

Home and Family Perspective:
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Nutrient Content of Foods Selected by Students in Iron County Middle Schools

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Abstract

The purpose of this study was to examine how the nutrient content of food selected by middle school students in Iron County School District compared to the Recommended Dietary Allowances published by the United States Department of Agriculture. Six trained coders observed students as they made food selections from the cafeteria lines at each middle school, recording selections made by each student. Coders also indicated gender for each student. Data were analyzed using SPSS 13.0 for Windows. Students who selected foods from the regular lunch line, as opposed to the à la cart line, received meals that more closely matched the RDAs. There was also a significant difference between nutrients in foods selected based on gender.

Introduction

The National School Lunch Program (NSLP), administered by the Food and Nutrition Service of the United States Department of Agriculture (USDA), feeds more than 30.5 million students each day. Meals served as part of the NSLP must meet the 1995 Dietary Guidelines for Americans which recommend that less than 30 percent of calories come from fat, and no more than 10 percent come from saturated fat. Lunches served as part of the NSLP must also provide one-third of the Recommended Dietary Allowance (RDA) of protein, Vitamin A, Vitamin C, iron, calcium and calories (USDA, 2008). Table 1 (USDA, 2007) summarizes nutrient and calorie level requirements of the NSLP for students in secondary schools.

Table 1. Minimum nutrient and calorie levels for school lunches (school week averages).

Nutrient	Grades 7-12
Calories (kcal)	826
Protein (g)	16
Calcium (mg)	400
Iron (mg)	4.5
Vitamin A (μ g)	300
Vitamin C (mg)	18
Total fat (g)	Not to exceed 30% over school week
Saturated fat (g)	Not to exceed 10% over school week

While the USDA requires schools meals to meet these nutrient requirements, competitive foods (any food sold in competition with the NSLP) may be sold as long as foods of “minimal nutritional value” are not sold in the cafeterias during meal times (USDA, 2007). States may pass additional legislation that is more restrictive than the NSLP but Utah has passed no such legislation (USDA, 2002). A 2009 research project found that competitive foods are sold in 97% of middle schools and that à la carte foods are available in 67% of middle school cafeterias in the United States (Fox, Gordon, Nogales, & Wilson, 2009). Koplan, Liverman and Kraak (2005) reported that many competitive foods sold in schools are high in calories and low in nutritional value. According to Briefel, Crepinsek, Calili, Wilson, and Gleason (2009) students attending a middle school with à la carte offerings consumed 52 calories more each day than those attending a comparable school with no à la carte offerings. Over the course of one school year, this difference could add up to a weight gain of 2.67 pounds. In Iron County School District (ICSD) middle schools competitive foods are sold in the à la carte line during the lunch period.

Obesity has become an epidemic in the United States and children and youth are not exempt from this problem (Story, Nanney, & Schwartz, 2009). School lunch portion sizes are designed to meet not only macro- and micronutrient needs, but to also meet caloric needs (USDA, 2008). When schools use the “offer versus serve” option of the NSLP, a meal must contain a minimum of three menu options. Secondary students must select at least two menu items and may decline a maximum of two foods (USDA, 2008) allowing for large differences in nutrient and calorie intake between students. Research has shown that nutrient intake varies significantly between males and females (Galloway, 2007; Lowry, Lee, McKenna, Galuska, & Kann, 2008). Mendoza, Drewnowski, Cheadle, & Christakis (2006) reported that males consumed more energy-dense diets than females. While some difference in energy and nutrient intake is appropriate based on gender-specific requirements, both genders should meet the RDAs.

Objectives

This study was conducted to examine the nutrient content of foods selected by students in two schools in ICSD, located in rural Utah, and compare them to the guidelines established for the NSLP. The research questions were:

- (1) Is the nutrient content of regular meals different than the à la carte meals selected by students in ICSD?
- (2) Is there a difference between the nutrient content of the meals selected by students in ICSD middle schools based on gender?
- (3) Is there a difference between percentage of RDA of key nutrients in menu items selected by middle school students in ICSD?

Methods

Permission to conduct the study was obtained from the superintendent, the school principals, and the district food service director. The study was also approved by Southern Utah University's Institutional Review Board for Research on Human Subjects. Two middle schools in ICSD were selected for this study. Each school was visited for three randomly selected days and food selected by students eating school lunch were recorded by trained coders. The gender of each student was also recorded. In order to determine individual students' intake, a unique spreadsheet was created for each day based on daily menus provided by the district food service director. Students were identified only by a sequential number based on the order in which they came through the lines.

Nutrient analysis of the menu items was conducted by ICSD food service personnel using WinSnap, a computer-based nutrient analysis program approved by the NSLP. All nutrients with specific requirements in the NSLP were included in the analysis; this included calories, protein, total fat, saturated fat, Vitamin A, Vitamin C, iron, and calcium. The Statistical Package for Social Sciences 13.0 for Windows was used to compare the nutrient content of foods selected by students with the students' recommended nutrient intake. T-tests were used to examine differences between groups.

Findings

The sample for this study consisted of 2,903 meals served to ICSD middle school students over the course of six days. The number of males (n=1454) and females (n=1449) in the sample were essentially equal. The majority of students purchasing lunch at school made selections from the regular line (n=2138) while only 765 students choose foods from the à la

carte line. As shown in Table 2, there was a difference in nutrient content between foods selected from the regular line and à la carte line for all nutrients except total fat. Menu selections from the regular line had more of the nutrients for which consumption is encouraged while the à la carte line had more foods that were low-nutrient, energy-dense.

Table 2. Difference in nutrient content between regular and à la carte menu items.

	Meal type	N	Mean	<i>P</i> -value (2-tailed)
Energy (kcal)	Regular	2138	840.69	<0.001
	À la carte	765	578.38	
Protein (g)	Regular	2138	26.91	<0.001
	À la carte	765	15.41	
Total fat (g)	Regular	2138	28.30	0.403
	À la carte	765	28.74	
Sat fat (g)	Regular	2138	10.02	<0.001
	À la carte	765	9.03	
Calcium (mg)	Regular	2138	364.78	<0.001
	À la carte	765	75.94	
Iron (mg)	Regular	2138	5.55	<0.001
	À la carte	765	2.31	
Vit A (µg)	Regular	2138	1372.10	<0.001
	À la carte	765	234.11	
Vit C (mg)	Regular	2138	18.12	<0.001
	À la carte	765	2.55	

As shown in Table 3, there was a difference in nutrient content of meals selected for all nutrients based on gender. Females selected meals that were lower in calories, protein, calcium, and iron

but higher in vitamins A and C when compared to males. When nutrient content between genders was compared using percentage of RDA (based on gender-specific requirements), these differences were still found to be significant for all nutrients except total and saturated fat.

Table 3. Difference in nutrient content between food items selected by gender.

	Gender	N	Mean	P-value (2-tailed)
Energy (kcal)	Male	1454	803.89	<0.001
	Female	1449	739.14	
Protein (g)	Male	1454	25.04	<0.001
	Female	1449	22.72	
Total fat (g)	Male	1454	29.62	<0.001
	Female	1449	27.21	
Sat fat (g)	Male	1454	10.15	<0.001
	Female	1449	9.37	
Calcium (mg)	Male	1454	308.54	<0.001
	Female	1449	268.72	
Iron (mg)	Male	1454	4.90	<0.001
	Female	1449	4.50	
Vit A (µg)	Male	1454	1006.02	0.020
	Female	1449	1138.64	
Vit C (mg)	Male	1454	12.92	0.012
	Female	1449	15.12	

The average nutrient content of the food selections made by students in middle schools in ICSD recorded over a six-day period were compared to the nutrient recommendations for school

lunches as endorsed by the NSLP as seen in Table 4. The researchers acknowledge that comparison of group intakes should not typically be compared to the RDA since mean intakes at or above the RDA do not ensure that the prevalence of inadequacy is low (Murphy, Guenther and Kretsch, 2006). However, since the NSLP uses the RDA as its standard, this study used the RDAs. The standard deviation for vitamins and minerals is assumed to be between 10 to 15% (Murphy et al., 2006) so 85% of the RDA was considered to meet nutrient requirements. Data analysis revealed that students who made lunch selections from the regular line met the RDA for all nutrients. Students who chose foods from the à la carte line, however, were deficient in calories, calcium, iron, and vitamin C; they also received too much total and saturated fat. Students who selected foods from the regular lunch lines as opposed to the à la carte line had, on average, meals that were higher in protein, vitamins, and minerals and lower in total and saturated fat. The protein content of foods selected from the regular line far exceeded the RDA.

