NUTRITION AND AGING SERVICES:
Screening, Innovating, Collaborating and Best Practices on Evaluating Impact

July 24, 2020
Aging is a priority for SNEB

“Recommit to an Ongoing Lifespan Approach and Address the Needs of a Growing Aging Population”
Speakers

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Objectives

• Describe the challenges and opportunities in evaluating the impact of nutrition and aging services and programs in older adults.

• Understand strategies to enhance study design, measures, and collection of needed data to evaluate the impact of community nutrition and aging services and programs in older adults.

• Describe the challenges and opportunities related to nutrition risk screening of community-dwelling older adults, including the newly developed COAST (Comprehensive Older Adult Screening Tool).
Disclosures

• No relevant disclosures

Funding

• This work was supported, in part, by:
  - GEO00805, National Institute of Food and Agriculture: Addressing Obesity/Weight Management and Chronic Disease Across the Lifespan through the Cooperative Extension Model, 06/27/16-06/15/21
Figure 1: Number of Persons Age 65 and Over: 1900-2060 (numbers in millions)
Figure 1: Number of Persons Age 65 and Over: 1900-2060 (numbers in millions)

85+: 14.4 million in 2040

123% from 2017
Changing Older Adult Racial and Ethnic Demographics

![Chart showing racial and ethnic demographics of older adults over time]

- **2017**
  - White: 77%
  - Asian: 4%
  - Hispanic/Latino: 5%
  - Black: 5%
  - Other: 1%

- **2030**
  - White: 72%
  - Asian: 5%
  - Hispanic/Latino: 10%
  - Black: 11%
  - Other: 2%

- **2060**
  - White: 55%
  - Asian: 8%
  - Hispanic/Latino: 21%
  - Black: 13%
  - Other: 3%
Living Arrangements

- Most (96%) of older adults live in the community
- Aging-in-place has health and emotional benefits and cost savings
- Women are more likely than men (36% v. 26%) to live alone

Saffel-Shrier, Johnson & Francis, 2019
Health Status – Physical Function and Disability

35%
Some disability

46%
Difficulties in physical functioning

Contribute to and result from poor nutrition
Health Status - Chronic Conditions

- Hypertension (55.9%)
- Heart disease, including heart failure (20.4%)
- Diabetes (20.8%)
- Certain cancers (23.4%)
- Osteoporosis
  - 70 – 79 years (16.4%)
  - 80+ years (26.2%)
- Obesity (34.7%)
  - Women 65 – 74 y (43.5%)
Income, poverty, health care costs

10% of older adults live in poverty

Prevalence higher among:

- Older women (10.5%)
- Hispanic (17.0%)
- Black (19.3%)

7.8% of older adults are food insecure

- 8.9% of those who live alone

Health care costs for 65 and older are 3x that of working-age people

In 2014, older adults were 15% of the population and 34% of all health care spending

ACL, AOA 2018, CMS 2018
Nutritional Risk

- Nutritionally inadequate
- Underweight and overweight/obesity
- Poverty, transportation, walkability
- Depression, social isolation
- Functional status, frailty, sarcopenia

Food Security
Weight Status
Enviromental and Economic Factors
Disability and Functional Status
Psychosocial factors

Saffel-Shrier, Johnson & Francis, 2019
Need for Older Adult Nutrition Education

- Rapidly growing older adult population
- Older adult health issues → many nutrition-related
- Rising health care costs
- Important role for nutrition and aging services
- Need ways to evaluate nutritional risk and outcomes

Saffel-Shrier, Johnson, and Francis, 2019; Image: https://isd194.org/community-education/k-12/adaptive-classes/we-need-you/
Position of the Academy of Nutrition and Dietetics and the Society for Nutrition Education and Behavior: Food and Nutrition Programs for Community-Residing Older Adults

Susan Saffel-Shrier, MS, RDN, CD\textsuperscript{1}; Mary Ann Johnson, PhD\textsuperscript{2}; Sarah L. Francis, PhD, MS, RD\textsuperscript{3}

ABSTRACT
Given the increasing number and diversity of older adults and the transformation of health care services in the United States, it is the position of the Academy of Nutrition and Dietetics and the Society for Nutrition Education and Behavior that all older adults should have access to evidence-based food and nutrition programs that ensure the availability of safe and adequate food to promote optimal nutrition, health, functionality, and quality of life. Registered dietitian nutritionists and nutrition and dietetics technicians, registered, in partnership with other practitioners and nutrition educators, should be actively involved in programs that provide coordinated services between the community and health care systems that include regular monitoring and evaluation of programming outcomes. The rapidly growing older population, increased demand for integrated continuous support systems, and rising cost of health care underscore the need for these programs. Programs must include food assistance and meal programs, nutritional screening and assessment, nutrition education, medical nutrition therapy, and counseling and the promotion of evidence-based...
Nutrition educators should...

