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NUTRITIONAL ADEQUACY IN ASSOCIATION WITH SOCIAL MEDIA USE AMONG UNIVERSITY STUDENTS

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Abstract

A cross-sectional study evaluated the association between nutritional adequacy and social media use among 390 university students (mean age 22.5±2.4 years). Participants completed questionnaires on sociodemographics, anthropometrics (height, weight, BMI, waist/hip), nutrition knowledge (GNKQ-R), social media usage, and dietary intake (food frequency questionnaire). Nutrient intakes were compared to recommended dietary allowances to assess adequacy. Data were analyzed with SPSS (chi-square tests, t-tests and one-way ANOVA; $p<0.05$).

Most students (68.5%) had normal BMI; 15.6% were overweight, 12.3% underweight, and 3.6% obese. The mean nutrition knowledge score was 34.7±18.1 (60.0% of students classified as 'poor' knowledge). The mean social media score was 74.9±26.1; 40.8% of students were categorized as high users. Fast food was eaten daily by 32.1% of students; 26.4% reported rarely or never consuming sugary beverages. Comparing to recommended intakes, mean energy was 89.5% of RDA, protein and fat met 100% of RDA, and carbohydrate 91.3%. In contrast, mean fiber intake was only 59.0% of RDA and many micronutrients were low (e.g. calcium 37.4%, iron 51.3%, vitamin B1 47.1%, B2 50.0%, B6 23.5%, folic acid 13.0%, vitamin D 67.3%).

BMI increased significantly with higher social media use ($p<0.001$), whereas BMI decreased with better nutrition knowledge ($p<0.001$). Energy, protein, fat, carbohydrate and cholesterol intakes all rose with greater social media use ($p<0.05$), as did consumption of fast food, meat, dairy and sweetened beverages ($p<0.001$). Conversely, higher nutrition knowledge was linked to lower intake of fast foods, meat, dairy, and sugary drinks ($p<0.001$) and greater adequacy of energy, protein, cholesterol and fiber intake ($p<0.05$). Waist circumference and waist-hip ratio were reduced with improved nutrition knowledge ($p<0.001$). Overall, heavy social media engagement corresponded to poorer dietary adequacy, while greater nutrition knowledge correlated with healthier diets. These findings highlight the need for targeted nutrition education interventions (e.g. via popular social media channels) to improve students' dietary adequacy

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INTRODUCTION

Transitioning to university brings new independence that can affect eating habits. Many factors (e.g. peer influence and food availability) impact college students' dietary choices. Nutrition knowledge is known to influence diet quality: students with higher knowledge tend to have healthier eating patterns[1]. Nonetheless, many students have poor nutrition knowledge and diets high in energy and fat. Social media platforms (e.g. YouTube, Instagram, Facebook) are ubiquitous among young adults and can strongly influence behavior. High social media engagement has been linked to unhealthy eating behaviors and metabolic risk[2].

In this context, we examined the association between social media use and nutritional adequacy among university students. We also assessed how nutrition knowledge relates to diet and body composition. We hypothesized that heavy social media use would be associated with poorer nutrient adequacy and higher BMI, whereas greater nutrition knowledge would be linked to more adequate diets.

Social media include internet-based communication technologies used for the purpose of sharing ideas, information, photographs, and various other forms of material (Ventola. 2014). It encompasses social media platforms such as facebook, twitter which is now X, YouTube, and others. Due to the instantaneous accessibility of social media through smartphones and the ease of sharing information, both adults and teenagers are becoming increasingly reliant on social media (Lambert et al., 2012). Hur and Gupta. (2013) reported that Social media is used by around 85% of 12–17 year olds. Adolescents' lives would be incomplete without social media (Pater et al., 2015). Hence, when researching the eating habits of teenagers, we must take their USM into study. In a study including mostly Latino middle school students, it was shown that the use of USM and other forms of entertainment media had a negative correlation with the consumption of fruit and vegetables (Albert et al., 2017). In addition, it was shown that the intake was highly correlated with of fast food and junk food. Students' food choices and consumption patterns are influenced by a variety of factors, such as the environment, the media, and advertisements (particularly those that promote particular meals) (Deliens et al., 2014). As now-a-days our young generation is using different social media platforms so their dietary intake and nutrition related knowledge may be affected. Since a comprehensive and up-to-date review on this topic has not been conducted for a long time, conducting this research aims to evaluate to find association of social media use with nutritional status and adequacy.

The aim of current research study was to evaluate the impact of Social Media use on Nutritional Adequacy including nutritional knowledge and entire dietary intake of University students. The study also emphasis on difference of nutritional knowledge between the students who use social media for nutrition awareness and those who are unaware of importance of nutrition.

REVIEW OF LITERATURE

Nosler et al. (2022) investigated eating habits and physical activity of German university students. The University of Education in Swabischgmund conducted a cross-sectional study on nutrition. Three-day estimated food intake data and physical activity level were measured in 60 male and 339 female students (PAL, standard questions), mean age 24.0 ± 3.1 years (males) and 22.7 ± 3.4 years (females). Results compared with recommendations (t test, $\alpha = 0.05$). Daily recommended intake of vegetables (177 ± 119 g, 152 ± 163 g), fruit (169 ± 117 g, 146 ± 158 g), and potatoes/cereals (303 ± 126 g, 362 ± 163 g) was not met. Weekly meat intake: men 1,155 ± 651 g, women 490 ± 455 g. Men's milk/dairy intake met recommendations (279 ± 253 g), women's was lower (190 ± 129 g). Nutrient deficiencies included fat, iron, vitamin E, fiber [f, m], carbs [m], vitamin D, folate [f, m]. Leisure-time physical activity: 259 ± 222 min/week (f) and 359 ± 236 min/week (m); PAL: 1.60 ± 0.11 (f), 1.65 ± 0.12 (m). Diet and activity levels require improvement, similar to German population.

Belogiani et al. (2022) studied university students' nutrition knowledge (NK), variables impacting NK, and predictors of NK excellence. Cross-sectional study (2017–2018) using the General Nutrition Knowledge Questionnaire. Demographic comparisons (gender, age, ethnicity, academic major, housing, dietary restrictions, self-reported health)

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analyzed via Kruskal-Wallis test; logistic regression identified predictors of high NK (>median score). Sample: 190 students across majors. Lowest NK score: nutrient sources (25/36); highest: healthy food choices (10/13). Total NK score: 64/88; 46.8% achieved high NK. NK influenced by age, study area, ethnicity, perceived health. Predictors of high NK: age (OR = 1.05, 95% CI 1.00–1.11, $p < 0.05$), White ethnicity (OR = 3.27, 95% CI 1.68–6.35, $p < 0.0001$), very good/excellent health (OR = 4.71, 95% CI 1.95–11.4, $p < 0.05$). Personal and academic elements should be considered to improve NK.

Lee (2021) examined effects of diet-related social media posts on college students at Alabama A&M University. Descriptive, exploratory study via survey sent through email, Blackboard, Facebook, Instagram. Sample: 221 students (51 males, 169 females). Social media use: 33% ≥6 hours/day, 30% 4–5 hours, 29% 2–3 hours, 9% <1 hour. Significant influence on trying new foods: 23% females, 13% males. More time on social media increased likelihood of trying new foods. Social media provides information on healthy eating habits.

Issahaku et al. (2021) studied nutrition awareness, dietary practices, and nutritional status of 152 non-academic staff at UDS Tamale campus (ages 18–59) via cross-sectional survey (May–June 2017). Non-probability quota sampling, data analyzed in SPSS. 59 females, 93 males; majority (56%) had solid nutrition knowledge. Dietary diversity: moderate in 81.6%, poor in 3.3%, good in 15.1%. Nearly half were overweight/obese; women more likely obese. No significant link between nutrition awareness and overweight ($p = 0.253$) or dietary diversity and nutritional status ($p = 0.686$).

