



**The Journal of the National Extension
Association of Family and Consumer
Sciences**

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Journal of National Extension Association of Family and Consumer Sciences President's Message

It is my pleasure to present to you the 2017 *Journal of NEAFCS*. This peer-reviewed, researched based journal is one way for our members to inform others in our field and related fields about our scholarly work as Family and Consumer Sciences professionals. The Journal highlights Research, Best Practices, and Implications for Extension Family and Consumer Sciences. It is also a valuable tool to help *you* stay current with programming, research, and methodology that is specific to our learning and teaching environment.

As you read the 12th volume of the *Journal of National Extension Association of Family and Consumer Sciences (JNEAFCS)*, I know you will discover informative and thought-provoking information in each article. Consider what you have to share with your colleagues about impacts that have resulted from your programming. Make it one of your professional goals for to submit an article for a future Journal issue.

JNEAFCS an on line resource, can be forwarded as a link along with a personal note to your administrators, local and state policymakers, advisory groups, and peers. Help them connect our efforts to the strong impacts we have across the nation such as reducing health care costs through our nutrition and health education programs. Extension work makes a difference! Research proves that!

Thank you to Co-Editors Sarah Ransom of the University of Tennessee Extension and Dana Wright of West Virginia University Extension for their hard work and dedication to the journal. My appreciation goes out to the members of the subcommittee, peer reviewers, and to our Vice President of Members Resources, Edda Cotto-Rivera of the University of Georgia Extension, for a quality, peer-reviewed, professional publication that helps preserve our valuable research and resources for the future.

I challenge you to chart your course with NEAFCS by harvesting opportunities to share new approaches to extension education and the public value of the work we do with others.

Sincerely,

Lora Lee Frazier Howard, President 2017 - 2018
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Not all reviewers identified themselves on the review form, if your name is not on our list, we would like to sincerely thank you for your contribution and hard work in reviewing these articles.

Journal of National Extension Association of Family and Consumer Sciences**From the Editors**

Here is your 2017 edition of the *Journal of National Extension Association of Family and Consumer Sciences* (JNEAFCS). JNEAFCS is a refereed journal. We appreciate the opportunity we have had to edit the journal this year and have learned a lot throughout the process. We look forward to serving you in 2018.

Please consider submitting a manuscript for the 2018 edition of JNEAFCS to promote yourself or one of your programs. The submission deadline is March 1, 2018. Choose a program where you can demonstrate impact. Have your colleagues read your manuscript to get input before submitting it to ensure it is of high quality.

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RESEARCH**Improving Health and Increasing Wealth: Research Insights**

Barbara O'Neill, Jing Jian Xiao, and Karen Ensle

Abstract

Many Extension family and consumer sciences educators teach both health and personal finance topics. This article begins by describing recent studies of relationships between health and personal finance practices. Next, it discusses the development of and research findings from an online survey instrument that simultaneously assesses frequency of performance of recommended health and financial management practices. The assessment contains 10 items each that measure health practice performance and financial management practice performance. Four studies conducted to date have shown positive associations between health and personal finance practices. The article concludes with a brief description of interdisciplinary programming opportunities for FCS educators.

Many Extension family and consumer sciences (FCS) educators teach both health and personal finance subject matter and, thus, need to have an interdisciplinary overview of both aspects of people's lives. The purpose of this article is to increase readers' awareness of relationships between personal health and financial management practices. The article begins by briefly describing recent studies that link health and personal finance. Next, it discusses the development of and research findings from an online survey instrument that simultaneously assesses frequency of performance of recommended health and financial management practices. Findings from four studies conducted to date with data from the online survey are presented. The article concludes with a brief description of interdisciplinary programming opportunities for FCS educators.

In recent years, an increasing number of research studies have found relationships between health and financial management practices of individuals. For example, the Center for Retirement Research at Boston College found, somewhat counterintuitively, that healthier people have higher lifetime health care costs than their unhealthy counterparts (Sun, Webb, & Zhivan, 2010). The results were attributed to more years of out-of-pocket expenses, an increased risk of developing chronic conditions in later life, and an increased likelihood of need for long-term care. Also somewhat counterintuitively, healthy living habits have been found to improve during tough economic times. A possible explanation is that declining work hours increase time availability for healthy lifestyle investments such as cooking nutritious meals and physical activity (Ruhm, 2005).

Studies have also found associations between financial distress and physical symptoms of stress such as anxiety and insomnia. O'Neill, Sorhaindo, Xiao, & Garman (2005) found evidence of health effects related to financial problems with a sample of credit counseling clients. Respondents who reported improved health since participating in credit counseling were more likely than others to engage in positive financial behaviors. Negative associations have also been found between body mass index (BMI) and income, especially among White females (Conley & Glauber, 2005; Zagorsky, 2005) and between smoking and net worth (Zagorsky, 2004). Kosteas (2012) found a positive relationship between engaging in regular physical activity and labor market earnings. Regular exercise yielded a 6%-10% wage increase. A possible reason is that fit employees are disciplined and productive, which can lead to career advancement and higher earnings.

Two recent studies investigated associations between specific health and financial management practices. Gubler and Pierce (2014) found a positive association between actions taken to improve health and financial planning. In a study conducted in conjunction with a workplace wellness program, 401(k) plan contributors showed improvements in health behaviors about 27% more often than non-contributors, despite having few health differences prior to the program. Time discounting preferences and conscientiousness were believed to be related to similarities between workers' retirement contribution patterns and health improvement behaviors. Carr, Sages, Fernatt, Nabeshima, & Grable (2015) found that individuals who engage in health information search behaviors, such as reading the nutrition details of food labels, were more likely to engage in financial planning activities. However, direct health

improvement activities (e.g., exercise and eating well) were not found to be associated with financial planning.

Objective

This paper describes the development, use, and findings of an online tool, the *Personal Health and Finance Quiz*, which enables consumers to self-assess their frequency of performance of 20 health and financial management practices. It also summarizes findings and implications from four studies that have been conducted to date using data collected from the quiz. The objectives of the four individual studies were to test various relationships between health and financial management practices including planning, avoiding negative behaviors, budgeting, and reading nutrition labels. Taken together, these four studies provide strong evidence of positive associations between two key areas of people's lives. Results of these studies can inform the delivery of interdisciplinary Extension FCS programs such as *Small Steps to Health and Wealth™*.

Method

All four studies described below used data from the online *Personal Health and Finance Quiz* available at <http://njaes.rutgers.edu/money/health-finance-quiz/>. The quiz is believed to be among the first publicly available surveys to simultaneously query users about their health and personal finance practices (O'Neill & Ensle, 2015). Respondents indicated one of four frequencies for their performance of 10 health and 10 financial management practices: 1 = never; 2 = sometimes; 3 = usually; and 4 = always. When the quiz was completed, respondents received a health, financial, and

total score. High scores mean they are frequently performing many activities that health and financial experts recommend for living a healthy lifestyle and building wealth.

The quiz is accessible worldwide via web site and social media links and online searches. It is also promoted at professional conferences and used by Extension FCS educators who become aware of it. Reliability analyses were conducted for the two indexes and they were found to be reliable: $\alpha=.737$ for the health practice index and $\alpha=.760$ for the financial practice index (O'Neill, Xiao, & Ensle, 2017a). Responses are recorded only if respondents complete the entire survey instrument. Thus, there is no way to know how many people attempted to complete the survey, nor are there any missing values.

The *Personal Health and Finance Quiz* was developed with input from health/nutrition, personal finance, and evaluation methods experts. Their advice included both the number and wording of Likert-type scale responses and the 20 practices used to measure health and financial management (O'Neill, Xiao, & Ensle, 2016a). Quiz behaviors were intentionally designed to be a "step in the right direction" rather than the highest recommended level of action. For example, most financial planners would agree that investing \$3,650 annually is not sufficient for most workers to achieve maximum financial security in later life. However, investing the equivalent of at least \$10 per day is far better than doing nothing, which, unfortunately, is the case for many Americans. According to the 2017 Retirement Confidence Survey by the Employee Benefit Research Institute (Greenwald, Copeland, and VanDerhei, 2017), 24% of American workers have less than \$1,000 saved for retirement, excluding the

value of a primary home and any defined benefit pension, and 47% have total savings and investments of less than \$25,000.

Findings

The first three studies described below used *Personal Health and Finance Quiz* data collected from the inception of the quiz in July 2014 through June 2015 with 942 observations from U.S. residents used in data analyses. The sample was primarily White (79%) and female (72%) and had a higher educational and income level than typical Americans with 65% of respondents holding a bachelor's degree or higher and 71% earning a household income of \$50,000 or higher (versus a \$51,939 median U.S. income in 2013). The 10th health practice quiz question about respondents' frequency of drinking water was excluded from analyses because it was questioned by some health/nutrition experts and peer reviewers as not being the best indicator of positive health practice. This item was subsequently replaced with a new question about frequency of reading Nutrition Facts labels beginning with data collected in July 2015.

The nine health practices and ten financial practices used in the first three studies are summarized below:

Health Practices

- Eating breakfast
- Avoiding sugar-sweetened beverages
- Eating 3 ½ to 4 ½ cups of fruits and vegetables daily
- Getting at least 7 hours of sleep per night
- Eating at least 1-2 high fiber foods each day

- Eating and drinking fat-free and/or low-fat dairy products each day
- Avoiding high-calorie salad dressings, gravies, spreads, and/or sauces
- Eating foods low in fat and/or saturated fat
- Getting at least 30 minutes of aerobic and/or muscle-strengthening physical activity at least five days per week

Financial Practices

- Following a hand-written or computer-generated spending plan (budget) to guide spending
- Maintaining an emergency fund equal to at least three months of basic essential household expenses
- Saving the equivalent of \$1 daily
- Investing the equivalent of \$10 daily
- Avoiding payday loans, car title loans, cash advances and other high-cost debt
- Owning less than 20% of monthly net income on monthly consumer debt payments
- Eating at least two meals a day prepared at home
- Using advertisements, coupons, and other discounts to save money on purchases
- Living below one's means
- Making written to-do lists or specific plans to organize financial goals, spending, and/or daily activities

The first study conducted with quiz data (O'Neill, Xiao, & Ensle, 2016a) explored the relationship of self-reported planning behavior and the frequency of performance of

positive health and financial management practices. Planning behavior was measured by responses to the quiz question “I make written to-do lists or specific plans to organize my financial goals, spending, and/or daily activities.” Like all the other quiz questions, the responses were: never, sometimes, usually, and always. Correlation analysis was conducted between the health and financial behavior indexes. The correlation was 0.46 at a significance level of $p < .05$. This result suggests that desirable health and financial behaviors are moderately associated. Support was found for all three hypotheses in this study. Respondents who reported frequent planning behavior had higher health behavior scores than others, respondents who reported frequent planning behavior had higher financial behavior scores than others, and respondents who had higher health behavior scores also had higher financial behavior scores (O’Neill, Xiao, & Ensle, 2016a).

The second study (O’Neill, Xiao, & Ensle, 2016b) explored relationships between certain items on the *Personal Health and Finance Quiz*, specifically positive personal health and financial practices that involve a routine time expenditure (e.g., 30 minutes of physical activity and eating two meals a day prepared at home) and those that involve avoidance of negative practices (e.g., avoiding sugar-sweetened beverages and high cost debts such as payday loans). Correlational and multivariate analyses indicated weak, but positive and statistically significant, relationships between health and financial behaviors that involve a time commitment and those that involve avoidance of certain negative practices. Findings of demographic subsamples indicated that older, White respondents and those with higher incomes and educational levels were more likely than other respondents to perform recommended health and financial practices.

The third study (O'Neill, Xiao, & Ensle, 2017a) explored relationships between the practice of following a hand-written or computer-generated budget and frequency of performance of positive personal health and financial practices. Findings of multivariate analyses indicated positive and statistically significant relationships between the practice of using a budget and eighteen positive health and financial practices. Specifically, the results suggested that consumers who reported following a budget more often scored higher in both the health and financial practice indexes. Budgeting and weight control both require discipline. People who budget their money may be inclined to budget their calories; i.e., have a daily calorie "allowance" and self-restrict personal calorie consumption and/or adjust their level of physical activity level to stay within it.

The fourth study (O'Neill, Xiao, & Ensle, 2017b) used *Personal Health and Finance Quiz* data collected from July 2015 through June 2016. The online sample initially had 3,414 observations. After removing 53 respondents who reported "Not a U.S. resident," the sample used for analyses included 3,361 observations. The sample was almost evenly divided by gender with 52% female and 48% male respondents. The age of respondents skewed young with 43.6% age 24 or younger versus 26% age 55 or older. Almost two in five (39.3%) respondents had four-year college degrees or higher, 30.9% had a household income of \$100,000 or higher, and 78% were White.

As noted above, a new item about reading nutrition labels, "I read the Nutrition Facts Label on food products before making a purchase," was added to the quiz and served as the independent variable for this study. The reliability of the overall scale was .845. Support was found for four hypotheses: there are differences in demographic

characteristics between those who read Nutrition Facts labels and others; respondents who reported reading nutrition labels had higher health practice scores and higher financial practice scores than others, and respondents who reported higher health practice scores also had higher financial practice scores (O'Neill, Xiao, & Ensle, 2017b).

Discussion

This article described over a dozen studies that provide evidence of positive associations between the health and personal finance practices of individuals, including four studies that were conducted during the past two years using data from the online *Personal Health and Finance Quiz*. Therefore, it makes sense to conduct at least some Extension FCS programs in an interdisciplinary manner that simultaneously addresses both aspects of people's lives. This is especially true for the topics of budgeting and reading nutrition labels, which were found to be positively and significantly related to indexes comprising a wide variety of both health and financial practices.

The Cooperative Extension signature program, *Small Steps to Health and Wealth*[™] (SSHW), is a resource for interdisciplinary health and personal finance programming. Its "elevator statement" is "SSHW encourages participants to make positive behavior changes to simultaneously improve their health and personal finances." Turn-key materials for Extension educators can be found at <http://njaes.rutgers.edu/sshw/> and <http://njaes.rutgers.edu/sshw/internal/>. They include a downloadable workbook (O'Neill & Ensle, 2013) and posters, training slides, monthly health and personal finance messages, curricula for youth and older adults, a logic model, evaluation tools, animated videos, and more.

One of the most crucial intersections in life that influences the way that people live is the nexus between health and wealth (Chatzky & Roizen, 2017). Extension FCS educators should pay attention to health and personal finance relationships. Clients or students who indicate, by their comments and/or actions, that they perform recommended health and financial practices, may be easier to work with. For example, if people have a propensity to plan and/or budget fixed numerical amounts, it may apply to both dollars and calories.

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RESEARCH**Exploring Emerging Adults' Perceptions of Romantic Relationship Education**

Shannon Cromwell and Jonathan Beckmeyer

Abstract

Relationship education programs assist emerging adults in developing and maintaining healthy, satisfying relationships. Exploratory, mixed-method survey results from college attending emerging adults indicated beliefs that relationship education programs benefit current and future romantic experiences. Survey results provide insight into the planning and implementation of relationship education programs by Extension faculty.

Relationship education programs assist emerging adults in developing and maintaining healthy, satisfying relationships. Exploratory, mixed-method survey results from college attending emerging adults indicated beliefs that relationship education programs benefit current and future romantic experiences. Survey results provide insight into the planning and implementation of relationship education programs by Extension faculty.

Exploring Emerging Adults' Perceptions of Romantic Relationship Education is expected to help emerging adults develop and maintain healthy and satisfying romantic experiences (Fincham, Stanley, & Rhoades, 2011; Vennum, Hardy, Sibley, & Fincham, 2015). Despite those anticipated benefits, few emerging adults appear to have taken part in relationship education or plan to do so in the near future (Duncan, Box, & Silliman, 1996). Perhaps in order to increase emerging adults' participation in relationship education, we must first assess their beliefs regarding what relationship education can achieve and the type of content they believe it should include. Doing so is particularly important in light of the significant changes that have occurred to romantic relationship formation processes among contemporary emerging adults (see Shuman & Connolly, 2013). As romantic experiences and expectations continue to evolve, relationship education may need to adapt to contemporary emerging adults' needs and interests.

Relationship education for emerging adults has most commonly taken the form of marriage preparation offered to couples (Fincham et al., 2011), with a primary focus on enhancing communication and conflict resolution skills and providing information on marriage and relationship expectations (Kruenegel-Farr et al., 2013; Rogge, Cobb,

Lawrence, Johnson, & Bradbury, 2013; Stanley, 2001). Those programs appear to lead to moderate gains in relationship quality and communication skills (Hawkins, Blanchard, Baldwin, & Fawcett, 2008; McAllister, Duncan, & Hawkins, 2012; Fawcett, Hawkins, Blanchard, & Carroll, 2010). Participants also see those programs as helpful (Duncan, Childs, & Larson, 2010).

