Researching functional food consumption in older adults and creation of a toolkit for knowledge translation

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Presentation Outline

• Background

• Research Project on Functional Food Consumption in Older Adults
  • Purpose and Objectives
  • Methods
  • Results

• Toolkit as Knowledge Translation Strategy
  • Development Process
  • Content

• Take-away Summary Points
Research Background
Food and Health

• Relation of food and its constituents to health has **evolved**
  • Traditionally prevent deficiency disease
  • Now includes prevention of chronic disease
  • Evolution manifests in numerous policies

• Key example is **advance of functional foods**
  • Extension of how we relate food and food constituents to health
  • Major influence on research activity in food, nutrition and health
What are Functional Foods?

Simplest definition: Foods that may provide health benefits beyond basic nutrition

- Conventional food form
- Specific bioactive constituent
  - enhanced content in the food
  - added to the food
- Biological rationale to relate to health
Functional Foods: Health Canada Definition

A *functional food* is similar in appearance to, or may be, a conventional food that is consumed as part of a usual diet, and is demonstrated to have physiological benefits and/or reduce the risk of chronic disease beyond basic nutritional functions, i.e. they contain bioactive compound.
Functional Foods and Health: Relevance to Older Adults

- Functional foods have relevance to many areas of human health and this can apply to multiple life-stage and gender groups.

- Among these life-stage groups, *older adults* emerge as a highly relevant beneficiary of FF.

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Journal of Nutrition For the Elderly
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title-content-t?792306906

The Changing Face of Food and Nutrition in Canada and the United States: Opportunities and Challenges for Older Adults
Lina Pauhonis

* Food and Nutrition Group, Cantox Health Sciences International,
Analysis of Canadian’s demand for food products in support of health

- Identified *disease threat* as a key driver and that this *increases with age*
Golden years shining brighter: Canadian seniors living longer, better

BY SHANNON PROUDFOOT, POSTMEDIA NEWS  OCTOBER 29, 2010  COMMENTS (21)

Canada’s seniors are living longer and are vastly less likely to struggle with poverty than they were three decades ago, but there’s work to be done in areas such as diagnosing and treating mental illness, reducing social isolation and combating the “mythology” of aging, Canada’s chief public health officer said. File photo.

Photograph by: Darren Stone/Victoria Times Colonist, Victoria Times Colonist

2010 report on the State of Public Health in Canada focused on aging and seniors

By 2050, more than 25% of population will be over 65 years old

Life expectancy is rising at 78 for men, 83 for women

Chronic health conditions:

- 89% have ≥1
- 25% have ≥4

37% taken steps to improve their health

Canada.com, October 29, 2010
Exploration of the consumption, awareness, understanding and motivating factors related to functional foods in older adults

• University of Guelph research project
• Investigators:
  • Alison Duncan, Judy Sheeshka
• Graduate and undergraduate students:
  • Meagan Vella, Laura Stratton, Hilary Dunn
  • Amanda Li, Sara Lum, Jennifer Wong
• Undergraduate students
• Approved by University of Guelph Research Ethics Board (REB#10SE012)
Research Purpose and Objectives

Understanding FF in Health and Disease among Older Adults

Factors that PROMOTE consumption

Consumption and purchase patterns

Factors that DISCOURAGE consumption

Awareness in relation to HEALTH

Sources of information

Preferred FF targets for
• Health
• Bioactive
• Food matrix

Sample characteristics: medical, lifestyle, demographics
Research Participants

• Older adults ≥ 60 years old
  • Community dwelling
  • Not utilizing meal-assisted services
  • Able to complete questionnaire or focus group
  • Able to provide written consent
Methods: Study Questionnaire

- Awareness of Functional Foods
- Current Functional Food Consumption
- Motivation to Consume Functional Foods
- Functional Food Matrices
- FF Definition
- FF Bioactives
- FF Food Matrices
- Functional Food Bioactive Ingredients
- Health Areas as they relate to Functional Foods
- Medical, Lifestyle, Demographic Information

INFORMATION SHEETS

REB#10SE012
Results: Participants (n=200)

- Participant age 70.8 ± 7.17 years old (n=200)

<table>
<thead>
<tr>
<th></th>
<th>Percent of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>70%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>95%</td>
</tr>
<tr>
<td>College/University</td>
<td>67%</td>
</tr>
<tr>
<td>Retired</td>
<td>82%</td>
</tr>
<tr>
<td>Income ≥ $50,000</td>
<td>61%</td>
</tr>
</tbody>
</table>
Results: Awareness and Consumption of Functional Foods

