

Nutritional Status of College Students: A Narrative Review of Prevalence, Determinants, and Interventions

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Abstract: The transition to college coincides with increased autonomy over food choices, new time and financial pressures, and shifts in living arrangements, all of which shape dietary habits and weight status. This narrative review synthesizes recent literature on the nutritional status of college students, its behavioral and socioeconomic determinants, its consequences, and the interventions used to address it. Peer-reviewed articles and reports published mainly between 2012 and 2026 were identified through PubMed, Scopus, and Google Scholar using terms related to college and university students, nutritional status, body mass index, dietary behavior, food insecurity, and nutrition education. Across studies, roughly one in five to one in four college students is classified as overweight or obese; on the other hand, a meaningful minority are underweight, particularly among women in lower-income settings. Skipped meals, low fruit and vegetable intake, and frequent fast-food intake and sugar-sweetened beverage consumption are common. Food insecurity affects a substantial share of students worldwide and is linked to poor diet quality and mental health. Nutrition knowledge is often disconnected from actual practice, and short-term education interventions show mixed but generally positive effects. College students represent a nutritionally vulnerable population shaped by environmental, financial, and behavioral factors. Campus-level nutrition policy, food-assistance programs, and sustained nutrition education are recommended to improve outcomes.

Index Terms - nutritional status; college students; dietary behavior; food insecurity; obesity; nutrition education

I INTRODUCTION

Nutritional status refers to the physiological condition of an individual that results from the balance between nutrient intake and requirements. Nutritional status is commonly assessed through anthropometric measures such as body mass index (BMI), dietary intake patterns, and biochemical indicators. Among young adults, the college years represent a distinct period of nutritional vulnerability. Students frequently leave a structured home food environment for the first time, gain control over their own food purchasing and preparation, and must balance academic demands, part-time work, and limited budgets, all of which influence what and how they eat.

The college food environment itself compounds this vulnerability. Campuses are often populated with inexpensive, calorie-dense, and heavily processed food options that are convenient for time-pressed students, while healthier alternatives may be less accessible or affordable (Kent et al., 2025). At the same time, a growing body of research has documented that many college students face food insecurity, which can further compromise diet quality regardless of nutrition knowledge (Wolfson et al., 2024).

This review synthesizes recent evidence on three interrelated aspects of the nutritional status of college students:

- (a) The prevalence of malnutrition in its various forms, including underweight, overweight, and obesity;
- (b) The behavioral, environmental, and socioeconomic determinants that shape student diets; and
- (c) The interventions that have been used to improve nutritional outcomes on campus.

The aim is to provide a concise, evidence-based reference that can inform campus health policy, student services, and future research.

II. RESEARCH METHODOLOGY

This is a narrative review rather than a formal systematic review. Relevant literature was identified through searches of PubMed, Scopus, and Google Scholar using combinations of the terms “college students,” “university students,” “nutritional status,” “body mass index,” “dietary behavior,” “food insecurity,” and “nutrition education.” Priority was given to peer-reviewed studies, systematic reviews, and meta-analyses published between 2012 and 2026, supplemented by a small number of national survey

reports where they provided the most current prevalence estimates. Studies were included if they reported on the nutritional status, dietary behavior, or nutrition-related determinants of undergraduate or graduate students. This approach allows for a broad, thematic synthesis rather than a formal risk-of-bias assessment, which is an acknowledged limitation discussed further below.

III. PREVALENCE OF MALNUTRITION, OVERWEIGHT, AND OBESITY

Estimates of excess weight among college and university students vary by region but consistently point to a substantial burden. A meta-analysis of medical students worldwide found a pooled overweight prevalence of 18% and obesity prevalence of 9%, for a combined excess-weight prevalence of roughly 24%, with rates trending upward over time and higher among male students (Shafiee et al., 2024). A large multi-country study of 22 low- and middle-income and emerging-economy countries similarly found that about 22% of university students were overweight or obese, with a higher rate among men (24.7%) than women (19.3%), as compared to underweight, which was more common among women (17.6%) than men (10.8%) (Peltzer et al., 2014). Regional studies echo this pattern: in the Gulf Cooperation Council countries, the mean prevalence of overweight and obesity among university students was found to be 29.4%, with individual studies ranging from 10% to over 48% (systematic review reported in *Frontiers in Public Health*, 2024), while a meta-analysis of Iranian university students found an overweight prevalence of 17.7% and abdominal obesity prevalence of 12.5%.

