

Correlation of Physical Activity and Social Media Use of Students

Jonar T. Martin, Elizabeth M. Acampad, Regina A. Baligad, Anatalia E. Larce and Michael E. Santos
Physical Education Department, College of Education, Angeles University Foundation Mc Arthur Hi-way, Angeles City, Philippines
martin.jonar@auf.edu.ph

Keywords: Physical activity, Social Media Use, Physical Education, Exercise.

Abstract: The purpose of the study was to examine the association between physical activity participation and social media use among college students. A convenience sample of college students ($N = 58$) from a private university voluntarily participated in this study. Participants self-reported their daily physical activity for two weeks and completed the Use of Social Media Questionnaire. Descriptive and correlation statistical analyses were conducted to describe the physical activity participation and social media use of students. Results of the study indicated that majority of the students who participated in the study have a sedentary physical activity level. It was indicated that the participants had very high internet use in terms of hours per day and moderately high social media use in terms of days per month. Moreover, data revealed that the students' social media use was not associated with physical activity participation. This means that the extent of social media use was not a determining factor on the students' participation level in physical activity. However, due to the low level of physical activity it is recommended that students increase their physical activity in order to maintain a healthy and active lifestyle.

1 INTRODUCTION

Physical fitness nowadays is considered a powerful marker of health status (Warburton, Nicol, & Bredin, 2006; Owen et al., 2010) which can be achieved by being physically active (Heron & Bradshaw, 2010; Warburton, Nicol, & Bredin, 2006; WHO, 2011). Physical activity promotion is viewed to address the problem of obesity, which the world is facing in epidemic rates (James, 2004; WHO, 2011). Yet, a large percentage of the population does not meet the minimum activity guidelines necessary for good health (Guthold et al., 2008; Haskell et al., 2007). In particular, researchers have reported a considerable decrease in the levels of physical activity in young people (Sue et al., 2002; Tomkinson, 2007), which is also true in the Philippines (Tanchoco et al., 2005). As stated by Tudor-Locke, Bassett, Swartz, et al., (2004), the most famous and practical type of physical activity that people are engaged in a regular basis is walking, which people do in many activities of daily living such as recreational, transportation and occupational (Bassett, et al., 2000). Yet, people do not reach the recommended amount of steps for either health or fitness.

One factor contributing to young people's physical inactivity is internet use. Previous research has illustrated that decreased in physical activity is

associated with more time spent on the internet (Ross et al., 2009; Zimmerman-Sloutskis et al., 2010). A vast majority of students have internet access and own smartphones that allow access to social networking sites (Buffardi & Campbell, 2008; Ross et al., 2009). It has been suggested that time spent on social networking sites comes at the expense of other activities. Moreover, social media has made it easy for many to become lethargic and less inclined to go outdoors just for some exercise or even working out at home. In contrast, in a study conducted by Zach and Lissitsa, (2010), they found out that long hours spent in front of a computer screen doesn't generally take time away from physical activity, which contradicts the widespread assumption that time spent on surfing the web comes at the expense of an active lifestyle. The contrasting result of the studies needed further research to make a significant conclusion on the relationship between social media use and physical activity. Likewise, studies have investigated the effect of internet use to health and physical activity but few on the use of social networking.

In a time when it is increasingly likely for students to become physically inactive, it is important to understand the relationship between students' social media use and their physical activity level. The purpose of the study, therefore, is to investigate the students' social media use in relation to their physical

activity levels. The study sought to answer the following questions:

1. What is the physical activity participation level of the college students?
2. What is the extent of usage of social media among college students in terms of?
 - 2.1. Hours per day
 - 2.2. Days per week
3. Is there a significant relationship between the students' physical activity participation level and social media use?

2 METHODS

2.1 Research Design and Participants

A convenience sample of college students ($N = 65$) from a private university voluntarily participated in this study. Participants included both males ($n = 28$) and females ($n = 37$). Of the 65 participants who began the study, 58 completed the research. Two (2) Male and 5 female participants did not complete the study due to non-compliance to protocol. Participants completed the research by wearing the pedometer for the two-week period and provided both step and survey data. Age range of the participants was 15 to 19 years with a mean age of 17 with a mean age of 17. No age restriction was placed on the college participants. Participants were of varying activity levels, since the convenience sample was physical education classes. However, current involvement in exercise was neither a requirement nor an exclusionary factor for participation in this study.

