

The Role of Social Media in Dietary Behavior and Well-Being: A Pilot Study Among University Students in a Rural Appalachian Region

Minu Sara Thomas, PhD and Anna Dysart PhD, RD

ABSTRACT

Social media is a major source of dietary information for young adults, influencing food choices and well-being. This cross-sectional pilot study examined the relationship between social media use, diet quality (Healthy Eating Index-2020, HEI-2020), and well-being (Secure Flourishing Index, SFI) among 73 students at a rural Appalachian university. Dietary intake was assessed using ASA24, and social media engagement was measured via surveys. Results showed lower diet quality in the study sample (HEI-2020 = 46.6) compared to the national average (53.3). Energy intake (1920.66 kcal) was below estimated requirements, and micronutrient deficiencies (Vitamin D, Vitamin E, Folate, Calcium, Magnesium, Potassium) were prevalent. Higher HEI-2020 scores correlated with better well-being ($r=0.3712$, $p=0.00096$). Social media had weak associations with diet quality; Instagram and Threads showed slight positive correlations with potassium and calcium intake, while Facebook use was negatively correlated with energy and saturated fat intake. Findings highlight the need for targeted dietary interventions in rural populations and evidence-based nutrition education on social media. Future research should explore digital interventions to improve diet quality and well-being among young adults.

INTRODUCTION

Social media plays a crucial role in shaping young adults' dietary habits, influencing food choices through trends, advertisements, and peer interactions. 88% of young adults in the U.S. use social media as a primary source for health and nutrition information. However, the accuracy of this information and its impact on diet quality and well-being remains uncertain.

Rural university students face unique challenges, including limited food access, which may affect their ability to maintain a nutritious diet. Understanding how social media engagement correlates with dietary quality and well-being in this demographic is essential.

Key Concepts

1. Healthy Eating Index (HEI-2020):

- A scoring system used to measure diet quality and adherence to the Dietary Guidelines for Americans.
- Scores range from 0 to 100, with higher scores indicating better dietary adherence.
- The national average HEI-2020 score for U.S. young adults is 53.3.

2. Flourishing Index (SFI - Secure Flourishing Index):

- A holistic measure of well-being, assessing factors like happiness, health, social relationships, and meaning in life.
- Higher scores indicate better overall well-being and life satisfaction.

Objectives

- Assess the relationship between social media engagement and diet quality using the HEI-2020.
- Examine associations between diet quality and well-being, measured by the Flourishing Index (SFI).
- Identify key dietary trends and deficiencies among rural university students.

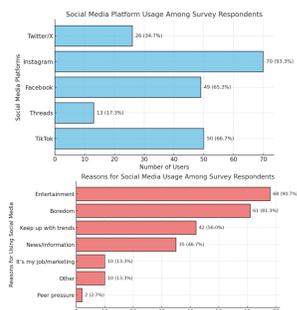
METHODS

- Cross-sectional pilot study conducted at a rural Appalachian university.
- Sample Size: 73 students participated.

Data Collection:

- Dietary Intake: Self-reported 24-hour dietary recalls using ASA24.
- Well-Being Assessment: Secure Flourishing Index (SFI) questionnaire.
- Social Media Engagement: Survey measuring frequency and platform usage.

Category	Survey Respondents (n=73)	University Demographics
Gender		
Female	49 (67.1%)	59%
Male	23 (31.5%)	41%
Non-Binary	1 (1.4%)	-
Race		
White	63 (86.3%)	75.30%
Asian	5 (6.8%)	1.30%
Black	4 (5.5%)	6.80%
Do not wish to disclose/Unknown	1 (1.4%)	2.90%
Native American	0	0.90%
Native Hawaiian or Pacific Islander	0	0.10%



Dietary Assessment

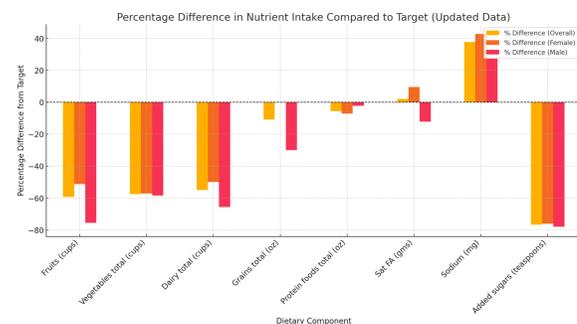
- HEI-2020 Score Calculation to evaluate diet adherence to U.S. Dietary Guidelines.
- Macronutrient intake compared with Acceptable Macronutrient Distribution Ranges (AMDR).
- Micronutrient deficiencies assessed.

Statistical Analysis

- Regression analysis examining relationships between social media use, diet quality (HEI-2020), and well-being (SFI).
- Pearson correlation coefficients (r-values) to determine strength of associations.

