

RESEARCH-BASED EVIDENCE SUPPORTING SECONDARY FOOD AND NUTRITION PROGRAM EFFECTIVENESS

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This paper reports findings from a literature review that identified research-based support for secondary-level family and consumer sciences (FCS) food and nutrition programs in U.S. Public Schools. No research was revealed in this review to substantiate the efficacy of these programs. Possible consequences of these findings for secondary FCS programs are discussed. Recommendations include 1) research with secondary FCS students; 2) national research related to the impact of FCS programs; 3) involvement of FCS professionals in the development and implementation of school nutrition and wellness programs; 4) establishment of a central database to house research related to secondary FCS programs; and 5) coordination of an effort to standardize key words for use by FCS professionals when reporting and cataloging research.

Obesity has reached epidemic proportions in the United States (Center for Disease Control and Prevention, 2005; Cotten, Stanton, & Zolten, 2004; U.S. Department of Agriculture, 2005). It is assumed that food and nutrition classes, central to secondary-level (Grades 6-12) family and consumer sciences (FCS) programs, include obesity and related topics as part of the curriculum. It is also assumed that these classes are making a difference in the lives of students who participate in them. What research-based support exists to substantiate these assumptions? The purpose of this investigation was to identify research-based evidence that food and nutrition classes in FCS secondary programs are making a positive difference in regard to the obesity epidemic. Such data are necessary in an era of accountability associated with the *No Child Left Behind Act of 2001* (NCLBA). What does the research reveal regarding the impact of secondary-level FCS food and nutrition programs on students in connection with the obesity epidemic?

Background

The quest to identify research-based support for secondary FCS food and nutrition programs' impact on students in connection with the obesity epidemic emerged from the *Study of the Effectiveness of Public School Family and Consumer Sciences Programs* (2004) conducted by a team of researchers in FCS Education and Studies at the Iowa State University (ISU) (Gentzler, Hausafus, Browne & Myers, 2004) with support from the American Association of

Family and Consumer Sciences (AAFCS)¹. The 2004 study examined published and unpublished research literature available from 196 secondary FCS programs in the United States from 1985 to the end of May 2004 to (1) substantiate the effectiveness of the delivery of FCS content and (2) provide support for the roles these programs have played in connection with initiatives linked to the NCLBA (2001). Three hundred and ninety-six entries including 79 dissertations, 178 master's theses, 78 journal articles, 38 research presentations and 23 research reports were included in the 2004 dataset. Summaries of these data are available on the website developed in connection with this project, *Family and consumer sciences education: Effectiveness of secondary programs* (available February 7, 2006, at <http://www.aeshm.hs.iastate.edu/fceds/effectiveness/>).

Research Methods

This research included data from the 2004 study as well as an additional review of documents through May 31, 2005 listed on *ProQuest's* online databases and the online library catalogs for 60 universities with FCS programs² to identify research conducted in connection with secondary FCS programs related to obesity. Databases were examined to locate research using the following keywords: obesity, eating disorders (anorexia and bulimia nervosa), weight control, dietary guidelines, food guide pyramid, nutrition education and adolescents. Secondary-level FCS standards available for 35 states, six nutrition and seven comprehensive FCS texts from two FCS textbook publishers³ were also reviewed to ascertain the inclusion of the topics identified in the aforementioned keyword search.

Findings

Research Related to Obesity in the 2004 Dataset

Although the FCS content area of food, nutrition and wellness provided the most listings (45) in the 2004 study (Gentzler, Hausafus, Browne, & Myers, 2004), none of the studies identified in this dataset focused specifically on obesity as a health concern among secondary FCS students. Notwithstanding this fact, what does the identified research reveal regarding the examination of topics related to obesity such as eating disorders (including anorexia and bulimia nervosa), weight control, dietary guidelines, the food guide pyramid, nutrition education and adolescents?

Three of the 45 studies identified in the 2004 study included topics associated with obesity. Floyd (2003) assessed "the relationship of body mass index [BMI] levels, nutritional knowledge, selected food habits, influences that affect food choices, and nutrition education" among 59 high school students (Grades 9-12) who had participated in nutrition classes (p. ix). Only 14 students in Floyd's (2003) sample had participated in FCS-based nutrition classes. A

¹ For discussion of the 2004 study see Browne, L., Gentzler, Y., Myers, L. & Hausafus, C. (2006, January). Effectiveness of Secondary Family and Consumer Sciences Programs (1985-2004). *Journal of Family and Consumer Sciences*, 98 (1), 26-32.

² Each state in the United States was represented in this search.

³ Texts analyzed in this investigation include *Discovering Food and Nutrition* (2005), *Nutrition and Wellness* (2004), *Food for Today* (2006), *Discovering Life Skills* (2004), *Today's Teen* (2004), *Creative Living Skills* (2006), *Guide to Good Food* (2004), *Adventures in Food and Nutrition* (2003), *Nutrition, Food and Fitness* (2004), *Building Life Skills* (2003), *Skills for Personal and Family Living* (2004), *Goals for Living* (2006), and *Take Charge of Your Life* (2004).

relationship between students' BMI and participation in nutrition classes was not established in this study.

