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IMPACT OF NUTRITIONAL EDUCATION ON DIETARY HABITS AND HEALTH STATUS OF COLLEGE STUDENTS: A HOME SCIENCE APPROACH

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ABSTRACT
The period of transition from adolescence to young adulthood is a high-risk period for transitioning to lifelong dietary practices and behaviors; however, Indian college students face the double burden of undernutrition and the escalating threats of obesity. The present study has tried to see the effect of a home science-based module for nutrition education on college students' dietary practices and health. A quasi-experimental design with pretest–posttest instruments and mixed methods was planned (200-250 participants). Data collection consisted of a KAP survey, dietary recall, anthropometry, and focus group discussion. A 6-week intervention focused on meal planning, portion literacy, and functional cooking skills that was underpinned by flipbooks and mobile reminders. Evidence from Indian studies also shows that such interventions can increase knowledge by 30-35% and improve breakfast behavior and vegetable consumption, but the impact on fruit consumption and biological outcome (BMI) is weak. The paper finds that integrating culturally adequate, skill-based nutrition education into the college curriculum could promote dietary behavior that is sustainable and enhance public health.

1. INTRODUCTION
The period from adolescence to young adulthood is a key time for the establishment of lifelong dietary habits. College students may be considered as late adolescents who shift from family influenced food environments into an increasingly self-directed one that is constrained by resources and peer influences. In India, this trajectory is worsened by a twofold burden of malnutrition. On the one hand, undernutrition, and to a degree micronutrient deficiencies, remain endemic; the most recent surveys indicate that nearly one-third of Indian adolescent and young adult women are anemic or folate deficient, both of which have implications for energy, cognitive function, and productivity. On the other hand, urban campuses remained on the rise in obesity prevalence and obesity, sustained through snacking, skipping meals, and being physically inactive.

It is not only that this contradiction also makes nutritional education a project of a political nature. But unlike these canned awareness campaigns, home science and focused ones focus on practical competence, meal planning as a function of seasonal foods, budgeting within very limited resources, food safety, and basic skills at cooking that give these girls some ability to make healthier choices and also some sense of self-efficacy. Indian reports receive evidence on the effectiveness of interactive, skills-based modules resulting in exceptionally large and highly significant change in knowledge and attitudes but holding a mixed prospect in terms of behavior. Thus, incorporating nutritional ability into higher education is both psychologically and academically helpful and helpful from a long-term public health point of view.

2. LITERATURE REVIEW
In India, studies among adolescents and undergraduate students have consistently emphasized the role of nutrition education in fostering healthier dietary practices. A number of interventions have proved that even a low-frequency structured program can elicit positive changes in awareness, attitudes, and eating behaviors.

Moitra et al. (2021) conducted a school intervention with interactive activities, such as activity books and group learning. They found good improvements in knowledge about food groups and health risks from poor diets. Students also said that they had a healthier lifestyle, saying they were eating breakfast and bringing home-prepared lunches more often. Meanwhile, the researchers found that not all behaviors improved so much at the same level, suggesting that participation and environmental support outside the classroom also play important roles.

At the university level, Sehgal (2024) evaluated an education intervention to create awareness and affect the consumption of nuts and oilseeds among university-going students in Delhi. The program increased knowledge and stimulated interest in adding these foods to the diet. However, cultural practices, including household food preferences and economic reasons, influenced the practical adoption to a degree, showing a need for combined individual and family/community-level education.

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Research by Vyas et al. (2023) in Gujarat set up that short, structured sessions could have a positive impact on students' knowledge and attitudes. The study noted that simple approaches like the illustrated flipbooks and target discussions proved to be successful in changing attitudes about healthy consumption. South Indian data in support of this view show that whilst students follow nutritionally neutral diets, a significant segment is potentially at risk, furthering feelings of disparity in health orientation across areas.

In general, these studies emphasize the role of nutritional education in shaping dietary feelings and attitudes in the Indian youth. However, keeping these modifications over time and dissecting them from health impacts are still problematic for the educationists and policy makers.

3. RESEARCH OBJECTIVES

This study aims to:

- Assess the effects of a home science-based nutrition education module on dietary practices (FV consumption and breakfast consumption) of Indian college students.
- Examine the association of better nutrition knowledge and dietary behaviors and proximal health outcomes (i.e., BMI, quality of life).
- Evaluate the effectiveness of skills-based instruction on the "affordable and culturally appropriate" aspects of a diet change.
- Guide policy and curricular policies in incorporating nutrition education in Indian higher education.

4. RESEARCH METHODOLOGY

A mixed-method, quasi-experimental study with a pretest–posttest control group is employed for the study. Two hundred to 250 college students will take part through stratified random sampling to enhance gender and socioeconomic diversity. We will collect information from a validated KAP questionnaire, 24-hour dietary recall, anthropometry, and self-reported well-being. After which, focus group discussions will investigate barriers and perspectives. A Home Science, led six-week intervention, will provide lessons in meal planning, part literacy, and low-cost cooking, accompanied by flipbooks and digital reminders.

5. ANALYSIS & INTERPRETATION

The intervention impact analysis writes down that nutrition education can show statistically significant improvements in the knowledge and attitude of Indian collegians. Evidence from Gujarat by Vyas et al. (4 2012) used the same cutoffs. (2023) obtained mean scores on knowledge of 7.78 and on attitudes of 49.82, which after a short education program increased to 10.28 and 54.55. These results confirm that a duration of only six weeks of a structured module, using instruction with basic teaching materials (e.g., flipbooks) and interactive sessions, is long enough to achieve measurable cognitive improvements. Consistent with these findings, this study expects similar enhancements, as evidenced by a 30–35% increment in knowledge scores from the baseline and an 8–10% increment in attitudes, demonstrating that information provision through both didactic and participatory learning is effective for college students.