Emerging adults are in a stage of romantic development focused on exploration and coordinating romantic and life goals (Shulman & Connolly, 2013). This often involves delaying serious and binding romantic commitments (e.g., engagements and marriage) until after they have acquired an advanced education and/or established economic and occupational stability (Arnett, 2004; Shulman & Connolly, 2013). Instead, emerging adults may participate in romantic and sexual relationships with less commitment (Shulman, Scharf, Livine, & Barr, 2013; Claxton & van Dulmen, 2013; Garcia, Reiber, Massey, & Merriwether, 2012) and/or pursue cohabitation (Guzzo, 2014; Manning, 2013; Shulman & Connolly, 2013). Given the characteristics of this stage of romantic development, premarital and marriage education is unlikely to be meeting the needs of most emerging adults. This has led researchers to begin developing programs tailored to emerging adults' unique needs (Braithwaite & Fincham, 2007, 2009; Fincham et al., 2011).

Purpose

Currently, there is little information regarding emerging adults' beliefs about relationship education (e.g., what they believe it can accomplish, their interest in participating, what they would expect to learn). This is a critical gap as individuals' beliefs and perceptions influence their behavioral intentions (Ajzen, 2002; Fishbein,

2008). Thus, without information about how emerging adults perceive relationship education, it will likely remain a challenge to effectively engage them in these programs. The purpose of this research was to conduct an exploratory study in which we a) measured college students' prior experiences with and current interest in relationship education, b) their beliefs regarding the potential benefits of relationship education, and c) what topics they would prefer to be included in relationship education. This information can then be used by Extension faculty to enhance their relationship education programs.

Methods

Participants

Emerging adults (N = 104) participated in a study on romantic values and expectations. All participants were attending a commuter college in the Western United States and were recruited through in-person presentations to classes and extracurricular clubs by county-based Extension faculty. Participants completed self-report surveys and received \$10.00 gift cards as compensation. Most participants were white (86.5%), women (62.5%), approximately 19 years old ($M = 19.5$, $SD = 1.82$), and not currently involved in romantic relationships (57.7%)

Measures

Romantic Education experience and interest. Prior relationship education participation and current interest were measured with the items: "Have you ever participated in a romantic relationship education program?" and "Would you be interested in participating in a romantic relationship education program within the next year?" Participants responded either *Yes* or *No*.

Perceived relationship education benefits. We developed 11 items for this study (see Table 1) that reflected potential relationship education benefits. Each item was rated using a 4-point scale (1 = *very unlikely* to 4 = *very likely*). The items were based on common relationship education goals (e.g., Braithwaite & Fincham, 2009; Hawkins et al., 2008), our experiences conducting relationship education, and the literature on romantic experiences in emerging adulthood (e.g., Furman & Collibee, 2014; Shulman & Connolly, 2013). Conceptually, we grouped the items into two areas: 1) *teaching relationship skills and knowledge* and 2) *enhancing relationship quality and outcomes* (see Table 1). We used these groupings heuristically, not statistically (i.e., they did not result from an exploratory factor analysis), to describe and discuss these emerging adults' perceptions of relationship education benefits.

Preferred relationship education content. Participants responded to one open-ended question: "What topics would you like to learn about in a romantic relationship education program?" Overall, 73 participants responded to this question. Responses ranged from single words to short paragraphs, with most participants providing bulleted lists of topics.

Results

Romantic Education Experience and Interest

Only 20.2% of the participants had previously participated in a relationship education program. Nearly three-fourths (73.1%), however, were interested in doing so in the next year. Relationship education interest did not differ for females (76.9%) and males (66.7%), $\chi^2 = 1.30$, *ns*, or single (71.7%) and romantically involved (75.0%), $\chi^2 = .14$, *ns*, participants.

Perceptions of Relationship Education Benefits

Teaching relationship skills and knowledge. Most emerging adults believed relationship education can help them prepare for future relationships, learn about healthy romantic relationships, learn relationship skills, and feel more confident about romantic relationships (see Table 1). Between 87.5% and 93.3% of participants rated each of those items as likely or very likely. However, just 51.9% of participants believed it was likely or very likely that relationship education could reduce gender stereotypes.

Enhancing relationship quality and outcomes. Participants reported that it was likely or very likely that relationship education helps create healthy relationships (91.4%), leads to happy marriages (88.5%) and improves the quality of current romantic relationships (88.5%). Fewer students felt it was likely or very likely that relationship education could create healthy relationships (71.2%), reduce dating violence (71.2%), increase the chances a couple would get married (55.7%), or felt it would lead unhappy couples to breakup (47.1%). Males and females' responses differed, $\chi^2(3) = 8.46, p = .037$, on one item: the likelihood that relationship education would make unhappy couples breakup. More females (53.9%) than males (36.8%) believed it was likely or very likely that relationship education would lead to unhappy couples to break up.

Preferred Relationship Education Content

We used thematic analysis to analyze participants' (n = 73) responses to the item soliciting topics they would like to learn about in a relationship education program. Based on open-coding (Daly, 2007) responses were organized into three broad categories: a) *relationship knowledge and behavior*, b) *gender and sex differences*, and

c) *sexual health information*. We then analyzed responses within each category to identify specific preferred content.

Relationship knowledge and behavior. This was the largest category, 94.5% of these emerging adults suggested a topic related to relationship knowledge and behavior. There was strong interest in the characteristics of healthy versus harmful romantic relationships. For example, one female emerging adult (21 years old) wrote: “What a healthy romantic relationship is and how to fix your attitude and actions to be in one.” Similarly, a male (18 years old) wrote: “Recognizing traits needed for a healthy relationship.” Other suggestions included: signs of an abusive relationship, red flags, what’s good/bad habits, healthy dating relations, learn healthy relationship roles, and what a healthy relationship is (verbatim exemplars).

Emerging adults were also interested in understanding how to initiate romantic relationships and communicate with romantic partners: “I guess how to talk to guys, or good ways to ask them on dates without it being awkward” (female participant, 21 years old). Other suggestions included: do’s and don’ts of dating, how to date, how to determine who to date and when, how to communicate effectively, conflict resolution, and solving problems (verbatim exemplars). Participants also suggested relationship education should include information regarding making relationship transitions more broadly: “Well honestly, I would like to learn how you know if you should be getting married to this person or how you know if they are the right one for you” (female participant, 19 years old), and “Know when to make the next move in a relationship” (female participant, 18 years old). As well as how to balance romantic commitment and individuality (e.g., remaining independent and learn to balance my needs and theirs).

Lastly, participants suggested that relationship education programs include information on financial issues in romantic relationships (e.g., finances within the relationship, financial education, and family finance).

Gender and sex differences. Fewer participants (15%) suggested content related to possible gender and sex differences in romantic relationships. These emerging adults were interested in understanding how men and women communicate, think, and “work.” For example, one male participant’s (19 years old) response was “Understanding women = my girlfriend gets upset with me and sometimes I don’t know why.” Similarly, a female participant (19 years old) suggested “how men work” and another female participant (20 years old) wrote “gender differences.” Other responses included requests to learn more about “the opposite gender,” thoughts and behaviors, what/how boys/girls think, and how the opposite sex react.

Sexual health information. Only a few (6.8%) participants indicated that relationship education should include information about sexual health. Responses in this area included: I think sex education as well, it’s very important, sex, and physical intimacy. Additionally, a female participant (18 years old) did not directly state sexual health but wrote: “I think it is important to learn about this stuff and nothing should be censored.” The relative absence of calls for the inclusion of sexual health information may suggest that emerging adults may draw a distinction between the *romantic* and *sexual* aspects of their relationships.

Discussion

Although relationship education is viewed positively and participants indicate an interest in relationship education, most of our participants had not actually taken part in relationship education. Similarly, Duncan and colleagues (1996) reported only 32% of their participants indicated they were extremely or quite likely to participate in premarital or marriage preparation. Therefore, a lingering challenge for Extension faculty appears to be translating emerging adults' relationship education interest into actual participation. We believe our results can aid such efforts as they provide unique insights into how emerging adults view relationship education.

Based on their ratings of potential relationship education benefits (see Table 1), emerging adults believe it can improve romantic skills and competencies. Further, these emerging adults primarily suggested relationship education content related to relationship skills and knowledge. Perhaps emerging adults primarily view relationship education as a way to develop their romantic abilities. Therefore, Extension faculty may be able to engage more emerging adults in relationship education by emphasizing the opportunity to gain romantic skills such as how to start a relationship, communicate with partners, and identify healthy and unhealthy relationships.

Emerging adults also appear to believe relationship education can enhance relationship dynamics, primarily by helping them establish healthy and happy relationships. Additionally, participants indicated they would like to learn about relationship decision-making, balancing individual and relationship commitments, and financial planning in relationships. It is encouraging that participants nominated these skills as scholars have suggested they are critical aspects of emerging adult romantic

development (Shulman & Connolly, 2013; Shulman et al., 2013; Stanley, Rhoades, & Markham, 2006). Focusing on relationship dynamics, however, may be most impactful for emerging adults that are in romantic relationships. Therefore, Extension faculty should balance relationship specific relationship education (e.g., premarital focused programs) with programs that are focused on promoting individual romantic skills.

Although few participants suggested relationship education include sexual health information, most young adult sexual behavior occurs with romantic partners (Lefkowitz, Gillen, & Vasilenko, 2011). Relationship education may be uniquely situated to help emerging adults learn how to communicate with romantic partners about sexual preferences and expectations, leading to greater sexual satisfaction (Beyers & Demmons, 1996; Lefkowitz et al., 2011) and consistent use of safer-sex practices with romantic partners (Reed, England, & Littlejohn, 2014).

Limitations

These results should be considered within the context of the study limitations. Our data came from a small sample of students attending a two-year college and were predominately white non-Hispanic women. Their views of relationship education may not be representative of emerging adults in general.

Conclusions

From this exploratory study we suggest that meeting emerging adults' own expectations for relationship education will involve primarily focusing on romantic skills and competency rather than dynamics in specific relationships, as well as providing information about gender differences and not ignoring sexual health. This supports continuing recent efforts to develop emerging adult-specific relationship education

programs. A beneficial approach to integrating these multiple content areas together in Extension programming could be to focus on a two-step process of first teaching relationship skills and then providing clear, practical advice about when emerging adults should apply those skills. For example, Extension faculty can first teach emerging adults how to engage in deliberate relationship decision-making, followed by directly informing participants about when they will need to use those skills (e.g., sexual behavior, cohabiting, and sharing finances). Exploratory studies such as this one provide valuable information for Extension professionals as they develop and implement successful community-based relationship education programs.

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Table 1.

College Students' Beliefs Regarding the Potential Benefits of Romantic Relationship Education
(N = 104).

	Very Unlikely	Unlikely	Likely	Very Likely	Missing	χ^2 for sex differences ^a
<i>Teach Relationship Skills and/or Knowledge</i>						
Help young adults learn about healthy romantic relationships	1.0%	4.8%	46.2%	47.1%	1.0%	6.54
Help young adults be better prepared for future romantic relationships	1.0%	4.8%	58.7%	34.6%	1.0%	1.76
Teach young adults romantic relationship skills	1.9%	7.7%	51.0%	36.5%	2.9%	4.54
Help young adults feel more confident about romantic relationships	1.0%	6.7%	54.8%	36.5%	1.0%	1.92
Reduce gender stereotypes	5.8%	39.4%	41.3%	10.6%	2.9%	4.72
<i>Enhance Relationship Qualities and Outcomes</i>						
Help young adults create healthy romantic relationships	0.0%	7.7%	60.6%	30.8%	1.0%	2.70
Lead to happier marriages	0.0%	9.8%	50.0%	38.5%	1.9%	0.79
Make unhappy couples break-up	4.8%	47.1%	41.3%	5.8%	1.0%	8.46*
Improve the quality of young adults' current romantic relationships	0.0%	10.6%	60.6%	27.9%	1.0%	2.44
Increase the chances a couple will get married	6.7%	36.5%	41.3%	14.4%	1.0%	1.07
Reduce dating violence	1.0%	26.0%	48.1%	23.1%	1.9%	3.56

Note. ^a χ^2 only used list wise deletion to account for missing responses. * $p < .05$.

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Research

Evaluation of the Effect of a Nutrition Education Curriculum on Children's Fruit and Vegetable Intake

Alyssa Carlson and Julie Garden-Robinson

Abstract

This study assessed the “On the Move to Better Health” program’s effectiveness in increasing fruit and vegetable intake of 4th to 6th grade student participants. “On the Move,” a nutrition and physical activity-based public health intervention program developed by NDSU Extension Service, was taught in 211 elementary school classrooms throughout North Dakota through 5 weekly sessions. This report analyzes changes in fruit and vegetable intake as a result of the program. The evaluation methods included a 15-question pre-survey and a 22-question post-survey that addressed knowledge and behavior, and self-reported daily tracking forms assessing fruit and vegetable consumption. Students increased both their fruit and vegetable intake significantly ($p < 0.05$) as a result of the 5-week program.

Evaluation of the Effect of a Nutrition Education Curriculum on Children's Fruit and Vegetable Intake

The issue of child overweight and obesity is a major health problem and public health concern in the United States (Centers for Disease Control and Prevention (CDC), 2016; Ogden, Carroll, Kit, & Flegal, 2014; Janssen et al., 2005). A recent study found high prevalence of overweight youth; nearly 32% of youth were categorized as either overweight or obese, with over half of this percentage (16.9%) being obese (Ogden et al., 2014). Ogden et al. (2014) also reported that according to the 2011-2012 National Health and Nutrition Examination Survey (NHANES) data, these percentages have plateaued since the 2003-2004 survey, but are much higher than they were in the 1980's. While national percentages have plateaued in recent years, the prevalence of overweight and obese youth in North Dakota has risen. According to the North Dakota Compass (2016), 35.8% of North Dakota youth are classified as overweight or obese, with 15.4% of these being obese. In 2007, only 25.7% of youth were classified as overweight or obese, showing a 10% increase over four years (North Dakota Compass, 2016). The prevalence of obesity for both the United States and North Dakota remains high.

Unhealthy dietary patterns are one major lifestyle trend contributing to childhood obesity. For many children, their caloric intake is greater than their energy expenditure (Troiano, Briefel, Carroll, & Bialostosky, 2000). This is likely due to children consuming high amounts of fats and empty calories (solid fats and added sugars). As of 2010, approximately 40% of the total energy being consumed by children was from empty calories, which is much higher than the recommended daily allowance of 8-20% of total

energy (Reedy & Krebs-Smith, 2010). Similarly, children consumed 33-34% of their total energy from fats, which exceeds the dietary recommendations of 30% or less of total energy (Troiano et al., 2000). The major sources of foods containing fats were pizza, grain desserts (cakes, cookies, donuts, etc.), whole milk, regular cheese, and fatty meats (Reedy & Krebs-Smith, 2010). Reedy & Krebs-Smith (2010) found that beverages contributed largely to children's total energy intake, reporting 21.4%. These percentages are alarmingly high, and replacing high-fat and high-sugar foods and beverages with low-calorie, nutrient-dense fruits and vegetables may play a significant role in decreasing childhood obesity.

With the prevalence of children classified as overweight or obese being so high in the United States and North Dakota, targeting public health interventions increasing physical activity and healthy food choices at young age groups remains important (Basterfield et al., 2011; Boumtje, Huang, Lee, & Lin, 2005; Cunningham, Kramer, & Narayan, 2014; Epstein et al., 1995; Herman, Sabiston, Mathieu, Tremblay, & Paradis, 2014; Reedy & Krebs-Smith, 2010; Troiano et al., 2000). Nutrition experts recommend that public health interventions focus on promoting healthful eating and reducing consumption of fats, sugars, and low-nutrient energy sources (Boumtje et al., 2005; Reedy & Krebs-Smith, 2010; Troiano et al., 2000). Implementing public health interventions in schools may be especially helpful in increasing healthful behaviors and decreasing childhood obesity (Janssen et al., 2005; Reedy & Krebs-Smith, 2010; Troiano et al., 2000).

In recent years, many physical activity and nutrition policies and programs have been implemented across the United States. An analysis of seven school-based

nutrition intervention programs found increases, ranging from 15% to 36%, in fruit and vegetable intake between intervention and control groups in six of the seven programs (Howerton et al., 2007). Additionally, approximately 0.45 more servings of fruits and vegetables were consumed by the intervention groups (Howerton et al., 2007).

