UNIVERSITY OF SOUTH CAROLINA LANCASTER

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RELATIONSHIP AMONG SCREENTIME, BODY FAT PERCENTAGE, AND MEASURED PHYSICAL ACTIVITY IN COLLEGE STUDENT POPULATIONS

Vanessa Grout, Elizabeth A. Easley, Sarah H. Sellhorst, William F. Riner, FACSM. Dept. of Exercise Science, USC Lancaster, SC 29720

UNIVERSITY OF SOUTH CAROLINA LANCASTER

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ABSTRACT

Purpose: To determine if there is a relationship among screen time, body fat percentage (BF%), and measured physical activity in traditional aged college students.
Methods: Anthropometric data were collected on 100 traditional aged college students (18-25y). BF% was measured using dual energy x-ray absorptiometry (GE Lunar iDXA). Average minutes per day (weekdays and weekend days) spent on screen time including computer and videogame use as well as television use were self-reported using the validated PACE Adult Activity Questionnaire. Time spent on televisions and computers/ videogames were assessed separately. Moderate-to-vigorous physical activity (MVPA) was measured with use of accelerometers (Acti-Graph-GT3X, Pensacola, FL).
Results: Pearson correlational analyses were used to determine the association among screen time, body fat percentage, and physical activity. There were no statistically significant correlations between screen time and the following variables: body fat percentage (r = -0.50, p = 0.619), MVPA (r = -0.124, p = 0.258), and average steps (r = -0.154, p = 0.176) when evaluating the total group. However, male screen time to steps showed significant correlation (r = -0.450, p = 0.010) between weekend and weekday averages. Overall, there were no significant correlations among body fat percentage, average steps, BMI, and moderate to vigorous physical activity in either sex.
Discussion: The study emphasizes limitations on effective screen time monitoring due to the accuracy of self-report. It is also possible the questionnaire used may be out of date in regards to use of technology that is considered “screen-time”. Reporting of cell phone use was not included in this study.
Conclusion: This study did not take into account factors such as the impact of diet, lifestyle, and genetics. However, our study concludes that there is a minimal impact in males. Additional research is suggested to further our findings.

INTRODUCTION

- “Screen time” is defined as time spent using a device that promotes sedentary behavior such as television viewing, computer use, and playing video games (Fountaine, Liguori, Mozumdar, Schuna, 2011).
- Sedentary behavior is believed to have increased over the past years due to the popularization of social media (Fountaine, Liguori, Mozumdar, Schuna, 2011).
- According to a systematic review research, increased sedentary time was linked to lower health-related quality of life among adolescents (Wu et al., 2017).
- Adverse effects that result from sedentary behaviors include an increased risk of obesity as well as an increased risk of cardiovascular disease (Wu et al., 2017).
- Currently, American college students are not meeting physical activity guidelines (Fountaine, Liguori, Mozumdar, Schuna, 2011).
- Studies have yet to conclude whether there is an association between screen time and body composition in college student populations.
- In order to develop interventions for screen time among college student populations, it is important to understand the relationship among screen time, body

PURPOSE

- To determine if there is a relationship among screen time, body fat percentage (BF%), and measured physical activity in traditional aged college students at a two year rural campus.

METHODS

Participants

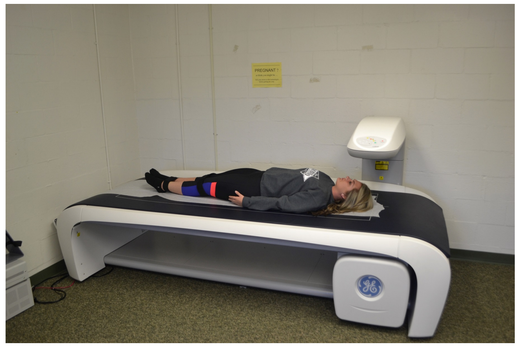
- Anthropometric data were collected on 100 traditional aged college students (18-25y).

Screen Time

- Screen time was measured using the PACE Adult Activity Questionnaire
- Average minutes per day (weekdays and weekend days) spent on screen time including computer and videogame use as well as television use were self-reported using the PACE Adult Activity Questionnaire.
- Time spent on televisions and computers/videogames were assessed separately.

Body Fat Percentage

- BF% was measured using dual energy x-ray absorptiometry (GE Lunar iDXA).



Physical Activity Measurements

- Moderate-to-vigorous physical activity (MVPA) and sedentary time were measured with use of accelerometers (Acti-Graph-GT3X, Pensacola, FL).
- Students were asked to wear the accelerometers for 7 consecutive days for all waking hours

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RESULTS

Table 1. Demographics

	Males	Females	Total
Region % Total fat Measured by DXA	24.48 ± 8.44	34.19 ± 6.71	29.43 ± 9.00
Measured Height in cm	175.46 ± 7.85	164.62 ± 5.25	169.93 ± 8.57
Measured Weight in kg	78.65 ± 18.98	67.97 ± 15.43	73.20 ± 17.99
Age (yrs)	19.47 ± 1.53	19.31 ± 1.40	19.38 ± 1.46

Table 2.

	Males	Females	Total
Screen time Week Days	269.68 ± 137.81	262.96 ± 162.40	266.25 ± 150.11
Screen time Weekend	282.90 ± 124.43	263.57 ± 153.48	273.04 ± 139.62
MVPA	320.82 ± 134.66	213.02 ± 136.87	265.80 ± 145.53
Average Steps	7461.16 ± 2892.63	6510.89 ± 2826.86	6976.12 ± 2883.96

- There were no statistically significant correlations between screen time and the following variables: body fat percentage (r = -0.50, p = 0.619), MVPA (r = -0.124, p = 0.258), and average steps (r = -0.154, p = 0.176) when evaluating the total group. However, male screen time to steps showed significant correlation (r = -0.450, p = 0.010) between weekend and weekday averages.
- Overall, there were no significant correlations among body fat percentage, average steps, BMI, and moderate to vigorous physical activity in either sex.

DISCUSSION

- Our study concludes that there is a small yet significant association among male college students. Males’ screen time to steps showed significant correlation within weekend and weekday averages.
- This study did not take into account factors such as the impact of diet, lifestyle, and genetics.
- The study emphasizes limitations on effective screen time monitoring due to the unreliable nature of self report.
- It is also possible the questionnaire used may be out of date in regards to use of technology that is considered “screen-time”.
- Reporting of cell phone use was not included in this study.
- Additional research is suggested to further our findings.

REFERENCES

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