Table 4. Comparison of food selections from regular and à la cart lines based on percentage of RDA.

	Regular line (n=2138)	À la carte line (n=765)	Sig (2-tailed)
Calories (% RDA)	101.90	70.11	<0.001
Protein (% RDA)	168.18	96.30	<0.001
Calcium (% RDA)	91.19	18.99	<0.001
Iron (% RDA)	123.38	51.32	<0.001
Vitamin A (% RDA)	457.37	78.04	<0.001
Vitamin C (% RDA)	100.67	14.16	<0.001
Total fat (% RDA)	100.25	146.18	<0.001
Saturated fat (% RDA)	108.37	140.47	<0.001

Summary

This study revealed major differences in nutrient content of foods from the different lines. Foods from the regular line were higher in nutrients whose intake is encouraged while foods from the à la carte line were higher in nutrients that should be consumed in moderation. Foods from the regular line were higher than necessary in protein and vitamin A while foods selected from the à la carte line were higher than recommended for good health in total and saturated fat. In ICSD competitive foods are not providing the same high quality nutrition that students consuming foods from the NSLP are receiving.

Research has suggested that strategies that help combat the development of diet-related diseases such as obesity, diabetes, and heart disease are most effective when begun in childhood (Nicklas, Demory-Luce, Yany, Baranowski, Zakeri, and Berenson, 2004). Schools are one of the primary vehicles for reaching the nation's youth and can play a vital role in the helping to establish healthy dietary habits, habits that are likely to be carried into adulthood (Koplan et al.,2005).

A major difference exists between the nutrient intake of students who eat from the regular line and those who eat from items from the à la carte line. This presents a challenge for schools. Foods served in the regular line are a part of the NSLP, are reimbursable, and must meet strict dietary guidelines. Foods served in the à la carte line do not need to meet such strict dietary guidelines and are typically a source of revenue for schools. Income from competitive foods may be used by the school to support approved student organizations and sports programs (USOE, 2009). Schools have become dependent on this revenue, making it difficult to make changes that would be in the best interest of the nutritional status of students because administration is concerned about the financial bottom line.

Family and consumer sciences teachers have the opportunity to play a key role in helping school personnel and parents understand the relationship of dietary habits and health and open the discussion of using non-food-related fund raising opportunities to generate funds needed to support school curriculum and activities.

Limitations and Assumptions

There was no attempt made to ascertain the actual amount of food consumed by each student; all results are based on the assumption that students ate all food they selected and put on the tray. It was also assumed that six days worth of food choices would provide sufficient information to identify nutrient deficiencies or excesses in food selections made by students.

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**Building competent, caring, and contributing middle-school youth
through effective after-school programs**

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Introduction

In an effort to reduce and prevent juvenile delinquency, Utah State University Extension has made it a priority to promote developmental assets in at-risk youth. 4-H Mentoring, also known as Youth and Families with Promise/4-H (or YFP 4-H), is the primary avenue through which this goal is achieved.

While the basic intents and purposes of 4-H mentoring have remained unchanged since its inception in 1994, there has been an expansion in how the program is implemented throughout the state. Namely, the program has been adapted to fit an after-school setting. Mentors and youth meet at the school where they participate in learning activities one-to-one as well as part of a larger group.

In Iron and Tooele counties, the targeted age group for the after-school program over the past four years has been middle-school aged youth. It was expected that the after-school mentoring experience would be somewhat different for these youth than the traditional community-based mentoring approach. However, because the same basic program components would remain intact, the assumption was that the 4-H Mentoring program would be equally successful in this different setting. The key components included one-to-one mentoring, family-based activities, 4-H and service. In addition, these youth would spend time on a regular basis to focus on academic improvement.

The targeted short-term goals were: increased social skills, improved academic performance and increased family bonds. Long-term, the goal was to assist at-risk middle-school youth to become competent, caring and contributing members of society. In each case, all activities would center on one-to-one mentoring.

The importance of youth interacting with, and being influenced by, supportive adults is highlighted in Bronfenbrenner's ecological systems theory: "The development of the child is enhanced through her increased involvement, from childhood on, in responsible, task-oriented activities outside the home that bring her into contact with adults other than her parents" (Bronfenbrenner, 1979, p. 282).

In light of ecological systems theory, the developers of 4-H YFP hypothesized that the integration of mentoring and family interventions into established youth development programs, such as 4-H, would reinforce and enhance the state-wide mission of promoting developmental assets. This hypothesis is supported by emerging research which suggests that integrating mentoring into existing youth programs is a promising strategy for youth development (e.g., Kuperminc, et al., 2005).

The program's integrative approach is consistent with conclusions drawn from research and reviews of youth development programs regarding programmatic characteristics that lead to positive outcomes (e.g., Kress, 2004; Lerner, 2006). Also, the National Research Council (2002) states characteristics of effective programs typically include: caring adolescent-adult relationships, designs that are long-term and approaches that incorporate multiple aspects of the youth development framework. Further, the youth development framework, as described by Roth, Brooks-Gunn, Murray and Foster (1998), includes (a) program elements that present youth with new roles and responsibilities, (b) support for youth, and (c) a focus on enhancing internal

assets and competencies. The design of YFP 4-H supports the enhancement of developmental assets by providing youth with new roles, relationships, and responsibilities, which are supported and reinforced across programmatic components (one-to-one mentoring, 4-H, service, and Family Night Out).

Equally strong is the research indicating that youth participating in afterschool programs improve not only academically, but in important life skill behaviors which help them succeed now and in the future. Also, evaluations of major after-school initiatives indicate that quality long-term programs with youth development elements, such as 4-H, increase positive outcomes and decrease negative behaviors among youth. Collectively, these studies indicate youth improved their interpersonal skills, peer and adult relationships, self-control, problem solving, cognition, self-efficacy, commitment to schooling, and academic achievement. (Marczak & Moreau, 2002). Youth also demonstrated significant improvement in self-confidence and self-esteem, positive feelings towards school, social behaviors, school grades, and test scores (Durlak & Weissberg, 2007).

Factors in society that put youth at risk for delinquent and violent behavior are complex. Poor academic and behavior management skills, family factors, and a low involvement in community programs for youth are a few of those factors. Mentoring is one of the promising approaches for improving academic performance, social skills and strengthening families. By establishing caring relationships with at-risk youth, adults can help youth improve their school performance, prevent school dropout, and help youth find positive ways to find recognition in their families, schools and communities. Block and Theokas (2006) suggest that participation in out-of-school time activities has “educational and social/emotional benefits and may have the most positive effects for youth who are most at risk” (p. 1).

Objective (purpose or hypothesis)

Traditional community-based YFP 4-H survey results have consistently shown that youth and families who have below-average school performance, poor social skills, and/or weak family bonds benefit in positive ways from participating in this program (Riggs, Lee, Marshall, Serfustini & Bunnell, 2006). Similar outcomes were desired for youth participating in afterschool mentoring. All YFP 4-H program components would remain essentially the same, except the majority of the activities would take place at the designated school. Therefore, all afterschool youth would be matched with a young adult mentor and engage in regular afterschool activities that included skill building, 4-H and service. In addition, families of involved youth would participate in a monthly family strengthening activities known as Family Night Out.

Method

Youth enrolled in grades 7-8 were engaged in “after-school 4-H” three days each week for up to two and one half hours immediately following the regular school day. School administrators made classrooms available and allowed students to have access to the computer lab and library at the school over the eight months the program was in session.

Young adult mentors from a local university and the community were recruited and screened to work one-to-one with an assigned/matched youth as well as to assist during homework time with up to three students. The role of the mentor was to establish a caring relationship with the youth, get the youth involved in positive community groups, provide tutoring, build developmental assets, provide wholesome recreation and where possible, support the youth’s activities he/she was involved in.