Ali et al. (2021) evaluated social media's effect on eating patterns and exercise in college students. 57.7% used social media to post about food, 46.4% for health-related activities. Students mainly used Snapchat and Facebook for diet/exercise sharing. Posting about exercise increased likelihood of moderate–vigorous activity. Those posting fitness updates had higher activity and lower negative health perception. Universities can use social media to promote healthier lifestyles.

Ahmed et al. (2021) examined students' perspectives on social media influencers (SMIs) and dietary choices using the Theory of Reasoned Action. Surveyed University Malaysia Sabah seniors. Behavioral intent significantly related to subjective norms, not attitudes, toward SMIs. 97.6% reported healthy diets, 98.8% followed influencers. Instagram most followed platform. SMIs influence youth eating patterns through subjective norms.

Methods

A cross-sectional survey was conducted among 390 undergraduate and graduate students at the University of Agriculture Peshawar. Participants were selected by consecutive sampling. A structured questionnaire collected sociodemographic data (age, gender, education level, family income, etc.) and self-reported social media usage (platforms and duration). Anthropometric measurements (weight, height, waist and hip circumferences) were taken following standard protocols, and BMI and waist-to-hip ratio were calculated. Dietary intake was assessed by a validated food frequency questionnaire.

Daily energy and nutrient intakes were calculated from the questionnaire data and compared to age- and sex-specific recommended dietary allowances (RDAs) to determine adequacy. Data were analyzed using SPSS v20. Continuous variables are reported as mean±SD and categorical variables as frequency (%). We used chi-square tests for associations between categorical variables, and independent *t*-tests or one-way ANOVA to compare means (e.g. nutrient intakes across social media user categories). A two-sided $p<0.05$ was considered statistically significant.

Results

Demographics: The mean age was 22.5±2.4 years. Most participants were male (55.4%) and undergraduates (76.2%). A majority (69.7%) lived in nuclear families and 59.0% in urban areas. Family income was >PKR 80,000 for 16.4%, PKR 50,000–80,000 for 51.5%, and <PKR 50,000 for 32.1% (Table 1).

Anthropometrics: Mean BMI was 22.3±3.7 kg/m^2. Table 2 shows BMI categories: 68.5% of students were normal weight (18.5–24.9), 15.6% overweight (25.0–29.9), 12.3% underweight (<18.5), and 3.6% obese (≥30). Mean waist circumference was 77.8±9.9 cm (34.1% above risk threshold), and mean waist-to-

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hip ratio was 0.82±0.12 (38.7% above risk threshold).

Nutrition Knowledge: The average GNKQ-R score was 34.7±18.1 out of 75. Using the median as a cutoff (31), 60.0% of students were categorized as having 'poor' nutrition knowledge and 40.0% as 'good' (Table 3).

Social Media Use: The mean social media engagement score was 74.9±26.1. Students were categorized as low (score<50), normal (50–98), or high (≥99) social media users. As shown in Table 3, 22.1% of students were low users, 37.2% normal, and 40.8% high. The most used platforms were YouTube (93%), WhatsApp (92%), and Facebook (88%).

Dietary Intake: Mean daily energy intake was 1968±141 kcal. Mean macronutrient intakes were 73.7±5.2 g protein, 76.5±5.4 g fat, and 319.7±22.9 g carbohydrate. Fast food was eaten daily by 32.1% of students; 26.4% reported rarely or never consuming sugary beverages. Comparing to recommended intakes, mean energy intake was 89.5% of RDA, protein and fat each met 100% of RDA, and carbohydrate 91.3%. In contrast, mean fiber intake was only 59.0% of RDA and several micronutrients were very low (e.g. calcium 37.4%, iron 51.3%, vitamin B1 47.1%, B2 50.0%, B6 23.5%, folic acid 13.0%, vitamin D 67.3%). Overall dietary patterns showed macronutrients largely adequate but notable micronutrient deficiencies.

