



Nutrition Intervention for Sacramento State Residence Hall Students

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California State University, Sacramento (CSUS)
09 December 2024

Background/Significance

Problem at Large

- College students often face food insecurity
 - Nationally: 47.2%
 - Sacramento State: 49.9%
- Residential Students may be at higher risk
 - Spring 2024, 62.9% of CSUS students living on campus reported any food insecurity



Why It Matters

- Food insecurity among college students is associated with poorer diet
- Current diet among CSUS Residential Students (Spring 2024)
 - 29.5% eat average 3+ servings of vegetables per day
 - 22.3% eat average of 3+ servings of fruit per day
 - 73.2% drink average of 1+ sugar sweetened beverage
- Other dietary concerns among this population
 - Higher intake of processed food
 - Overeating at dining hall
 - Lack of cooking skills
- Health implications
 - Increasing obesity rates seen among college students
 - Larger weight increases among 1st year college students

(ASI Pantry, 2024; Food and Housing Survey: Understanding Student's Basic Needs, 2023; Manchester, 2020; Vadeboncoeur et al. 2015; Sacramento State SHCWS, 2024; Sogari et al., 2018)

Our Goal

Develop a series of education sessions that work to address these issues by helping students incorporate more whole foods into their diet

Target Audience

Sacramento State University Students

- Currently enrolled and living on campus at any of the residence halls
- Diverse group of individuals (race, gender, etc.)
- Any college level, but primarily freshman (may require more dietary guidance after moving out from parents' home)

Methods

Supporting Data

- Peer reviewed articles focused on motivational and facilitating determinants (influenced selection of SCT and idea for a convenient, budget-friendly meal)
- ASI pantry (possession of/accessibility to kitchenware/kitchen, factors that influence dietary choices, & grocery shopping frequency)
- National College Health Assessment (fruit/veggie consumption & prevalence of food insecurity)

Pre-Intervention Survey (distributed QR online and with flyers; 10 responses)

- Discover students' wants, needs and diet preferences
- Understand their nutrition-related attitudes, behaviors, beliefs, influential factors, and intentions

Methods

Recruiting Participants

- Developed, distributed, and posted flyers online and on-campus
- Professor Shilts provided an incentive to first-year nutrition students

Pilot Testing

- Demonstrated activity (pair & share) focused on perceived barriers (motivational determinants) to group of nutrition students

Nutrition Education Intervention/Workshop (Utilization of DESIGN)

- Thursday, November 21st from 4-5pm
- Location: The Cove at The Well (includes kitchen and utensils for preparing whole food meal)

Theoretical Framework

Theory: **Social Cognitive Theory**

This theory aims to help individuals make changes by addressing personal, behavioral and environmental determinants. It was chosen because it goes beyond increasing motivation, and it emphasizes environmental influence. It has also proved effective among college students in prior studies.

Determinants

Motivational: Self-worth, Perceived benefits/barriers, negative outcomes, self-efficacy

Facilitating: Behavioral skills, action goal setting, knowledge and cognitive skills, self-regulation processes

Intervention Activities

Lesson 1: Whole food background and meal preparation

Cloud map, recognizing benefits/barriers, cooking demo, goal setting

Lesson 2: Choosing whole food snacks

Review of benefits, practice identifying whole food snacks, discussion of barriers, handout of snack+journal for goal setting

Lesson 3: Choosing whole foods in the dining hall

Students practice choosing whole foods at the dining hall using online menu

Lesson 4: Choosing whole foods at campus eateries

Students practice choosing meals with whole foods using campus eatery menus

Short Term: Determinants and Measures

Motivational: self-worth, perceived benefits, self-efficacy (*post intervention survey*)

Facilitating: knowledge and cognitive skills, behavioral skills (*post-intervention survey*)

Medium Term: Behaviors and Measures

Frequency of meal planning (*survey*)

Frequency of using shared kitchen space (*survey*)

Long Term: Problems to Solve and Measure

Frequency of whole food consumption (*24 hr dietary recall or food frequency questionnaire*)