Each day began with a brief activity and snack. Then students and mentors focused on completing homework assignments. Youth who did not have homework were able to work

quietly on another project, play interactive games or read. The second half of time together was spent on different skill development in one of the following areas on a rotating basis. Four-H (4-H) included focusing on projects to develop social competencies and mastery in a variety of subject areas including areas such as rocketry, food sciences, sewing, electricity, photography and entrepreneurship. Life skills focused on internal assets as identified by Search Institute (2006) such as peaceful conflict resolution, planning and decision making and interpersonal competence. Academic skills focused on activities that utilized games and other hands-on activities to teach that math can be fun.

Quarterly service projects were selected that helped youth work together to help make their community a better place. The projects were used to reach out to others and help those who could not help themselves. The youth also showed they cared about others beyond themselves.

Beyond the classroom, 4-H activities, and service, the youth and their families were involved in a monthly family strengthening activity known as Family Night Out (FNO). This monthly gathering of all families in the program was planned around monthly themes. The experience included learning activities that were geared to help families build communication skills and learn to work together to solve problems and set goals. As families arrived, they were involved in an introductory activity to get everyone talking and socializing. Following a light meal or snack, activities were conducted using the experiential learning model (experience, share, process, generalize, apply).

Findings

Youth and parents involved in the afterschool project voluntarily participated in the Utah Afterschool Survey supervised by the State 4-H Office. The questions examined overall effectiveness of after-school programs and monitored positive behavioral changes in the youth.

While the survey did not cover all aspects related to YFP 4-H, there are documented responses from participants regarding their experience in the program.

Exit survey results indicate that among youth respondents:

90% were more certain of themselves

86% felt they were successful

79% felt they did better in school

Parents reported:

100% felt their child enjoyed the program

81% felt their child had a better attitude towards school

85% said their child completed homework on time

90% said their child got along better with them

85% said the child felt closer to the family and got along better with siblings

Results consistently showed positive outcomes for youth participants and their families. When measured against traditional YFP retrospective surveys, afterschool evaluations yielded consistent findings about the effectiveness of the program, increasing confidence in the efficacy of both programs.

Mentoring by itself shows a strong influence on improving the lives of youth on the major program emphases (improve youth academic achievement, enhance youth social competency, and supporting positive family bonds). However, when a youth's levels of participation in a mentoring relationship and their involvement in 4-H are analyzed simultaneously, significant correlations ($p < .05$, two-tailed) emerge. Specifically, significant positive correlations existed with both youths' and parents' perceptions of youth academic achievement, social competency,

and family bonding, in addition to youths' perceptions of increased levels of community attachment (Riggs, Lee, Marshall, Bunnell & Serfustini, 2006).

Summary

Youth/adult relationships can be influential in preventing anti-social behaviors in youth. Mentoring programs are a proven way of reaching at-risk youth. By combining 4-H with mentoring, Utah's Youth and Families with Promise program is an effective way to help at-risk youth strengthen the protective factors of academic achievement, social competence and family bonds. The addition of service and family strengthening activities also increase family bonds and help the youth give back to their communities.

In an after-school setting, youth increase their social interaction with each other on a regular basis through 4-H and life skill development activities. They also experience one-to-one as well as group mentoring. While no one instrument has been used to evaluate the total program of YFP 4-H Afterschool programs, its strengths are documented in statements from youth, mentors, parents and staff:

Mentor: At the first of the month, one youth was difficult to work with. He seemed like he had a difficult time concentrating. Over the past week this difficulty has seemed to disappear. He has advanced in his reading level, too.

Staff: One female youth was a shy, timid girl when she first joined the after school YFP program. Her parents were concerned that she didn't have many friends. During the program I noticed that she was talking more to some of the other girls in the program. Her grades were improving dramatically each and every week, but something else was happening to her. I took her aside and told her how proud I was of her and that she had been working so hard and had improved so

much. She looked at me and said, "I'm so thankful for this program. I now have friends that I see and talk to everyday. Thanks for letting me join."

Youth: "Before I started coming here, I was getting into trouble and my mom was always mad at me. Now, [the staff] looks for me to be at afterschool, which is way cool."

Parent: "I have seen a major change in my son. He isn't as stressed out about getting homework done and he is actually showing some manners- shocking! He says [the Site Coordinator] expects him to treat her with respect at after-school and I can tell it's flowing into how he acts at home, too."

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Food Security among Students, Staff, and Faculty of Southern Utah University

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ABSTRACT

Food security is the access by all people at all times to enough food for an active, healthy life. It is considered one of the requirements for a healthy, well-nourished population. In 2007, 89% of households in the United States were food secure. In light of the current economic environment, food security may now be a greater problem. This study was conducted to assess the current status of food security among students, faculty and staff at Southern Utah University (SUU) and how food security at SUU compares to food security in Utah and the United States. Data was collected using a survey developed by the Economic Research Service of the United States Department of Agriculture, the same survey used to gather data on the status of food security nationally. Results revealed food insecurity is more prevalent among SUU students and staff than in Utah and the United States. However, comparison of SUU data to Utah and U.S. data was made using the 2007 (most recently available) state and national data on food security. The state of Utah is in the process of gathering data on the current status of the food security of its residents. Future comparison of SUU data to new state data will provide a more accurate picture of how food security at SUU compares to the rest of Utah in the current economic environment.

INTRODUCTION

Extreme forms of hunger, known in third-world countries, are rarely seen in the United States. Due in part to social policies such as the National School Lunch Program and the Food Stamp Program, massive hunger has been eliminated (President's Task Force on Food Assistance, 1984). However, hunger is still known in the United States in a more simple form – degrees of hunger based on income. The 1984 President's Task Force on Food Assistance

Report (Bickel, Nord, Price, Hamilton, & Cook, 2000) acknowledged the need for the development of a system that would measure hunger in the U.S. Private sector groups were the first to begin research on measuring hunger, followed by the U.S. Census Bureau. In 1990, Congress passed the National Nutrition Monitoring and Related Research Act, which called for better assessment and monitoring of U.S. nutrition. The act included a plan to create a long-term standard survey that would measure the extent of hunger in the U.S. by measuring food security. Building upon the earlier research of private sector groups and the U.S. Census Bureau, the Food Security Measurement Project (FSMP) was founded in 1992 under the direction of the United States Department of Agriculture (USDA). The objective of this federal interagency working group was to make a feasible food security survey to be distributed on state and local levels. The Core Food Security Module (CFSM) was thus created and has now been successfully administered in the U.S. and Canada (President's Task Force on Food Assistance, 1984).

Food security is the access by all people at all times to enough food for an active, healthy life. Food insecurity occurs when access to food is limited or uncertain. The FSMP defines food insecurity as a “complex, multidimensional phenomenon which varies through a continuum of successive stages as the condition becomes more severe” (President's Task Force on Food Assistance, 1984). The CFSM uses 18 indicators to measure the levels of food security within the population. Survey questions focus specifically on financial limitations leading to food insecurity. The CFSM does not measure other aspects of broader food security, such as food safety, nutritional quality, and social acceptability of food.

In 2007, the CFSM U.S. results showed that 89% of households in the United States and 87.5% of households in Utah were food secure (Nord, Andrews, & Carlson, 2008). Although the CFSM was designed to measure food security among households, not among college students, students are at a higher risk for food insecurity given their typical modest financial situations

(Wei, Berkner, He, Lew, Cominole, & Siegel, 2009). In light of the current economic environment, food security may now be a greater problem for both students and the general population.

OBJECTIVES

This study was conducted to assess the current status of food security among students, staff, and faculty at Southern Utah University (SUU) and to compare food security at SUU with levels of food security in Utah and the United States.

METHODS

Participants

Approval for this study was obtained from the SUU Institutional Review Board. Data was collected February 2009. Questionnaires were distributed through campus mail to 100 staff and 50 faculty members, selected with a table of random numbers; the return rate was 54% and 70% respectively. Researchers distributed surveys to 11 classes at SUU, selected for large enrollment, resulting in a total of 738 student surveys; 732 surveys were complete. Usable responses represent 11.5% of students, 13.0% of staff, and 14.1% of faculty on the SUU campus. After omitting cases with missing values for sex, age, or food security items, 821 questionnaires were used for analysis. Students made up 89.2% of respondents, 6.6% were staff, and 4.3% were faculty. The mean age of respondents was 24.09, the youngest being 18 and the oldest 71.