Associations: Higher social media use was associated with higher BMI (ANOVA $p<0.001$). Students with high social media engagement consumed significantly more calories, protein, fat, carbohydrate, and cholesterol than low users ($p<0.05$), and had higher frequencies of fast food, meat, dairy, and sugary drink intake ($p<0.001$). In contrast, students with good nutrition knowledge had lower mean BMI ($p<0.001$) and healthier diets: they consumed significantly less fat, cholesterol, and sugary beverages ($p<0.05$) and significantly lower intake of fast food, meat, and dairy ($p<0.001$). In summary, heavy social media use corresponded to higher BMI and poorer nutrient adequacy, whereas better nutrition knowledge was associated with more adequate diets and lower BMI.

Table 1: Socio-Demographic Characteristics of Students

Variable	Category	n (%)
Gender	Male	216 (55.4)
	Female	174 (44.6)
Education	Undergraduate	297 (76.2)
	Postgraduate	93 (23.8)
Residence	Rural	160 (41.0)
	Urban	230 (59.0)
Family Income	>PKR 80,000 (Good)	64 (16.4)
	PKR 50,000–80,000	201 (51.5)
	<PKR 50,000 (Poor)	125 (32.1)

Sociodemographic characteristics of the students are presented in table 1. The mean age of the students was 22.5±2.4 (years). The study concluded that majority (55.6%) of the enrolled students in this study were males whereas students (76.2%) were in their undergraduate studies. The parental education of the students showed that fathers (35.1%) and mothers (63.8%) were illiterate. Fathers (21.3%) were having government jobs and mothers (66.2%) were having status of housewives. Nuclear family type was recorded for 69.7% of the students and 59.0% of them belong to urban areas of the country. The monthly income of the family among the students (51.5%) was recorded as average.

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Table 2: BMI Distribution of Students

BMI Category	n (%)
Underweight (<18.5)	48 (12.3)
Normal (18.5–24.9)	267 (68.5)
Overweight (25–29.9)	61 (15.6)
Obesity (≥30)	14 (3.6)

Anthropometric Measurements of the enrolled student are enlisted in table no 2 below. The Mean weight, Height and Body mass index of the students was 63.5±11.4 (kg), 168.3±9.8 (cm) and 22.3±3.7 (kg/m2). Majority of the students (68.5%) were falling in the normal category of body mass index.

Table 3: Social Media Use among Students

Social Media Use Category	n (%)
Low (score 1–49)	86 (22.1)
Normal (score 50–98)	145 (37.2)
High (score ≥99)	159 (40.8)

Discussion

This study found that heavy social media use was associated with higher BMI and greater energy and fat intake, whereas better nutrition knowledge was linked to healthier diets. These findings align with recent research. For example, Bawazeer *et al.* reported that extensive social media engagement provides exposure to food-related content that can lead to unhealthy eating behaviors and increased risk of metabolic syndrome[2]. Similarly, we observed that high social media users consumed more calories and low-nutrient foods.

In contrast, students with greater nutrition knowledge tended to eat more healthfully. Kolodinsky *et al.* found that college students with higher knowledge of dietary guidelines were more likely to make healthy food choices (e.g. adequate fruits, vegetables, dairy, whole grains)[1]. Likewise, Yahia *et al.* showed that better nutrition knowledge among students was associated with lower intake of saturated fat and cholesterol[3]. Our results support these trends: the high-knowledge group consumed significantly less fat and cholesterol than the poor-knowledge group. Moreover, nutrient adequacy was poor in this population: only 89.5% of energy needs were met on average, and many micronutrient intakes were far below recommendations (e.g. 37% of calcium RDA, 51% of iron RDA), raising concerns about potential long-term health impacts such as bone deficits and anemia risk.

Notably, nutrition knowledge and social media use were positively correlated, suggesting that many students may seek nutrition information online. However, unfiltered social media also exposes students to misleading dietary content. These findings imply that social media could be leveraged as an educational tool: disseminating reliable nutrition information through popular online channels may help improve students' diets. For instance, promoting evidence-based healthy eating messages on platforms like YouTube or Instagram could reach a broad student audience.