In Latin America, a cross-sectional study of Colombian university students similarly described a concerning nutritional profile marked by overweight, elevated adiposity, and sedentary behavior, despite relatively frequent consumption of natural foods (nutritional status study, Medellín, Colombia, 2022). In China, a survey of 815 college students found that only 54.97% had a normal BMI, underscoring that both excess and deficient weight status remain common even where knowledge, attitudes, and self-reported practice scores are collected together (Yuan et al., 2026). Taken together, these findings suggest that excess weight affects roughly one-fifth to one-quarter of college students globally; on the other hand, underweight remains a notable concern in specific subgroups, particularly young women.

IV. DIETARY PATTERNS AND EATING BEHAVIORS

Beyond weight status, the day-to-day dietary patterns of college students are frequently characterized as suboptimal. A narrative review of eating behaviors among university students concluded that the campus food environment, being heavily populated with inexpensive, tasty, calorie-dense foods, creates unfavorable conditions for healthy eating. This review also cited evidence that fast food, sugar-sweetened beverages, and packaged snacks are more popular among college students than fruits and vegetables across multiple world regions. It noted that in Turkey, nearly 40% of university students reported consuming fast food at least once every two weeks, and described it as their favorite food (Almoraie et al., 2025).

Meal-skipping, irregular eating schedules, and reliance on convenience are also recurring themes. Reviews of college eating habits describe a persistent gap in nutritional knowledge, with many students selecting food based on convenience, taste, time constraints, and price rather than nutritional value. This pattern is consistent with the broader literature on the transition to independent living, in which newly gained autonomy over food choices is not always matched by the skills or motivation needed to translate nutrition knowledge into consistent healthy practice.

V. FOOD INSECURITY AS A DETERMINANT OF NUTRITIONAL STATUS

Food insecurity has emerged as one of the most consistently documented threats to college students' nutritional status, particularly in the years following the COVID-19 pandemic and during recent periods of high inflation. A U.S. national longitudinal study using the USDA Household Food Security Survey Module found that from 2015 to 2019, roughly 11% of college students experienced marginal food security and 15% experienced food insecurity, with notably higher rates among Black and Hispanic students (21% and 26%, respectively) compared with White students (9%), and among first-generation students (18%) compared with continuing-generation students (10%) (Wolfson et al., 2024).

More recent and localized surveys report substantially higher rates. A 2024 national student survey found that 41% of students had experienced food insecurity in the past month, and 59% reported at least one form of basic needs insecurity related to food or housing within the past year. Students from food-insecure households were considerably less likely to complete their degrees. A Spring 2025 survey of New Jersey college students found that more than one in three students (36%) reported low or very low food security. In Australia, repeated cross-sectional surveys conducted between 2022 and 2024 found that food insecurity increased in both prevalence and severity during a sustained period of high inflation, with younger, on-campus, and international students at significantly higher risk (Kent et al., 2025). A U.S. campus-level study similarly found that international and multicultural students experienced significantly higher food insecurity (26.8% and 35.6%, respectively) than White students (19.9%).

Food insecurity does not only affect quantity of intake; it is also associated with poorer diet quality and mental health outcomes. A cross-sectional study of college students in Lebanon found that food insecurity was associated with indicators of depression, anxiety, and reduced well-being, underscoring that nutritional and psychological health are closely intertwined in this population.

Collectively, this body of evidence indicates that financial precarity, rather than knowledge deficits alone, is a major structural driver of poor nutritional status among college students.