Situation/Behavior

Change Goal:

Improve nutritional quality of diet by promoting increased intake of whole foods

Target Audience:

Sacramento State students living in the residence halls

Setting:

Sacramento State

Inputs:

Residence Hall staff
Jennifer Campbell
Kitchen space
Kitchen appliances
White boards and white board markers
Data from ASI food pantry and SHCWS

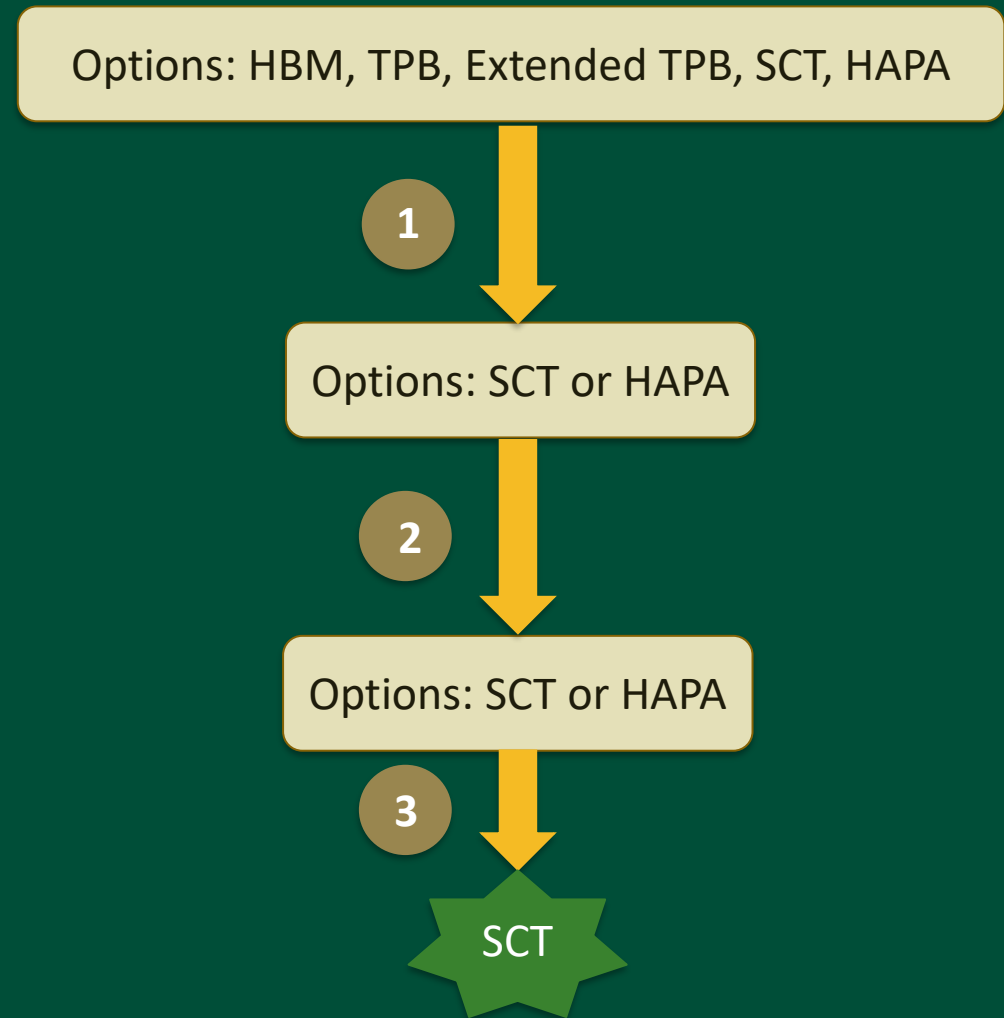
Inputs

Outputs

Outcomes

Why Social Cognitive Theory?