Limitations: The cross-sectional design prevents causal inferences. Self-reported dietary data may be subject to recall bias. The sample was drawn from a single university, which may limit generalizability. Strengths include the large sample size and comprehensive assessment of diet, knowledge, and social media use.

Conclusion

Among university students, heavy social media use was linked to higher BMI and less adequate diets, whereas higher nutrition knowledge correlated with better dietary intake and healthier weight. These results underscore the need to enhance nutrition education for young adults. Given students' engagement with social platforms, targeted interventions (for example, delivering evidence-based nutrition information via social media) could help improve dietary adequacy and prevent nutrition-related diseases.

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REFERENCES

Bawazeer NM, Almalki S, Alanazi R, et al. Examining the association between social media use and dietary habits among college students in Riyadh, Saudi Arabia. J Community Health. 2025;50(2):244-251. doi:10.1007/s10900-024-01414-w[2]

Yahia N, Brown CA, Rapley M, et al. Level of nutrition knowledge and its association with fat consumption among college students. BMC Public Health. 2016;16:1047. doi:10.1186/s12889-016-3728-z[3]

Kolodinsky J, Harvey-Berino JR, Berlin L, Johnson RK, Reynolds TW. Knowledge of current dietary guidelines and food choice by college students: better eaters have higher knowledge of dietary guidance. J Am Diet Assoc. 2007;107(8):1409-1413. doi:10.1016/j.jada.2007.05.016[1]

Abdullah, Alyoussef., D. Eman., El, Desouky., S. Hosni., M. Saleem. 2023. Exploration of the nutrition knowledge among general population: multi–national study in Arab countries. BMC Public Health, 23(1) doi: 10.1186/s12889-023-15791-9

Abioye, A. I., K. Hajifathalian and G. Danaei. 2013. Do mass media campaigns improve physical activity? A systematic review and meta-analysis. Archives of Public Health = Archives Belges De Sante Publique, 71 (1): 20.

Adams, R. J., S. L. Appleton, C. L. Hill, M. Dodd, C. Findlay and D. H. Wilson. 2009. Risks associated with low functional health literacy in an Australian population. Medical Journal of Australia, 191(10): 530-534.

Adiba, C., S. F. Pradigdo and M. I. Kartasurya. 2020. Association between social media exposure to food and beverages with nutrient intake of female adolescents. *Kesmas: Jurnal Kesehatan Masyarakat Nasional (National Public Health Journal)*, *15*(4).

Ahmad, S. A. and D. E. Bruno, 2021. Social Media Influencers and The Dietary Choices Among University Students. Malaysian Journal of Social Sciences and Humanities (MJSSH), 6 (10): 543-557.

Al Ali, N. M., E. A. Alkhateeb, D. Jaradat and M. Bashtawi. 2021. Social media use among university students in Jordan and its impact ontheir dietary habits and physical activity .CogentEducation, 8 (1): 1993519.

Albert, S. L. 2017. Consumingitall: Understanding the Complex Relationship between Media Consumption and Eating Behaviors. University of California, Los Angeles.

Al-Isa, A., and A. Alfaddagh 2014. Nutritional knowledge among Kuwaiti college students. Health, 2014.

Almansour, F. D., A. R. Allafi and A. R. Al-Haifi. 2020. Impact of nutritional knowledge on dietary behaviors of students in Kuwait University. Acta bio-medica : Atenei Parmensis, 91(4): e2020183. https://doi.org/10.23750/abm.v91i4.8716

Al-Naggar, R. A., and R. Chen. 2011. Nutrition and cancer prevention: knowledge, attitudes and practices among young Malaysians. Asian Pac. J. Cancer Prev. 12(3): 691-694.