Timing of FF Consumption (n=200)

• 26% of participants aware of the term “functional food”
• Prevalence of FF consumption was 93%
• Majority (75.3%) of participants are consuming FF on a daily basis
Results:
Awareness and Consumption of Functional Foods

Top most frequently consumed functional food products (n=200)

- Yogurt with Probiotics
- Eggs with Omega-3 Fatty Acids
- Bread with Dietary Fibre
- Cereal with Dietary Fibre
- Orange Juice with Calcium and Vitamin D

Percent of Participants
**Results: Functional Food Matrices**

- **BREAD, CHEESE and PASTA** were most frequently identified as matrices participants would consider consuming as a functional food (n=200)
Results: **Functional Food Bioactives**

- **ANTIOXIDANTS** was the frequently identified bioactive participant would consider consuming in a functional food (n=200)
Results:

Motivation to Consume Functional Foods

Factors that act as BARRIERS to functional food consumption (n=200)

- Health reasons were the most frequently (45%) reported rationales for consuming FF
- 86.2% of participants reported consuming FF to improve their health
- 79.6% of participants reported feeling that they have more control over their health by consuming FF
Results: Health Areas as they Relate to Functional Foods

- Participants were predominately (94%) “very interested” in their overall health and the majority (85%) indicated that they had specific areas of health that they were concerned about.

Top health areas participants address or would address through functional food consumption (n=200):

- Osteoporosis/bone health (67.5%)
- Heart disease (61%)
- Arthritis (55%)
- Constipation/bowel health (54.5%)
- Eye health (50%)
Results: Health Areas as they Relate to Functional Foods

Health areas addressed through the consumption of **Antioxidants** in functional foods

Health areas addressed through the consumption of **Dietary Fibre** in functional foods
Results: Health Areas as they Relate to Functional Foods

Health areas addressed through the consumption of **Omega-3 Fatty Acids** in functional foods

Health areas addressed through the consumption of **Probiotics** in functional foods
Results: Health Areas as they Relate to Functional Foods

Health areas addressed through the consumption of **Plant Sterols** in functional foods

Health areas addressed through the consumption of **Prebiotics** in functional foods
Results Highlight:

Dietary Fibre is Frequent

• Most frequently identified bioactive considered effective at improving health (86.9% of participants)
• Most frequently identified bioactive currently consumed in functional foods (79.5%)
• LINK between bioactive that they think is effective and what they consume in functional foods
• Suggests use of functional foods as a strategy for improving health
Results Highlight:

Yogurt is Yearned

• **Yogurt** with probiotics was the most commonly consumed functional food

• **Yogurt** was the most frequent currently consumed functional food matrix
  – However probiotics had “don’t know” when asked what area of health they would address through their consumption in a functional food

• Potential for yogurt with dietary fibre?
Results Highlight:

Prebiotics and Plant Sterols

• Most opportunity for consumer education
• Least frequently identified bioactive considered effective at improving health (26.6% and 22.1%)
• Least frequently identified bioactive currently consumed in functional foods (24% and 28.5%)
• Most frequent response of “don’t know” when asked what area of health they would address through their consumption in a functional food
Research Stakeholders

- Registered Dietitians
  - Results will inform better interaction with older adult patients/clients in their navigation of daily food choices to manage health
  - Concepts could relate to patients/clients in other life stage groups as well
- Food Industry
- Older Adults
- Academic community
**Toolkit as a KT Strategy**

**Toolkit Purpose**

To provide guidance and materials to assist Registered Dietitians in communicating with older adults about functional foods for healthy aging

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**Development**

- Weekly meetings with toolkit team to:
  - Discuss literature
  - Identify knowledge gaps
  - Determine toolkit content and main messages
  - Review and revise

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**Stakeholder engagement**

- Presented toolkit to stakeholders to:
  - Seek feedback
  - Inform final version
  - RAWF Health Prof. Forum
  - CFDR AGM
  - Colleague extension
  - Final version Sept 2012
Toolkit Structure

• **Section 1:**
  - Understanding FF

• **Section 2:**
  - Relevance of Functional Foods for Healthy Aging

• **Section 3:**
  - Research Summary and Results

• **Appendices:**
  - Resource and Educational Materials
Section 1: Understanding FF

