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.
  - 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 each 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 food.”
    - Question: “What vitamins, minerals, and nutrients are in fruits/vegetables?”
  - 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**
  - Table: 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.

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.
  - 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