Axelson, M., T. Federline and D. Brinberg. 1985. A meta-analysis of food- and nutrition-related research. J. Nutr. Educ. 17: 51-54

Block, G., C. Gillespie, E. H. Rosenbaum and C. Jenson. 2000. A rapid food screener to assess fat and fruit and vegetable intake. American Journal of Preventive Medicine, 18 (4): 284-288.

Boland, S., J. D. Irwin and A. M. Johnson. 2015. A survey of university students' vitamin D–related knowledge. Journal of Nutrition Education and Behavior, 47 (1): 99-103.

Bottcher, M. R., P. Z. Marincic, K. L. Nahay, B. E. Baerlocher, A. W. Willis, J. Park and M. W. Greene. 2017. Nutrition knowledge and Mediterranean diet adherence in the southeast United States: Validation of a field-based survey instrument. Appetite, 111: 166-176.

Britten, P., K. Marcoe, S. Yamini and C. Davis. 2006. Development of food intake patterns for the MyPyramid Food Guidance System. Journal of Nutrition Education and Behavior, 38 (6): S78-S92.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Buxton, C. and A. Davies. 2013. Nutritional knowledge levels of nursing students in a tertiary institution: Lessons for curriculum planning. Nurse Education in Practice, 13 (5): 355-360.

Caballero, B., L. Allen and A. Prentice. 2005. Encyclopedia of Human Nutrition. Oxford: Elsevier Academic Press.

Collins, C., A. Young and A. Hodge. 2008. Diet quality is associated with higher nutrient intake and self-rated health in mid-aged women. J. Am. Coll. Nutr. 27: 146–157.

Cooke, R. and A. Papadaki. 2014. Nutrition label use mediates the positive relationship between nutrition knowledge and attitudes towards healthy eating with dietary quality among university students in the UK. Appetite, 83: 297-303.

Dagan, N., D. Beskin, M. Brezis and B. Y. Reis. 2015. Effects of social network exposure on nutritional learning: Development of an online educational platform. JMIR Serious Games, 3 (2): e7

Dallongeville, J., N. Marecaux, D. Cottel, A. Bingham and P. Amouyel. 2001. Association between nutrition knowledge and nutritional intake in middle-aged men from Northern France. Public Health Nutrition, 4 (1): 27-33.

Deforche, B., D. Van Dyck, T. Deliens and I. De Bourdeaudhuij. 2015. Changes in weight, physical activity, sedentary behaviour and dietary intake during the transition to higher education: a prospective study. International Journal of Behavioral Nutrition and Physical Activity, 12: 1-10.

DeGroot, M. H. 1986. Probability and statistics. 2. ed. New York: Addison-Wesley.

Deliens, T., P. Clarys, I. De Bourdeaudhuij and B. Deforche. 2014. Determinants of eating behaviour in univer-sity students: A qualitative study using focus group discussions. BMC Public Health, 14 (1): 1–12

Dickson-Spillmann, M. and M. Siegrist. 2011. Consumers knowledge of healthy diets and its correlation with dietary behaviour. J. Hum. Nutr. Diet 24: 54–60.

Dissen, A. R., P. Policastro, V. Quick and C. Byrd-Bredbenner. 2011. Interrelationships among nutrition knowledge, attitudes, behaviors and body satisfaction. Health Education, 111 (4): 283-295.

Eichler, K., S. Wieser and U. Brugger. 2009. The costs of limited health literacy: a systematic review. Int. J. Public Health, 54: 313–324.

El Ansari, W., C. Stock and R. T. Mikolajczyk. 2012. Relationships between food consumption and living arrangements among university students in four European countries-a cross-sectional study. Nutrition journal, 11 (1): 1-7.

Emilia, Alfitri., Ratih and Kurniasari. 2022. The effect of nutrition education with social media on changes in knowledge and diet quality in obesity women. Jurnal Gizi Prima, 7(1):44-44.

FAO/WHO. 2001. *Human Vitamin and Mineral Requirements*. Report of a Joint FAO/WHO Expert Consultation. Rome: Food and Agriculture Organization of the United Nations.