Similarly, Perry et al. (1998) found that implementing a behavior change curriculum in elementary school classrooms, as well as changing the foods offered at lunchtime to healthier choices, increased consumption of fruits and vegetables. Farm-to-school programs and school-garden programs, which encourage fruit and vegetable consumption in schools, have gained interest in recent years have shown promise (Story et al., 2009). However, research on the effectiveness of various physical activity and nutrition programs is limited.

Purpose

This study evaluated the effectiveness of the “On the Move to Better Health” program and whether it promoted 4th to 6th grade students to increase their fruit and vegetable intake as part of a state curriculum standards-based health education unit. During the physical activity and nutrition-based program, students learned about the health benefits of fruits and vegetables and tracked their personal intake of these foods.

Methods

Participants

Public and private elementary school 4th to 6th grade students between the ages of 8 and 13 years in 22 counties participated in the program. Subjects were recruited from 211 classrooms being taught the “On the Move” curriculum from the following North Dakota counties: Barnes, Benson, Bowman, Burleigh, Cass, Cavalier, Dunn,

Emmons, Grand Forks, Kidder, McHenry, McLean, Mercer, Morton, Pierce, Ramsey, Ransom, Richland, Rolette, Sargent, Stutsman, and Ward. The student pre-survey was completed by 3,144 students with a mean age of 10.21 ± 0.79 years, while the student post-survey was completed by 2,906 students with a mean age of 10.26 ± 0.79 years. Of those who completed the student pre-survey, 43.91% ($n=1,376$) were 4th graders, 50.29% ($n=1,576$) were 5th graders, and the remaining 5.81% ($n=182$) were 6th graders. Fourth graders comprised 46.75% ($n=1,352$), 5th graders, 48.13% ($n=1,392$), and 6th graders, 5.12% ($n=148$), of those who completed the student post-survey.

Study Procedure

“On the Move to Better Health” is a nutrition and physical-activity based curriculum that was originally developed by Cass County Extension and Fargo Cass Public Health and has undergone two major revisions with the release of new dietary guidance. The nationally recognized curriculum promotes healthy lifestyle choices (Ussatis, 2015). The program consists of five lessons taught over the course of five weeks. Each lesson highlights a different healthy lifestyle topic and takes about an hour to complete (Garden-Robinson, 2012). Lesson 1 provides an overview of the program. Lesson 2 focuses on fruits and vegetables, Lesson 3 on physical activity and sedentary behavior, and Lesson 4 on healthy snacks and beverages. Lesson 5 is a review of the previous lessons.

Fruits and vegetables were highlighted during week 2 of the “On the Move” program. During the lesson, students were taught that fruits and vegetables are high in nutrients and low in calories, fat, and sodium. Teachers explained what a nutrient is and discussed the different kinds of nutrients (fat, protein, carbohydrate, water, vitamins,

minerals), as well as the key nutrients found in fruits and vegetables (vitamin C, vitamin A, potassium, fiber, and phytochemicals). Students were informed that half of their plate should consist of fruits and vegetables and that it's important to consume as many colors of fruits and vegetables as possible to receive all the different nutrients. At the end of the lesson, students played "Half Your Plate" bingo. Teachers read clues about various fruits and vegetables, and students were asked to guess which fruit or vegetable was correct so they could mark it on their bingo card. Students also were given a handout with tips on incorporating fruits and vegetables into their day.

Students participated in the "On the Move to Better Health" program as part of their health curriculum. Students were given a map of North Dakota and told they would be able to "walk" around the state by doing designated healthy activities. The healthy activities pertaining to fruit and vegetable consumption included: "I filled one-fourth of my plate with veggies two times today," "I ate vegetables for a snack today," "I filled one-fourth of my plate with fruit two times today" and "I ate more whole fruit than fruit juice today." For each healthy activity students completed, they got to fill in a circle on the map. Students earned one bead for every five circles, as well as special beads for completing special tasks such as returning their family goals. Students had the ability to win prizes through participation in the program (class activities and completing their maps), which served as an incentive. Students also set healthy behavior goals for themselves in school, as well as at home with their families.

Students were given a pre-survey during Lesson 1 and a post-survey during Lesson 5 to measure their dietary knowledge and habits at the beginning and the end of the program. The peer-reviewed surveys were developed by NDSU Extension Agents

and Cass County Extension Agents for use with the “On the Move to Better Health” curriculum (Cass County Extension Service, 2016; NDSU Extension Service, 2015) and were adapted from the CDC’s Youth Risk Behavior Surveillance Survey (YRBSS) (Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Adolescent and School Health, 2017). Included were demographic, knowledge-based, and behavior choice questions. Students were read instructions prior to each survey, which included stating that the survey was optional. Therefore, any student who completed the survey provided implied informed consent. The implementation of “On the Move to Better Health,” the data collection protocol (via pre- and post-survey) and use associated with the program, and a waiver of signed parental consent was approved by North Dakota State University’s Institutional Review Board. However, because the surveys were anonymous and administered five weeks apart, the researchers chose not to match the surveys or ensure that the same students completed both the pre-survey and the post-survey.

Analysis

Survey information was entered by Extension employees trained in data entry, and analyzed using SAS Analytics (version 9.4; SAS Institute Inc., SAS Campus Drive, Cary, NC). Frequencies were reported using mean \pm standard deviation, as well as summary statistics of frequencies and percentages, for overall data. Two-sample t-tests were used to compare mean values between student pre-survey and student post-survey. A Cohen’s d statistic was used to determine the effect size following the two-sample t-tests. The effect size was interpreted as: $d=0.20$ indicated a small effect, $d=0.50$ a medium effect, and $d=0.80$ a large effect. Chi-square tests were used to

compare differences in responses from student pre-survey to student post-survey. Significance value was set at $p < 0.05$.

Results

The “On the Move” student pre- and post-surveys were used to determine behavior changes among 4th to 6th grade students over the course of the 5-week “On the Move to Better Health” program. Specifically, changes in fruit and vegetable intake from baseline (week 1) to the end of the program (week 5) were measured.

Both the student pre- and post-survey asked, “How many times did you eat whole fruit yesterday?” This question was used to assess students’ daily intake of fruits at baseline (N=3,124) and at the end of the “On the Move” program (N=2,872).

According to MyPlate recommendations, children 9-13 years of age should consume at least 1 ½ cups of fruit daily (United States Department of Agriculture, 2017); therefore, the desired response for this question was two times. Fresh, frozen, and canned fruits were all included as whole fruit. At baseline, participants reported consuming fruit an average of 1.91 ± 1.36 times daily (Table 1). After the program, the mean times fruit was consumed daily increased to 2.17 ± 1.32 times. There was a significant difference between pre- and post-survey means ($p < 0.0001$), and the effect size indicated a small effect ($d=0.20$). At baseline, 28.39% ($n=887$) of participants reported consuming fruit two times daily, and 30.47% ($n=875$) reported consuming fruit two times daily at the end of the program (Table 2). Further, the number of participants who consumed fruit two or more times per day increased from 58.6% ($n=1,831$) at baseline to 69.22% ($n=1,988$) at the end of the program. There was a significant difference between pre- and post-survey responses

($p < 0.0001$).

The student pre- and post-survey also asked, “How many times did you eat vegetables yesterday?” This question was used to assess students’ daily intake of vegetables at baseline (N=3,131) and at the end of the “On the Move” program (N=2,894). MyPlate recommendations state that children between the ages of 9-13 should consume at least two cups of vegetables daily (United States Department of Agriculture, 2017). Therefore, two times was the desired answer for this survey question. Fresh, frozen, or canned vegetables were all included. At baseline, participants reported consuming vegetables a mean of 1.75 ± 1.40 times daily (Table 1). At the end of the program, participants reported consuming vegetables an average of 1.86 ± 1.35 times daily. There was a significant difference between the mean values ($p = 0.0028$), and the effect size indicated a small effect ($d=0.08$). Participants who reported consuming vegetables two times per day was 24.43% ($n=765$) at baseline and 29.41% ($n=851$) at the end of the program (Table 3). From baseline to the end of the program, participants who consumed vegetables two or more times per day increased from 51.68% ($n=1,618$) to 57.26% ($n=1,657$). There was a significant difference between pre- and post-survey responses ($p < 0.0001$).

The student post-survey asked, “During the past month, I did the following...” with the answer options being “increased the amount of fruits and vegetables I ate,” “decreased the amount of fruits and vegetables I ate” or “the amount of fruits and vegetables I ate stayed the same.” This question was used to assess students’ perceived changes in fruit and vegetable consumption over the course of the program. After the program, 51.95% ($n=1,446$) of participants reported increasing their

consumption of fruits and vegetables, while 42.98% (n=1,213) reported that their fruit and vegetable consumption stayed the same (Table 4).

Discussion

Student pre- and post-surveys were used to analyze changes in children's dietary habits from the beginning of the program to the end of the program. Data analysis showed a significant difference between pre- and post-survey means and responses for both fruit and vegetable intake. At both baseline and at the end of the study, participants reported consuming fruit an average of more than one and a half times per day. Assuming one time is approximately one serving, these results imply that participants consumed more than the one and a half cups of fruit per day recommended for their age group by MyPlate at both baseline and at the end of the study (United States Department of Agriculture, 2017). There also was an increase of 0.26 times eaten for fruit between pre- and post-survey averages. While there was a slight increase in average vegetable intake from baseline to the end of the study, both mean values fell below vegetable consumption being two times per day. Again, assuming one time is about one serving, these values fall below the MyPlate recommendation of two cups of vegetables for children between the ages of nine and thirteen (United States Department of Agriculture, 2017).

Despite the small increases in mean times eaten for both fruits and vegetables between pre- and post-survey, more than half of participants reported increasing their intake of fruits and vegetables over the past month. One explanation for this may be the reporting bias associated with self-report surveys (Ventura, Loken, Mitchell, Smiciklas-Wright & Birch, 2006). Students may have reported that they consumed more fruits and

vegetables because, after being encouraged throughout the 5-week “On the Move” program to consume more fruits and veggies, they knew this was the desired response or behavior change they should have made.

Overall, this study found the “On the Move to Better Health” nutrition and physical activity-based intervention program successful in promoting healthful behavior changes, specifically increases in fruit and vegetable intake, among students. While this study adds to the literature on the positive influence of childhood nutrition education on fruit and vegetable consumption, research in this area remains limited and sometimes conflicting. Therefore, future research is necessary to determine the importance and effectiveness of public health intervention programs targeting youth. This study measured and found success with short-term behavior changes; future research measuring long-term behavior changes would be beneficial to determine if healthy habits learned during childhood are being carried into adolescent years and adulthood.

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Table 1

Changes in mean values from student pre-survey to student post-survey

	Units	Presurvey ¹	Postsurvey ¹	Change ²	Effect Size ³
Daily fruit intake	Times eaten	1.91±1.36	2.17±1.32	0.27±1.34*	0.20
Daily vegetable intake	Times eaten	1.75±1.40	1.86±1.35	0.11±1.38*	0.08

¹Data presented as mean ± standard deviation (SD)

²Difference in the mean between pre-survey and post-survey ± pooled SD

³Absolute value of difference in the mean divided by pooled SD

*Statistically significant

Table 2

Participants' reported daily intake of fruit

Times eaten	Pre-survey (N=3,124)		Post-survey (N=2,872)	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
0	511	16.36	325	11.32
1	782	25.03	559	19.46
2	887	28.39	875	30.47
3	549	17.57	700	24.37
4	220	7.04	233	8.11
5	175	5.60	180	6.27

Table 3

Participants' reported daily intake of vegetables

Times eaten	Pre-survey (N=3,131)		Post-survey (N=2,894)	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
0	663	21.18	483	16.69
1	850	27.15	754	26.05
2	765	24.43	851	29.41
3	490	15.65	463	16.00
4	178	5.69	181	6.25
5	185	5.91	162	5.60

Table 4

Participants' reported changes in fruit and vegetable consumption over the past month

	Increased	Decreased	Stayed the same
Frequency (n)	1,446	143	1,213
Percentage (%)	51.95	5.07	42.98

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Research

High Speed Hand Washing Helps Build Healthy Habits

Glenda Hyde and Marc Braverman

Abstract

Incorporating proper hand washing before consuming food samples in nutrition education lessons takes time and is therefore not prioritized. A fourth grade “High Speed Hand-Washing” lesson plan was developed and taught. Classrooms can get their hands washed properly in five minutes or less with this simple, inexpensive technique, increasing food safety and, reducing risk of communicable diseases. Improved classroom handwashing led to overall improvement in proper handwashing. Post, then pre-surveys were administered to 1697 fourth graders during 2011-2013. In a two-year average, 82.6% improved frequency of proper hand washing or always washed their hands properly before touching or eating food.

Research clearly indicates the most effective and least expensive way to prevent the spread of illness, including foodborne illness, is proper hand washing (CDC, Keep food safe, 2017). Educational materials and campaigns to encourage consumers to wash their hands properly at critical times before and during food preparation have been developed by government agencies from local to federal levels. The Centers for Disease Control and Prevention (CDC Preventing food poisoning, 2017) and state Health Departments collect and publish statistics showing consumers do not faithfully implement this practice. The U.S. Department of Agriculture & U.S. Department of Health and Human Services (2010) reports that foodborne illness (some caused by improper hand washing) affects more than 76 million individuals in the United States, leading to 325,000 hospitalizations and 5,000 deaths. For prevention of Norovirus, the most common foodborne illness due to improper hand washing, Norovirus: Notorious (2013, January 15) reports health professionals treating infected patients are asked to first, "Encourage proper hand hygiene," because "patient education is generally the only way to prevent secondary cases: Washing hands carefully (*and often*) with soap and water is key." In 2007, our local nutrition education staff members realized that even though food safety is taught in our lessons, we did not have enough time to put the hand washing activity into practice allowing students to actually wash their hands before eating food samples during our 30-minute lessons. Using traditional hand washing, each student could take a minute to wash hands and hand washing could absorb all 30 minutes of a lesson, especially with younger students. Further, there was no standard in place to help students judge the quality of their hand washing.

Objective

Plan and Activities: The objective of the High Speed Hand Washing (HSHW) lesson (Hyde, Wilson, 2016-revised) is to teach a classroom technique for quick, effective hand washing to get all hands washed properly in less than five minutes. The technique removes the bottlenecks at the sink and instead pulls students through the process to wash hands while adding a quality benchmark.

The introduction to HSHW is a 30-minute lesson, taught with grade-level adjustments to all grades, Pre-K through 12th grade, students learn about harmful germs and how to avoid spreading germs to others. To establish a baseline for time and thoroughness, students wash their hands as they normally would and conduct a self-evaluation by applying a lotion used to replicate germs on the skin that glows in a black light. In viewing the remaining lotion in the black light, students can see areas for improvement in their hand washing quality.

The HSHW technique starts when one predetermined classroom group of at least four to six youth goes to a classroom sink. This group size range provides the minimum number to properly complete hand washing while the maximum number helps avoid loss of focus on the activity. Timing begins when the first student begins the process and ends when the last student sits down-the total time needed to wash all the hands. The educator, stationed at the sink to dispense the hand-pump soap for Pre-K through primary grades, leads a cadence with verbal cues and dispensing soap. Students wet their hands, shake them off over the sink, get their dollop of soap, begin lathering and go to the end of the line. While in line, they rub their hands together to develop a heavy lather. When they reach the front of the line, they quickly rinse,

prompted by the educator, and move out of the way of the next student to get the paper towel to dry their hands. When there are only three students left in the line, the next group comes to the line. Students return to the black light after drying their hands to analyze their skill and find out where they need to improve rubbing the soap. The educator leads a review of the proper technique for success and gives a challenge to practice in class to reduce the time for HSHW. The pace of the cadence improves with subsequent practice sessions led by the teacher until the class reaches the goal of under five minutes. Nutrition educators, returning the following week to deliver a nutrition education series, can check the class progress and offer praise to the class and the teacher for achieving the goal or encouragement for improvement at the next lesson. Timing the class and recording progress helps track improvement and creates an engaging sense of competition between classes and even between grades. Further, when guest educators teach nutrition lessons involving food preparation or sampling, HSHW is used to assure proper hand washing prior to sampling the food.