2.2 Instruments

2.2.1 Walking Activity Recording Log

A walking activity-recording log was created for participants to record step data per day generated from the pedometer. Data were submitted to the researchers at the end of two weeks. According to Tudor-Locke et al., (2004), minimum of three days is considered to offer reliable information for determining average daily steps, as long as Sunday is included as one of the three days. At the orientation, participants were given instructions and practiced correct placement of the pedometer and were constantly reminded through their social media accounts. Pedometers according to researchers are easy to use and less expensive (Haines, et al., 2007; Tudor-Locke & Myers, 2001) and can quantitatively measure the amount of physical activity throughout a

given time period (Behrens & Dinger, 2003; Behrens, et al., 2005), and can practically be used with large population (Tudor-Locke & Meyers, 2001).

2.2.2 The Use of Social Media Questionnaire

This written questionnaire was adopted from Pew Internet and American Life Project's "Social Networking Websites and Teens Survey" by Lenhart, Purcell, Smith, and Zickuhr, (2010). Only the time spent per day and per week questions in the survey was included to gather information on the participants' usage of social media. The questions on the instrument were designed to satisfy the research questions as set forth in the introduction of this study.

2.3 Procedure

Prior to the onset of the study and any data collection, approval was given by the authorities concerned of a private university in Angeles City, Pampanga, Philippines. The convenience sampling was chosen due to time limitations and researcher accessibility to participants. The opportunity to be a participant in the research study was announced in several sophomore college physical education classes in a voluntary basis without any exchange of course credit. The researchers provided an overview of the research design, along with its purpose. The respondents were given verbal and written assurance of their anonymity and that all information exchange will be confidential.

All participants were instructed to self-report their walking activity for two weeks with the use of the walking activity recording log. Participants were instructed to record their pedometer data logs each day. During this period, participants were instructed not to purposefully increase their amount of daily physical activity and social media use, but rather to simply perform their normal, everyday activities. At the end of two weeks, the researchers met with participants to collect the walking activity log and to complete the research surveys – 1) Walking activity recording log and 2) The Use of Social Media Questionnaire.

2.4 Data Analysis

The statistical analysis was conducted in the following order: descriptive statistics and Pearson correlation. Prior to statistical analyses, the normality and missing values were examined. For the descriptive statistics, the mean and standard deviation were computed. Furthermore, Spearman rho

correlation was done to examine relationships between physical activity level and social media use. Statistical analysis was completed with the Statistical Package for the Social Sciences software (2008), version 17.0.

3 RESULTS AND DISCUSSION

3.1 Physical Activity Level and Social Media Use

Table 1 shows the mean and standard deviation of the study variables. As shown in the table, the participants' average walk per day (N=58, M=4,284±291) indicated that they were way below the recommended number of steps per day of 10,000 steps/day which is a popular guideline by which minimum activity levels for good health can be achieved (Tudor-Locke & Myers, 2001). This finding is similar to that of Hackman and Mintah, (2010) and Martin and Santos, (2015) where likewise identified the same findings that participants failed to meet the minimum recommended guidelines on number of steps per day.

Table 1: Mean and standard deviation of physical activity and internet use (N=58).

Variable	M	SD
Internet Use-Hours/Day	4.896	.55
Internet Use-Hours/Day	3.431	1.39
PA	4294	291

Figure 1 shows that a big number of respondents can be classified as 'sedentary'; whereas, only a small number of participants are highly active. The walking activity level of the participants was described based on the proposed activity level indices relative to average daily steps by Tudor-Locke et al., (2004). This finding is consistent with the researches of Hackman and Mintah, (2010) and Martin and Santos, (2015) which revealed that college participants were below the ideal physical activity level.

For the participants' social media use, the participants' have very high Internet Usage in terms of hours per day (M=4.896 ± .55) and moderately high internet usage in terms of days per month (M=3.431 ± 1.39).