Guenther, P., J. Reedy and S. Krebs-Smith. 2008. Development of the healthy eating index – 2005. J. Am. Diet. Assoc. 108: 1896–1901.

Harris, J. R. and R. B. Wallace. 2012. The Institute of Medicine's new report on living well with chronic illness. Prev. Chronic Dis. 9: E148.

Heaney, S., H. O'Connor, S. Michael, J. Gifford and G. Naughton. 2011. Nutrition knowledge in athletes: a systematic review. International Journal of Sport Nutrition and Exercise Metabolism, 21 (3): 248-261.

Heaney, S., H. O'Connor, J. Gifford and G. Naughton. 2010. Comparison of strategies for assessing nutritional adequacy in elite female athletes' dietary intake. International Journal of Sport Nutrition and Exercise Metabolism, 20 (3): 245–256. https://doi.org/10.1123/ijsnem.20.3.245

Hendrie, G., J. Coveney and D. Cox 2008. Exploring nutrition knowledge and the demographic variation in knowledge levels in an Australian community sample. Public Health Nutr. 11: 1365–1371.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Hilger, J., A. Loerbroks and K. Diehl. 2017. Eating behaviour of university students in Germany: Dietary intake, barriers to healthy eating and changes in eating behavior since the time of matriculation. Appetite, 109: 100-107.

Hill, E. 2013. College student social media use and its relation to health behaviors [Doctoral dissertation]. The Ohio State University

Issahaku, I. and M. Alhassan. 2021. Nutrition knowledge, dietary practices and nutritional status of non-academic staff at the Tamale campus of University for Development Studies. Heliyon, 7 (4).

Jasti, S. and S. Kovacs. 2010. Use of trans fat information on food labels and its determinants in a multiethnic college student population. Journal of Nutrition Education and Behavior, 42 (5): 307-314.

Johns, D. J., T. E. Langley and S. Lewis. 2017. Use of social media for the delivery of health promotion on smoking, nutrition, and physical activity: A systematic review. The Lancet, 390: S49

Kabir, A., S. Miah and A. Islam. 2018. Factors influencing eating behavior and dietary intake among resident students in a public university in Bangladesh: A Qualitative Study. PloS one, 13 (6): e0198801.

Katie, Emerson., S. Douglas., Kalman., Michael and Downing. 2023. Nutrition Intervention Through a Social Media Platform on Nutrition Knowledge and CVD Risk Factors Amongst Firefighters. Journal of exercise and nutrition, 6(1)

Kietzmann, J. H., K. Hermkens., I. P. McCarthy, I. P., & Silvestre, B. S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. Business Horizons, 54(3), 241-251.

Kliemann, N., J. Wardle, F. Johnson. 2016. Reliability and validity of a revised version of the general nutrition knowledge questionnaire. Eur. J. Clin. Nutr. 70: 1174–1180

L Hur, J., and M. Gupta. 2013. Growing up in the web of social networking: Adolescent development and social media. Adolescent Psychiatry, 3 (3): 233-244.

Lambert, K. M., P. Barry and G. Stokes. 2012. Risk management and legal issues with the use of social media in the healthcare setting. Journal of Healthcare Risk Management, 31 (4): 41-47.

Matthews, J. I., L. Doerr and P. D. Dworatzek. 2016. University students intend to eat better but lack coping self-efficacy and knowledge of dietary recommendations. Journal of Nutrition Education and Behavior, 48 (1): 12-19.

Mazier, M. P. and S. L. McLeod. 2007. University Science Students: Knowledge of Fats. Canadian Journal of Dietetic Practice and Research, 68 (3): 154-159.

Misra, R. 2007. Knowledge, attitudes, and label use among college students. Journal of the American Dietetic Association, 107 (12): 2130-2134.

Morgan, P. J., J. M. Warren, D. R. Lubans, K. L. Saunders, G. I. Quick and C. E. Collins. 2010. The impact of nutrition education with and without a school garden on knowledge, vegetable intake and preferences and quality of school life among primary-school students. Public Health Nutrition, 13 (11): 1931-1940.