RESULTS

- Dietary Patterns & Deficiencies**
 - Average energy intake: 1920.66 kcal, lower than the estimated requirement (2306.85 kcal).
 - Macronutrient distribution: Within recommended ranges.
 - Excess Added Sugar: 18.18% of total energy, exceeding dietary recommendations.
- Key Micronutrient Deficiencies:**
 - Vitamin D, Vitamin E, Folate, Calcium, Magnesium, Potassium.



RESULTS

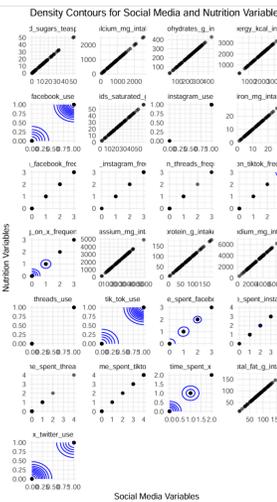
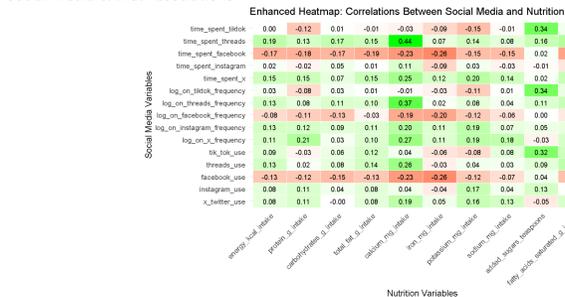
Diet Quality using HEI Score



This radar chart compares Healthy Eating Index (HEI-2020) scores between the U.S. population (ages 19-59) and students from a rural Appalachian university. Mean HEI-2020 score: 46.6 (SD = 12.4), lower than the national average for U.S. young adults (53.3).

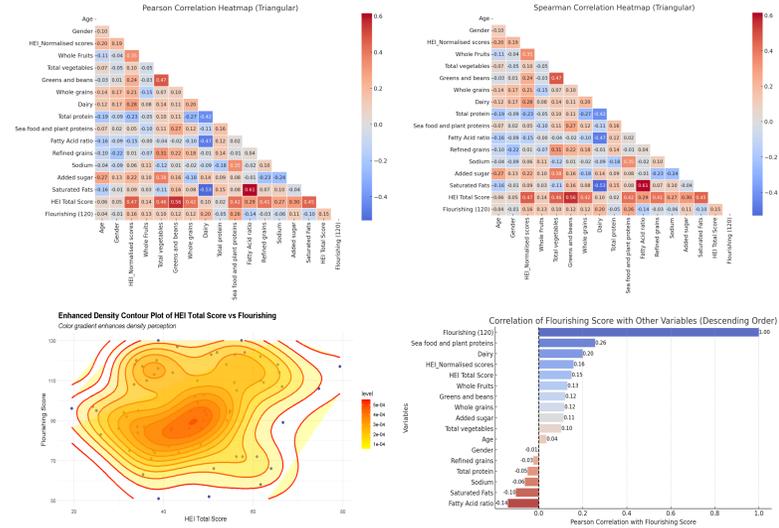
- Lower Whole Fruit & Greens Scores:** Suggests limited access to fresh produce in rural areas.
- Lower Seafood & Plant Protein Scores:** Reflects reduced intake of these protein sources, common in Appalachian diets.

Social Media & Diet Associations



While platforms like Instagram and Threads appear to encourage slightly better intake of essential nutrients such as potassium and calcium, Facebook usage correlates negatively with several nutritional variables. These findings suggest that the type of platform and user engagement levels may influence dietary patterns, albeit weakly.

The analysis reveals that social media engagement has nuanced relationships with dietary intake, varying across platforms. Certain platforms, like Instagram and Threads, align with higher nutrient-specific intakes, while others, such as TikTok, might correlate with potentially imbalanced diets (e.g., higher added sugars).



Higher HEI-2020 scores correlated with higher Flourishing Scores ($r=0.3712$, $p=0.00096$), suggesting a positive relationship between diet quality and well-being.

CONCLUSIONS

- Suboptimal diet quality** in participants highlighting the need for targeted nutritional interventions to improve dietary habits and reduce long-term health risks.
- Social media plays a role in shaping young adults' dietary habits, but its direct impact on diet quality remains unclear.
- Students in rural settings exhibit lower diet quality compared to national averages, possibly due to food access limitations.
- Higher diet quality is associated with improved well-being, emphasizing the need for better nutrition education and interventions.

RECOMMENDATIONS

- Enhance Nutrition Education on Social Media:**
 - Promote credible health sources and evidence-based dietary guidelines.
 - Implement university-led digital interventions.
- Address Nutrient Deficiencies in Rural Areas:**
 - Increase access to fresh foods through campus initiatives.
 - Encourage meal planning strategies for improved micronutrient intake.

Future Research Directions:

- Explore longitudinal studies on social media and dietary behaviors.
- Assess intervention-based approaches using social media for nutrition education.

References

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