enough time*" persist as a key barrier to exercise.

The present study is affected by several limitations. The convenience sample beget attrition (and skipped questions), and only 102 participants completed the full survey. Loss of data most directly impacted statistical power for the sub models of the EMI-2. Additionally, the present research had to be narrowed to focus on traditional, college aged individuals, and it was skewed toward those identifying as female, white, active, and educated. Lastly, we gathered physical activity and social media volume usage data via self-report. Use of objective measures of physical activity and screen time usage statistics are recommended in future studies.

CONCLUSIONS

This research is important as it focuses on motivations and barriers to exercise—exercise is critical to multiple dimensions of wellness. The main motivators for the sample were the psychological and fitness sub models and the positive health and strength and endurance subscales. For barriers, college athletes noted needing to better manage time to exercise more, and nonathletes noted the same, as well as not being motivated. College athletes perceived the magnitude of their barriers to be significantly less than nonathletes when rated on a simple, self-created scale. We encourage others to use this same, simple scale to see if these findings are replicated in similar and different samples. Social media usage was prevalent among our participants, and the highest-volume users rated their barriers to be more impactful than the lowest-volume users. Social media might be differentially impacting users based on volume of engagement, and the impacts of social media need further investigation. We encourage others to use our findings to promote participation in exercise for athletes and nonathletes alike.

AUTHOR CONTRIBUTIONS

SLB: conceptualization, methodology, analysis, writing—original draft, and review and final editing. MJG: conceptualization, methodology, analysis, writing—original draft, review and final editing, and project supervision. AR: conceptualization, methodology, analysis, and review and final editing.

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