Materials

Data was gathered using the 18-item CFSM developed by the Economic Research Service of the USDA, the same survey used by the USDA to calculate food insecurity rates in the United States. The CFSM questions focus specifically on household financial limitations in the past 12 months leading to food insecurity. The questions include phrases such as “because we couldn’t afford that” or “because there wasn’t enough money for food”, and ask specifically about the

past 12 months (President's Task Force on Food Assistance, 1984). Five additional questions were added to the survey to allow analysis based on demographic variables.

The results of the CFSM can be combined into a single overall measure called the food security scale. The scale is continuous, linear, and measures the degree of food insecurity experienced by a household in terms of a single numerical value (President's Task Force on Food Assistance, 1984). The household food security status of survey respondents was classified using this scale. Food insecurity was indicated by three or more affirmative responses to items on the CFSM. Respondents with no children in the household completed only the first ten questions; those with children responded to all 18 CFSM items. Food insecurity was measured at the household level, not the level of the individual respondent. The format of the CFSM does not allow for determination of the food security status of an individual adult or child unless there is only one adult or one child.

Demographics

Respondents reported their SUU status in three categories: student, staff, or faculty. Current marital status was reported in four categories: single, married, divorced, or widowed. Only 2.4% of the respondents were divorced or widowed, therefore marital status was collapsed into two categories with single, divorced and widowed being grouped together as "single" for data analysis. Household size was self-reported in six categories ranging from one to six or more people in the household. A summary of demographic data is provided in Table 1.

Table 1. Summary of demographic data of survey respondents.

SUU Status	n	Gender		Marital Status		Household size (%)						Age (%)				
		Male (%)	Female (%)	Single* (%)	Married (%)	1	2	3	4	5	6	18-21	22-25	26-34	35-49	50+
Student	732	45.0	55.0	82.3	17.7	11.6	22.0	18.3	17.7	11.6	18.8	57.1	34.7	5.9	2.2	0.1
Staff	54	33.3	66.7	16.7	83.3	7.7	40.4	15.4	15.4	11.5	9.6	0.0	1.9	9.6	36.5	51.9
Faculty	35	65.7	34.3	14.3	85.7	3.1	46.9	12.5	15.6	3.1	18.8	0.0	5.9	5.9	38.2	50.0

*Single, divorced and widowed were combined into a single category for data analysis.

Statistical analysis

Statistical analyses were performed using the Statistical Package for the Social Sciences version 13.0 for Windows. Descriptive statistics were calculated for the total sample by food insecurity/food security, SUU status, marital status, age, household size and whether or not there were children in the household. Frequencies and chi square analyses were conducted to compare responses across these variables. Differences were considered significant at $p < 0.05$.

FINDINGS

Results showed that 63.8% of students, 77.8% of staff, and 91.4% of faculty who participated in the study were food secure. Chi square analysis between SUU status and food security revealed a significant difference between the groups of students, staff, and faculty. To determine where the difference lay, a chi square analysis was conducted comparing each individual SUU status against the other two groups combined. Faculty were more food secure than staff and students ($p < 0.001$) and students were less food secure than staff and faculty ($p < 0.001$). Married respondents reported being more food secure than single respondents ($p = 0.003$). However, a comparison across marital status among the student population showed

no association with food security. No association was found between food security and gender, age, household size, and whether or not children were in the home.

Table 2. Summary of food security by SUU status.

	Food Secure	Food Insecure	χ^2 P-value
	% (n)	% (n)	
Student			<0.001
Yes	63.8 (464)	36.2 (263)	
No	83.1 (74)	16.9 (15)	
Staff			0.037
Yes	77.8 (42)	22.2 (12)	
No	65.1 (496)	34.9 (266)	
Faculty			<0.001
Yes	91.4 (32)	8.6 (3)	
No	64.8 (506)	35.2 (275)	

Table 3. Summary of food security by demographic variables.

	Food Secure % (n)	Food Insecure % (n)	χ^2 P-value
Gender			NS
Male	67.7 (247)	32.3 (118)	
Female	64.7 (290)	35.3 (158)	
Marital status*			0.003
Single	63.4 (390)	36.6 (225)	
Married	74.4 (148)	25.6 (51)	
Age			NS
18-21	64.6 (268)	35.4 (147)	
22-25	65.2 (156)	34.8 (88)	
26-34	63.3 (31)	36.7 (18)	
35-49	67.4 (31)	32.6 (15)	
50+	86.7 (39)	13.3 (6)	
Children in home			NS
Yes	63.0 (82)	37.0 (47)	
No	66.5 (458)	33.5 (231)	
Household size			NS
1	62.1 (54)	37.9 (33)	
2	68.6 (131)	31.4 (60)	
3	66.4 (93)	33.6 (47)	
4	67.2 (92)	32.8 (45)	
5	64.4 (56)	35.6 (31)	
6 or more	64.3 (92)	35.7 (51)	

*Single, divorced and widowed were combined into a single category for data analysis.

Chi square analysis of individual item responses for the CFSM revealed an association between SUU status and six of the eight main adult food security items. Faculty and staff were grouped together because of low cell numbers in the contingency table. Results revealed that faculty and staff worried less than students about whether food would run out and were less likely to cut the size of a meal, skip a meal or eat less than they felt they should because of a lack of money ($p < 0.001$). Students were more likely to be hungry because they couldn't afford food ($p = 0.001$), to have lost weight because they didn't have sufficient money for food ($p = 0.004$), and

to have food not last and inadequate money to purchase more ($p=0.007$). There was no association between SUU status and the ability to afford balanced meals. There was also no association between SUU status and adults not eating for an entire day because of insufficient money. This data is summarized in Table 4.

Table 4. Item responses for eight adult food security items.

Question	Student (% No)	Staff/Faculty (% No)	χ^2 P-value
We worried whether our food would run out before we got money to buy more.	61.2	80.9	<0.001
The food that we bought just didn't last, and we didn't have money to get more.	73.2	85.4	0.007
We couldn't afford to eat balanced meals.	98.8	100.0	NS
In the last 12 months, did you ever cut the size of your meals or skip meals because there wasn't enough money for food?	79.2	95.5	<0.001
In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?	75.0	91.0	<0.001
In the last 12 months, were you ever hungry but didn't eat because you couldn't afford enough food?	82.0	94.4	0.001
In the last 12 months, did you lose weight because you didn't have enough money for food?	91.1	98.9	0.004
In the last 12 months, did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food?	97.0	100.0	NS

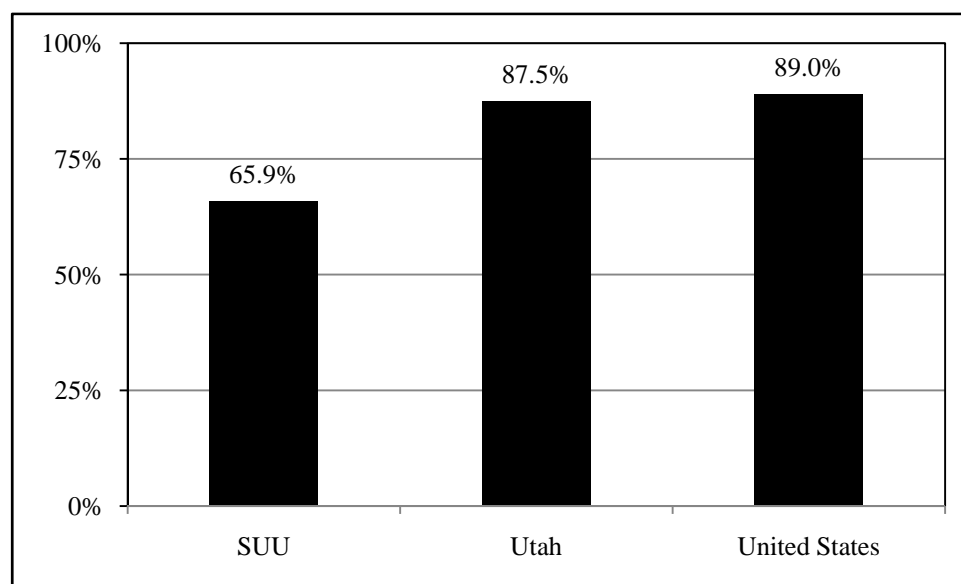
Analysis of individual item responses for the CFSM revealed associations between SUU status and three of the seven main child food security items (completed only by respondents with children). Students were more likely than staff and faculty to rely on a few kinds of low-cost foods to feed their children ($p=0.025$), feed their children a diet they felt was not properly balanced ($p=0.011$), and not feed their children enough because they couldn't afford it ($p=0.020$). There was no association between SUU status and children skipping meals, children going hungry, and children not eating for an entire day. This data is summarized in Table 5.

