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09 ORIGINAL RESEARCH

Effects of Nutrition Knowledge on Dietary Behavior in Collegiate Students: A Case Study

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ABSTRACT

Introduction: The abandonment of traditional lifestyles and the increasing burden of cardiovascular disease are increasing global health problems. Diet education and educating about the macro and micro-nutrients, aim to delay, avoid or reduce the prevalence of these chronic and life-threatening conditions. According to Centers for Disease Control and Prevention guidelines, in the United States, 19% of young people aged 2 to 19 years and 40% of adults have obesity, which can put them at risk for heart disease, type 2 diabetes, and some cancers. Most college students do not have an adequate diet to lead healthy lives in the future because of a lack of education in nutrition and a lack of time to prepare or cook their own meals. It may result in eating fast foods or quick-frozen meals that do not provide proper nutrients.

Purpose: The purpose of study was to analyze how nutrition knowledge through an online nutrition course would affect dietary behavior in collegiate students.

Methods: The data collected from a nutrition course in collegiate level and four students (age 21.5±2 yrs, height 171.5±5 cm, weight 68.4±22.6 kg) were volunteered and participated in three trials. All food and beverages intakes were tracked for three days (two weekdays and one weekend) per week and analyzed by NutritionCalc Plus (NCP) which is a dietary self-assessment tool and analysis software program (version 5.0, ESHA Research, Oak Brook, IL) during three weeks. This application allowed for the individual to input their physical data, such as height, weight, age, gender, and fitness level. When tracking their diet, the participants had to search through the database in NCP to identify all food and beverages which were distinguished as either breakfast, lunch, dinner, or snack. After all, three days had been completed in each week, the individual could download their weekly report, in which their macro and micronutrients were compared to the daily recommended intake (DRI) goal, based on their age, gender, and fitness level. The 1st trial (T1) tracked food and beverages consumption and showed a baseline which was no feedback to food choice or consumption at the first week. The 2nd trial (T2) and the 3rd trial (T3) tracked food and beverages consumption at the second and the third

week, respectively, and the results were reflected by feedback and comments from the instructor. The consumption (%) of nutrients based on an individual's DRI goal were analyzed as variables.

Results: Daily calorie intake (T1:72%, T3:77.5%), carbohydrate (T1: 197.5%%, T3: 88%), fat (T1:69.75%, T3:82.75%), vitamin B1(T1: 94%, T3: 88.5%), Potassium (T1: 76.25, T3: 63.5%), and zinc (T1:78%, T3: 94.25%) were shown to maintain or meet within DRI recommended range after 3 weeks. However protein (T1: 155.75%, T3:197.5%), cholesterol (T1: 87.75%, T3: 118%), vitamin B3 (T1:115.75%, T3:187%), vitamin B6 (T1:114.25, T3:244.5%), vitamin B12(T1: 100.5%, T3: 254.25%), vitamin B2 (T1: 111%, T3:100.75%), phosphorous (T1:98%, T3: 117.5%), iron (T1: 146.75, T3: 128.75%), and sodium (T1: 63.5%, T3: 141.5%) exceeded the DRI recommendation. The intakes of dietary fiber (T1: 93.25%, T3: 51.25%), water (T1: 44.25%, T3:40.5%), vitamin D (T1: 28.25%, T3: 59.25%), folate (T1:65.75%, T3:55.75%), calcium (T1:63.25%, T3: 64.75%), and magnesium (T1: 128.75%, T3:48%) were decreased or lower than the DRI recommendation after 3 weeks.

Conclusion: In conclusion, following a nutrition education course, there were only certain specific changes made to intake of micronutrients. When looking at vitamin D and water intake, it was decreasing or lower than the DRI, while protein and sodium were exceeding the recommended intake. This shows that while an education course on nutrition may contribute slightly to a change in diet, it is not a general guide for most collegiate students. There could be more important factors that are influencing diet that outweigh the information being learned.

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