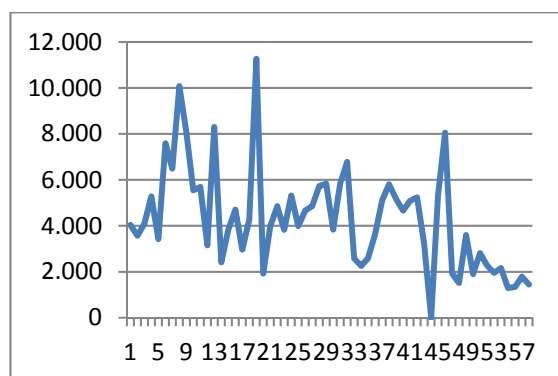


Figure 1: Participants' average walk per day (N=58).

3.2 Relationship between PA and Social Media Use

A Spearman rho correlation was conducted to test the relationship between physical activity participation and social media use (Table 2). As shown in the table, physical activity participation was not associated with social media use in terms of hours per day (rho=.256, p-value> .05) and day per month (rho=-.114, p-value> .05). Result confirmed the findings of Zach and Lissitsa, (2010) that long hours spent in social media doesn't generally take time away from physical activity, which contradicts the popular notion that active lifestyle is taken for granted due to too much exposure to the internet or social media.

Table 2: Correlation between Social Media Use and Physical Activity.

Variable	Spearman rho	Internet Use- Hrs/Day	Internet Use- Day /Month	PA
Internet Use- Hrs/Day	Correlation Coefficient	1	-.199	.256
	Sig. (2-tailed)		.134	.053
Internet Use- Day/Month	Correlation Coefficient	-.199	1	-.114
	Sig. (2-tailed)	.134		.393
PA	Correlation Coefficient	.256	-.114	1
	Sig. (2-tailed)	.053	.393	

4 CONCLUSION

This study found out that majority of the students who participated in the study belongs to the sedentary

walking activity level. It was indicated that the participants had very high internet use in terms of hours per day and moderately high social media use in terms of days per month. Moreover, data revealed that the students' social media use was not associated with physical activity participation. This means that the extent of social media use was not a determining factor on the students' participation level in physical activity. Although it is a relief to know that physical activity participation was not related to the social media use of students, it is alarming to know that majority of the respondents belong to the sedentary lifestyle level. This finding emphasizes the need for the physical educators to intervene and promote an active lifestyle. Likewise, students should also be educated on how to manage their social media use because of possible other detrimental effects. Through the process of teaching, physical educators should employ various strategies that encourage a physically active lifestyle.

More research is needed on walking as a physical activity so that factors that affect walking activity level can be thoroughly explored. Likewise, future research may look into intervention strategy that would increase physical activity with the use of social media since the participants have a very high extent of usage in terms of hours per day. It is recommended that college students increase their walking activity in order to maintain an active lifestyle.

