

Relationship Between Health Behaviors and Academic Performance in Pharmacy Students in Their Didactic Years

Gabriella Gambadoro¹ PharmD Candidate, David Nisanov¹ PharmD Candidate, Daniel Streng¹ PharmD Candidate, Vincent Tran¹ PharmD Candidate, Sandipan Bhattacharjee, B.Pharm, MS, PhD²

University of Arizona College of Pharmacy¹, University of Texas at Austin, Health Outcomes Division, College of Pharmacy, Austin, Texas²



Pharmacy



INTRODUCTION

- Health behaviors can substantially impact one's quality of life by aiming at the prevention or detection of illnesses.^{1,2}
- Performing well academically is important for PharmD students to graduate and fulfill their roles in providing optimal healthcare.
- Limited studies have been conducted to analyze the effects of health behaviors and their association with academic performance among PharmD students.
- The existing studies have demonstrated that exercise can lead to improved academic performance. However, there are limitations to these studies in that they did not examine other facets of health behaviors such as study habits and the use of tobacco or alcohol.³

OBJECTIVES

- To compare the relationship between health behaviors on academic performance amongst PharmD students at the University of Arizona College of Pharmacy.
- To determine if PharmD students who meet recommended health behaviors will have a higher-grade point average (GPA) compared to students that do not.

METHODS

Study Design: Observational study

Outcomes Measured:

- Primary outcome: Comparing GPA of PharmD students who meet the U.S. Department of Health and Human Services (HHS) recommended physical activity guidelines to GPA of those who do not.
- Secondary outcome: Comparing GPA of PharmD students who meet the U.S. Dietary Guidelines for Americans recommended alcohol consumptions to the GPA of those who do not.

Data Collection Procedures:

- 371 PharmD students in the classes of 2021, 2022, and 2023 at the University of Arizona College of Pharmacy were emailed a voluntary and anonymous survey using Qualtrics software.
- The survey included 5 demographic questions and 17 questions regarding academics and health behaviors.
- Questions relating to academics included GPA, leadership positions, time spent studying, and hours worked per week.
- Questions regarding health behaviors included tobacco and alcohol use, physical activity (type, intensity, frequency), and average hours of sleep per night.

METHODS (CONTINUED)

- The responses were stored in a secure server in the Qualtrics Server with a protective password. Only the adviser, students, and statistical consultants were able to access the data files.

Data Analysis: Independent sample t-tests were used and reported as a mean, standard deviation, and p-value.

RESULTS

Table 1: Baseline Characteristics (N=91)

Gender	N (%)
Female	58 (64%)
Male	31 (34%)
Prefer not to answer	2 (2%)
Ethnicity	N (%)
White/Caucasian	60 (66%)
Asian/Pacific Islander	19 (21%)
Other	12 (13%)