1. Addressing motivation alone is likely not enough
 - Evidence of students knowing and having a desire to eat healthier, but lack of resources or skills (ASI pantry, 2024)
2. Relevant determinants
 - Self-efficacy
 - Perceived benefits and barriers
 - Knowledge and Cognitive skills
 - Descriptive norms
 - Behavioral supports
 - Behavioral skills
3. Environment is particularly important for this population
 - Skills/choices restricted by living in dorm and not necessarily having 100% control over food options
4. Previous interventions effective using this theory (*Brace et al., 2018; Kelly et al., 2013*)
 - Used quite often among college students for nutrition interventions including those focused on fruits, vegetables, whole grains
 - Most have positive changes reported



Intervention Description and Delivery

Our 4 Lessons:

- **Food Demonstration**
- Healthy Snacking
- Smart choices in the Dining Commons
- Eating whole food based at Campus Eateries

Other Activities included in the Intervention

- Educating participants of the benefits of eating whole foods
- Addressing perceived barriers
- Creating SMART Goals

Environmental Supports

- Providing students with ingredients for the food demo
- Voucher for a meal at a campus restaurant

Maintenance

- Creating a cooking club that meets each week to make a whole food recipe

Lesson Presentation

- Excite: Words of Self-Worth. (5 min)
 - Cloud map
- Explain: What are whole foods and how do they benefit me? (10 min)
 - Discussion with scientific evidence supporting claims
- Explain: Provide a definition and explanation of barriers. (5 min)
 - Discussion
- Expand: Recognizing & Bypassing obstacles. (10 min)
 - Pair and share with group discussion
- Expand: Demonstrate a whole food meal. (20 min)
 - Cooking demonstration
- Exit: Maintaining behavior change. (5 min)
 - Participants write down final thoughts and takeaways

Intervention Description: Tailoring to College Students

- We used the information we learned in our survey to make the cooking demonstration suitable for our audience (*American College Health Association, 2024; ASI pantry, 2024*)
- We chose to make chicken salad that was
 - Affordable
 - Required few cooking skills
 - Contained shelf stable ingredients
 - Quick to make
 - Versatile
- We also chose to focus 2 of our lessons on how to eat balanced meals from campus eateries because most of the students had meal plans and did not cook most of their meals (survey respondents)

Intervention Description- Tailoring to Framework

Determinants Addressed

Self-Worth (Excite)

Specific Objective: Students will be able to describe why eating healthy represents how they value themselves.

Activity: Display Cloud Map

Perceived Benefits (Explain)

Specific Objective: Students will be able to explain the benefits of eating whole foods

Activity: Demonstration of scientific evidence regarding proven benefits

Perceived Barriers (Explain):

Specific Objective: Students will be able to define what a barrier is.

Activity: Explain what barriers are and provide examples

Perceived Barriers (Expand)

Specific Objective: Students will be able to identify two barriers that they can overcome to increase whole food consumption

Activity: Pair & Share

Behavioral Skills (Expand)

Specific Objective: Students will practice creating a meal with whole foods

Activity: Cooking Demonstration with participant involvement

Action Goal Setting (Exit)

Specific Objective: Students will apply what has been learned by beginning to plan how they can start to incorporate whole foods long term

Activity: Commit to incorporating whole foods in their diet

Intervention Delivery

The lesson took the allotted 50 minutes

Attendees

- There were 2 attendees at our intervention
- Neither attendee was included in our target audience of college student living on campus
- One of the participants was a graduate student and the other was undergraduate level
- We had a sign-up for the intervention but the students that signed up did not come

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Jennifer Campbell
Kitchen space
Kitchen appliances
White boards and white board markers
Data from ASI food pantry and SHCWS

Inputs

Outputs

Outcomes

Evaluation plan

Short Term: Determinants and Measures

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Short term: Post intervention survey was distributed to participants post activity.

Sample Questions:

How confident did you feel planning an easy, budget-friendly meal with whole foods before the lesson? (self-efficacy)

Mid-term: Follow up survey

Sample Questions:

How often do you eat meals containing 1 or more whole foods? Never/Sometimes/Occasionally/Often

Long term:

Conducting 24-hour recall, food frequency questionnaire, collecting food diaries to measure increase of whole food consumption.