Table 5. Item responses for seven child food security items.

Question	Student (% No)	Staff/Faculty (% No)	χ^2 P-value
We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food.	65.6	84.2	0.025
We couldn't feed our children a balanced meal because we couldn't afford that.	73.3	92.3	0.011
Our children were not eating enough because we just couldn't afford enough food.	88.3	100.0	0.020
In the last 12 months, did you ever cut the size of your children's meals because there wasn't enough money for food?	99.7	100.0	NS
In the last 12 months, did your children ever skip a meal because there wasn't enough money for food?	99.9	100.0	NS
In the last 12 months, were the children ever hungry but you just couldn't afford more food?	99.7	100.0	NS
In the last 12 months, did your children ever not eat for a whole day because there wasn't enough money for food?	99.7	100.0	NS

In order to compare SUU data to state and national data, all SUU data was combined into a single variable; 65.9% of all respondents were classified as food insecure based on their responses to the CFSM (Figure 1). Chi square comparison tests between SUU and Utah and national data revealed a significant difference in food security rates ($p < 0.001$).

Figure 1. Food security rates.



SUMMARY

Results showed that students at SUU were less food secure than staff and faculty, and faculty were more food secure than staff and students. Besides SUU status, marital status was the only other variable found to significantly impact food security of respondents. Single respondents were less food secure than those who were married. This result is consistent with the 2007 national survey results in which food insecurity rates were lowest in households of married couples with children and multiple-adult households with no children (Nord et al., 2008). However, this result did not hold true within the student population surveyed. When examined, the demographic data showed students were largely single while faculty and staff were largely married. The presence of an overwhelmingly single student population may be a confounding variable. The greater food insecurity among singles may be due to the greater food insecurity among students, regardless of marital status.

Results of the combined SUU data were compared to the 2007 state and national data on food security, the most recent data available (Nord et al., 2008). Households of students, staff, and faculty at SUU in 2009 were found to be more food insecure than households in Utah and the United States in 2007. This comparison had two limitations. First, the SUU population surveyed most likely had a greater proportion of single college students than the Utah or U.S. populations surveyed. Second, the current national economic status has declined in recent months, which may have affected household food security as reported in this study. The state of Utah is in the process of gathering data on the current status of the food security of its residents. Future comparison of SUU data to this new state data will provide a more accurate picture of how SUU students, staff, and faculty compare to the rest of the state in the current economic environment.

LIMITATIONS

This study was based on a sample drawn from a single university. The overall response rate of mailed questionnaires was 59.3% that is comparable to similar surveys in other settings (Asch, Jedrzewski, & Christakis, 1997). Nonetheless, this response rate increases the possibility of non-response bias error over which the researchers had no control. The use of a self-administered questionnaire format may have led to a higher frequency of item-non-response than in interview administration of similar items.

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Messages About Breastfeeding: A Content Analysis of Major U.S. Newspapers

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Abstract

Breastfeeding (BF) is widely acknowledged as the best source of nutrition for an infant. This study analyzed BF messages in newspaper articles concurrent with National Breastfeeding Awareness Week. One hundred ninety-eight articles were analyzed. Three coders evaluated all articles using the same coding instrument. Analysis revealed mostly positive depictions of BF in categories of support group education, BF in public, and BF benefits. Mention of nutrition/health benefits for infants were 2.7 times more frequent than benefits for mothers. There were no mentions of fathers' feelings regarding public BF. Regional variations include: Southeast having 65 of 198 articles— most talking about support groups or BF in public, the West discussed benefits of BF and support groups. No articles mentioned the occurrence of National Breastfeeding Awareness Week.

Introduction

Breastfeeding an infant is the best way to give the child the healthiest nutrition possible. The American Dietetic Association states that “breast feeding provides the nutrition that nature designed specifically for your baby—and in the right amounts. In addition, the first six to eight weeks of breastfeeding provide antibodies that help the infant build a strong immune system” (American Dietetic Association Public Relations Team, 2005). However, this message is not always reaching everyone. Khoury, Moazzem, Jarjoura, Carothers, and Hinton (2005) surveyed

733 post-partum women in Mississippi. They found that older, white, educated, and married women were more likely to initiate breastfeeding, while other groups were not.

What messages are reaching women? Mannien, van der Brandof, and McIntyre (2002) content analyzed 334 articles over a four-year period in the Australian press. Their research found that 35% of the articles presented positive information regarding breastfeeding, while 14% presented negative information. Forty-three percent of the information presented was considered neutral.

Prantik's 2002 study dealt with the distracting issue of eroticism as it pertains to the female breast and breastfeeding. This study, focusing more on the literature of female sexuality, found, unsurprisingly, that males tend to eroticize female breasts, but that, within the context of breastfeeding, the practice is seen by them as a valuable source of nutrition for babies.

A correlational study of breastfeeding and infant feeding advertisements in *Parents'* magazine was done by Foss and Southwell (2006). Their research found a negative correlation between ads for formula feeding and the percentage of breastfeeding rates during the same time period.

Henderson, Kitzinger, and Green (1999) analyzed television and print references to breastfeeding in Great Britain. They found that bottle-feeding was shown more often and most frequently associated with ordinary families, while breastfeeding was associated with more well-off middle class families and with celebrities. The risks or benefits of either practice were rarely mentioned.

The ambivalence of society in regards to breastfeeding is reflected in expenditures by the U.S. Government, as reported by Brown, Bair, and Meier (2003) in their analysis of federal funding. They found that over 40 million dollars was used for research in this area during the time studied, but that only 13.7% of this money went to projects that directly impacted goals for

increasing breastfeeding.

Purpose

This research investigates one particular branch of mediated references to breastfeeding: those found in newspapers. “In most communities, newspapers cover more news at greater depth than competing media” (Vivian, 2010, p. 79).

The purpose of this study was to analyze the content of breastfeeding messages found in newspaper articles concurrent with National Breastfeeding Awareness Week for the U.S.

It was hypothesized that, as a result of efforts like National Breastfeeding Awareness Week, newspaper references to that practice would be mostly positive. It was also hypothesized that references to breastfeeding would vary geographically in the United States.

Method

One hundred ninety-eight newspaper articles were retrieved via a Lexus-Nexus topic search for analysis. Four regions of the U.S. were represented: Southeast—65 articles, Northeast—48 articles, Midwest—41 articles, and West—44 articles. The articles were published between the weeks of April 30th and June 3rd, 2006. These dates were chosen to include U.S. National Breastfeeding Awareness Week the week of May 14th – 20th, 2006 plus two weeks before and after the event. A coding instrument was developed with categories of support groups, breastfeeding in public, benefits of breastfeeding for mother, benefits of breastfeeding for the infant, and non-substantive mentions. Three coders independently coded all articles using the same coding instrument. Intercoder reliability was determined to be 89.5% using the reliability test developed by Holsti (1969).

Findings

Data analysis revealed that newspaper references to breastfeeding were mostly positive. Support groups for breastfeeding were the most frequent topic with 30.3% (n=48) of all the

articles mentioning them. Those articles contained a total of 60 separate references. Categories on the coding instrument regarding support groups included: 1) Who was invited to attend and 2) Type of support group—education, techniques, and benefits.