One study in the 2004 dataset focused on the topic of eating disorders. Nagel-Murray's (1989) survey research was conducted with teachers' to determine if previous academic experiences with and understanding of eating disorders influenced whether topics related to eating disorders were included in their classes and whether they would seek help for a student with an eating disorder.

The final study in the 2004 dataset related to obesity was conducted by Stuhldreher, Zuchowski and Liddel (1996) with 355 FCS teachers in West Virginia. This research examined the extent to which the United States' Dietary Guidelines were incorporated into the curriculum as well the adequacy of teachers' preparation to implement the guidelines in the classroom. The two guidelines most consistently included by teachers related to the importance of eating a variety of foods and choosing plenty of vegetables, fruits and grains. The adequacy of teachers' "educational preparation to promote dietary guidelines was positively correlated with ease of implementation" (1996, p. 3) in this research.

Research Related to Obesity: Moving Beyond the 2004 Dataset

Recognizing that very little research was available related to secondary FCS programs' impact on obesity in the 2004 dataset, the authors wondered what they might have missed in their initial review of 20 years of the literature. What support for secondary FCS teachers' involvement with the obesity epidemic existed? The authors revisited online library catalogs, Iowa State's online research listings, and *ProQuest's* dissertation and master's thesis database to update the dataset through May 31, 2005. Searches in *ProQuest* yielded 17 studies using the aforementioned keyword searches. Research was identified in *ProQuest* related to obesity and adolescents in schools, but none of these studies could be tied to secondary FCS programs.

When online library catalogs and indices were reviewed, only nine titles for studies were found that focused on obesity-related topics with adolescents. Although these studies were identified, none of these listings included research abstracts and no evidence was provided of any specific connection between secondary FCS classrooms and these studies. Although no additional research studies were identified, the review revealed a report from the U.S. Food and Nutrition Board titled, *Preventing Childhood Obesity: Health in the Balance* (Kaplan, Liverman, & Kraak, 2005). Chapter 7 in the report outlined how schools were addressing the issue of obesity. Upon review, however, the section on classroom initiatives related to obesity focused solely on health education and did not include FCS as a participant in nutrition and wellness programs. This raised concern because the report was available in all of the online catalogs reviewed and was available online from the National Academies Press.

An updated review of FCS-related journals did not uncover any additional research related obesity study and emphasis in secondary FCS programs. The April 2005 issue of the *Journal of Family and Consumer Sciences* included several research studies and professional practices addressing obesity (Ames, & Farrell, 2005; Dart, Frable, Bae, & Singh, 2005; Little, Howell, & Williams, 2005). However, none of this research focused on secondary FCS programs or students. Two studies were located in the *Family and Consumer Sciences Research Journal* (Lokken, Worthy, & Trautmann, 2004; Shankar, Dilworth, & Cone, 2004) but these were conducted with college-age students rather than secondary-level students.

Because secondary educators exist within a climate of accountability related to student performance and standards are often used to evaluate students, online standards available for 35 states were investigated to determine the number of states that included obesity and related topics

in their standards. Figure 1 indicates that six states included the topic of obesity in their standards. Nine states also included the topic of weight control, and 16 included the topic of eating disorders in their standards.

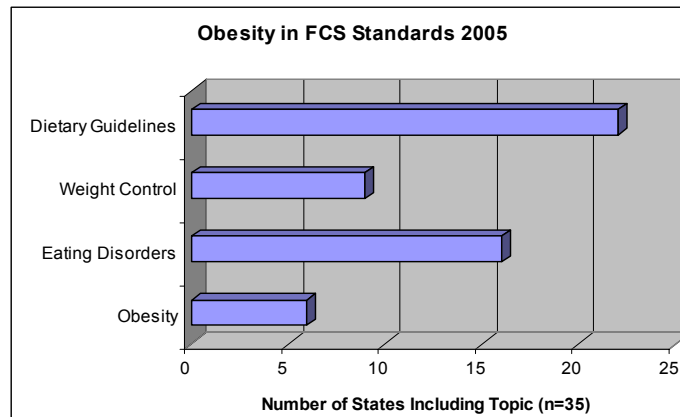


Figure 1: Obesity-related Topics in FCS Standards (2005)

The word obesity was not mentioned in the *National Standards for Family and Consumer Sciences* (National Association of State Administrators for Family and Consumer Sciences, 1998). The national standards, as well as standards for the 22 states reviewed, included the dietary guidelines. The *Dietary Guidelines for Americans* (U.S. Department of Agriculture, 2005) focused largely on obesity, weight management and related issues. Consequently one might assume that obesity and related concerns would be addressed in FCS classrooms in states that reference the dietary guidelines. However, no research-based evidence existed that any of these topics have been or are being taught in FCS classrooms. Further, even if obesity-related topics are being taught, no literature exists to document the effectiveness of the programs in students' lives.

The final resource reviewed to identify possible connections between secondary FCS classrooms and obesity was secondary-level nutrition textbooks. The table of contents for the latest editions of six nutrition and seven comprehensive FCS texts (*Discovering Food and Nutrition*, Kowtaluk, 2005; *Nutrition and Wellness*, Duyff & