Factors Affecting Physical Activity and Sedentary Behavior in University Students: A Cross-Sectional Study

Ching-Wen Hung, MSN, RN
Health Center, Office of Student Affairs, National Taichung University of Education, Taichung, Taiwan
Yun-Ping Lin, PhD, RN
School of Nursing, China Medical University, Taichung, Taiwan

Background: University students’ reduction in physical activity and increases in sedentary behaviors are harmful to their health. There is a lack of studies on the university students’ sedentary behaviors conducted in Taiwan. Thus, understanding university students’ physical activity and sedentary behavior and their influencing factors is a top public health issue.

Purpose: This study is based on core concepts of social cognitive theory – personal psychosocial factors (e.g., self-efficacy and self-regulation) and environmental influences (e.g., social support and physical environment). The purpose of this study is to determine the current state of physical activity and sedentary behavior and their influencing factors among university students in Taiwan.

Methods: This study conducted a cross-sectional survey of 531 students from 3 universities in central Taiwan. A total of 513 valid questionnaires (96.6%) were returned. For research tools, we utilized the International Physical Activity Questionnaires (IPAQ)-Taiwan short form (self-administered), sedentary behavior questionnaire (SBQ), self-efficacy for physical activity, self-efficacy for reducing sedentary behaviors, self-regulation for sitting less and moving more, social support for physical activity, physical activity environments on campus, and personal characteristics. The inferential statistics were derived through independent sample t-test, one-way analysis of variance (ANOVA), Pearson product-moment correlation and multiple regressions.

Results: Approximately 36% of university students did not achieve the recommended amount of physical activity, and over 60% engaged in too much sedentary behaviors. Male students performed more physical activity (2946.7 MET-minutes/week) than female counterparts (2081.9 MET-minutes/week). Males and females preferred different types of physical activity. In terms of sedentary behaviors, both male and female students’ average sitting time on weekdays and weekend days exceeded 8 hours a day. Female students’ average weekday and weekend day sitting time (9.61 and 10.62 hours, respectively) were higher than male counterparts (9.14 and 9.98 hours, respectively). As for factors that influenced physical activity, peer support for physical activity ($p < .001$), self-efficacy for physical activity ($p < .001$) and self-regulation for sitting less and moving more ($p < .001$) may explain 15.7% of the variance in physical activity. However, none of the variables that showed statistical significance with the sedentary behavior.

Conclusions: Male students engaged in more physical activity and less sedentary behavior than female counterparts. Self-efficacy for physical activity, self-regulation for sitting less and moving more, and family and peer support for physical activity are significant predictors of physical activity among university students. Accordingly, we suggest that the university’s health promotion practitioners adopt different strategies for male and female students, design diverse and interesting types of physical activity to increase participation, plan intervention programs to increase university students’ self-efficacy for physical activity, self-regulation for sitting less and moving more, and peer support for physical activity to increase students’ physical activity levels.
Factors Affecting Physical Activity and Sedentary Behavior in University Students: A Cross-Sectional Study

**Keywords:**
Physical activity, Sedentary behavior and University student

**References:**


Van Dyck, D., De Bourdeaudhuij, I., Deliens, T., & Deforche, B. (2015). Can changes in psychosocial factors and residency explain the decrease in physical activity during the transition from high school to college or university. *International Journal of Behavioral Medicine, 22*(2), 178-186.

**Abstract Summary:**
Approximately 36% of university students did not meet the recommendations for physical activity, and over 60% engaged in too much sedentary behaviors. Self-efficacy for physical activity, self-regulation for sitting less and moving more, and family and peer support for physical activity are significant predictors of physical activity among university students.

**Content Outline:**

**Introduction**
A. University students’ reduction in physical activity and increases in sedentary behaviors are harmful to their health.

B. There is a lack of studies on the university students’ sedentary behaviors conducted in Taiwan.
C. The purpose of this study was to determine the current state of physical activity and sedentary behavior and their influencing factors among university students in Taiwan.

Body

A. There is a tendency towards increased sedentary behaviors among university students in Taiwan.

1. Over 60% of university students engaged in too much sedentary behaviors (≥8 hours/day).

   a) Both male and female students’ average sitting time on weekdays and weekend days exceeded 8 hours a day.

   b) Female students’ average weekday and weekend day sitting time (9.61 and 10.62 hours, respectively) were higher than male counterparts (9.14 and 9.98 hours, respectively).

B. Approximately 36% of university students did not achieve the recommended amount of physical activity, whereas 64.1% met physical activity guidelines.

1. Male and female students who did not meet the recommendations for physical activity were 27.8% and 39.4%, respectively.

2. Male and female students who met the recommendations for physical activity were 72.2% and 60.6%, respectively.

3. Male students performed more physical activity (2946.7 MET-minutes/week) than female counterparts (2081.9 MET-minutes/week).

C. Factors that may influence physical activity and sedentary behavior were examined.

1. Peer support for physical activity (p < .001), self-efficacy for physical activity (p < .001) and self-regulation for sitting less and moving more (p < .001) may explain 15.7% of the variance in physical activity.

2. None of the variables that showed statistical significance with the sedentary behavior.

Conclusion

A. Male students engaged in more physical activity and less sedentary behavior than female counterparts.

B. Self-efficacy for physical activity, self-regulation for sitting less and moving more, and family and peer support for physical activity are significant predictors of physical activity among university students.

C. We suggest that the university’s health promotion practitioners adopt different strategies for male and female students, design diverse and interesting types of physical activity to increase participation, plan intervention programs to increase university students’ self-efficacy for physical activity, self-regulation for sitting less and moving more, and peer support for physical activity to increase students’ physical activity levels.

First Primary Presenting Author

Primary Presenting Author
Ching-Wen Hung, MSN, RN
National Taichung University of Education
Health Center, Office of Student Affairs
School Health Nurse
West Dist.
Taichung
Taiwan

**Author Summary:** Ms. Hung is a School Health Nurse at the National Taichung University of Education. She plans to cooperate with school units, student clubs, off-campus health units and medical institutions to jointly implement the annual school health plan. Her recent research interests focus on the health promotion of university students for increasing physical activity and reducing sitting.

Second Secondary Presenting Author

**Corresponding Secondary Presenting Author**

Yun-Ping Lin, PhD, RN
China Medical University
School of Nursing
Associate Professor
Taichung
Taiwan

**Author Summary:** Dr. Lin is currently serving as Associate Professor of the School of Nursing. Her broad area of interest is in changing health behaviors. Her recent research interests are primarily in the field of workplace health promotion interventions for increasing physical activity and reducing sitting. Moreover, she is currently working on a project to design a mHealth technology-based health promotion intervention for sitting less, moving more and eating healthy for sedentary workers.