…be actively involved → clinical community linkages

…collaborate with dietitians and other health professionals

…monitor and evaluate outcomes

➤ Key to funding!
Community Nutrition Programs for Older Adults

USDHHS and Administration on Community Living – Older Americans Act (OAA)

- Congregate and home-delivered meals
- Chronic disease management and prevention programs

SNAP (Supplemental Nutrition Assistance Program) & SNAP-Ed

Senior Farmers Market Nutrition Programs

Child and Adult Care Food Program

Cooperative Extension Service, i.e.)

- Iowa State Extension – *Stay Independent: A healthy aging series*
- University of Minnesota Extension – *Seniors Eating Well*
Goals of USDA DHHS Community Nutrition

Reduce food insecurity, hunger, nutritional risk, and/or malnutrition

Promote socialization, health, and wellbeing

Delay adverse health conditions
Congregate Meal Programs

a value proposition

Congregate meal programs

Serve adults 60+ (and in some cases, caregivers, spouses, and/or younger people with disabilities)

Provide meals in senior centers, schools, churches, farmers markets, and other community settings

Offer healthy meals, social engagement, access to community resources, volunteer roles
Congregate Meal Program Impacts

How the health care system benefits

Participants vs non-participants

Fewer ER visits leading to admissions
- 5.4% vs 10.4%

Fewer hospital admissions
- 8.5% vs 13.7%
How meal program participants benefit

Higher quality diet

- A healthy diet is essential to overall wellness
- 1 out of 2 older adults is at risk or is malnourished

80% of participants say a congregate meal program improved their health

Greater food security

- Access to food is a social determinant of health
- 4.9 million seniors do not have reliable access to enough affordable, nutritious food

54% of participants say a congregate meal supplies 50% or more of total food for the day
## Challenges and Opportunities

<table>
<thead>
<tr>
<th>Program</th>
<th>Outcomes</th>
<th>Opportunities for Nutrition Educators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Older American’s Act Programs (Congregate meals, Home delivered meals,</td>
<td>↑ self-reported health, dietary intake</td>
<td>• Provide nutrition education</td>
</tr>
<tr>
<td>Home delivered meals, chronic disease prevention/management, falls</td>
<td>↑ food security</td>
<td>• Improve program evaluation, nutrition risk screening</td>
</tr>
<tr>
<td>prevention)</td>
<td>↑ remain in home</td>
<td>• Publish outcomes</td>
</tr>
<tr>
<td>Nutrition Sercies Incentives</td>
<td>Not available</td>
<td>• Market/communicate impacts</td>
</tr>
<tr>
<td>SNAP</td>
<td>↓ Food insecurity</td>
<td>• Encourage referral from clinic to community</td>
</tr>
<tr>
<td>Senior Farmers Market Nutrition Program</td>
<td>↑ self-reported produce intake</td>
<td></td>
</tr>
<tr>
<td>The Emergency Food Assistance Program (TEFAP)</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>CACFP</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Extension Food and Nutrition Programs</td>
<td>Limited published evidence</td>
<td></td>
</tr>
</tbody>
</table>

Adapted from Saffel-Shrier, Johnson & Francis, 2019
Nutrition Educator Role

- Understand factors influencing older adults' nutritional status
- Identify tools needed to document programming outcomes
- Work collaboratively with state and federal community-based food and nutrition programs
- Conduct evaluation and publish!
COMMUNITY-BASED PROGRAM EVALUATION—LESSONS LEARNED

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Human Sciences Extension and Outreach State Specialist, Nutrition and Wellness
Iowa State University
Disclosure Statement

• National Agricultural Research, Extension, Education, and Economics Advisory Board Member

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  • USDA’s Supplemental Nutrition Assistance Program, SNAP, in collaboration with the Iowa Department Public Health
  • Administration for Community Living/Administration on Aging: Innovations in Nutrition Program and Services Grant 2017-2019

• This work was completed as part of the USDA NE-1439 Multistate Project “Changing the Health Trajectory for Older Adults through Effective Diet and Activity Modifications” and the USDA NE-1939 Multistate Project “Improving the health span of aging adults through diet and physical activity.”
Learning Objectives

• Understand strategies to enhance study design, measures, and collection of needed data to evaluate the impact of community nutrition and aging services and programs in older adults.