The benefits of breastfeeding were also high in occurrence with 59 articles (29.8% of total articles) touting them. The Northeast (18) and West (15) regions mentioned the benefits of breastfeeding more than the other regions. Nutrition/health benefits for the infant (62 mentions) were 2.7 times more frequent than those of benefits for the mother (23 mentions).

Breastfeeding in public was another common category that was mentioned in 30 articles. Of the 65 articles from the Southeast, 21.5% of them were about breastfeeding in public. Mother's feelings about breastfeeding in public were all positive in the Southeast region. Articles from the Midwest also mentioned breastfeeding in public as one of the most discussed topics with 24.4% of 41 articles for that region. Of interest was the relatively low ratio of negative to positive mentions of public breastfeeding. It should be noted that there were no mentions of fathers' feelings regarding breastfeeding in public.

Seventy-three articles included non-substantive mentions of breastfeeding. These were 36.9% of total articles with most of these mentions in the Northeast and West regions. None of the 198 articles mentioned National Breastfeeding Awareness Week.

There was little geographic differentiation in the coverage of this topic, albeit that articles in the Southeast emphasized support groups, but did little to tout benefits of breastfeeding.

It is recognized that this study is limited in that newspapers were the only medium analyzed, and that analysis was limited to a five-week period of observation. Nevertheless, it is also known that printed sources are often the wellsprings of dissemination to other media.

Summary

Despite the limitations of this study, there is much to be learned. Certainly one message is that the public relations effort for National Breastfeeding Awareness Week needs to be examined. However, the mostly positive coverage of breastfeeding in public may indicate some subtle success on their part after all. It is apparent that breastfeeding mothers see breastfeeding in public as a positive, useful activity. Further, the research suggests that concern about public breastfeeding does not seem to be significant. While not completely conclusive, this research suggests that news coverage of breastfeeding is providing useful information to the public.

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Dietary Behaviors of Preschool Children in a Culturally Homogenous Rural Community

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Abstract

Most American children do not meet minimum dietary recommendations. This study was conducted to determine whether diets of preschool children in a small, culturally homogenous rural community, are influenced by parental age, education level, or socioeconomic status. Parents of 74 preschool children were surveyed for nutritional knowledge, demographic information, and food frequency of children's intake. Eighty-three percent of parents scored >75% on the nutritional knowledge survey. Parental knowledge did not translate into children's consumption of recommended food groups. Comparing food intake to MyPyramid.gov, no children met recommendations for all food categories. The percent of children meeting food group recommendations was: milk (86.8%), bread (56.6%), fruit (25%), meat (23.7%), vegetables (3.9%). There was no significant difference when diet was compared to age, education level, or income of the parents. This community appears knowledgeable, but nutrition behavior does not coincide. Improving food intake is needed regardless of parental demographics.

Introduction

Research suggests that most American children are not meeting the United States Department of Agriculture (USDA) recommendations set forth in MyPyramid, nor are they

following the 2005 Dietary Guidelines for Americans (American Dietetics Association, 2008; Nicklas, T. Baranowski, J. Baranowski, Cullen, Rittenberry, & Olvera, 2001).

Parents have a major influence on the eating habits of their children (Birch & Fisher, 1998; Birch & Davison, 2001; Lazarou, Kalavana, & Matalas, 2008; McGarvey, Keller, Forrester, Williams, Seward, & Suttle, 2004). Those eating habits, food preferences and practices, are initiated early in life and are in place well before adolescence (Nicklas et al., 2001; Satter, 2000).

It has been postulated that parental age correlates to belief systems which impact and influence children's beliefs (Galejs & Pease, 1986). This would suggest that if parents value nutrition education and behaviors, their children will also. This idea was supported by Gibson, Wardle, and Watts (1998) who show that fruit and vegetable consumption by a child was influenced not only by their mother's nutritional knowledge, but also by her beliefs relative to nutrition and health.

Parents' level of education can inhibit or enhance a child's dietary intake habits. Wachs and McCabe (2001) explored the influence of maternal education on nutritional intake of children in less developed countries and found it to be a predictor of the nutritional adequacy of the diet. In a follow-up study Wachs, Creed-Kanashiro, Cueto, and Jacoby (2005) concluded that "maternal education and intelligence appear to have unique influences upon different aspects of the diet and nutritional status of offspring" (p. 2179). Following a study by Parizkova (2008) it was concluded that: "The increasing prevalence of obesity during growth and development is significantly related to the education of children, and also to that of parents who influence food intake and physical activity from the beginning of life" (p. 526).

Finally, often parallel to parental education is the impact of family income and socio-economic status. It has been suggested that healthy eating takes time and money and that those

with a lower socio-economic status may have a harder time providing healthy meals. Hart, Herriot, Bishop and Truby (2003) explored parental influence on promoting healthy diet and exercise, comparing high and low socio-economic status. The results showed that high socio-economic status parents were more likely to make food rules, whereas lower socio-economic status parents focused on making sure food was eaten at mealtime. A Canadian study by Riediger, Shooshtari, and Moghadasian (2007) evaluated fruit and vegetable consumption by adolescents identifying the impact of socio-demographic factors – including age, household income, and household education, among others. It was found that “household education and income independently had a significant ($P < 0.001$) positive impact on fruit and vegetable consumption” (p. 1511). An additional study in the United Kingdom (UK) by Clark, Goyder, Bissell, Blank, Walters, and Peters (2008) concluded: “Child-feeding behaviours differ between areas within a single city and within a largely white population, and this distribution is related to socio-economic and educational factors” (p. 1030).

Purpose

The purpose of this study was to determine whether the diets of preschool children in a small, culturally homogenous rural community are influenced by parental age, education level or socioeconomic status.

Method

The parents of 74 children enrolled in five preschools or Head Start centers in Iron County, Utah, were surveyed. These included a diverse range of parental ages (21-61 yrs: mean 30.5 ± 5.9); income levels (\$800-10,000/month; mean $\$3236 \pm \1862) and education levels (46% high school diploma or lower; 54% associates/bachelors/masters or more). The mean age of the children was $3.89 (\pm .49)$. In addition to demographic information about themselves, parents completed a 12-point questionnaire evaluating their basic knowledge of nutrition and food

sources of important nutrients along with a 48-point food frequency survey of the intake of their children.

Findings

The questionnaire results revealed that 83% of parents scored above 75% on the basic nutritional knowledge survey. However, parental nutritional knowledge did not necessarily translate into adequate consumption of a variety of food groups by the children. When reported food intake of the children was compared to the recommendations of the United States Department of Agriculture food plan, MyPyramid, (<http://www.mypyramid.gov/preschoolers/Plan/index.html>) none of the children met the recommendations for all five major food categories. As illustrated in Figure 1, only 8% of the children met the recommendations for 4 of the 5 food groups, 18% percent of the children met the recommendations of only 3 food groups, and 42% only met 2 of the food groups. The percent of children meeting the recommendations for each individual food group is illustrated in Figure 2. The milk group (86.8%) and bread group (56.6%) were most likely to have recommendations met. The recommended intake of vegetables was met by only 3.9% of children surveyed, fruit (25%), and meat (23.7%). Correlation tests showed no significant difference in intake compliance when diet was compared to parental age, education level, or income.

The findings from this study should be interpreted in light of their limitations. The survey collected information only from parents whose children are enrolled in public early childhood programs. The nutrition knowledge questionnaire, while designed to elicit information about a variety of nutrients and food groups, asked very basic questions.

Figure 1

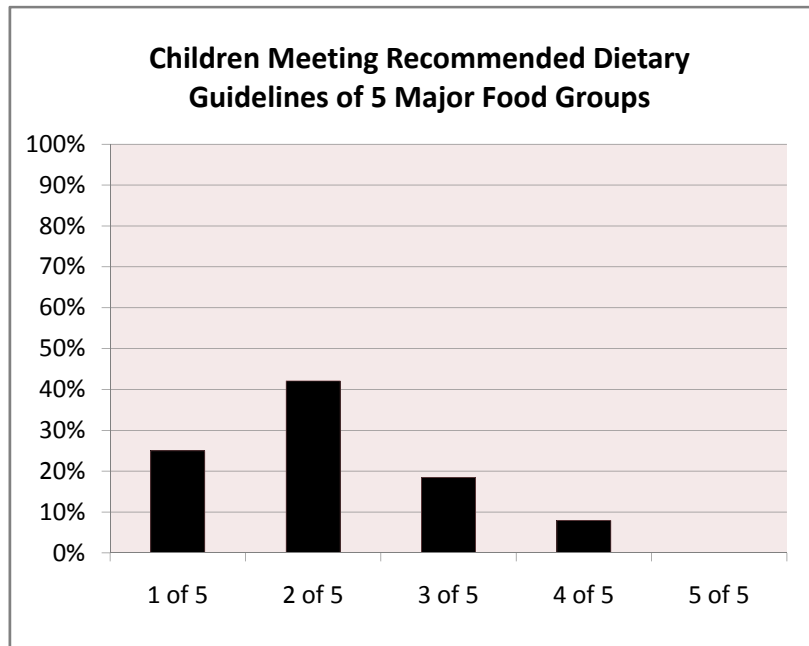
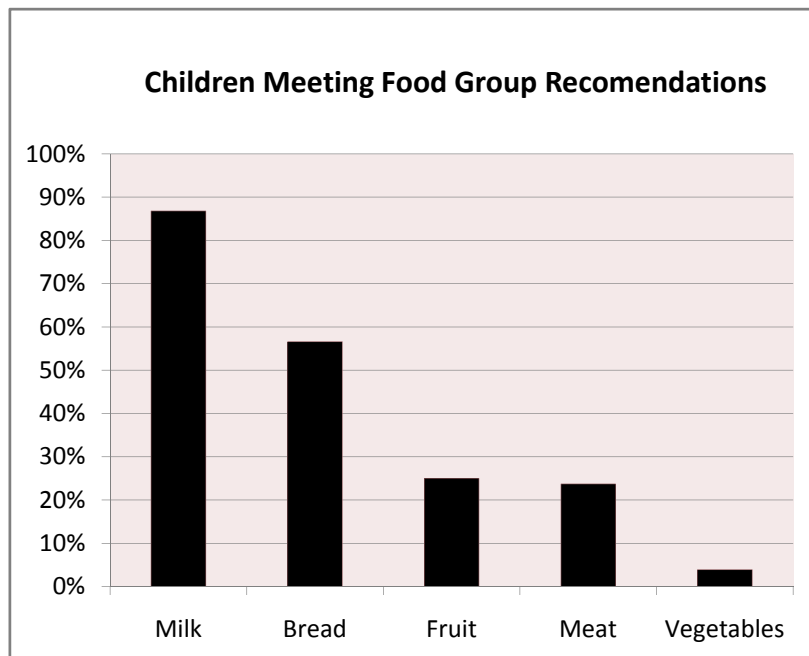


Figure 2



Summary

It is concluded that parents in this community appear to have nutrition knowledge, but nutrition behavior did not necessarily follow suit. While it was hypothesized that parental age, education level, and socioeconomic status would affect the child's diet, there was no significant correlation of the children who are not meeting recommendations with any of those three factors. It is apparent that none of the children are receiving a complete balanced diet. Improved food intake is needed in this population regardless of parental age, education level, or socioeconomic status. No group is exempt. Future education efforts would do well to target ways of applying the nutrition knowledge the parents appear to possess into practical methods for improving children's daily food intake in all food groups. Follow-up research might address other reasons, besides parental nutritional knowledge, that account for the findings.

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Bankruptcy in Zion: The role of religion

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Utah consistently ranks among the top ten states in the nation in consumer bankruptcy filings and ranked first in the nation from 2002 to 2004. In 2004 one in 41 Utah households filed for bankruptcy compared to one in 76 for the U.S. (American Bankruptcy Institute, 2005). Utah's high bankruptcy rate is puzzling considering that the state prides itself on its pioneer heritage and work ethic (Farnsworth, 2004). Further, 62.4% of Utahns are members of the Church of Jesus Christ of Latter-Day Saints (LDS) which teaches financial prudence (Johnson & Wright, 2007).

To cast some light on the intersection of religion and bankruptcy in Utah, this article first summarizes research on U.S. debtors; second, describes reasons why Utahns may be more vulnerable than other Americans to financial collapse, and third, reports a study of bankruptcy filers in Utah, comparing LDS to non-LDS debtors. It concludes with recommendations for family and consumer science educators.

Bankruptcy Causes and Debtor Profile in the U.S.

Job loss, combined with overwhelming consumer debt and meager savings, is a principal cause of bankruptcies (Sullivan, Warren, & Westbrook, 1989). The joint impact of lost income and medical expenses resulting from accident or illness affects more than half of debtors (Himmelstein, Warren, Thorne, & Woolhandler, 2005). Linfield (2009) summarized debtors' reasons for filing: credit overextension, income or job loss, unexpected expenses, and illness or injury. Unsustainable mortgage debts and family breakup are major contributing factors as well (Sullivan, Warren, & Westbrook, 2000).

Based on decades of research, Sullivan, et al., (1989; 2000) concluded that debtors are middle class Americans who resemble their co-workers but earn one-third less income and are drowning in debt. Single women, large families, and one-income families are (Sullivan, et al.). The average American filing for bankruptcy in 2007 was “Caucasian, married, employed, between the age of 35 - 44, had at least a high school education and made no more than \$30,000 per year” (Linfield, 2009, p. 47).

While overwhelming debt is the primary cause of bankruptcy, unanticipated events are the main trigger for filing (Sullivan, et al., 1989). In sum, researchers concur that the top five reasons for filing are job loss/income interruption, medical expenses, divorce or death of breadwinner, creditor problems and unsustainable housing expenses.

Financial Vulnerability of Utah Households

Studies of Utah bankruptcy filers found that the demographic profile and reasons for filing are very similar to the rest of the U.S. (Johnson & Wright, 2007; Lown, 2008; Lown & Rowe, 2003). While Utahns encounter the same financial problems as debtors in the rest of the U.S., the question remains as to why Utahns file at one of the highest rates in the nation. This question is especially puzzling considering the dominant influence of the LDS Church which actively promotes financial prudence. Utah families and households share some unique characteristics that make them especially vulnerable to financial problems. Utah’s high bankruptcy rate has been attributed to: large families, high charitable contributions, early marriage and parenthood, and low wages (Farnsworth, 2004; Lown, 2008).

U.S. Census Bureau data, the Governor's Office of Planning and Budget, and other sources confirm that Utahns differ from the rest of Americans. Compared to the rest of the U.S., Utah household and family characteristics differ as follows:

- largest households in the U.S.: (3.12 compared to the U.S. average of 2.60)
- lowest median age: 28.7 vs. 36.8 years with a high dependency ratio¹
- low per capita income: UT \$31,189 (ranks 45th) vs. US \$38,611
- low wages: 80% of national median earnings for full-time workers
- Utah ranks 46th in women's earnings
- largest houses (number of rooms) in the nation and more vehicles per household
- high charitable contributions (Johnson & Wright, 2007)

According to Voices for Utah Children, a non-profit advocacy organization, one-third of all Utah workers earn too little to support their families and one-third of Utah's low income families lack health insurance (www.utahchildren.org). For a more detailed discussion of bankruptcy risk factors in Utah see Farnsworth (2004), Lown and Rowe (2003), and Lown (2008).

Bankruptcy studies in other states found that families with children are three times as likely to file for bankruptcy as households with no dependent children (Warren, 2003). Utah families are the largest in the nation and children are expensive. According to the USDA, in 2008 the cost of raising a child to age 18 was about \$ 221,190 (Lino & Carlson, 2009). Johnson and Wright (2007) calculated that Utah households with children are 191% more likely to file for bankruptcy than those with no children.

Based on 1999-2004 filing statistics, most (63%) Utahns who seek personal bankruptcy file for chapter 7 which allows debtors to quickly discharge their unsecured debts, but a

¹ Each worker, many at the low paid beginning of their career, supports more children than in any other state.

substantial minority (37%) file for chapter 13 repayment plans. Chapter 13 enables debtors to catch up on delinquent secured debts and retain property, pay priority obligations that cannot be discharged, and repay some of their unsecured debts in a court supervised plan. Compared to other federal bankruptcy districts, Utah has a high proportion of chapter 13 filings, most of which are not completed (Evans & Lown, 2008). Debtors who fail to complete their plan do not receive a debt discharge and often file again, contributing to Utah's high bankruptcy rate.

