

Assessing the Knowledge, Dietary Intake, and Physical Activity of College Students Regarding Osteoporosis

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INTRODUCTION

- Meaning “porous bone”, osteoporosis is a bone disease characterized by a lack of bone production or bone loss.¹
- In 2010, an estimated 53.6 million older adults in the United States were affected by either osteoporosis or low bone mass.²
- Research has been done on the effects of various exercise programs on osteoporosis, as well as the effect of nutrition on bone health. More research on these areas may be beneficial.
- Additionally, most of the research conducted surrounding osteoporosis has been on older or postmenopausal women, meaning there is limited data on college-aged populations.

Purpose: To explore the relationship between knowledge and behaviors surrounding the prevention of osteoporosis in both male and female college students. We aimed to identify if factors such as family history, dietary intake, and physical activity could predict knowledge of osteoporosis.

METHODS

Cross sectional survey administered to 46 UD undergraduate students aged 18-23.

Survey incorporated questions from:

- Osteoporosis Knowledge Assessment Tool (OKAT)³
 - Total Knowledge Score: number of correct answers out of 20.
- Centre For Public Health Nutrition Research at The University of Dundee 24-hour recall form⁴
 - Meet or Do Not Meet RDA for: Vitamin D, Calcium and Protein.
- International Physical Activity Questionnaire (IPAQ)⁵
 - No Adherence, Adherence or Far Exceeds Adherence for recommended 150 minutes of moderate intensity exercise per week

Analyzed with a multiple regression to determine relationships between knowledge, attitudes and practices, with considerations to other covariates.

RESULTS

The majority of students surveyed consisted of females, seniors, and Health Science majors. The mean age was 21.33 years (SD=0.701). The majority of students had no family or personal history of bone related disease.

The multiple regression revealed no statistically significant correlations between knowledge and family history ($r=-0.178$, $p=0.161$), exercise ($r=0.189$, $p=0.146$), diet ($r=0.165$, $p=0.180$), BMI ($r=-0.252$, $p=0.079$), or gender ($r=0.174$, $p=0.166$). There was a statistically significant correlation between diet and exercise ($r=0.435$, $p=0.006$). The ANOVA revealed that the model utilized was not significant ($F(6, 26) = 1.477$, $p<0.225$) with an R^2 of 0.254.

Table of Correlations for Main Variables

	1	2	3	4	5	6
1. Knowledge of Osteoporosis	—					
2. Family History	-0.178	—				
3. Exercise	0.189	0.218	—			
4. BMI	-0.252	0.073	-0.11	—		
5. Diet	0.165	0.019	0.435*	-0.193	—	
6. Gender	0.174	-0.025	0.071	-0.442*	0.129	—

Note: * $p < 0.05$. $N=46$.



CONCLUSIONS

The model utilized to predict knowledge did not have a statistically significant correlation. This means that diet, exercise and the other covariates did not accurately predict the level of knowledge of osteoporosis that a student had. This is likely because variables such as exercise and diet are affected by vast amounts of different factors.

While neither diet or exercise had a statistically significant correlation with knowledge, a statistically significant correlation was found between those who had higher intakes of protein, calcium, and vitamin D and those who had higher exercise scores. Our data therefore suggests that exercise and diet may influence one another. This may be useful in future research.

Because of a small sample size and lack of power, the dataset may not accurately reflect whether a correlation exists between dietary intake, physical activity, and knowledge of osteoporosis, indicating that more research may be needed.

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