• Describe the challenges and opportunities in evaluating the impact of nutrition and aging services and programs in older adults.
Position Statement

It is the position of the Academy of Nutrition and Dietetics and the Society for Nutrition Education and Behavior that older adults should have access to evidence-based food and nutrition programs that ensure the availability of safe and adequate food to promote optimal nutrition, health, functionality, and quality of life. Registered dietitian nutritionists and nutrition and dietetics technicians, registered, in partnership with other practitioners and nutrition educators, should be actively involved in programs that provide coordinated services between the community and health care systems that include regular monitoring and evaluation of programming outcomes. The rapidly growing older population, increased demand for integrated continuous support systems, and rising cost of health care underscore the need for these programs.

Iowa Collaborations

Iowa Department of Public Health (SNAP-ED)

Iowa State Extension and Outreach

Fresh Conversations
https://snapedtoolkit.org/interventions/programs/fresh-conversations/

Stay Independent: A healthy aging series
https://www.extension.iastate.edu/humansciences/stay-independent

Words on Wellness (monthly newsletter)
https://www.extension.iastate.edu/humansciences/wellness

Congregate Meal Program
Conduct:

- Program needs and preference assessments
- Program evaluation
- Program fidelity
Social Marketing Theory

1. Planning & Strategy
2. Selecting Channels & Materials
3. Developing Materials & Pretesting
4. Implementation
5. Assessing Effectiveness
6. Feedback to Refine Program

Lefebvre & Rochlin, 1997; Storey, Saffitz, & Rimón, 2008
How Much is Too Much?

Binge Drinking Among Adults 65 and Older is on the Rise

Falls are the Leading Cause of Injury Death for Older Americans

Fall Risk Screening is a Medicare Benefit

Recipe of the Month

Can Strengthen

Deciding Healthy Behaviors

Take Action Corner

Iowa State University Extension and Outreach
Fresh Conversations Timeline

2011-2012
Pilot Study

2013-2014
Formative Work to revise program

2015-2016
Statewide Impact Study

2016
Facilitator Evaluation

2017-2019
Fidelity Assessment & Program Satisfaction Survey

2020
Impact study
“Cancelled due to COVID-19. Rescheduled for 2022”
Fresh Conversations Publications


Declining Congregate Meal Site Participation

Nationwide: 8%

Iowa: 46%

Administration for Community Living (ACL), 2017 & Heritage Agency on Aging
### Iowa Congregate Meal Program (CMP) Timeline

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018-19</td>
<td>CMP Program Awareness Assessment</td>
<td>(service providers)</td>
</tr>
<tr>
<td>2018-2019</td>
<td>Impact Study</td>
<td>(control group design study; participants)</td>
</tr>
</tbody>
</table>
Iowa CMP Publications


Project Insights

• Surveys and questionnaires are viewed by most participants as a burden—make sure to explain purpose

• If relying on others to help with evaluation distribution and completion—get their buy-in from the beginning

• Share the findings with those involved with the project
What considerations do you make when planning a program evaluation?
Considerations Made...

• What are the goal outcomes for the program being assessed?

• What validated tools are available to measure these anticipated outcomes?

• Are these validated tools:
  – able to be completed by participants without assistance?
  – short to ease participant burden

• What are potential barriers to implementation?