Regular hand washing reduces risk of illness, which may increase school attendance (Master, Hess Longe, & Dickson. 1997). When classrooms practice HSHW, they can wash their hands in less than five minutes, thereby reduce the classroom strain on academic time to practice proper hand hygiene, and make it easier for teachers to squeeze proper hand washing into a tight schedule. A modified version of the lesson has been popular with adult and family classes. HSHW taught in all grades since 2007, produces effective hand washers after their first year. Over the summer, with disrupted schedules and other interruptions, students may lose focus on their hand washing skills. When fourth graders have learned the basic techniques in previous

school years, other approaches to review the need for food safety are used to reengage their commitment to food safety during the lesson introduction. A skit, "Food Safety on the Farm," or a game show format of Win, Lose or Wash! (Hyde, Enjoying our healthy harvest, 2016-revised) have been popular. Groups are formed for the current year, who then quickly review and practice the skill and strive to meet the time goal.

HSHW is proven successful for young students as well. Head Start teachers report that three- and four-year olds can learn HSHW with two weeks of practice.

Materials developed and/or resources used: To encourage behavior change in the classroom and to encourage students to carry the food safety and hand washing messages home to improve food safety practices there, too, the HSHW lesson plan was developed. Using Control Theory (Glasser, 1993; Glasser, 1984). "Participants develop quality schoolwork and positive behavior changes," according to Dr. Glasser "when six conditions are met. 1) There must be a warm, supportive classroom environment; 2) Students should be asked to do only useful work; 3) Students are always asked to do the best they can do; 4) Students are asked to evaluate their own work and improve it; 5) Quality work always feels good; and 6) Quality work is never destructive." This lesson meets all of the conditions and is fun and engaging for all ages.

Our Extension Nutrition and Foods Specialist reviewed the lesson plan. Classrooms supply a hand washing station and paper towels.

Partnerships or collaborations: The HSHW lesson plan has been used, annually, in 33 fourth grade classrooms in five school districts. With slight adaptation, HSHW was also used outdoors in school garden activities. Teachers are encouraged to practice HSHW daily in their classrooms schedule sessions before meals or snacks, daily.

Cost: Minimally, the purchase of liquid hand soap is recommended. Some classrooms had no soap in the dispensers or dispensers mounted too far away for the children to easily reach. The lesson incorporates the use of a black light with glowing lotion (approximately \$100) to promote self-assessment. Alternately, students can do a good quality lathering self- or peer-assessment with a visual inspection.

Marketing: The lesson is free and available in two sections on the county Extension web page. One is the food safety section (Hyde & Wilson, 2016) (446 hits in 2014) and the other is the Enjoying Our Healthy Harvest (EOHH) curriculum web page (Hyde, 2016a) (1660 hits in 2014). Over 675 teachers and school administrators and staff have received paper copies of the lesson.

HSHW Helps Build Healthy Habits was presented at poster sessions at the 2016 National Health Outreach Conference and the 2015 Epsilon Sigma Phi (ESP) Conference. HSHW Helps Build Healthy Habits was a 2015 National Extension Association of Family and Consumer Sciences (NEAFCS) Annual Session breakout session. Half page flyers, distributed at the poster sessions or presentations, promoted the lesson and the link. One Extension professional wrote: "I teach handwashing to most of the first graders in my four counties and use the way you taught me to do it when you were at the ESP meeting in Coeur d'Alene, ID. It's so slick to have them wet their hands, get their soap and go to the back of the line to scrub while they sing the ABCs. [After] twenty seconds of active scrubbing, they are most likely at the front of the line, ready to rinse and wipe. Boy, does that make for a neat way to get the kids to properly wash and not be pushing and shoving each other as they wait in line for their turn at the sink! It is fun to go back in to the same first grade classroom the next year

and see that the teacher has now adopted your method. Thanks so much for the teaching tip, which I've shared with my counterparts here in my state." *HSHW Training* was provided to the Wellness Coordinators at the 2015 [state] Head Start Staff Conference. The HSHW lesson plan was also distributed electronically by request to interested FCS and 4-H faculty in our state and seven other states.

HSHW, the first lesson in EOHH, including charts with hand washing data, was presented at five different national association conferences and our [state] 4-H/Family and Community Health (FCH) conferences. Full-page flyers were distributed at these sessions with the abstract and the link. Poster presentations for EOHH included: 2014 Contemporary Northwest Health Conference (partially sponsored by Northwest Portland Area Indian Health Board and the Northwest Native American Research Centers for Health) in Portland, OR; 2013 Extension Galaxy Conference; 2012 [state] chapter of the American Association of Family and Consumer Sciences; 2011 Society of Nutrition Education and Behavior Conference; 2010 [state] Extension Conference; 2009 Farm to Cafeteria Conference; and 2009 [state] 4-H/FCH Conference. A breakout session was held at the 2009 state 4-H/FCH Conference.

Efforts were made to reach educators with other marketing efforts. In 2014, the EOHH curriculum (including the HSHW lesson) was presented as the June NEAFCS webinar (69 registered, 34 states). It is archived on the NEAFCS.org web page. A colleague in our region taught hands-on seminars at the 2014 and 2015 Men's and Women's Native American Health Conference, San Diego, CA. EOHH has been listed on SNAP-Ed Connection Library under Curricula and Lesson Plans since 2013 (Hyde, 2016b).

Method

Hand washing behavior in our fourth grade nutrition education programs was evaluated during 2011-2013 school years using a retrospective pre-test approach, “post, then pre-test” was used (Rockwell, Kohn, 1989). The evaluation plan and questionnaire were developed with the assistance of a campus faculty team consisting of the Extension Nutrition and Foods Specialist, the Family and Community Development Program Leader and Evaluation Specialist and the Nutrition Education Program Records Manager. The specific wording of the question developed was: “Before I touch or eat food, I wash my hands....” The four response categories were: Always, Most of the Time, Sometimes, and Never.

Results

Two years of program evaluation results are shown in Table 1. Data from 1,697 fourth grade student respondents was analyzed. As Table 1 shows, in each of those years, the percentage of children who either improved their scores or were already engaging in best practices for hand washing was 82.6%. Thus, a substantial majority of program participants improved their hand washing behaviors or already did it frequently.

Those that have made HSHW a classroom habit have reported reduced illness of their students. One elementary teacher reported that during a flu outbreak lasting several weeks in 2008-2009, overall school attendance had dropped to 50%, while her class, with a regular HSHW routine and wiping tables with a bleach-water solution (one teaspoon bleach: one gallon water) had 100% attendance during the same period.

Summary

Through HSHW an efficient and effective program has been established for use in classrooms. Without exception, all fourth grade classes achieved the target goal of five minutes or less within five days. The bottleneck at the sink that restricted efficiency in traditional hand washing is removed by moving the students away from the sink during the necessary 20-seconds of lathering time. With the proven ability of HSHW to get all hands washed in five minutes or less, a class of 32 students spends an average of only 9.4 seconds or less per student at the sink. The 20-seconds of lathering time became important socialization time, with singing, chanting or doing peer-observations of lathering skills. This made the practice fun for the students, with willing engagement. Knowing the importance of this fun activity, proper hand washing has become a habit that is practiced at home, too. Parents have also joined in HSHW as students, and have also enjoyed the benefits of improved handwashing quality and speed.

Future Sustainability: HSHW does improve healthy habits. In response to an outbreak of pertussis in regional Head Start classrooms in 2015 the county communicable disease specialist recommended more and better hand washing in the classrooms. A policy was adopted by the Head Start Regional Health Advisory Board to bring Extension staff to teach HSHW to each classroom. With this training, teachers started teaching HSHW on the first day of school in the fall. The lesson, recorded on video, so that new teachers or substitute teachers could learn and understand the technique, helps sustain the practice. In 2017, [another state] Extension requested the HSHW lesson and training materials for their Head Start teachers to help them meet four indicators in Early Childhood Environment Rating Scale – Revised Edition (2005).

In 2015, HSHW was approved by SNAP-Ed to be used with the evidence-based curriculums. A six-month follow up survey was conducted in 2014. Analysis that could provide an evidence-based product may be available in the future.

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Table 1. Pre- and Post-Program Hand Washing Behaviors of 4th Grade Program

Participants

4th Grade Hand Washing Indicator Data Summary						
Question: Before I touch or eat food, I wash my hands						
School Year	N=	% increase	% did not increase	% already at best practice	% decrease	Type of Survey
2011 – 2012	733	46.7%	13.0%	36.2%	3.7%	Post then Pre
2012 – 2013	964	47.9%	13.7%	34.4%	3.4%	Post then Pre

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Implications for Extension

The Importance of Helping Consumers Make Sense of Food Label Claims

Alice Henneman, Robert L. Eirich, Cindy Brison, Elizabeth A. Janning, Jamie Loizzo

Abstract

This article discusses the importance of future Extension programming to address consumer confusion about current food label claims. A statewide survey (n=1,208) was conducted on how people think and feel about their food. Food labels were identified as the major information source by 63.7% of respondents. Such findings are not limited to our state; this issue has local, national and international significance. Definitions and sources of information for common food claims and suggestions for beginning the discussion with consumers are given.

Consumers are currently exposed to myriad food claims, such as “natural,” “organic,” and “locally produced.” Understanding those claims and where to find reliable information can be challenging (Consumer Reports National Research Center, 2015; International Food Information Council Foundation, 2016; “Truth about food,” 2016).

The Consumer Reports National Research Center (2015) survey found that many consumers thought the word “natural” on a label means that no toxic pesticides (63%) and no GMOs (60%) were used in growing ingredients. In the Elanco Enough Movement survey, 66% believed “natural” means the product contains no artificial ingredients, GMOs, toxic pesticides, or hormones. However, foods labeled “organic” or “natural” may contain pesticides such as boron and copper sulfate, which occur naturally in the environment (“Truth about food,” 2016).

An International Food Information Council Foundation (2016) survey (n=1,003) found the information on the labels most influencing purchasing decisions were “natural” or “no added hormones or steroids” (34%), “locally sourced” (30%), and “organic” (28%).

Such findings extend even globally. A survey commissioned by Elanco’s Enough Movement, a global community working toward food security (www.enoughmovement.com) and conducted by Kynetec, a leading global market research firm, surveyed people in several countries. Kynetec found that 80% of 3,337 consumers in 11 countries (Argentina, Brazil, Colombia, France, Germany, Italy, Mexico, Peru, Turkey, the United Kingdom and the USA) also looked to food labels and food claims on labels as a major source of food information (“Truth about food,” 2016).

The vast majority, however, admitted they often did not understand the terms on the labels.

Misinterpreting label terms and claims can lead to paying more for attributes that are not present in a food or to purchasing or advocating for products that provide few or no additional benefits beyond those offered by similar foods without such a label. For example, in a survey of 2,511 consumers from the United States and Canada, 17% of respondents believed that foods labeled “organic” are also locally grown, and 23% believed that local produce is grown organically (Campbell, Khachatryan, Behe, Dennis, & Hall, 2014).

While the Nutrition Facts Label information on the U.S. Food and Drug Administration (2017) website provides a convenient one-stop location for consumers and educators about the nutrient and calorie labeling on packaged foods, there is no similar source of information for the type of current and confusing food claims reported in these studies.

Objective

Two events occurred simultaneously that lead to writing this article. Our university Extension “Increase Consumer Confidence in Our Food” team—consisting of agricultural; horticultural; 4-H; and family and consumer science staff—completed a survey where responses to one of the questions indicated that food labels were an important source of consumer information about food in our state. Meanwhile, a member of our team, in a conversation with a colleague about our survey, learned how confusion about food label claims—such as “natural” and “locally produced”—was becoming a global concern.

As a result, this article was written to help Extension FCS professionals:

- understand the importance of educating consumers about current, confusing food label claims for which Extension could play an important educational role; and
- become more knowledgeable about these food claims through accurate, up-to-date descriptions and sources of information.

Method

Working with our midwestern university's Bureau of Sociological Research (BOSR), Extension's "Increase Consumer Confidence in Our Food" team collected statewide data on how citizens think and feel about emerging food and agriculture issues—such as whether food was produced organically, locally, and so on. The survey also asked where they look for information about their food. This data was gathered as part of an annual Institutional Review Board approved survey on various quality-of-life indicators.

The questions were adapted from questions related to these topics in the International Food Information Council Foundation (2016) Food and Health Survey.

Findings

BOSR extracted the food-related data from our state survey for a separate food report (BOSR, 2016). The survey (n=1,208) identified that the food label claims provided by food processors were the major source of food information for consumers (63.7%) in our state. Food label information was more important than information provided by family and friends (24.6%), farmers and ranchers (7.5%), and social media (8.3%). The BOSR survey also indicated consumers were more likely to visit a website

(59.2%) than attend a workshop (1.7%). Only 6.1% of respondents have not looked for information. Percentages do not add up to 100% as respondents could mark more than one item.

Discussion

Extension professionals, through their food-related programs and materials, can do much to educate consumers worldwide by disseminating accurate food label information and helping consumers make sound food decisions. The following discussion provides information about current popular and often confusing food claims.

Hormone Free

The claims “free of hormones,” “no hormones added,” or “raised without hormones” can be especially confusing. In fact, all multicellular organisms, including plants, produce hormones naturally (Science Daily, n.d.). Only unicellular organisms which consist of a single cell, don’t contain hormones. Examples of unicellular organisms include amoebas, bacteria, and plankton (Biologydictionary.net Editors, 2017).

Since the 1950s, the U.S. Food and Drug Administration (FDA), has allowed the use of a small amount of growth hormones in beef cattle to increase the efficiency of lean meat production using fewer animals and resources (U.S. Food and Drug Administration, 2017). The term “no hormones administered” may be used on the label of beef products if sufficient documentation is provided to the U.S. Department of Agriculture (USDA) by the producer showing no hormones were used in raising the animals (U.S. Department of Agriculture/Food Safety and Inspection Service, 2015). Hormones aren’t given to poultry and pigs because they don’t have a growth-promoting effect in these animals.

Locally Produced

USDA (U.S. Department of Agriculture, n.d.) states “There is no pre-determined distance to define what consumers consider ‘local,’ but a set number of miles from a center point or state/local boundaries is often used.” Interpretations range from within 100 miles to within a state, region or country (Mulcahy, 2017).

Organic

Organic standards are based on the full spectrum from farm to retail. Animals graze on pasture that is grown organically during the grazing season or supplemented diets of feedstuffs that are certified organic to meet their nutritional requirement when not grazing (U.S. Department of Agriculture/Agricultural Marketing Service/National Organic Program, 2013). The animals are raised without hormones or antibiotics. No artificial colors, preservatives, flavors, irradiation, sewage sludge, or genetic engineering are used (McEvoy, 2011).

A food labeled “100% organic” contains only organic ingredients; “organic” means a food must contain a minimum of 95% organic ingredients. And “made with organic ____” indicates that a multi-ingredient product contains at least 70% organically produced ingredients. If an ingredient is identified in the “made with organic ____” statement, the product can contain only organic forms of that specific ingredient. (U.S. Department of Agriculture/Agricultural Marketing Service, n.d.-a). McEvoy (2014) states, “For example, if the label states ‘Made with organic corn’ all raw and processed corn-based ingredients—such as blue corn, corn oil, and corn starch—must be certified organic.”

Land used to produce organic foods must have been free of prohibited substances for the previous three years. Farms and businesses must undergo an

annual review and inspection to maintain their organic certification (U.S. Department of Agriculture/Agricultural Marketing Service, n.d.-b). There is a common perception that organic food is higher in nutrients. A meta-analysis published in 2012 (Smith-Spangler, Brandeau, Hunter, et al.) found no difference, and a meta-analysis reported in 2017 concluded, “It is therefore currently not possible to quantify to what extent organic food consumption may affect human health” (Barański, Rempelos, Iversen, & Leifert, “Abstract,” para. 1).

An ingredient’s source does not determine its safety. Plants that contain toxic substances are still unsafe, even if grown organically (U.S. Food and Drug Administration, 2017).

Natural

Like “locally grown,” there is no formal definition for the claim “natural.” Currently, “The FDA has considered the term ‘natural’ to mean that nothing artificial or synthetic (including all color additives regardless of source) has been included in, or has been added to, a food that would not normally be expected to be in that food,” (U.S. Food and Drug Administration, 2016). FDA is currently reviewing consumer perceptions of the term.

USDA defines “natural” labeling on meat and poultry products as, “A product containing no artificial ingredient or added color and is only minimally processed. Minimal processing means that the product was processed in a manner that does not fundamentally alter the product.” The label must include a statement that explains the meaning of the term, such as “no artificial ingredients; minimally processed” (U.S. Department of Agriculture/Food Safety and Inspection Service, 2015).

Implications

Nutrition and agriculture science are complex disciplines. Research findings can be difficult to translate into practical action. Consumers are confused about what is good to eat and what isn't, what's known versus what is speculation, and whom to believe versus whom to ignore. In a climate like this, trust is up for grabs.