- Functional Foods Defined
  - Functional food definitions established by various countries and organizations
  - Common components of functional foods
  - Food forms
  - Bioactives
  - Relation to natural health products
Section 1: Understanding FF

• Functional Food Product Guidance
  • Summary table of guidance tool, regulatory notes and dietetic practice points
    • List of ingredients
    • Nutrition Facts table
    • Nutrient Content Claims
    • Additional Food-Related Claims
    • Health Claims
      • Disease Risk Reduction Claims
      • Therapeutic Claims
      • Function Claims (Nutrient Function, Probiotic)
      • General Health Claims (Front-of-Package labelling)
Section 1: FF Product Examples

- Functional food guidance highlighted
- Dietetic practice points
- Product example sheets:
  - Cereal (oats)
  - Juice (plant sterols)
  - Margarine (omega-3)
  - Milk (omega-3)
  - Yogurt (probiotics)
- Views: top, front, back, side 1, side 2
Section 1: FF in the Canadian Marketplace

- Functional food sales revenue
- Functional foods industry growth
- Statistics Canada Functional Food and Natural Health Product Survey 2007
- Identifies need for research into consumer acceptability of functional foods
Section 2: Relevance of FF for Healthy Aging

- Role of FF in Canada’s aging demographic
  - Study of Canada’s aging demographic
  - Aging and increased disease risk
    - Focus on cancer, CVD risk and type 2 diabetes
  - Aging and increased health care expenditure
  - Potential for FF to contribute to healthy aging
- Role of RD in considering FF in practice
  - Review of current literature
Section 3: Summary and Results of University of Guelph Research Study

- Summary of research rationale
- Research purpose and objectives
- Study methods and objectives
- Study conference presentation abstracts
  - Canadian Nutrition Society 2012
  - Dietititians of Canada 2012
Appendices:
University of Guelph Research Study Information Sheets

• Inform and exemplify key functional food concepts:
  • Functional food definition
  • Functional food food forms
  • Functional food bioactives
  • Functional food health claims
• Combination of text and pictures
Appendices: Bioactive Resource Sheets

- Antioxidants
- Plant Sterols
- Dietary Fibre
- Prebiotics
- Omega-3 Fatty Acids
- Probiotics

What are they and what do they do?
Research Results: What health areas are older adults using them for?
Three review articles cited for further information.
Plant sterols and healthy aging

Key background notes about phytosterols

Results from FF research study

Key references for further information

What are they and what do they do?
- Plant sterols (or phytosterols) are phytochemicals found naturally in plants, including fruits, vegetables, nuts, seeds, grains, and legumes.
- Plant sterols are structurally similar to cholesterol but are not readily absorbed.
- Plant sterols compete and interfere with dietary and endogenous cholesterol absorption and effectively reduce circulating LDL and total-cholesterol, thereby reducing cardiovascular disease risk, at doses of 2 g/day.
- Plant sterols have also been linked to reduced risk of numerous cancers (lung, stomach, colon, breast, and prostate) and have demonstrated antioxidant, anti-inflammatory, and antiatherogenic properties.
- In May 2010, Health Canada approved a therapeutic claim for certain foods containing at least 0.65 grams of plant sterols per serving and blood cholesterol lowering. These claims can also state that high cholesterol is a risk factor for heart disease.

What health areas do older adults address by consuming functional foods with plant sterols?
A University of Guelph study that explored functional food consumption in a sample of 200 older adults asked participants to indicate the health areas that they do address or would consider addressing by consuming functional foods containing plant sterols. The following figure indicates the top five responses. Of note is that 72% of participants responded that they did not know.

Plant Sterol Review References
Toolkit: Next Steps

• Dissemination and Circulation:
  – CFDR partners
  – Canadian RDs
    • Webinar January 16, 2013 at 1pm
    • PDF circulation
  – Agri-food for Healthy Aging (A-HA) website
Take Home Points

• FFs are an exciting strategy to promote healthy aging as older adults are incorporating FF into their diets and are motivated to address multiple health concerns through FF consumption

• There are key FF matrices and bioactive ingredients preferred among older adults and this information can be valuable to stakeholders

• The Functional Foods for Healthy Aging toolkit can be used as a knowledge transfer tool to aid Registered Dietitians in their interactions with older adult clients about FFs
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• Research Participants