VI. CONSEQUENCES OF POOR NUTRITIONAL STATUS

Poor nutritional status during college has consequences that extend beyond immediate physical health. Excess weight in early adulthood is a known risk factor for future cardiovascular disease, type 2 diabetes, and other noncommunicable diseases, meaning that patterns established during the college years may carry forward into adult health trajectories (Peltzer et al., 2014; Shafiee et al., 2024). At the other end of the spectrum, food insecurity and inadequate intake have been linked to disrupted sleep, heightened anxiety, and lower academic engagement, with some reports suggesting food-insecure students are substantially less likely to complete their degree. Obesity has also been associated with mental health outcomes such as depression, anxiety, and body image dissatisfaction among university students in Gulf Cooperation Council countries, illustrating a bidirectional relationship between nutritional and psychological wellbeing in this population.

VII. NUTRITION EDUCATION AND CAMPUS LEVEL EDUCATION

A body of intervention research has examined whether structured nutrition education can improve student dietary habits. An early but frequently cited review of 14 studies involving 1,668 college students in developed nations identified three main intervention formats: web-based education, in-person lectures, and supplement provision, and found that most interventions produced measurable improvements in dietary habits, though methodological inconsistencies (small samples, short follow-up, limited use of control groups) limited the strength of conclusions (Lua & Wan Putri Elena, 2012). More recent reviews have reinforced that university settings offer a practical target population and location for nutrition interventions, and have recommended that programs be theory-based, incorporate control groups, and include follow-up to confirm lasting effects.

Beyond individual-level education, structural interventions are increasingly emphasized. These include on-campus food pantries and emergency food assistance, subsidized meal plans, expanded enrollment support for public food-assistance programs, and improving the availability and affordability of fresh produce in dining halls and vending areas. Given that studies increasingly show many food-insecure students are unaware of and do not use available campus resources, improving outreach and reducing stigma around accessing these services appears to be as important as the resources themselves.

VIII. DISCUSSION

Across geographically diverse studies, three consistent patterns emerge. First, excess weight affects a substantial minority of college students worldwide, typically 20–30%, while underweight remains a notable concern for specific subgroups, especially young women in some regions. Second, dietary behavior among college students is shaped less by a simple lack of knowledge than by an environment that makes convenient, inexpensive, calorie-dense food the default option, compounded for a meaningful share of students by genuine food insecurity. Third, interventions that focus solely on nutrition education show only modest and inconsistent effects unless paired with changes to the food environment and financial support structures.

Several limitations of the existing literature should be noted. Much of the available research relies on cross-sectional, self-reported data, which limits causal inference and is subject to recall and social-desirability bias. Sample sizes and measurement tools (for BMI, dietary intake, and food security) vary considerably across studies, complicating direct comparison. Additionally, the majority of published intervention studies originate from high-income countries, leaving a gap in evidence regarding what works in lower-resource settings where food insecurity is often most severe. As a narrative rather than systematic review, this paper also did not apply formal risk-of-bias screening, which should be considered when weighing the strength of the synthesized conclusions.

IX. CONCLUSION AND RECOMMENDATIONS

College students constitute a nutritionally vulnerable population shaped by a combination of behavioral habits, campus food environments, and financial constraints. Existing evidence indicates that both excess weight and food insecurity are common, that nutrition knowledge does not reliably translate into healthy practice, and that education-only interventions produce limited change without complementary environmental and financial support. Based on this synthesis, the following recommendations are proposed:

- Integrate nutrition education into orientation and ongoing student life programming, using theory-based, interactive formats rather than one-time lectures.
- Expand and destigmatize access to campus food pantries, emergency food funds, and enrollment assistance for public nutrition-assistance programs.
- Improve the campus food environment by increasing the affordability and visibility of fresh, minimally processed options in dining halls and vending areas.
- Screen for food insecurity alongside physical and mental health assessments in student health services, given the documented overlap with anxiety and depression.

- Prioritize longitudinal and intervention research, particularly in low-income and middle-income settings, to strengthen causal evidence and guide policy.
- Addressing the nutritional status of college students will require coordinated efforts across health services, dining and food services, and institutional policy, rather than reliance on nutrition education alone.

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