In this environment, Extension professionals have an opportunity to educate consumers about how to use food labels and food claims to make choices that work for them. There is no magic bullet, no cure-all food. It is best to balance food choices across a whole day, based on the Dietary Guidelines for Americans (U.S. Department of Health and Human Services and U.S. Department of Agriculture, 2015).

Consumers should be encouraged to choose foods they enjoy and can afford. For example, people who simply prefer the taste of an organic product over its conventional counterpart, should choose the organic version—not necessarily because it is “healthier” but rather because they like it.

Extension professionals can integrate information about food label claims into a variety of activities to help consumers make and advocate for knowledgeable food choices. In our population, survey respondents indicated that they preferred getting information from websites rather than from workshops (BOSR, 2016). It might be wise for all Extension FCS professionals to develop and promote a generous mix of online resources and social media addressing how to use food labels and claims. Possible programming activities for others that include a mix of face-to-face and web-based activities that we are beginning to initiate in our state include:

- analyzing food prices in relation to label claims, such as “natural,” and discussing whether the foods are a good buy for the money for an individual or a family;
- writing articles on label claims, utilizing some of the resources mentioned in this article, for print and online resources;
- discussing whether a food is healthier because it contains a specific label claim; for example, a soft drink produced locally versus one produced in another state but with the same ingredients;
- promoting articles about food label claims relying heavily on social media; and
- hosting a Twitter chat where participants can ask questions of experts regarding label claims and term.

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Best Practices**Reducing Food Insecurity Among Low-Income Youth Through Weekend Food Packs**

Shannon Cromwell, Cindy Nelson, and Suzanne Prevedel

Abstract

Food insecurity can lead to detrimental physical, social-emotional, and academic outcomes for children. In order to alleviate hunger among elementary-aged youth, a county-wide weekend backpack program was developed. The Kid Pack program is a collaborative effort between food pantry volunteers, school district administrators, Extension faculty, and community agencies. The weekend backpack program provides nutritious meals and snacks to low-income children who experience food insecurity in their households.

According to the U.S. Department of Agriculture Economic Research Service annual food security survey (2015), 16.6% of households in the United States with children were identified as food insecure. Food insecurity occurs when family members are unable to obtain adequate amounts of safe foods due to limited access of resources (Alaimo, Olson, & Frongillo, 2001; McCurdy, Gorman, & Metallinos-Katsaras, 2010; Shanks & Harden, 2016). Furthermore, food insecurity among children can lead to detrimental effects on physical and emotional health, along with adverse effects on academic performance (Contunga & Forbes, 2008; Fram, Frongillo, Fishbein, & Burke, 2014; Shanks & Harden, 2016).

Food Insecurity and Physical Health Effects

Growing up in food insecure households often contributes to physical health deficiencies among children. Studies indicate that malnutrition is associated with delays in motor skills, in addition to stomachaches, headaches, and the prevalence of more colds (Ashiabi, 2007; Ashiabi & O'Neal, 2008; Fram et al., 2014). Children have also been found to exhibit iron deficiency rates that are double that of their peers and intake significantly lower amounts of folate, vitamin C, carotene, fiber, and carbohydrates, as well as lack essential vitamins and minerals such as thiamine, vitamin A, and iodine (Ashiabi & O'Neal, 2008; Martinez & Kawam, 2014).

Food Insecurity and Social-Emotional Health Effects

In addition to physical health deficiencies, food insecurity also plays a role in children's cognitive and emotional behavior. Children in food insecure households often display anxiety and depressive symptoms, difficulty getting along with peers, and suicidal ideation (Ashiabi, 2007; Cotunga & Forbes, 2008; Fram et al., 2014).

Additionally, fatigue, irritability, and difficulty concentrating are often side effects of hunger (Ashiabi, 2007), as well as aggressive, withdrawn, and distressed behaviors (Ashiabi & O'Neal, 2008; Martinez & Kawam, 2014). As a result, children who experience behavioral and emotional problems due to food insecurity often become less engaged in school when compared to their peers.

Food Insecurity and Academic Performance

Food insecurity issues have a strong influence on children's success at school. In addition to lack of concentration, shorter attention span, and memory retention problems (Ashiabi, 2007; Ashiabi & O'Neal, 2008), studies have shown that children living in food insecure households often exhibit increased levels of aggression, irritability, and antisocial and risky behaviors (Fram et al., 2014; Martinez & Kawam, 2014). Researchers suggest that the focus on hunger instead of school work often leads to food-insecure children scoring lower on standardized tests, as well as exhibiting poor academic performances on math, vocabulary, and reading tests when compared to their peers (Ashiabi & O'Neal, 2008; Coleman-Jensen, Nord, & Singh, 2013; Martinez & Kawam, 2014).

Purpose

According to U.S. Census data (2015), Sanpete County has a population of 28,778 individuals and a poverty level of 17.2%. Food insecurity is a concern and a reality among county residents, with individuals experiencing a lack of access to adequate, well-balanced meals due to insufficient economic resources. Furthermore, 22% of youth ages 0-17 are living in poverty throughout Sanpete County (Kids Count Data, 2013), resulting in the eligibility of free or reduced lunches for 50% or more of

students in all eight elementary schools. Based on the county poverty rate and the adverse effects food insecurity can have on children's development, the Sanpete County Weekend Kid Pack program was established as an effort to alleviate hunger during out-of-school hours, and to increase the physical, social-emotional, and academic outcomes of low-income youth.

Methods

The Kid Pack program is a collaborative effort between food pantry board members, food pantry volunteers, North Sanpete School District, South Sanpete School District, Utah State University Extension, and community agencies throughout the county, and relies upon small grants, private donations, and local grocery store donations to operate. The Kid Pack program currently provides nutritious meals and snacks to 106 low-income, at-risk elementary-aged youth at five elementary schools who experience food insecurity and hunger within their households during out-of-school hours. The weekly packs have an average retail cost of \$15.00 each, contain two kid friendly, easy-to-prepare meals for youth on Saturday and two meals for youth on Sunday, plus additional snacks. All meals are shelf-stable, easy to open, and require little to no preparation so elementary-aged youth are able to prepare the meals without adult assistance. In an effort to provide meals with nutritional benefits, food pantry volunteers work with Extension faculty to include meals that incorporate all five MyPlate food groups (See Appendix A for examples).

Kid Pack Procedures

Collaboration between elementary school district administrators and food pantry volunteers is essential for weekly program operations. At the beginning of the school

year, district administrators provide food pantry board members with the number of packs needed on a weekly basis in order to serve low-income, food-insecure youth at each elementary school. Using donated, disposable grocery sacks, food pantry volunteers assemble the packs on a weekly basis and deliver them to school administrators on Thursdays where they are stored in a safe and secure place. School administrative assistants distribute the Kid Packs to youth in a confidential manner on Friday afternoons to help reduce hunger over the weekend.

Results

The Kid Pack program was established in 2014, and served 44 youth each week during the school year through the distribution of 175 weekend packs a month. As economic hardship continued to rise among Sanpete County families, so did the demand for weekend Kid Packs. In 2015, the program served 75 youth each week through 300 weekend packs and 81 youth participated in the program each week through the distribution of 325 packs a month in 2016. The number of youth participants continued to increase in 2017 with 106 youth receiving assistance each week through the distribution of 424 packs a month.

The weekly Kid Pack program has saved families a considerable amount of money on grocery purchases, thus reducing the stress and burden of poverty and food insecurity. Table 1 displays economic impact data showing the amount of savings the program has afforded families.

Discussion

Food insecurity and hunger among families has been shown to have a detrimental effect on children's development. Youth experiencing food insecurity in their

households are often faced with physical, social-emotional, and academic challenges. The Sanpete County Kid Pack program has successfully aided in the alleviation of hunger among elementary-aged youth during weekend hours, and has reduced grocery costs among families who participate in the program.

Limitations

Limitations to the Kid Pack program include funding and access to participant information. Funding for the program is based on grant monies, private donations, and local grocery store donations. A lack of funding directly impacts the amount of food and the nutritional quality of the meals that are distributed to youth. Access to participant information is limited and family names are kept confidential due to the sensitive nature of the program. This creates a barrier for obtaining impact data highlighting knowledge and skills gained, which can then be used to support the effectiveness of the program when applying for grant funding.

Future Directions

In addition to the adverse effects that hunger has on children's development, parental stress caused from food insecurity can have detrimental effects on children through parenting practices. Adult stress brought on by food insecurity challenges can affect the quality of parenting and children's outcomes (Ashiabi & O'Neal, 2008; Knowles, Rabinowich, Ettinger de Cuba, Cutts, & Chilton, 2016). Future plans include partnering with Extension Specialists to include educational information in the Kid Packs directed toward parents. The research-based information will contain positive parenting strategies, free parenting class information, and community-based resources that can lead to a decrease in stress among parents.

Likewise, nutrition, food safety, and physical activity information will be included in the Kid Packs through a partnership with Utah State University's SNAP-Ed program. Educational materials will align with MyPlate concepts and encourage both youth and parents to focus on making healthy choices when choosing meals and snacks.

Additional efforts will be made to secure Institutional Review Board approval to collect impact data with all families participating in the Kid Pack program in order to assess knowledge and skills gained through participation. Survey questions will contain demographics, nutrition education, and parenting education measures. Due to the sensitive nature of the program, surveys will be distributed through the weekly Kid Packs and families will be given self-addressed stamped envelopes in which they can return the anonymous surveys.

Conclusion

Food insecurity can lead to negative physical, social-emotional, and academic outcomes for children. Given the critical importance of food insecurity and the detrimental effects it can have on children's development and adults' parenting practices, it is important to implement community-based programs such as weekend backpacks that aim to ameliorate the effects of hunger. Furthermore, the inclusion of nutrition and parenting education resources provides families with opportunities to gain knowledge and skills to combat the disadvantages of hunger.

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Best Practices

Connecting Program Design to Curriculum Development: A Succession Planning Curriculum Example

Michael R. Reichenbach, Rebecca Hagen Jokela, Deborah Giraud, and Mary Sisock

A curriculum framework is described to help educators develop curriculum for topics where the class participants are making choices between many options. A succession planning program is used as an example. The framework described is designed to help groups of participants, including families, come to common understanding and collective action.

Families own 33% of Minnesota's woodlands or about 5.4 million acres (Butler, 2008). Changes in family ownership may result in parcelization of woodlands resulting in the loss of economies of scale for timber harvest and loss of ecological values. One approach to keeping woodlands intact is to assist families transfer ownership to the next generation. This involves working with family members differing perceptions of the lands value and utility. During this process families come to have a common understanding and make informed decisions about their resources and the future of the woodland. The Minnesota Intergenerational Land Transfer Program focuses on family communication, transfer of the management goals and legal aspects of land transfer using an approach that involves multi-generations within a family unit. The development of a sample curriculum for succession planning will be described.

In 2014, we surveyed educators, who self-selected as teaching succession or estate planning, to learn what they thought were important elements of a successful succession planning class. While the specifics of the particular programs described by respondents varied, there were common themes: facilitate a vision and help participants set goals, focus on legal, financial and communication tools, and involve the entire family. Drawing from the descriptions respondents provided, we used the Collaborative Curriculum Framework to develop a sample succession planning curriculum. In order for others to replicate this process in their own program design, we provide a detailed description of the model.

We define succession planning as a process that describes the owner's goals for the transfer of 1) their land, 2) their business, and 3) their land management approach, also known as the land ethic from one generation to the next. The sample curriculum outline focuses on the importance of family communication because the success of succession plans is dependent on communication between family members (Bentz et al. 2006).

Literature Review

Extension is uniquely positioned to help families with succession planning. For example, family and consumer science educators can teach positive family dynamics, and ag-business and natural resource educators can teach about the legal and financial tools needed for the successful transfer of the land, land ethic and business to the next generation. Extension has developed educational programs to address family communication through *Who Gets Grandma's Yellow Pie Plate? Workbook: A Guide to Passing on Personal Possessions* (University of Minnesota Extension Service, 1999)

and succession planning through *Ties to the Land: Your Family Heritage, Planning for an Orderly Transition* (Bentz et al. 2006). Extension and others have identified tools to assist in the educational delivery process. Fetsch (1999) identified ten do's and 10 don'ts, tools, and people skills needed for successful estate transfers. Hachfeld et al. (2009), focused on helping participants increase their knowledge of farm transfer and estate planning. Reichenbach, Hagen Jokela, and Sagor (2013), provided an example of an interdisciplinary and multi-generational approach to land transfer education, highlighting the importance of curriculum design and activities to foster family communication and the planning process. Withrow-Robinson, Sisock, and Watkins (2012), responded to participant need for succession education through pre-recorded modules. In addition, Withrow-Robinson, Broussard, Landgren, and Sisock (2013), suggested extending meeting times for practicing communication skills may help meet specific group needs resulting in an increase in the successful transfer of property from one generation to the next.

Research on program design shows participants are better served when the curriculum is directly linked to a theory based curriculum framework. Meyer, Boyce, and Meyer (2015), highlighted the importance program development as on-going innovation, using new ideas and procedures in order to strengthen program impacts and improvements in programming. We selected a curriculum design model called the Collaborative Curriculum Framework to bring out new ideas and procedures (see Figure 1). We were familiar with this framework and selected it because of its potential use in addressing family decision making processes.

The Collaborative Curriculum Framework was developed by Reichenbach (2015) from research on transformative learning in a collaborative process. The framework draws on transformative learning theory described by Mezirow (1991) and constructivist learning theory described by Merriam, Caffarella and Baumgartner (2007). Reichenbach found learning occurs when participants reflect on differing viewpoints, and share their reflections in dialogue (2015). Through this process, participants often come to common understanding and take collective action. It is reflection on premise and dialogue that can lead to permanent transformations in meaning and long-term behavior change (Mezirow, 1991) (see Figure 2). The key elements of the Collaborative Curriculum Framework are (a) a program focus, (b) expert knowledge, (c) local knowledge, (d) dialog, (e) deliberation, and (f) reflection. The remainder of this section is organized by each of these elements.

Methods

The objective of our research was to develop a sample curriculum aimed at empowering families to engage in an ongoing succession planning process that leads to the successful transition of participants' landownership, and the land ethic from one generation to the next. We wanted to know what educators with one or more years of experience teaching succession planning might describe as a practice that was essential to participant success.

In 2014, a web-based survey was used to gather information from succession planning educators from across the United States (see <https://z.umn.edu/betterpracticesurvey>). The survey was sent directly to educators most likely to be involved with succession planning and who had one or more years of

experience with teaching this content. To encourage participation, an announcement was placed in newsletters of the Association of Natural Resource Professionals, the National Association of Family and Consumer Sciences, and the National Association for Agricultural County Agents. For the purpose of protecting participants in social science research, the research protocol was reviewed by the investigators' respective home universities' internal review boards (IRB). This research was determined to be exempt from full IRB review.

A modified Listening Guide method, a method of holistically summarizing qualitative data, was used to analyze the data (Gilligan, Spencer, Weinberg, & Bertsch, 2003). The Listening Guide method has four analysis steps which may be used to better understand the participant's story about teaching. These steps include

- Reading the data and finding the participants plot
- Constructing "I" poems from responses that include the pronoun "I"
- Examination for points and counter points
- Composing an analysis

The set of responses from each participant were read for a plot, examined for points and counter points, and analysis notes composed. Finally, themes were developed based on practices educators described in the data (see <https://z.umn.edu/betterpracticetheme>). The data, analysis notes, themes and practices described in the data were then used to develop the sample curriculum (see Table 1). To improve reliability and validity the team met several times to review each other's findings.

Results and Discussion

We received 381 responses to the survey, of these, 158 participants self-reported to have taught succession planning. These 158 responses were used in the analysis. Respondents to the 2014 survey had an average of 10 years of experience. The range in years of experience was from 1 to 37. The most common number of years of experience was 15.

In addition to the number of years of experience teaching succession planning, survey participants responded to the following open ended questions:

- Regarding the workshops you have taught, coordinated, or attended, what observations have you made about the teaching practices that best led landowners to take action towards successful succession planning?
- Please describe two or three practices that you consider vital for conducting a succession planning workshop that lead participants to take action.

Selected responses to these questions are quoted in italics. The Collaborative Curriculum Framework elements are used to organize the discussion.

Program Focus

Identifying a clear focus for the design of the education program was described by respondents as important to attracting and keeping participants engaged. A program focus is the first element of the Collaborative Curriculum Framework. According to Wiggins and McTighe (2006), the program or educational focus should be centered on the big ideas, enduring principles or concepts that need to be learned. For succession planning, the enduring principles that focus on the goal of succession planning

workshops might be elucidated by asking a series of questions. What do you and other family members think is most important, income from the property, or the emotional value? What is the family's connection to the land? Should my woodlands be managed as a business? What is my land ethic? How would I like to see my woodland managed after I pass?