Nabhani-Zeidan, M., F. Naja and L. Nasreddine. 2011. Dietary intake and nutrition-related knowledge in a sample of Lebanese adolescents of contrasting socioeconomic status. Food and Nutrition Bulletin, 32 (2): 75-83.

Şahin C. 2018. Social Media Addiction Scale-Student Form: The reliability and validity study. Turkish Online Journal of Educational Technology-TOJET. 17:169-182.

Sajwani, R. A., S. Shoukat, R. Raza, M. Shiekh, Q. Rashid, M.S. Siddique and M. M. Kadir. 2009. Knowledge and practice of healthy lifestyle and dietary habits in medical and non-medical students of Karachi, Pakistan. Journal of the Pakistan Medical Association, 59 (9): 650.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Scalvedi, M. L., Gennaro, L., Saba, A., & Rossi, L. (2021). Relationship Between Nutrition Knowledge and Dietary Intake: An Assessment Among a Sample of Italian Adults. *Frontiers in nutrition*, *8*, 714493. https://doi.org/10.3389/fnut.2021.714493

Scalvedi, M. L., L. Gennaro., A. Saba and L. Rossi. 2021. Relationship Between Nutrition Knowledge and Dietary Intake: An Assessment Among a Sample of Italian Adults. Frontiers in nutrition, 8, 714493. https://doi.org/10.3389/fnut.2021.714493

Serenko, A., O. Turel and H. Bohonis. 2021. The impact of social networking sites use on health-related outcomes among UK adolescents. Computers in Human Behavior Reports, 3: 100058.

Sina, E., Boakye, D., Christianson, L., Ahrens, W., & Hebestreit, A. (2022). Social Media and Children's and Adolescents' Diets: A Systematic Review of the Underlying Social and Physiological Mechanisms. Advances in nutrition (Bethesda, Md.), 13(3), 913–937. https://doi.org/10.1093/advances/nmac018

Wardle, J., K. Parmenter and J. Waller. 2000. Nutrition knowledge and food intake. Appetite 34: 269–275.

Welch, V., J. Petkovic, J. P. Pardo, T. Rader and P. Tugwell. 2016. Interactive social media interventions to pro-mote health equity: An overview of reviews. Health Promotion and Chronic Disease Prevention in Canada, 36 (4): 63–75.

WHO. 2007. Cancer Control: Knowledge into Action. Geneva: WHO.

WHO. 2007. Prevention of Cardiovascular Disease. Geneva: WHO.

WHO. 2011. Framework for Care and Control of Tuberculosis and Diabetes. Geneva: WHO.

Willett, W. 2013. Nutritional epidemiology. 3rd edn Oxford University Press.

Wojdan, W., K. Wdowiak, A. Witas, J. Drogoń and W. Brakowiecki. 2021. The impact of social media on the lifestyle of young people. Polish Journal of Public Health, 130 (1): 8-13.

Woo, J., 2000. Relationships among diet, physical activity and other lifestyle factors and debilitating diseases in the elderly. Eur. J. Clin. Nutr. 54, Suppl. 3: S143–S147.

World Health Organization. 2017. Obesity and overweight. Retrieved October 18, 2017.

World Health Organization. 2018. Physical activity. Retrieved February 23, 2018.

Worsley, A., 2002. Nutrition knowledge and food consumption: can nutrition knowledge change food behaviour? Asia Pac J. Clin. Nutr. 11: S579–S585.

WY, G., Mohd M.T. Nasir, Zalilah M.S. and Hazizi A.S. 2011. Differences in eating behaviours, dietary intake and body weight status between male and female Malaysian University students. Malaysian Journal of Nutrition, 17(2).

Zoellner, J., C. Connell, W. Bounds, L. Crook and K. Yadrick. 2009. Peer reviewed: nutrition literacy status and preferred nutrition communication channels among adults in the lower Mississippi Delta. Preventing Chronic Disease, 6 (4).