



The Impact of Nutrition Classes at Urban Peak on the Nutritional Status and Dietary Patterns of Unhoused Youth

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Background

- Youth homelessness is a significant public health concern in the US with an estimated 4.2 million youth unhoused yearly^{4,8}
- Unhoused youth face many nutritional challenges including food deprivation, disordered eating patterns, and obesity^{3,9,10}
- Studies have examined the nutritional deficiencies and the associated health implications impacting unhoused youth; however, the role of nutritional education in influencing the nutritional status of this population has not been explored^{1,5,6}
- Objective:** Implement nutrition classes at Urban Peak, an unhoused youth shelter in Denver for clients ranging in age from 15 – 20, to evaluate the impact of education on the dietary patterns and nutritional status of this population

Planned Methods

- Community partnership established between the University of Colorado School of Medicine and Urban Peak
- Project deemed to be a quality improvement project not requiring COMIRB approval
- An eight-week in-person curriculum taught by medical school students was designed following USDA and CDC guidelines and using a Community-Based Participatory Research Model
 - Lesson Topics: Introduction to Nutrition, Reading a Nutrition Label, Fruits and Vegetables, Dairy and Protein, Caffeine and Sugar Drinks, Fast Food Options, Health Implications of Over/Under-eating, and Food Budgeting/Colorado SNAP benefits
- Youth will complete a five-question, free-response pre-survey before each lesson to assess baseline knowledge and current dietary patterns
- Youth will complete a similar post-survey following the lesson to assess the knowledge gained and the curriculum's influence on future dietary patterns
- An additional post-survey will be given one month later to evaluate the long-term efficacy of the curriculum on their dietary patterns and nutritional status
- Data analysis will be conducted qualitatively and quantitatively
 - Qualitative Analysis: Thematic analysis
 - Quantitative Analysis: Score of at least 50% comprehension/retention of teaching points and percentage of unanswered questions

Results

- Qualitative/Thematic Analysis**
 - Baseline Nutritional Knowledge and Understanding
 - Question: "What does nutrition mean to you?"
 - Response: "The proper way to keep your body healthy and provide enough to eat"
 - Question: "What vitamins, minerals, and nutrients are in fruits/vegetables?"
 - Response: "Vitamin A, B, C, and D, carbohydrates, proteins, sodium, fats"
 - Food Accessibility
 - Question: "What is your eating schedule like?"
 - Response: "I like to eat lunch and dinner when I can, like when I am staying at Urban Peak – otherwise I eat whenever and whatever I can find"
 - Question: "How often do you drink milk?"
 - Response: "Whenever it is provided, what is provided"

Quantitative Analysis

Lesson	Number of Medical Student Participants	Number of Youth Clients	Number of Completed Surveys	Number of Surveys with ≥ 50% retention of key teaching points	Percent of Pre-Survey Questions Unanswered	Percent of Post-Survey Questions Unanswered
Introduction to Nutrition	3	4	3	3	15	20
Reading a Nutrition Label	3	4	3	3	0	15
Fruits and Vegetables	3	7	7	4	20	40
Dairy and Protein	2	6	6	3	13.3	30

- Table 1:** Quantitative analysis of survey results reporting the number of medical student mentors present, number of youth clients present, number of surveys completed, and the percentage of unanswered pre-survey and post-survey questions associated with the first four lessons of the nutrition curriculum
- Negative Results**
 - Incomplete and unanswered survey questions – particularly post-survey questions
 - The complexity of working with unhoused populations – including the turnover of the youth clients at Urban Peak – prevented administration of the additional post-survey one month later
 - No data was gathered to evaluate the curriculum's long-term influence on the nutritional status and dietary patterns of unhoused youth
 - The formal academic structure of the curriculum and data collection limited youth curiosity and engagement, small group discussion, and mentorship opportunities

Discussion

- After completion of the formal eight-week curriculum and analysis of the associated surveys, the youth demonstrated a strong baseline understanding of nutrition before starting each class
- The main areas of educational need identified by the survey and the youth included selecting healthy and inexpensive food options and accessing nutritious food
- Per youth feedback, the classes positively influenced their short-term eating habits and deepened their understanding of nutrition
- Limitations**
 - Complex systemic challenges when working with and caring for unhoused populations
 - Inherent and community-based limitations of survey data
 - Dissonance between the academic structure of the project and the community's needs
 - Inability to evaluate the long-term impact of the curriculum on dietary patterns
- Project Reconstruction
 - Guided by the principles of Community Engaged Research and Decolonizing Research Methodologies, the project was re-designed based on the shifting needs of the youth clients and Urban Peak staff as well as the medical student participants^{2,7}
 - Flipped-classroom, small-group approach
 - Hands-on cooking courses and topic-related snacks
 - Opportunities for one-on-one youth mentorship
 - Data collection via youth client and medical student narrative comments
 - Curriculum flexibility to focus on youth-requested topics and areas of educational need
- Established as a CUSOM service-learning site for ongoing curriculum development and research

Conclusions

- Nutrition education was successfully implemented by CUSOM medical students at Urban Peak
- Qualitative/quantitative data provided valuable information regarding the baseline knowledge of the youth clients and the beneficial impact of the curriculum on improving their short-term nutritional knowledge and dietary patterns
- The re-designed curriculum increased youth engagement, facilitated mentorship relationships between the youth clients and the medical student participants, and promoted curriculum flexibility
- Future research needs to investigate the long-term impact of nutritional education on the dietary patterns of unhoused youth and methods to address food insecurity
- Future Directions**
 - IRB approval for the project to gather youth personal information to follow up on the long-term influences of the curriculum on their dietary patterns and nutritional status
 - Broaden the curriculum to encompass other topics related to lifestyle, health, and wellness

References, Disclosures, Funding, and Contributors

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