Local Knowledge

Local knowledge is the second element of the Collaborative Curriculum Framework. Local knowledge is the meaning the participant holds about the issue at hand. The meaning may be influenced by exposure to new ideas, reflection on experience; or it may be the meaning we derive from knowing about the issue at hand. Finally, meaning may be an indication of the participant's way of being, as well as how the participant knows things to be true. Allowing participants to express and share meaning about succession planning was reflected in responses to our survey questions. For example one respondent stated,

Every producer thinks their situation is unique, but as they talk with other producers they realize the challenges are similar but may require differing strategies. Knowing this seems to give families a sense of hope.

It is the shared appreciation of the challenges found in succession planning that helps to provide families a sense of hope. Participants can express local knowledge through storytelling. One respondent suggested

Encourage storytelling as a communication method. Storytelling provides a non-threatening mechanism that allows participants to learn from a variety of class members' experiences and to become further aware of their own family members'

views regarding the land. When participants tell a "story," personal experiences and memories regarding them are shared. This process may assist other class participants as they seek, gather, and analyze information when making future land decisions.

Storytelling can facilitate family communication, provide options for families to formulate their vision and goals and help them take advantage of options for land transfer.

According to Peters and Franz (2012), "One of the main ways we make meaning of our lives and experiences, our society and its institutions and the broader natural world we inhabit is by telling and interpreting stories about them" ("Why Stories and Storytelling?" para. 4). Through storytelling, the learner is actively involved, and a natural opportunity exists to learn from others when discussing land transfer options. In addition, storytelling contributes to capturing participant interest and reinforces session content ultimately helping participants engage in the ongoing process of succession planning.

Expert or Research Based Knowledge

Expert knowledge is the third element of the Collaborative Curriculum Framework. Adults learn in a variety of ways. It is important to select techniques and activities that best illuminate the big ideas or enduring truths about the topic (Wiggins & McTighe, 2006). So who or how might research based knowledge be provided to participants in the process of succession planning? The Extension educators we surveyed shared ideas about how experts in the field of succession planning can help. For example,

Guest speakers should have experience working with farm and forest landowners. An additional benefit is if the guest speaker has personal

experience with farm or forest land. . . . Get recommendations and bring in experienced speakers from a distance if needed. Work with them ahead of time and provide an outline of topics so that speakers don't overlap information or try to cover too much, and overwhelm your audience.

Another respondent made this suggestion:

Effective speakers provided general guides but had the ability to answer specific questions of participants. Knowledge of current regulations, options, and tools is mandatory. General vague ideas, concepts or presentations are not effective. If specifics cannot be addressed, the presentation is a waste of time.

Because of the number and complexity of options, several respondents suggested that a workbook containing details about communication, legal and financial options and other aspects of the succession planning process would allow participants to review options after the workshop conclusion.

Dialogue

Dialogue is the fourth element of the Collaborative Curriculum Framework. Dialogue is the process of understanding others points of view. In a family, this can mean bringing out into the open the family members different perceptions about fairness (Jaffe, 1990). Several respondents to our survey suggested that succession planning workshops should encourage participation by the entire family including children. According to Reichenbach, Hagen Jokela, and Sagor (2013), "Consideration of multi-generational perspectives . . . can enrich audience engagement, foster increased understanding of content, and create increased participant awareness of the need for

action” (Implications for Extension, para. 3). When family members are involved in discussions, activities, and storytelling, it is more likely that individual hopes and dreams are realized and considered when deciding a course of action.

Kaplan, Nussbaum, Becker, Fowler, and Pitts (2009, Discussion), state “Family members need opportunities to share individually held views, to explore common goals and values, and move forward together, in establishing shared visions for farm and family.” One respondent offered the following suggestion:

If you can incorporate the succession planning training into a larger program that producers are interested in (such as production topics), you may gain a broader audience with all 3 generations (grandparent, parent, child).

Respondents also suggested methods for incorporating relevant content through dialogue:

- *As for content, tax implications got their attention at first. But then, it was communication skills in family meetings and the nuts and bolts of legal/financial tools they really dove in to. Lastly, we went back to vision and goal setting (because after everything else, they saw the value in describing their vision in terms their heirs would better understand).*
- *We talk about goal setting and it being the groundwork for all of the other topics as they need to know what they want to accomplish before business structures, trusts, wills, and other tools are implemented.*

- *We're using a model of landowners reaching out to peers to introduce the idea of legacy and then directing them to tools. So in that vein we created talking points, tools for starting conversations, forest story cards with a legacy theme, etc.—things that can be used to get the conversation going in a safe place and help landowners reach out to their families with that same dialogic, conversational, reflective, and safe approach.*

Since dialogue is the process of learning others points of view, provide participants time to practice listening skills and facilitate family communication. As educators we have an important role in helping families to communicate. Not all respondents to our survey agree that helping families communicate will lead to successful transfer of land. One participant suggested families that do not communicate are unlikely to engage in the on-going process of succession planning.

Deliberation

Deliberation is the fifth element of the Collaborative Curriculum Framework. Deliberation is the selection of a course of action among competing options. The succession planning process is complex and involves many competing options including integrating personal, interpersonal, financial and legal aspects. Very few of the respondents to the survey said that they focused solely on the traditional estate planning topics of taxes or legal structures, rather the personal and interpersonal aspects of planning—vision and goal setting, communication, and family meetings—were the topics that were seen as “critical” or “essential.” One respondent described a specific deliberation strategy as follows,

We spend as little time as is reasonable in lecture and have the families work on their business succession plans of which estate planning is a subset. . . . The legal tools needed become apparent when the parties identify their priorities, intent, and mission. When discussing estate planning cover only six questions: What do you own? How do you own it? What is it worth? Who do you want to give it to? When do you want them to get it? How do you want them to own it?

Reflection

Reflection is the final element in the Collaborative Curriculum Framework. In terms of transformative learning theory, reflection has a specific meaning. Quoting Reichenbach (2015, p. 4-5)

Mezirow (2000), describes a process of learning that enables adults to make meaning in a world where “the human condition may best be understood as a continuous effort to negotiate contested meanings” (p. 3). Transformative theory is that process. In brief, transformative theory explains the ongoing process of creating meaning from reflection on experience. It is through critical reflection on one’s own perceptions and through dialogue that one’s way of thinking and acting is permanently changed (Taylor, 2008).

In our survey respondents did not place as much emphasis on reflection as they did on dialogue. However, one respondent noted,

Plan time for discussion and reflection. For example, structured concurrent sessions can allow sharing between generations and peers. Participants need to know they are not alone; everyone is dealing with these issues.

Reflection is central to transformative learning and action (see Figure 3). Transformative learning is a permanent change in knowing that may be initiated by the participants

acceptance of other viewpoints, a change in understanding regarding facts, adoption of new ways of doing things, or a change perception (Taylor, 2009) (see Figure 2).

To develop the innovative foundation necessary to design curriculum and implement program activities the Collaborative Curriculum Framework can be a guide (see Table 1). Each element in the framework has a purpose. Identifying a program focus includes identifying the audience and the big ideas that should be taught. For example, in the sample curriculum one of the big ideas we hope participants will explore is the idea that “succession planning is an on-going process of planning” rather than a specific product such as a will or trust. Wills and trusts are options for achieving specific ends and families need to know about these options: this is expert based content. The sharing of local knowledge often expands the participants understanding, because it brings diverse experiences and viewpoints to light. The process of having family members share stories about how they are connected to the property helps all family members develop a clear purpose for engaging in the succession planning process. The reflection and dialogue elements of the framework help the educator facilitate transformation learning: transformational learning requires both elements. In the sample curriculum time is planned for participants to reflect and engage in dialogue. Finally, deliberation is used to help the participants select options for succession planning that will work for them. Because this selection process often happens outside the classroom, providing participants a workbook is one way to allow this selection process to occur after the workshop is over.

Conclusion

Using the Collaborative Curriculum Framework, we developed a sample succession planning curriculum. Educators may replicate this process in their own programs. The steps involve a) surveying participants or reviewing existing programs, b) analyzing results, c) defining a program focus, d) identifying the big ideas that drive participant decisions, e) mapping activities to a theory based framework, f) implementation of the curriculum, g) evaluation and h) revision. The theory based framework we used was the Collaborative Curriculum Framework. This framework is holistic and will help educators develop curriculum for programs where participants are making decisions about multiple options, need to gain common understanding, and need to take collective action. The Collaborative Curriculum Framework provides a means to link the program focus to expert and local knowledge, foster dialogue and deliberation, and incorporate time for reflection. The implementation of programs based on this framework is expected to foster learning, create a permanent change in how participants view the topic and ultimately help change participant action.

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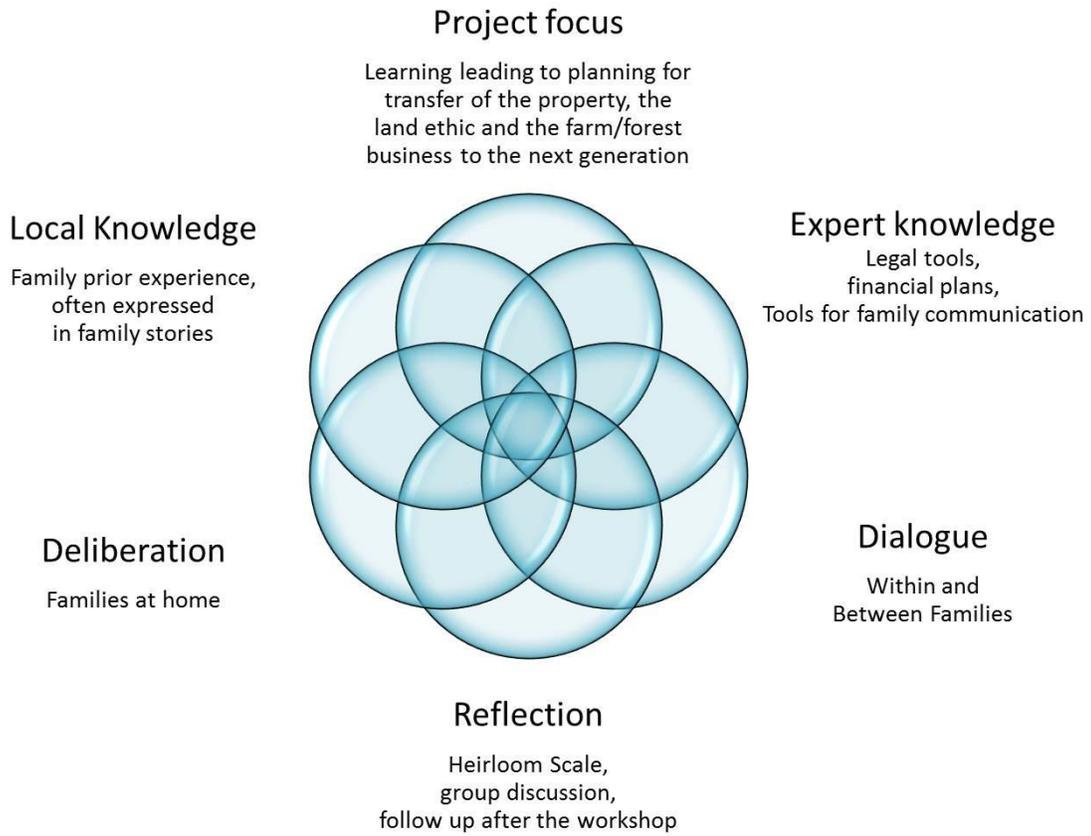


Figure 1. The Collaborative Curriculum Framework

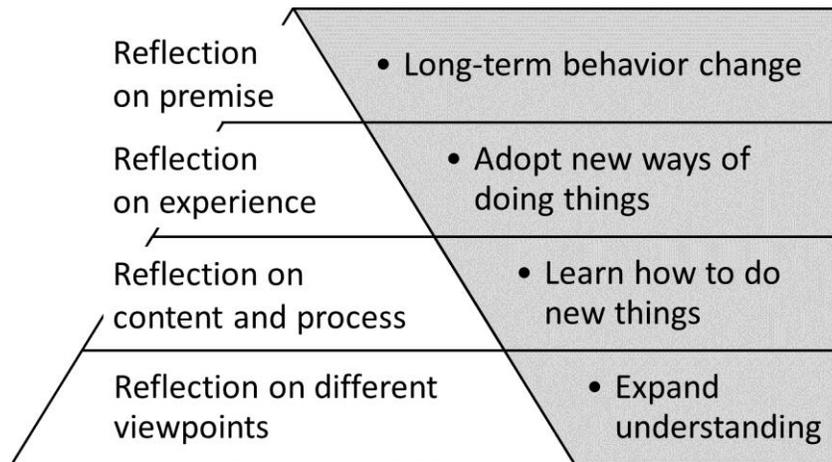


Figure 2. Reflection, Learning and Behavior Change Pyramid: Adapted from Reichenbach (2015). Taking time to reflect has implications for learning and behavior change. It is common to think about or reflect after being exposed to new viewpoints, it is less common to reflect on premise, the why and how of what we know.

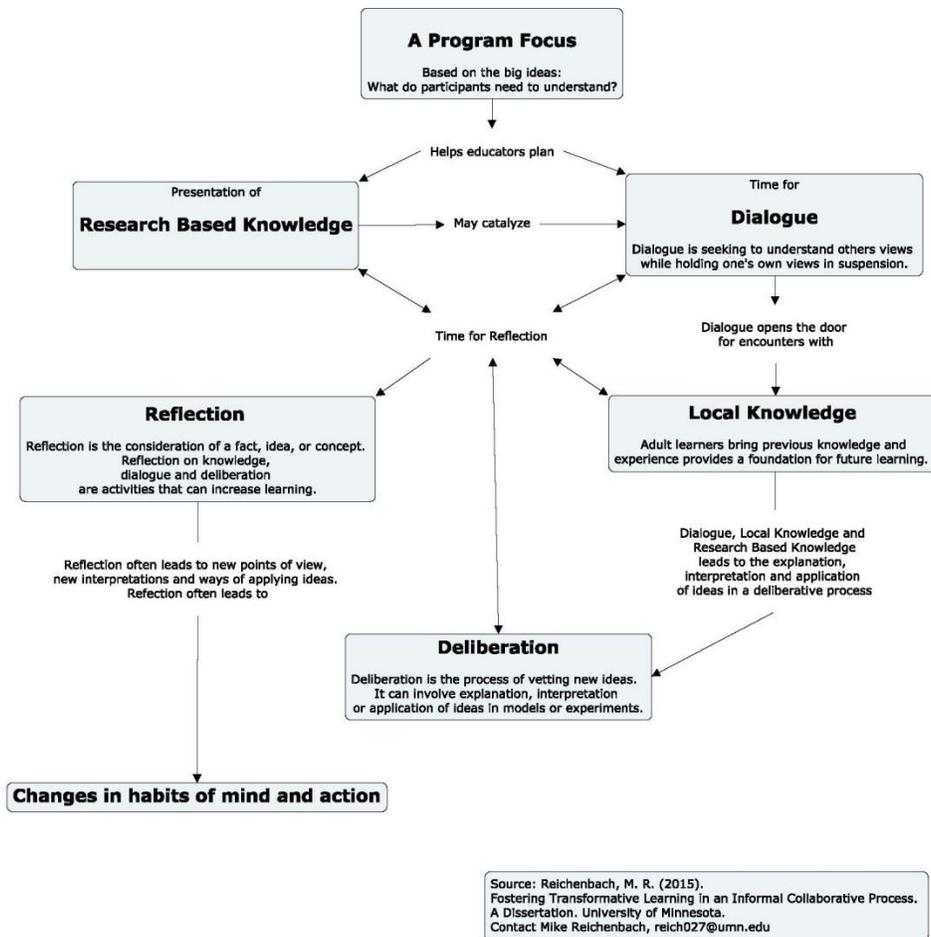


Figure 3. A Flow Diagram for the Collaborative Curriculum Framework

Table 1. Sample Curriculum for Land Transfer Programming

Collaborative Curriculum Element:		What should participants understand	Activity
Project Focus	Desired Results (Wiggins and McTighe, 2006)	<ul style="list-style-type: none"> Participants will engage in the on-going process of planning for the transfer of their property, their land ethic and farm or woodland business to the next generation. Keeping farm and forestland working and intact for future generations. 	Welcome and Introductions Workshop overview
	Big Ideas (Wiggins and McTighe, 2006)	<ul style="list-style-type: none"> Without planning working lands are often subdivided into parcels that are no longer workable. Succession planning is a complex on-going process involving activities, documents and tools (Catanzaro, Rasku, & Sweetser, 2013) 	
	Achievement	<ul style="list-style-type: none"> Participant self-reporting that they have taken action to contact their succession planning team, to write or revise a will, trust or limited liability company papers or other legal instruction for passing the land to the next generation Observing participants engage in communication leading to vision, or goal setting Follow-up questions to the instructors post workshop regarding communication, the land ethic or legal and financial aspects of transfer. 	End of workshop evaluation Follow-up evaluation Phone and email log
Local Knowledge		<ul style="list-style-type: none"> -Family prior experience -Successful family communication -Tools for family communication What does it mean to pass the land ethic to the next generation 	Activity: Sharing of family stories Involving the family (children) in tree planting, land management, family meetings, holding family reunions on the property
Dialogue		<ul style="list-style-type: none"> The importance of how family member's values differ for different family members and may differ for the same family member over time. The concept of equity: equal division of the property is not always fair. Different families may use different legal and financial tools based on circumstances 	Stories as told by participants within the family and sharing among families Dialogue within families Dialogue among families Heirloom scale activity
Reflection		Participant learning occurs when the participant reflects on their own experience, shares their thoughts with others in an iterative process that ultimately leads to behavior change (Reichenbach, 2015).	Homework assignments that use questions to elicit reflection on different ideas, on new ways doing, on others and our own experience and on how we know things to be true.
Expert Knowledge		There are a number of legal and financial tools that may be used to transfer the land to the next generation	Attorney or CPA as a speaker or panelist Extension educator presentations on legal, financial or communication options
Deliberation		The selection of a plan of action from a list of options for succession planning	Within family time to review the options and begin the selection process toward development of a succession plan. This may occur over time, therefore a workbook with the options listed may be helpful. For example Grandma's Yellow Pie Plate (University of Minnesota Extension Service), Ties to the Land (Bentz et al.) and others.