REFERENCES

- Bassett, D.R., Jr., Cureton, A.L., & Ainsworth, B.E. 2000, 'Measurement of daily walking distance-questionnaire versus pedometer', *Medicine and Science in Sports and Exercise*, vol.32, no. 5, pp. 1018-1023.
- Behrens, T. & Dinger, M. 2003, 'A preliminary investigation of college students' physical activity patterns', *American Journal of Health Studies*, vol.18, no.2/3, pp. 169-172.
- Behrens, T., Hawkins, S., & Dinger, M. 2005, 'Relationship between objectively measured steps and time spent in physical activity among free-living college students', *Measurement in Physical Education and Exercise Science*, vol. 9, no.2, pp.67-77.
- Buffardi, L.E. & Campbell, W.K. 2008, "Narcissism and social networking web site", *Personality and Social Psychology Bulletin*, vol.34, no.10, pp.1303-1314. Available from: <http://journals.sagepub.com/doi/abs/10.1177/0146167208320061> [20 September 2017].
- Guthold, R., Ono, T., Strong, K.L., Chatterji, S., & Morabia, A. 2008, 'Worldwide variability in physical inactivity: a 51-country survey', *American Journal of Preventive Medicine*, vol.34, no.6, pp. 486-494.
- Hackman, D.J. & Mintah, J.K. 2010, 'Pedometers: a strategy to promote increased physical activity among college students', *Journal of Instructional Pedagogies*, vol. 4, pp. 1-28.
- Haines, D.J., Davis, L., Rancour, P., Robinson, M., Neel-Wilson, T., & Wagner, S. 2007, 'A pilot intervention to promote walking and wellness and to improve the health of college faculty and staff', *Journal of American College Health*, vol.55, no.4, pp. 219-225.
- Haskell, W.L., Lee, I.M., Pate, R.R., Powell, K.E., Blair, S.N., Franklin, B.A., Macera, C.A., Heath, G.W., Thompson, P.D., & Bauman, A. 2007, 'Physical activity and public health: updated recommendation for adults', American College of sports Medicine and the American Heart Association, *Medicine in Science and Sports Exercise*, vol.39, no.8, pp. 1423-1434.
- Heron, C. & Bradshaw, G. 2010, *Walk This Way: Recognizing Value in Active Health Prevention* London, Natural England.
- James, P.T. 2004, 'Obesity: The worldwide epidemic', *Clinics in Dermatology*, vol. 22, no. 4, pp. 276-280.
- Lenhart, A., Purcell, L., Smith, A., & Zickuhr, K. 2010, *Social media and young adults. Pew Internet and American Life Project*. Available from: http://www.pewinternet.org/files/oldmedia/Files/Reports/2010/PIP_Social_Media_and_Young_Adults_Report_Final_with_toplevels.pdf [20 September 2017].
- Martin, J.T. & Santos, M.E. 2015, 'Perceived barriers to walking activity of college students', *Asia Life Sciences*, vol. 24, no. 1, pp. 207-218.
- Owen, N., Healy, G.N., Matthews, C.E., & Dunstan, D.W. 2010, 'Too much sitting: the population health science of sedentary behavior', *Exercise Sport Science Reviews*, vol.38, pp.105-113.
- Ross, C., Orr, E.S., Arseneault, J.M., Simmering, M.G., & Orr, R.R. 2009, 'Personality and motivations associated with Facebook use', *Computers in Human Behavior*, vol. 25, no.2, pp. 578-586.
- Sue, Y.S., Kimm, M.D., Glynn, N.W., Kriska, A.M., Barton, B.A., Kronsberg, S.S., Daniels, S.R., Crawford, P.B., Sabry, Z.I., & Liu, K. 2002, 'Decline in Physical Activity in Black Girls and White Girls during Adolescence', *The New England Journal of Medicine*, vol. 347, pp.709-715.
- Tanchoco, C.C., Yuchingtat, G.P., Gayya, C.T., Barrameda, M.B. & Panungao, M.P. 2005, *Physical activity assessment of Filipino school children ages 9-12 years*, Unpublished. Available from: http://obesity.org.ph/v4/wp-content/uploads/2013/09/physical_activity.pdf [20 September 2017].
- Tomkinson, G.R. & Olds, T.S. 2007, 'Secular changes in pediatric aerobic fitness test performance: the global picture', *Medical Sport Science*, vol.50, pp. 46-66.
- Tudor-Locke, C.E. & Myers, A.M. 2001, 'Challenges and opportunities for measuring physical activity in sedentary adults', *Sports Medicine*, vol. 31, no.2, pp. 91-100.
- Tudor-Locke, C., Burket, L., Reis, J.P., Ainsworth, B.E., Macera, C.A. & Wilson, D.K. 2004, 'How many days

- of pedometer monitoring predict weekly physical activity in adults?', *Preventive Medicine*, vol. 40, no.3, pp. 293-296.
- Warburton, D.E., Nicol, C.W., & Bredin, S.S. 2006, 'Health benefits of physical activity: the evidence', *Canadian Medical Association Journal*, vol. 174, no. 6, pp. 801-809.
- WHO 2011, '*Global recommendations on physical activity for health*', World Health Organization, World Health Status 2011.
- Zach, S. & Lissitsa, S. 2010, *Will the internet make you a couch potato? Surprisingly, not*. Available from:
Available from:
<http://www.israelnationalnews.com/News/News.aspx/216706> [20 September 2017].
- Zimmermann-Sloutskis, D., Wanner, M., Zimmermann, E., & Martin, B. W. 2010, 'Physical activity levels and determinants of change in young adults: a Longitudinal panel study', *The International Journal of Behavioral Nutrition and Physical Activity*, vol.7, no. 2.