The behavioral effects are less explicit than the psychological effects, but such changes can also be measured. Moitra et al. (2021) found that interactive instruction for adolescents increased the consumption of breakfast, the percentage of homemade lunches, and the vegetable variety. In the present analysis, an improvement from baseline levels of breakfast regularity by 20-25 percentage points and of fruit and vegetable intake by 80-100 grams/days is expected. But fruit consumption is more of a challenge to alter, because of its greater cost, and living in a hostel with limited food, a barrier to affordability still exists.

The Indian studies in terms of anthropometrical indices show that short-term programs do not contribute significantly to reducing BMI or prevalence of obesity. For example, a cross-sectional study from South India reported that half of the students had a healthy BMI, with the others being underweight or overweight. Hence, it is not expected that the current intervention produces many short-term effects on BMI, even though small reductions of 0.5-1units of BMI could be achieved for overweight participants who shift towards a healthier routine.

Qualitative analysis provides further meaning to these numerical findings. Affordability is likely to be brought out in focus groups as a common theme, particularly with fruits, nuts, and oilseeds, which students feel are costly. A study by Sehgal (2024) in Delhi verified that despite an increase in awareness and attitude towards nut intake, cultural and household food preferences hindered continued dietary behavior; after intervention, only 11.3% of students met the recommended 30 gm/day intake.

On the whole, the findings suggest that education on nutrition in Indian colleges can be effective in creating a substantial improvement in knowledge and a small improvement in dietary practices within a brief period. But structural and cultural obstacles prevent these successes from translating into sustainable health gains. Affordable, practical cooking with peer support A home science approach to promoting these beneficial changes.

6. POLICY AND PEDAGOGICAL IMPLICATIONS

The Indian trials point to the need for handwashing promotion to progress from stand-alone pilots to sustained programs in further and higher education. The least complex path to incorporate the modules in the curricula is to integrate these modules either in the Home Science departments or as an add-on interdisciplinary course open to all students. In studies such as Vyas et al. (2023), structured education can increase knowledge scores by more than 30%, proving that even brief modules can have a substantial effect. Credit-bearing status would provide added incentives for students and would enhance institutional credibility.

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Low-cost, locally relevant resources are also important. Flipbooks, peer-led discussions, and mobile-based reminders are already having success in Indian settings; these achieved better actor engagement and reinforced knowledge. Moitra et al. (2021), for example, saw that interactive teaching with activity-based materials led to an increase in the frequency of breakfast intake and vegetable consumption in adolescents. Scaling such cost-effective models across colleges would allow programs to be affordable and scalable.

Environmental orientation is an essential condition to keep the change in behavior. Hostel food service and canteen service are the important ones that significantly influence the student's diet. Working with service providers to develop menu plans that are balanced, cost-effective, and consistent with program messaging may perfect intervention impact. For nutritionally vulnerable groups, especially female students, who suffer higher rates of anemia, added measures like subsidized seasonal produce boxes or vouchers for fortified foods would help close the affordability gap.

Monitoring and evaluation efforts should become institutionalized if they are to remain successful over time. Colleges should check knowledge, dietary behavior, and anthropometrics at least once a semester, employing standardized instruments. Programs could be responsive to the needs of students and yet provide longitudinal data of student progress and successes for researchers and policy makers.

7. CONCLUSION

College years are about more than classrooms and careers; they are about developing habits that last a lifetime. What students ingest during this unsupervised hour influences their energy level and mood and may even affect their academic performance. The research from India gives us a clear pattern: When you give young people practical, culturally relevant nutrition lessons, they learn fast, and their choices start to shift. They begin eating breakfast more often, piling more vegetables on their plates, and even trying foods such as nuts and oilseeds that were not part of their routine previously.

But knowledge by itself is never sufficient. A lot of students still have problems with cost, hostel food restrictions, and family practices. This is what makes the Home Science point of view so powerful, the fact that it meets them where they are at and provides a simple, affordable, internalized, and realistic way to eat well! If these small moves are accompanied by supportive campus environments, they can mature into lifelong health habits.

REFERENCES

1. *Moitra, P., Kumar, A., Yadav, A., & Kishore, J. (2021). The effect of two health education packages on nutritional knowledge, practices and physical activity levels among school-going adolescents in Rishikesh: A cluster randomized trial. Cureus, 13(8),*
2. *Sehgal, G. (2024). Nutrition education in college students using Diffusion of Innovation Theory: Promoting nut and oilseed consumption. Progress in Medical Research, 4(1), 57–65.*
3. *Vyas, D. Y., Patel, P., & Parmar, V. (2023). A study to assess the effect of nutrition education program on dietary habits in terms of knowledge and attitude among college students. Research Journal of Humanities and Social Sciences, 14(2), 123–129.*
4. *Sharma, R., & Gupta, S. (2018). Nutritional interventions and their impact on dietary practices of Indian adolescents. Indian Journal of Home Science, 45(2), 101–112.*
5. *World Health Organization. (2020). Healthy diet. Fact sheet. Geneva: WHO.*
6. *Khan, M. S. I., Rahman, M. A., & Sultana, S. (2024). Breakfast skipping among university students: Prevalence and determinants in Bangladesh. Frontiers in Public Health.*
7. *Rao, S., & Joseph, B. (2022). Nutritional status and dietary profile of college students: A cross-sectional study from South India. International Journal of Current Science Research and Review.*
8.