• What are the potential burdens for the program staff?
Common Tools Used Across Studies

- Dietary Screening Tool (Bailey et al., 2007; Bailey et al., 2009)
  - Assesses nutritional risk based on dietary intake frequencies

- Healthy Eating Self-Efficacy Scale (Schwarzer & Renner, 2000)
  - Assesses one’s confidence in making healthy food choices when faced with various barriers

- Food Security (6-items and/or 2-tem) (Economic Research Service, 2020; Hager et al., 2010)
Dietary Screening Tool

- Validated with older adults
- Completed in <10 minutes
- Nutritional risk classification
  - <60 points: “at nutritional risk”
  - 60-75 points: “at possible nutritional risk”
  - >75 points: “not at nutritional risk”

(Bailey et al., 2007; Bailey et al., 2009; Ventura-Marra, 2018)
# Dietary Screening Tool

<table>
<thead>
<tr>
<th>Dietary Pattern</th>
<th>Diet Category</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRUDENT</strong></td>
<td>Whole Fruit and Juice</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Vegetables</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Total and Whole Grains</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Lean Protein</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Dairy</td>
<td>10</td>
</tr>
<tr>
<td><strong>WESTERN</strong></td>
<td>Added Fats, Sugars, and Sweets</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Processed Meat</td>
<td>10</td>
</tr>
</tbody>
</table>

(Bailey et al., 2007; Bailey et al., 2009)
Self-Efficacy

• I can manage to stick to healthful foods even if I:
  – need a long time to develop the necessary skills (e.g. label reading, cooking, etc).
  – have to try several times until it works (e.g. until it becomes a new habit).
  – have to rethink my entire way of eating (e.g. eating more produce, buying lean meats, etc)
  – do not receive a great deal of support from others when making my first attempt (e.g. family/friends make fun of my new food choices, or I am offered high sugar or high fat foods).
  – have to make a detailed plan (e.g. shopping list, menu, meal plan, etc)

Schwarzer & Renner, 2000
Food Security

- 6-Item Short Form (ERS, 2020)
- 2-Question Form (Hager et al., 2010)
Best Practices for Community-Based Program Evaluation

• Accept there will be limitations in the study design but still design as strong of a long-term evaluation plan as you can.

• Determine the sample size you need to assess impact.

• Include program staff in study design—*convey the importance of continued evaluation and its impact on funding*

• Utilize mix-method approaches toward program evaluation to ensure qualitative and quantitative impact assessment.

• Publish to provide evidence of impact.
Acknowledgements

• Iowa Department of Public Health
  o Doris Montgomery, MS, RD (retired)
  o Haley Hopkins, MPH
  o Catherin Lillehoj, PhD
  o Marilyn Jones

• Iowa Department on Aging
  o Carlene Russell, MS, RDN (retired)
  o Alexandra Bauman, RDN

• Francis Lab Members Involved with studies mentioned
  o Annette (Annie) Contrady, RDN (2018- Present)
  o Savannah Schultz, MS (2018-2020)
  o Catherine Rudolph, MS (2016-2019)
  o LeLee Yap, MS, RDN (2014-2016)
  o Lindsay MacNab, MS, RDN (2012-2015)
  o Kara Hoerr, MS, RDN (2010-2012)
SCREENING FOR MALNUTRITION RISK AMONG OLDER ADULTS


Wendy Dahl PhD RD
Associate Professor, Food Science and Human Nutrition Department
Objectives

• Describe the challenges and opportunities related to nutrition risk screening of community-dwelling older adults.

• Describe the validity and reliability of the COAST (Comprehensive Older Adult Screening Tool), as well as the feasibility of its use in the community.

We need a valid, practical tool to effectively evaluate nutrition education programming targeting nutrition risk reduction.

→ Mobility issues
→ Multiple chronic diseases
→ Multiple medications
→ Overweight or obese
→ Eating alone
→ Eating < 3 meals per day
→ Issues with food access...
Malnutrition and the Older Adult

5.6% of community-dwelling older adults are malnourished?

Kaiser et al., 2010; White et al., 2012; Cederholm et al., 2019
Position of the Academy of Nutrition and Dietetics: Malnutrition (Undernutrition) Screening Tools for All Adults

- Recommends MST to screen adults of all ages (including older adults) for malnutrition purposes of triaging referral for assessment by registered dietitians.
- Lack of evidence on the validity of MST to assess programs outcome for SNAP, home-delivered meals or congregate meals.

*Not tested US community settings, false positives, and unknown predictive validity

Skipper et al., 2020; Ferguson et al., 1999; Dwyer et al., 2019
Position of the Academy of Nutrition and Dietetics and the Society for Nutrition Education and Behavior: Food and Nutrition Programs for Community-Residing Older Adults

USDHHS and USDA food and nutrition programs, recommended these outcomes:
• decrease risk of malnutrition;
• prevent or reverse unintended weight loss;
• improve dietary alignment with 2015-2020 DGA

...as determined by validated screening and assessment tools

“The OAA Nutrition Program should recommend the use of validated nutritional risk tools...to assess program effectiveness.”
• MNA - Mini Nutritional Assessment
• DST - Dietary Screening Tool
• MST - Malnutrition Screening Tool
• SCREEN II: Seniors in the Community: Risk Evaluation for Eating and Nutrition

Saffel-Shrier et al., 2019
DETERMINE Checklist

Older Americans Act Nutrition Program congregate meal sites report on Determine questions.

Intended for awareness and nutrition education - not been shown to be valid for nutrition screening.

Sahyoun et al., 1997; Wellman et al., 2005
MNA-SF®

- Anthropometric measurement and calculation is challenging time and impractical in many community settings.

- Good sensitivity and specificity to detect community-dwelling older adults at risk of malnutrition validated against the MNA® but...

- **Validity issues** as extensively tested against the MNA® vs. other assessment tools (e.g. Subjective Global Assessment)

- Shown to be a useful tool for frailty screening

Isautier et al., 2019; Soysal et al., 2019
SCREEN I, II and III

SCREEN I: 15 items on weight change, skipping meals, limiting foods, appetite, food-group intake, fluid intake, chewing and swallowing problems, meal replacements, number of meals, meal preparation, and grocery shopping.

SCREEN II & II-AB: Revised to 14+ items and 8-items

- Designed for needs assessment in addition to screening.

SCREEN III: 3-item version showed construct validity but problems with misclassification of risk

Is SCREEN appropriate for CMS and other higher risk populations?

SCREEN I - CMS attendees (n = 136; 77.1 ± 8.9 y)
- 68% at nutritional risk – confirming low specificity
- Appetite, swallowing/chewing problems, and significant weight change triggers were uncommon
- Poor diet quality (inadequate intake of dairy, fruits, and vegetables) was a major contributor to nutritional risk.

Dwyer et al. reviewed validity, reliability, and feasibility of screening tools for identifying risk of protein-energy malnutrition (PEM) for community-dwelling older adults and Recommend SCREEN II

Keller et al., 2005; Morrison et al., 2019

Springstroh et al., 2016; Dwyer et al., 2019
COAST Development

**Goal** - to develop a *practical* and *feasible* malnutrition screening tool – a Comprehensive Older Adult Screening Tool

- Targeting congregate meals
- Brief and easily administered in the community - excluded anthropometrics (e.g. height, weight, circumference) and calculations.

**Long-term goals**

- To identify individuals at high nutritional risk in need of additional food-based nutrition interventions.
- To promote widespread evaluation of the effectiveness of nutrition education programs to at-risk, community-dwelling older adults.

**Key indicators from the literature**

**Weight loss:** “Have you lost weight recently without trying?” from the MST

**Appetite:** Have you been eating *less food* because of a decreased appetite? was adapted from MST

**Change in food intake:** Do you have an illness or condition that has made you change the kind and/or amount of food [you] eat? from DETERMINE

**Quality of diet:** “In general, how healthy is your overall diet?” a previously validated, single-item, self-rating of diet quality.

**Intake of protein foods:** Do you consume....? adapted from the MNA

van der Pols-Vijlbrief *et al*., 2014; Ferguson *et al*., 1999; NSI, 1994; Loftfield *et al*., 2015; Vellas *et al*., 1999
COAST study 1 – Validation

**Objective:** To determine the validity of COAST against the full MNA®

**Content validity** (n = 5 experts)
**Readability** (n=35 adults >60 y)
**Ease of use** (n=42 adults >60 y)
  - 96% found it “easy” or “very easy”

**Methods:**
- A cross-sectional study of adults (≥ 60 y) was conducted at congregate meal sites and similar sites frequented by older adults in Florida.
- MNA®, COAST, and demographics were collected by interview.
COAST study 1 - Validation

Results

- COAST items were retained based on their correlation with the total MNA® score (internal consistency reliability)
- COAST items were significantly correlated with the total MNA score (criterion validity)
- Upper cut-point of 6 (out of 8 points): 74% sensitivity, 74% specificity, and 84% area under the curve (AUC)
- Lower cut-point of 5 displayed 100% sensitivity, 88% specificity, and 95% AUC

Categories by score out of 8

- 7 or 8: low risk
- 5 or 6: moderate risk
- 0 to 4: high risk

Cronbach alpha (reliability - internal consistency) was 0.71

Participant characteristics

<table>
<thead>
<tr>
<th></th>
<th>n = 298</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, y</td>
<td>77 ± 9</td>
</tr>
<tr>
<td>Range</td>
<td>60-100</td>
</tr>
<tr>
<td>Sex, n (%)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>59 (20)</td>
</tr>
<tr>
<td>Female</td>
<td>239 (80)</td>
</tr>
<tr>
<td>BMI, kg/m²</td>
<td>29.5 ± 6.5</td>
</tr>
<tr>
<td>Range</td>
<td>17-56</td>
</tr>
<tr>
<td>Race, n (%)</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>209 (70)</td>
</tr>
<tr>
<td>Black</td>
<td>71 (24)</td>
</tr>
<tr>
<td>Others</td>
<td>18 (6)</td>
</tr>
<tr>
<td>Ethnicity, n (%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>20 (7)</td>
</tr>
<tr>
<td>Not Hispanic or Latino</td>
<td>260 (87)</td>
</tr>
<tr>
<td>Unknown or Not Reported</td>
<td>18 (6)</td>
</tr>
</tbody>
</table>

Upper cut-point of the MNA-SF
72% sensitivity, 89% specificity, and 91% AUC

Lower cut-point demonstrated 75% sensitivity, 97% specificity, and 99% AUC.

Alabasi et al., in review; Alabasi et al., 2018
1. “Have you lost weight recently without trying?”
   - Yes
   - No

2. Have you been eating less food because of a decreased appetite?
   - Yes
   - No

3. Do you have an illness or condition that has made you change the kind and/or amount of food you eat?
   - Yes
   - No

4. “In general, how healthy is your overall diet?”
   - Poor
   - Good
   - Very good

5. Do you consume...
   - Dairy products (milk, cheese, yogurt) or soymilk at least once a day? Yes No
   - Meat, poultry (e.g. chicken), fish/seafood, or eggs every day? Yes No
   - Legumes (e.g. beans), soy products, nuts, or seeds at least twice a week? Yes No

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https://edis.ifas.ufl.edu/fs393
COAST - ES

1. "¿Ha perdido peso usted recientemente sin intentarlo?"\(^1\)
   
   0 = Sí
   1 = No

2. ¿Ha estado usted comiendo menos alimentos debido a una disminución de apetito?\(^1\)
   
   0 = Sí
   1 = No

3. ¿Tiene usted una enfermedad o condición que le ha hecho cambiar el tipo y la cantidad de alimentos que come?\(^2\)
   
   0 = Sí
   1 = No

4. "En general, ¿Qué tan saludable es su dieta?"\(^3\)
   
   0 = Pobre
   1 = Buena
   2 = Muy buena

5. ¿Usted consume...
   
   - Productos lácteos (leche, queso, yogur) o leche de soya al menos una vez al día? Sí No
   - Carne, ave de corral (p.ej. pollo), pescado/mariscos, o huevos todos los días? Sí No
   - Legumbres (p.ej. frijoles), productos de soya, nueces o semillas al menos dos veces por semana? Sí No


---

COAST - ES (Entrevista)

Primer nombre: ______________ Apellido: ______________ Fecha: ______________

1. "¿Ha perdido peso usted recientemente sin intentarlo?"\(^1\)
   
   0 = Sí
   1 = No

2. ¿Ha estado usted comiendo menos alimentos debido a una disminución de apetito?\(^1\)
   
   0 = Sí
   1 = No

3. ¿Tiene usted una enfermedad o condición que le ha hecho cambiar el tipo y la cantidad de alimentos que come?\(^2\)
   
   0 = Sí
   1 = No

4. "En general, ¿Qué tan saludable es su dieta?"\(^3\)
   
   0 = Pobre
   1 = Buena
   2 = Muy buena

5. ¿Usted consume...
   
   - Productos lácteos (leche, queso, yogur) o leche de soya al menos una vez al día? Sí No
   - Carne, ave de corral (p.ej. pollo), pescado/mariscos, o huevos todos los días? Sí No
   - Legumbres (p.ej. frijoles), productos de soya, nueces o semillas al menos dos veces por semana? Sí No

Screening score (subtotal max. 8 points)

7-8 puntos: ☐ Bajo riesgo de malnutrición
5-6 puntos: ☐ Riesgo moderado de malnutrición
0-4 puntos: ☐ Alto riesgo de malnutrición

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https://edis.ifas.ufl.edu/fs396
COAST 2 study

**Aim:** To determine if risk of malnutrition as determined by the COAST was associated with muscle mass and strength in community-dwelling older adults

**Design:** A cross-sectional study measuring COAST, weight, height, hand-grip strength, body composition by bioelectric impedance analysis (BIA).

**Results:** Using BIA nutritional parameters, all participants were assessed as normal nutritional status.

<table>
<thead>
<tr>
<th>Nutrition status</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>High risk of malnutrition</td>
<td>4%</td>
</tr>
<tr>
<td>Moderate risk of malnutrition</td>
<td>42%</td>
</tr>
<tr>
<td>Low risk of malnutrition</td>
<td>54%</td>
</tr>
</tbody>
</table>

**Participants**

<table>
<thead>
<tr>
<th></th>
<th>n = 136</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, y (range)</td>
<td>76 ± 10 (60-97)</td>
</tr>
<tr>
<td>Sex, n (%)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>29 (21)</td>
</tr>
<tr>
<td>Female</td>
<td>107 (79)</td>
</tr>
<tr>
<td>BMI (range)</td>
<td>27.7 ± 6.1 (18 – 61)</td>
</tr>
<tr>
<td>Race, n (%)</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>127 (93)</td>
</tr>
<tr>
<td>Black</td>
<td>3 (2)</td>
</tr>
<tr>
<td>Others</td>
<td>6 (5)</td>
</tr>
<tr>
<td>Ethnicity, n (%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>1 (0.7)</td>
</tr>
<tr>
<td>Not Hispanic or Latino</td>
<td>134 (98.5)</td>
</tr>
<tr>
<td>Latino</td>
<td>1 (0.7)</td>
</tr>
</tbody>
</table>
The ENAFS Effectiveness Implementation Trial – stay tuned

A curriculum developed by Linda Bobroff, UF professor emeritus, covering nutrition, food safety, healthy living, diabetes, hypertension, fall prevention etc.

Aim: To test the effectiveness of the ENAFS program (Nutrition Module 1) at reducing nutritional risk (using COAST) and increasing participant nutrition knowledge and health-related behaviors as well as other AAA priority outcomes.

Extension and research collaboration lead by Carlin Rafie, Department of Human Nutrition, Foods, and Exercise at Virginia Tech
Conclusions and Future Work

• County, state and national data on nutrition risk using a **validated screening tool** to identify those at highest risk and evaluate the effectiveness of food and nutrition education programs is needed.
• SCREEN II shows promise but requires US testing in specific target populations

**COAST**
• A brief, practical and valid tool for the CMS population (in Florida)
• Although easy to self-complete, depending on the functional and literacy levels of the target group, it may be most appropriate to screen by interview.

**Research needed/in progress**
• Cross-validation – home-bound older adults
• Test-retest reliability, inter-rater and intra-rater reliability by interview
• Test against another malnutrition comparator?
• Predictive validity – its association with onset of malnutrition, need for additional services such as homecare, or admission to long-term care.
• Testing as a pre and post tool for nutrition education program evaluation, specifically to determine if nutrition education improves the nutritional risk of high-risk community-dwelling older adults.
Protect the Future of Food and Nutrition Programs for Older Adults

- Opportunity for nutrition educators
- Work collaboratively with state and federal community-based food and nutrition programs
- Balance study design rigor with feasibility
- Include staff in design and evaluation plan
- Consider mixed methods

- Choose validated tools
  - Think critically about options
  - COAST

- Conduct evaluation and publish!
  - KEY TO FUNDING!!!!
QUESTIONS?

Nutrition and Aging Services: Screening, Innovating, Collaborating and Best Practices on Evaluating Impact

July 24, 2020
References


References


References


References


Sahyoun NR, Jacques PF, Dallal GE, Russell RM. Nutrition Screening Initiative Checklist may be a better awareness/educational tool than a screening one. *J Am Diet Assoc*. 1997;97(7):760-764. doi:10.1016/S0002-8223(97)00188-0