BMI Categories

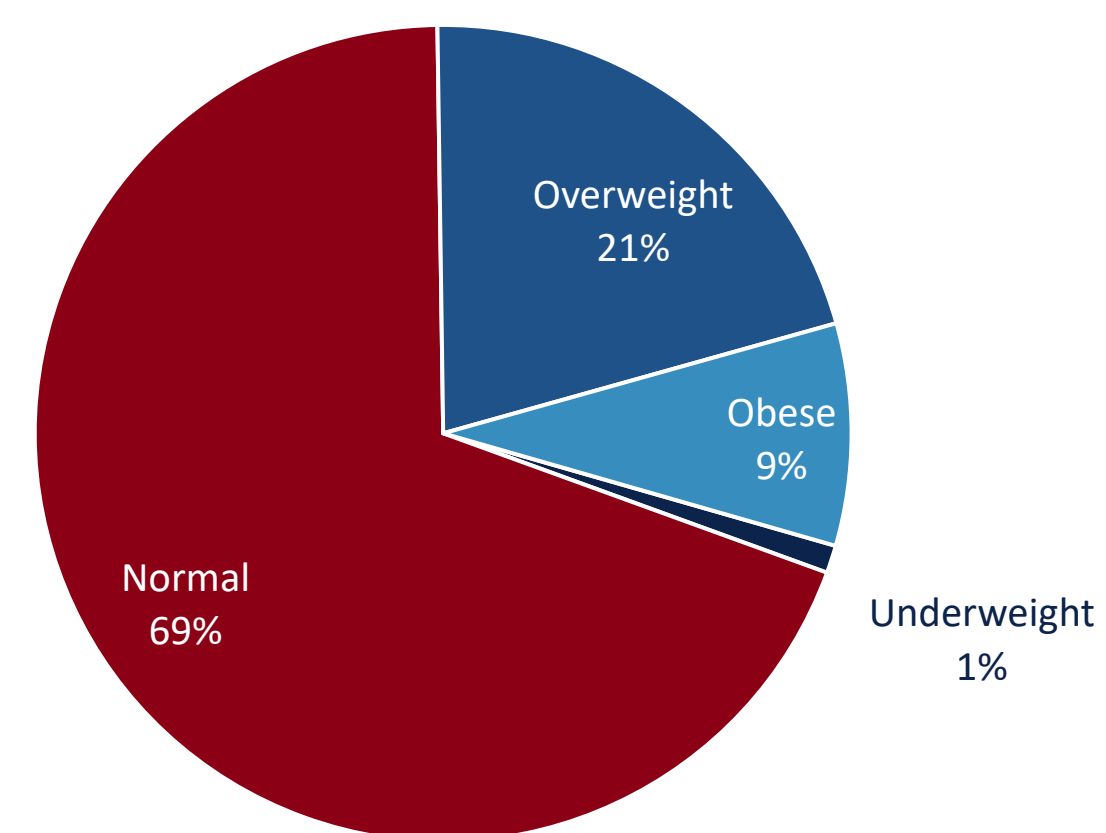


Table 2: Age Categories (N=91)

Age	18-22	23-27	28-32	33-37	Over 37
N	7	59	13	8	4
(%)	(8%)	(65%)	(14%)	(9%)	(4%)

RESULTS (CONTINUED)

Table 3: Statistical Analysis

Guidelines	Physical Activity		Alcohol Consumption		Nicotine Use	
	Yes	No	Yes	No	Yes	No
Met Requirements						
Mean GPA	3.70	3.57	3.61	3.67	3.50	3.63
SD	0.25	0.32	0.31	0.28	0.39	0.28
df	85		54		10	
T-stat	2.51		-0.59		-1.04	
p-value	0.04		0.56		0.32	

- A total of 91 PharmD students from the classes of 2021, 2022, and 2023 (25% response rate from the 371 PharmD students currently enrolled) at the University of Arizona College of Pharmacy completed the questionnaire.
- Survey respondents were primarily female (64%), White/Caucasian (66%), had normal BMI (69%), and in the 23-27-year-old age range (65%).
- 36 of the 91 participants met recommended health guidelines for physical activity.
- Recommended guidelines for alcohol consumption were met by 64 of the 91 participants.
- 10 of the 91 participants reported concurrent use of nicotine-containing products.

CONCLUSIONS

- The results suggest an association between health behaviors and academic performance.
- Meeting the HHS recommended physical activity guidelines was associated with a higher GPA (3.70) compared to those who did not (3.57).
- Meeting recommended HHS guidelines for alcohol consumption was not associated with a significant difference in GPA.
- There was no significant difference in GPA between students who use tobacco/nicotine products and those who do not.
- Meeting recommended health behaviors may improve academic performance and help facilitate patient counseling.

CONCLUSIONS (CONTINUED)

- Emphasizing the importance of exercise to students enrolled in PharmD programs may lead to improved academic performance.
- This study may motivate PharmD students to exercise regularly and promote recommended health behaviors.
- Future studies with a larger participants pool are warranted to further explore the influence of alcohol consumption and nicotine usage on academic performance.

LIMITATIONS

- Data collected is subjective and self-reported.
- Surveys sent through email may not be seen or opened.
- Participation is voluntary.
- It is assumed that participants understand the questions and respond honestly and accurately.
- Small sample size, the survey response rate of 25%.
- Grades from the 2020 spring semester may not accurately reflect student's typical academic performance due to the COVID-19 pandemic.

REFERENCES

- 2018 Physical Activity Guidelines Advisory Committee. 2018 Physical Activity Guidelines Advisory Committee Scientific Report. Washington, DC: US Dept of Health and Human Services.
- "Appendix 9. Alcohol." 2015-2020 Dietary Guidelines, health.gov/our-work/food-nutrition/2015-2020-dietary-guidelines/guidelines/appendix-9/.
- Xu, Qingqing, and Sujit S Sangsri. "Association between Physical Activity and Grade Point Average among a Cohort of Pharmacy Students in Didactic Years." *Currents in Pharmacy Teaching & Learning*, U.S. National Library of Medicine, Mar. 2018, www.ncbi.nlm.nih.gov/pubmed/29764637.

DISCLOSURE AND CONTACT

- The authors have nothing to disclose.
- Please contact Gabriella Gambadoro with any questions via email <gambadoro@pharmacy.arizona.edu>