Sample FFQ question:

How often do you eat the following:

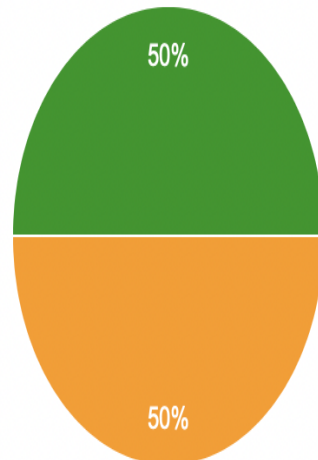
whole food AND/OR non whole food

Behavioral Skills

PRE LESSON

How confident did you feel planning an easy, budget-friendly meal with whole foods **before** the lesson?

2 responses

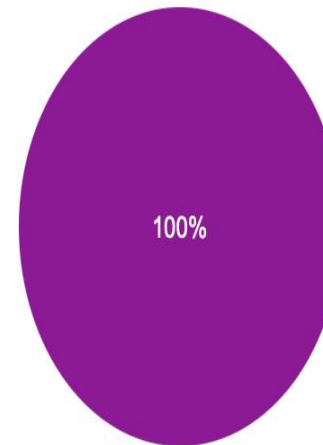


- Very Unconfident
- Somewhat Unconfident
- Neither Unconfident or Confident
- Somewhat Confident
- Very Confident

POST LESSON

How confident did you feel planning an easy, budget-friendly meal with whole foods **after** the lesson?

2 responses



- Very Unconfident
- Somewhat Unconfident
- Neither Unconfident or Confident
- Somewhat Confident
- Very Confident

Perceived Benefits

What benefits could you experience by consuming more whole foods?

2 responses

Mindfulness and efficiency

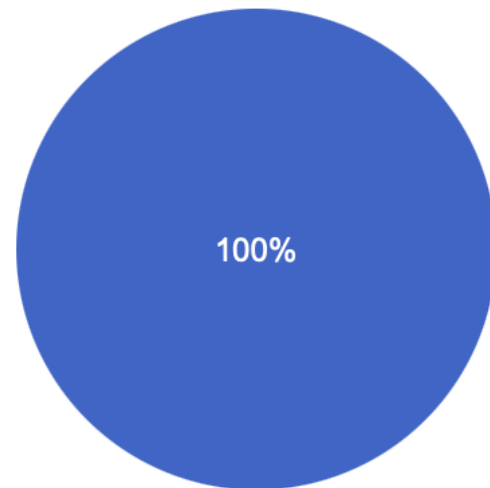
Increased energy




Behavioral Skills

I believe that I can plan meals with more whole foods after this lesson

 [Copy chart](#)

2 responses



-  Agree
-  Agree or Disagree
-  Disagree

No additional feedback provided from session

Is there anything the presenters could improve upon?

2 responses

They did perfect

N/A

Are there any changes you would make to the session

2 responses

No

N/A

Conclusion/Next Steps

Highlights:

- Created a hands-on learning approach for increasing whole foods consumption with a food demonstration
- Pre and post surveys show an increase in confidence in picking whole foods and increasing consumption
- Lesson was designed to reflect the needs of the specific population

Potential positive implications of our intervention and how it adds to the field of nutrition education & behavior:

- Learned practical cooking/food prep skills during session
- Adaptable to diverse nutrition settings
- Emphasizes the needs to incentives for this population and a need for a connection with this community

Conclusion/Next steps cont.

What we would do differently:

- Collect more data from residential halls (demographics, behavioral questions, eating habits)
- Having lesson be delivered to actual population in the residential hall
- Creating an incentive to boost participation
- Focus groups vs surveys to gain additional insight on behaviors

Possible next steps:

- Track behavior change over time with follow up assessments and longitudinal tracking
- Measure long-term dietary modifications
- Personalized nutrition feedback
- Adapt nutrition lessons to cater to different dietary needs



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