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Best Practices**Healthy Habits, A Way of Life, Wellness Challenge**

Cindy Nelson, Shannon Cromwell, and Gaelyn Peterson

Abstract

Healthy Habits, A Way of Life, is designed to improve the overall wellness of participants. Challenge objectives include: promoting and improving physical and mental health, encouraging proper nutrition and appropriate physical activity, and developing better overall health habits that positively influence quality of life. Healthy Habits is a five-month program that consists of pre and post health assessments, three six-week challenges, face-to-face educational classes, weekly wellness tip emails, and healthy team and individual support and competition. Program participants report an improvement in overall wellness, a reduction of stress, and the development of healthy habits.

Sedentary lifestyles, high obesity rates, rising health care costs, poor nutrition, lack of recreational facilities, and limited income are only a few examples of why research-based wellness programs are vital to helping people improve their quality of life. Unhealthy behaviors often lead to preventable chronic diseases and poor health outcomes (Porchaska et al., 2012; Wolever et al., 2013). Cardiovascular disease is the leading cause of death in adults, along with hypertension and diabetes being prevalent among adults at 22% and 9%, respectively. With nearly \$50 billion dollars a year being spent on weight loss products and services in the U.S. (Crespin, Abraham, & Rothman, 2016; Tallier, Reineke, Fredrickson, 2017; Weiss, Galuska, Khan, & Serdula, 2006), wellness programs are an important tool in helping individuals change their lifestyle patterns in order to prevent chronic diseases and decrease healthcare costs.

Wellness programs grounded in an ecological perspective provide participants with a multi-level approach which includes individual, community, and societal factors (Cook, Foley, & Semeah, 2016). The ecological theory, developed by Bronfenbrenner, purports that individuals are influenced by the environments in which they interact. The individual is embedded within several environmental systems and has interactions within each system from immediate family members and peers to broader contexts such as the community and society (Bretherton, 2009). The community and society systems include settings in which individuals live and work, as well as cultural norms and policies (Kail & Cavanaugh, 2007).

Wellness programs that incorporate an ecological systems approach provide individuals with education and support on an individual, community, and societal level to assist them in achieving their wellness goals, creating healthy lifestyles, and maintaining

healthy behaviors. By providing effective behavior change strategies, Extension professionals can empower individuals to make beneficial health improvements (Hongu, Kataura, & Block, 2011).

Purpose/Objectives

Healthy Habits was developed in response to national health trends using Extension's ability to develop programs for emerging needs. The Healthy Habits program aligns with the Cooperative Extension's National Framework for Health and Wellness with its emphasis on increasing the number of Americans who are healthy at every stage of life (See Figure 1). The Healthy Habits program was a reflection of the National Prevention Strategy that promotes health and wellness in an effort to prevent disease and illness (Braun et al., 2014). Extension faculty recognize the importance of addressing and including individual, community, and societal factors in the program, so peers, local professionals, and relevant health research are incorporated throughout the five month program. The objectives of the Healthy Habits program are: to raise wellness awareness and promote healthy living, develop better overall health habits, encourage healthy eating and appropriate exercise, and positively impact quality of life through improved physical and mental health.

Methods

Healthy Habits, A Way of Life, Wellness Challenge, has been offered for five years in a small rural county with an approximate population of 6,000 people. Each year the program is advertised throughout the county using newspaper, social media, flyers, email, etc. Each year, about 50 people register ranging in age from 12 to 70, with the

largest percentage being women age 40-50. Overall health and wellness of individual participants varied greatly.

Healthy Habits is a five month program that begins and ends with pre and post physical health assessments. Local emergency medical technicians (EMTs), with their specialized skills and need for continued training, are a vital asset as they assist in completing clinic assessments for all participants: weight, heart rate, oxygen saturation, blood pressure, blood glucose level, aerobic capacity, pushups, grip strength, flexibility, body fat percentage, skeletal muscle percentage, visceral fat measure, and body mass index (BMI). The physical assessments provide participants with baseline data to assess their overall health, discover health deficiencies, and track progress throughout the program.

Participants track their daily habits during three six-week challenges (See Tables 1, 2, & 3). The challenges encourage participants to improve their daily wellness habits by recording points earned for each task completed. Participants receive an email each Monday morning that includes a google doc link to report their weekly score, along with a wellness tip, healthy recipe, and recognition of previous week's winners.

Specific wellness topics are taught by Extension professionals during the three face-to-face educational classes, i.e. how to best track food, types of physical activity (aerobic, strength training, stretching), fruit and vegetable recommendations and serving sizes, community wellness resources, reading food labels, etc. These classes allow participants to receive social support from others working towards health improvements, learn new information, and celebrate progress through recognition and awards. Various wellness topics (e.g. mindfulness, benefits of water, meditation, sleep,

healthy snacks, mental health, etc.) are provided through weekly emails to participants that increase knowledge and understanding of research-based wellness approaches.

Post health assessments are completed after the 18-weeks of challenges and pre and post data is compared and evaluated. Individuals and teams earning the most points and making the most progress are awarded prizes during the final meeting to recognize successful changes.

Results

Using pre and post assessment data and an Institutional Review Board (IRB) approved Qualtrics survey, the following impacts were identified:

- 53% percent of participants reported weight loss (average of 3 lbs. per person)
- Reported reduction of stress levels due to healthy lifestyle choices and behaviors
- Pre-diabetes eliminated (as confirmed by physician and reported by one participant)
- Participants exercising 30 minutes a day increased from 13% to 40%
- 77% percent reported eating a healthy breakfast as Good/Excellent, showing an increase of 26%
- Sleep habits of 7-9 hours increased 22%
- Perceived overall wellness improved significantly (See Figures 2 & 3)
- 79% percent of participants increased daily water consumption
- 63% percent of participants indicated that the program was VERY VALUABLE in helping them meet their wellness goals

Qualitative data was collected through participant statements that indicated overall health benefits gained from participation in the Healthy Habits program:

- *“Weight loss, gained muscle, lowered cholesterol and lowered blood pressure.”*
- *“Lower visceral fat, higher skeletal muscle %.”*
- *“More energy, positive attitude, better food choices.”*
- *“Developed new habits.”*
- *“I feel stronger and more committed to maintaining a healthy lifestyle.”*

Additional data was collected to determine knowledge gained from participation in the program. Participants shared the following statements concerning their increase in knowledge:

- *“I can do whatever I set my mind to. A goal not written is only a wish. It doesn't get done.”*
- *“To be more thoughtful and conscious about my lifestyle choices and their results.”*
- *“Health is more than just physical. To be well, we have to take care of mind body and spirit.”*
- *“The weekly email taught me a lot on how to be a better person.”*
- *“Healthy habits are not all about weight loss but lead to overall wellness.”*
- *“The more you focus on being healthy it comes easier.”*

Summary

Using the National Prevention Strategy as a guide and following the Cooperative Extension's National Framework for Health and Wellness, the Healthy Habits, A Way of Life program was developed to assist people in improving their quality of life. The program offers challenges, informational classes, wellness tips, team and individual

support and competitions to encourage participants to increase their overall wellness, reduce stress levels and develop healthy habits. Pre and Post physical health assessments are used to measure outcomes. As a result of participating in this program, participants reported weight loss, reduction of stress levels, increase in exercise frequency, improved nutrition, healthier sleep habits and an improvement in perceived overall wellness. Participants report the program was very valuable in helping them meet their wellness goals.

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Figure 1.
Based on the National Prevention Strategy Action Plan, U.S. Department of Health & Human Services

Cooperative Extension's National Framework for Health & Wellness

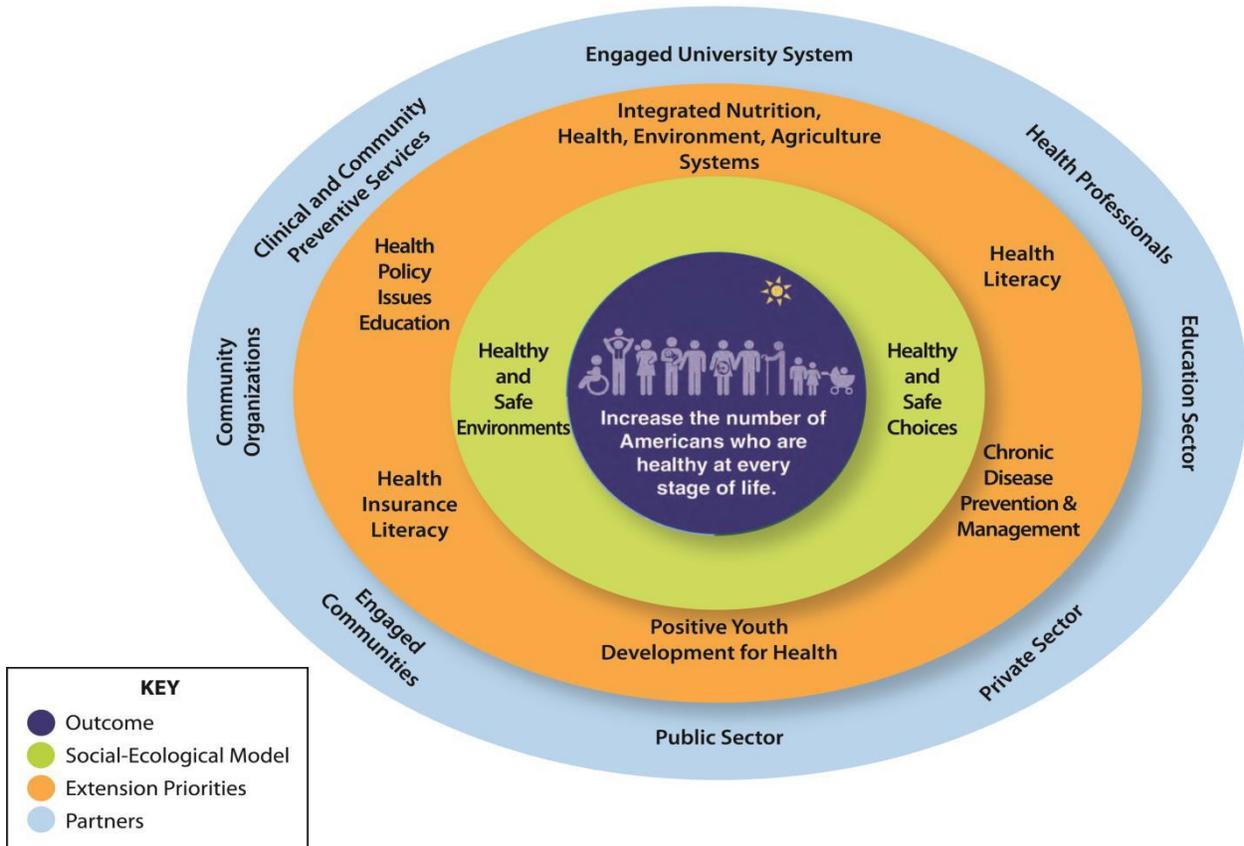


Table 1.

WEEK ONE	Mon. Jan. 16	Tue. Jan. 17	Wed. Jan. 18	Thur. Jan. 19	Fri. Jan. 20	Sat. Jan. 21
Drink 64 oz. water						
Physical Activity for 30 minutes						
No cell phone use while driving						
Read/Meditate (10 min/positive)						
DAILY TOTAL						

Table 2.

WEEK ONE	Mon. Feb. 27	Tue. Feb. 28	Wed March 1	Thur. March 2	Fri March 3	Sat March 4
7-9 hours of sleep						
30 minutes exercise, +10 minutes stretching						
Eat 3 servings each of fruits and vegetables						
Give someone a compliment						
DAILY TOTAL						

Table 3.

WEEK ONE	Mon. April 24	Tue. April 25	Wed. April 26	Thur. April 27	Fri. April 28	Sat. April 29
Eat a healthy breakfast						
Physical activity 1 point for 7,500 steps 2 points for 10,000 steps						
Do 10 push-ups						
<i>Record two things you are grateful for each day</i>						
Challenge of Choice						
DAILY TOTAL						

Figure 2.
Participants perceived overall wellness level improved dramatically as reported in a Qualtrics survey of the Healthy Habits program.

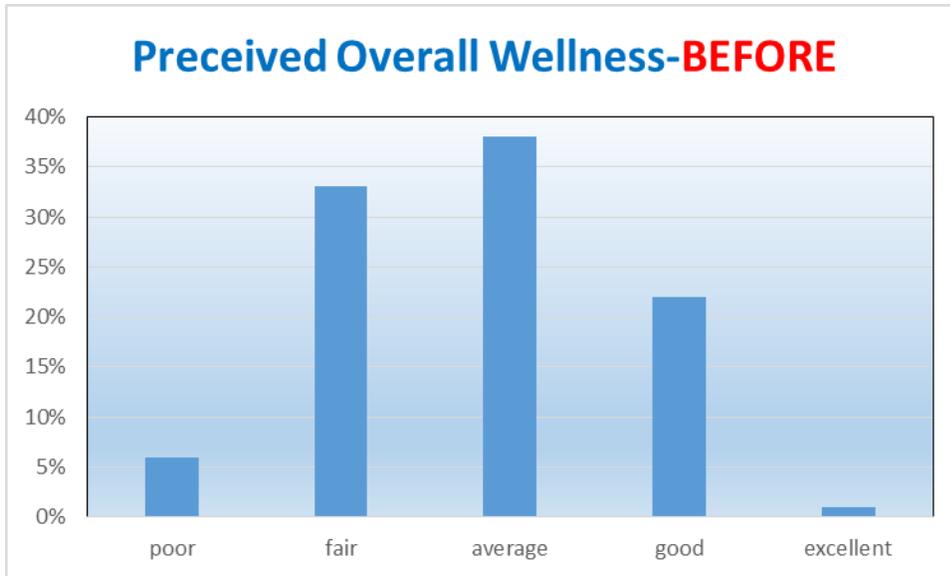
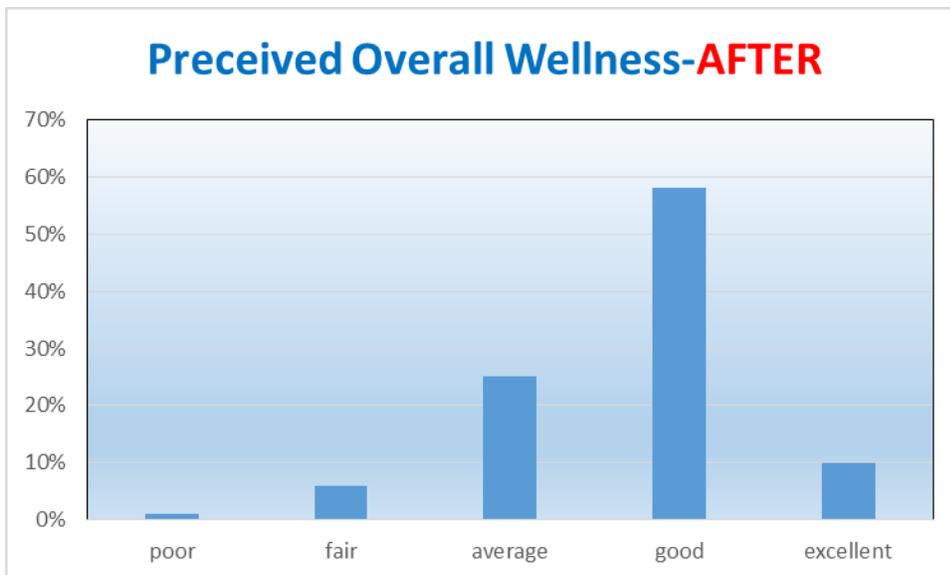


Figure 3.