Purpose and Methods

Previous studies of Utah debtors were based on court documents which provide little insight into why debtors filed and minimal demographic data. In addition to gathering this information, this study was designed to explore a possible link between religious affiliation and bankruptcy. Specifically, why does the state dominated by a religion that teaches avoidance of debt have one of the highest bankruptcy rates?

Using an instrument developed by Sullivan *et al.* (2000) Utah debtors were surveyed in 2004-05 before or after the meeting of creditors, the only time they must appear in court. Questions addressed reasons for filing, employment type and tenure, demographics, and events in the two years prior to filing. Because 62.4% of Utahns belong to the LDS Church that teaches adherents prudent money management and debt avoidance, two questions about religion and frequency of religious participation were included. A total of 508 debtors participated, representing a response rate of 85.3%. Data analysis used the Statistical Package for the Social Sciences (SPSS).

Findings

Similar to debtors in the rest of the nation, the most common reasons for filing were: job problems, credit cards, trouble managing money, illness or injury, and divorce/family problems. Compared to the Utah population, debtors were less educated, less likely to be married, and less likely to own a home. The largest educational category was “some college” (41.1%); 15.7% had not graduated from high school. Only 11.0% had earned a bachelor’s degree or higher. Compared to the mean Utah household size of 3.12, debtor households were smaller with an average size of 2.18 persons. Fully 42.7% of debtors had no dependents. The largest household consisted of 12 persons. There was no difference in number of dependents between LDS (mean: 1.48) and non-LDS debtors (mean: 1.44). The smaller household size for debtors can be attributed to their relatively young age (median age: 37; mode: 28; youngest: 20) and their low marriage rate. Only 45.0% of debtors were currently married compared to almost 60% of Utah adults. A change in marital status during the prior two years was reported by 16.6% of respondents.

Compared to the 62.4% of Utah residents who are LDS (Johnson & Wright, 2007), fewer than half of the debtors (43.5%) identify themselves as Mormon. The next largest religious groups were Catholics (12.4%) and Protestants (3.1%). A diverse variety of “other” religions constituted 17.3% of the sample while 11.0% claimed no religious affiliation. To measure religiosity debtors were asked how often they participate in religious activities. Although 36.6% do not take part in any religious activities, 13.1% were involved more than once a week, 18.7% participate weekly, 9.2% attend two to three times a month, and 22.4% attend a few times a year. The highest participation rate was reported by LDS respondents with 45.3% indicating at least weekly religious activities. When divided into three religious participation levels, the 219 LDS

respondents are evenly divided between high (at least once a week: 45.3%) and low or no religious activity (few times/year to not at all: 45.6%); the remaining 9.1% report participating two to three times per month. When compared to non-LDS debtors, Chi-square analysis revealed significantly higher participation levels for the LDS debtors.

Discussion and Implications for Financial Educators

This is the first study to confirm that LDS Church members are less likely to file for bankruptcy than their non-LDS neighbors. Although Johnson and Wright (2007) claim a similar finding, they simply reported that the 61.33% of their sample who were LDS was less than the 62.4% of the state population, a tiny difference. Johnson and Wright did not report any tests of statistical significance. In addition, their sample was smaller (N=281) with a lower response rate (65.3%). The current study more convincingly indicates that Utah Mormons are less likely than their non-LDS neighbors to file for bankruptcy, despite financial contributions such as tithing that make them vulnerable to financial stress.

Possible reasons why Mormons file at a lower rate than their non-LDS neighbors may be due to following the LDS Church's Provident Living guidelines that encourage budgeting, avoiding debt, and the importance of emergency funds (<http://www.providentliving.org/>). Other than tithing, all the principles of prudent personal finances included in the Provident Living website are very similar to the recommendations of personal finance textbooks. Since the LDS Church does not report activity levels of members, it was not possible to compare the subjects in this study to LDS membership in general with respect to religious activity levels. It is unknown whether the inactive Mormons in this study follow the prudent financial management practices encouraged by the LDS Church but most have likely been exposed to these teachings. The financial management practices of the non-LDS debtors are also unknown. Because many

bankruptcies are precipitated by crises beyond the control of the debtor, such as job loss and medical debt, following recommended financial management practices is no guarantee against bankruptcy.

Fewer than half (43.5%) of Utah debtors reported being LDS, and, of those, only half indicated that they participated in religious activities at least once a week. Thus, LDS members were underrepresented in bankruptcy compared to their proportion of the state population. This underrepresentation may be due to both the financial teachings and the strong LDS Church support system. Members in good standing can apply to their local religious leader (bishop) for financial support to pay rent or mortgage and for in-kind goods such as food from the Bishop's Storehouse. The extent of potential financial support exceeds that available to members of most other religious groups. Despite having lower disposable incomes associated with large families and high charitable contributions, Mormons may take to heart the prudent financial management teaching of their church, thus overcoming these economic risk factors.

Educators should continue to inform consumers about the factors that make families vulnerable to financial stress and to emphasize the value of prudent financial management practices. With respect to the current economic crisis, a Utah Foundation report (Summers & Kroes, 2009) concludes that "In terms of household debt loads, Utah does not appear to be worse than the rest of the nation; however, Utah did follow the same trend of accumulating significant debts during the recent economic expansion, making Utah households vulnerable to the economic recession" (p. 1). The report concludes that Utahns assumed unsustainable debt loads that will prolong the economic crisis and that the state bankruptcy rate is likely to increase to record levels.

In addition to teaching wise financial practices, educators can expose their students to public policy issues related to family finances using resources available on the websites of the non-partisan Utah Foundation, Voices for Utah Children, and the United Way of Salt Lake. United Way economic security initiatives regarding [education](#), [income](#), [health](#), and [safety net](#) services are an excellent Utah-specific resource. The nationwide American Saves campaign has a Utah Saves affiliate that promotes savings and prudent financial practices. Understanding the link between current political issues such as health care reform and bankruptcy can prepare students to be more informed citizens as well as more aware of choices that can make them more financially secure. The U.S. will continue to have the highest bankruptcy rate in the world as long as a significant proportion of Americans lack health insurance or have inadequate coverage. Educators need to emphasize the risks of going without insurance and equip consumers with the information and decision making skills to compare and choose a health insurance policy. Johnson and Wright (2007) report that LDS debtors in Utah are more likely than the non-LDS to cite medical problems and job loss as the reasons for filing, yet Utah has one of the lowest unemployment rates in the nation and a modest level of uninsured residents. This study found no correlation between medical expenses or health insurance and religion.

While most of the speculation about Utah's high bankruptcy rate has focused on the costs of Utah's large families (Farnsworth, 2004; Lown, 2008), most of the debtors reported two or fewer dependents. However, household size is confounded by the high rate of unmarried debtors in the state with the highest marriage rate in the nation. There was no significant difference in household size when LDS debtors were compared to non-LDS debtors. A research question that remains to be explored is whether the household size for Utah debtors is significantly larger than that of debtors in the rest of the United States.

The incongruous fact remains that a state dominated by a religion that specifically teaches financial prudence ranks very high in bankruptcy compared to the rest of the country. According to Johnson and Wright (2007), Utahns are 1.7 times as likely as other Americans to file for bankruptcy. Although LDS Church members are underrepresented in bankruptcy in relation to their proportion of the population, LDS faithful are still heavily affected by the state's high consumer bankruptcy rate due to the fact that large numbers of church members file for bankruptcy each year. Despite the "good news" that the prudent financial teachings of the LDS Church and church financial support may partially protect Utah Mormons from bankruptcy, the fact remains that Utahns file at an alarmingly high rate and thus large numbers of LDS families are affected by the financial trauma of bankruptcy. If 44% of the 6,955 bankruptcy cases filed in Utah in the first half of 2009 represented LDS households, then 3,060 LDS individuals or families were affected. This number represents only the first half of the year and all projections are that filing rates will continue to rise. Much remains to be done to reduce Utah's high bankruptcy rate.

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