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BEST PRACTICES

Evaluating the Effectiveness of the SNAP-Ed *CREATE* Curriculum

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ABSTRACT

The *CREATE* Curriculum was developed by the Utah SNAP-Ed program to increase nutrition and physical activity related knowledge, skills, and self-efficacy among low income individuals in effort to prevent obesity and chronic diseases. The objective of this study was to assess intention to change and actual behavior change of participants after attending SNAP-Ed classes that utilized the *CREATE* Curriculum. The results of this study suggest that the *CREATE* Curriculum is an effective nutrition education tool for improving select nutrition-related behaviors associated with a reduced risk of obesity and chronic diseases among SNAP-Ed participants.

The Supplemental Nutrition Assistance Program – Education (SNAP-Ed) uses evidence-based nutrition education and obesity prevention strategies to initiate nutrition-related behavior change among low-income individuals. The goal of SNAP-Ed is to educate low-income individuals to make “healthy food and lifestyle choices that prevent obesity” (United States Department of Agriculture [USDA], 2016). SNAP-Ed programming has been found to improve food security, increase fruit and vegetable intake, and intention to change a variety of nutrition-related behaviors (Rivera, Maulding, Abbott, Craig, & Eicher-Miller, 2016; Savoie et al., 2015). However, more research is needed to determine long-term changes in overall dietary patterns and healthy lifestyle choices of individuals after receiving nutrition education (Molitor, Sugerman, & Sciortino, 2016; Savoie et al., 2015).

Low-income Americans experience many barriers that make it difficult to prepare healthy meals at home, including lack of time, limited access to and cost of nutritious foods, and lower confidence in their ability to create meals with what is available to them (AbuSabha, Namjoshi, & Klein, 2011; Aggarwal, Monsivais, Cook, & Drewnowski, 2011). As a result, SNAP participants report purchasing large quantities of prepared foods and calorie-dense processed foods (USDA, 2012). Utah’s SNAP-Ed program has developed an innovative curriculum, *CREATE*, which aims to help participants overcome these barriers by increasing knowledge, skills, and self-efficacy with purchasing and creating healthful meals. *CREATE* teaches participants general recipes that can be easily adjusted to include ingredients they have on hand. These skills increase participants’ confidence, subsequently improving the likelihood that they will make sustained healthier food choices (Burton, Reid, Worsley, & Mavondo, 2017).

OBJECTIVES

To date, no study has determined if participation in SNAP-Education classes that utilize the *CREATE* curriculum are associated with short-term or long-term nutrition-related behavior change. The objective of this study was to evaluate the effectiveness of the *CREATE* curriculum on participants' progression from intent to change nutrition-related behaviors to long-term healthy eating patterns.

METHOD

The *CREATE* Curriculum, developed by the Utah SNAP-Education program, was used for all SNAP-Education nutrition education classes that were offered to low income individuals across the state of Utah. A convenience sample of SNAP-Education participants was surveyed in 2014 and 2015. Data were collected through three survey tools including: class participant survey, six-month follow up survey, and the six-class follow up survey, each of which is discussed in detail below. This study was approved by the Institutional Review Board at Utah State University and was funded by the Utah State University Extension.

All SNAP-Education participants who attended a SNAP-Education class during the study period were asked to complete the class participant survey at the end of class. This survey included basic demographic information regarding income eligibility, age, gender, race, ethnicity, number of people in the household, and participation in nutrition assistance programs. Through a retrospective pretest posttest survey design, participants were asked seven questions related to their nutrition-related behaviors prior to taking SNAP-Education classes and their intention to change behaviors after attending a SNAP-Education class.

Participants were also asked to provide their email address or phone number if they were willing to complete the six-month follow up survey. For those participants who agreed, they were contacted via email or phone six months later. The six-month follow up survey included the same basic demographic questions as the class participant survey and 20 nutrition-related behavior change questions formatted in a retrospective pretest posttest design. Participants who completed this survey were entered into a drawing for a kitchen appliance valued at \$250.

Participants received a punch card after their first SNAP-Ed class to track the number of classes they attended over the study period. Once participants attended six SNAP-Ed classes, they were provided with a link and contact information to either take the six-class follow up survey online or over the phone with a SNAP-Ed employee. In addition to the previously listed demographic questions, this survey included 20 questions about current nutrition and physical activity behaviors, which were different than the questions included in the class participant survey and the six-month follow up survey. Participants who completed this survey received a small kitchen appliance valued up to \$20.

Data were compiled and entered in SPSS 21.0 for data analysis. Mean, median, standard deviations, and interquartile range were reported. Retrospective pretest posttest questions were analyzed using the Wilcoxon Signed Rank test and reported using P-values.

RESULTS

A convenience sample of SNAP-Ed participants completed the class participant survey (n=6,825), six-month follow up survey (n=249) and six-class follow up survey (n=168). Demographic characteristics of participants are found in Table 1. The majority of participants in each survey were non-Hispanic white females with ages ranging from 18 years old to over 60 years of age. Most participants who completed the class participant survey and the six-month follow up survey reported either receiving assistance or being eligible to receive assistance benefits such as SNAP, food pantry, WIC, among others.

Table 2 includes the medians, interquartile ranges, and P-values of the seven retrospective pretest and posttest questions from the class participant survey. Pretest and posttest responses from each individual were compared to determine if intention to change select nutrition-related behaviors improved after attending a SNAP-Ed lesson. The median response of each question significantly increased ($P < .001$) from pretest to post test. Table 3 includes the medians, interquartile ranges, and P values of the retrospective pretest and posttest questions from the six-month follow up survey. Pretest and posttest responses from each individual were compared to determine if nutrition-related behaviors improved six months after receiving SNAP-Ed nutrition education. The median response of each question significantly increased ($P < .001$) from pretest to posttest. Participants reported an intention to improve all nutrition-related behaviors surveyed in the class participant survey. Furthermore, participants reported

actually changing those same nutrition-related behaviors in the six-month follow up survey.

Table 4 includes questions from the six-class follow up survey regarding self-reported changes in nutrition-related behaviors of SNAP-Ed participants who participated in at least six classes. On average, participants agreed that after participating in SNAP-Ed classes they eat more whole grains and healthier fats and fewer refined grains, saturated fat, and processed foods. Participants also reported following the MyPlate recommendations of making half the plate fruit and vegetables.

DISCUSSION

Low-income Americans are at an increased risk of food insecurity and poor dietary patterns, which are associated with higher rates of obesity, type II diabetes and heart disease (Martin & Ferris, 2007; Townsend, Peerson, Love, Achterberg & Murphy, 2001; Darmon & Drewnowski, 2008). Nutrition education strategies that increase food security and nutrition knowledge have the potential to play an important role in improving eating habits that are associated with a reduced risk of obesity (Jessri, Lou & L'Abbe, 2016; Slavin & Lloyd, 2012). Results from this study demonstrate that the *CREATE* curriculum, is an effective nutrition education tool for improving self-reported behaviors associated with a reduced risk of obesity among SNAP-Ed participants. This study reveals a relationship between exposure to the *CREATE* curriculum and self-reported improvements in food security, increased occurrence of family mealtime, and more time spent being physically active. Participants also reported significant

improvements in following the MyPlate recommendations of making half the plate fruits and vegetables and replacing refined grains with whole grain options.

Results of this study are consistent with the limited number of studies that have been published on SNAP-Ed programming. While the *CREATE* curriculum provides a unique cooking-skills approach that emphasizes using foods on hand to create healthy meals, all SNAP-Ed programs have the same goal of improving dietary and lifestyle choices that prevent obesity among the SNAP-Ed eligible audience (USDA, 2016). Several studies suggest that SNAP-Ed is effective at achieving these goals. Previous research on the Utah SNAP-Ed program demonstrated a positive impact on participants' intent to improve nutrition and physical activity related behaviors (Savoie et al., 2015). A study conducted among California SNAP-Ed participants found an increase in fruit and vegetable intake after exposure to a variety of SNAP-Ed interventions (Molitor, Sugerman & Sciortino 2016). SNAP-Ed programming in Indiana was found to improve long-term food security status among households that had one adult receive SNAP-Ed education (Rivera et al., 2016). The current study builds upon the previous literature demonstrating that SNAP-Ed participants in Utah experience sustained improved nutrition-related behaviors and food security at several points post-intervention (Savoie et al., 2015). It also suggests that the *CREATE* curriculum may be an effective way to teach low income individuals about how to make the healthy choice, the easy choice.

Despite the strengths of this study, a study limitation is the inability to match participants' responses throughout the three survey periods. This eliminates the ability to track individual progression from intent to change to long-term behavior change

implementation. Participants in the study self-reported their dietary and physical activity behavior changes which introduces the potential for social desirability bias. There is a discrepancy between the sample sizes among participants who started and those who completed the class participant survey. Nutrition education classes were provided to refugees during the study period. It is possible that a language barrier inhibited some participants from completing the entire survey. Improved methods for collecting surveys from SNAP-Ed participants who have a language barrier are currently in progress. There may be other reasons why some participants did not complete the entire class participant survey. For example, this was the only survey conducted during the study period where participants did not receive an incentive, which may have impacted their interest and motivation for completing the survey.

The findings of this study have strong implications for the future nutrition education of low-income Americans. The *CREATE* curriculum offers educators an alternative model for teaching low-income populations how to successfully implement the Dietary Guidelines for Americans. Further evaluation of the *CREATE* curriculum will be conducted to assess the impact of the teaching strategies not only on sustained behavior change, but also on the long-term health status of its participants.

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Table 1. Demographic Characteristics of SNAP-Ed Participants from Three Surveys

Demographics	Class Participant Survey (n= 6,825)	Six Class Follow Up Survey (n=168)	Six-Month Follow Up Survey (n=249)
Gender			
Female	79%	81%	92%
Age			
18-34 years old	38%	30%	52%
35-59 years old	40%	50%	40%
60 or older	22%	20%	8%
Race			
American Indian/Alaska Native	5%	3%	1%
Asian	2%	2%	2%
Black/African American	2%	1%	3%
Native Hawaiian or Pacific Islander	1%	1%	1%
White	90%	88%	93%
Ethnicity			
Non Hispanic	87%	74%	92%
Receive SNAP Benefits			
Yes	34%	24%	57%
Eligible for SNAP Benefits			
Yes	47%	---	49%
Receive Other Assistance			
Yes	41%	32%	43%
Eligible for Other Assistance			
Yes	35%	---	36%
Satisfied with Food \$ense Classes	1%	----	---
Not Satisfied	1%		
Somewhat Satisfied	5%		
Moderately Satisfied	37%		
Very Satisfied	56%		
Extremely Satisfied			

Table 1. Demographic Characteristics of SNAP-Ed Participants from Three Surveys

Demographics	Class Participant Survey (n= 6,825)	Six Class Follow Up Survey (n=168)	Six-Month Follow Up Survey (n=249)
Gender			
Female	79%	81%	92%
Age			
18-34 years old	38%	30%	52%
35-59 years old	40%	50%	40%
60 or older	22%	20%	8%
Race			
American Indian/Alaska Native	5%	3%	1%
Asian	2%	2%	2%
Black/African American	2%	1%	3%
Native Hawaiian or Pacific Islander	1%	1%	1%
White	90%	88%	93%
Ethnicity			
Non Hispanic	87%	74%	92%
Receive SNAP Benefits			
Yes	34%	24%	57%
Eligible for SNAP Benefits			
Yes	47%	---	49%
Receive Other Assistance			
Yes	41%	32%	43%
Eligible for Other Assistance			
Yes	35%	---	36%
Satisfied with Food \$ense			
Classes	1%	----	---
Not Satisfied	1%		
Somewhat Satisfied	5%		
Moderately Satisfied	37%		
Very Satisfied	56%		
Extremely Satisfied			

Table 2. *Intention to Change Nutrition-Related Behaviors in Adult SNAP-Ed Participants in Utah (n=5,275)*

Class Participant Survey	Retrospective Pretest	Retrospective Posttest	P-Value
	Median (IQR)	Median (IQR)	
Questions^a			
*Stretch my food dollars so there is food to last all month	4 (3, 5)	4 (4, 5)	<.001
*Shop with a grocery list	4 (3, 5)	4 (4, 5)	<.001
*Prepare meals at home at least three times a week	4 (3, 5)	5 (4, 5)	<.001
*Eat meals together as a family at least three times a week	4 (3, 5)	4 (3, 5)	<.001
*Choose to be physically active for 30 minutes 5 days a week	3 (2, 4)	4 (3, 5)	<.001
Choose whole foods based on MyPlate recommendations	4 (3, 5)	4 (4, 5)	<.001
Follow USDA food safety recommendations			

SNAP-Ed is the Supplemental Nutrition Assistance Program-Education; IQR is the interquartile range.

P < 0.05 is considered significant.

^aValues are median and interquartile range from a Likert scale (1=never, 2= seldom, 3= sometimes, 4= usually, 5= always). Comparisons performed using Wilcoxon signed-rank test.

*Questions were asked on the class participant survey and the 6-month follow up survey

Table 3. *Self-Reported Nutrition-Related Behavior Change in Adult SNAP-Ed Participants in Utah (n=249)*

Six-Month Follow Up Survey	Retrospective Pretest	Retrospective Posttest	P-Value
	Median (IQR)	Median (IQR)	
<i>Questions^a</i>			
*Stretch my food dollars so there is food to last all month	4 (2, 5)	4 (4, 5)	<.001
*Shop with a grocery list	4 (3, 4)	4 (4, 5)	<.001
*Prepare meals at home at least three times a week	5 (4, 5)	5 (4, 5)	<.001
*Eat meals together as a family at least three times a week	4 (3, 5)	5 (4, 5)	<.001
*Choose to be physically active for 30 minutes 5 days a week	3 (2, 4)	4 (3, 5)	<.001
Plan a menu before shopping	3 (2, 4)	4 (3, 4)	<.001
Make food purchases based on the nutrition facts panel	4 (3, 5)	4 (4, 5)	<.001
Eat breakfast within 2 hours of waking	3 (2, 4)	4 (3, 5)	<.001
Eat at least 2 ½ cups of vegetables a day	3 (2, 4)	4 (3, 4)	<.001
Eat at least 2 cups of fruit a day	3 (3, 4)	4 (3, 5)	<.001
Eat more whole grains than refined grains			

SNAP-Ed is the Supplemental Nutrition Assistance Program-Education; IQR is the interquartile range.

P < 0.05 is considered significant.

^aValues are median and interquartile range from a Likert scale (1=never, 2= seldom, 3= sometimes, 4= usually, 5= always). Comparisons performed using Wilcoxon signed-rank test.

*Questions were asked on the class participant survey and the six-month follow up survey

Table 4. Six-Class Follow Up Survey-Self-Reported Changes in Nutrition-Related Behaviors As a Result of Receiving a Series of SNAP-Ed Nutrition Education Lessons (n=168)

Level of Agreement	Mean (SD)
Eating more whole grains such as brown rice and whole wheat pasta	3.8 (.03)
Eating less refined grains such as white rice and white pasta	3.7 (.97)
Replaced saturated fats such as butter and margarine with healthier fats found in olives, avocados and oils	3.7 (.99)
Eating less processed foods such as frozen and boxed meals	4.0 (.82)
Following MyPlate by filling ½ my plate with fruits and vegetables	3.7 (.92)

Note. SNAP-Ed indicates the Supplemental Nutrition Assistance Program-Education; SD indicates standard deviation.

^aValues are mean ± sd points from a Likert scale (1= strongly disagree, 2= disagree, 3= neither agree nor disagree, 4= agree, 5= strongly agree).

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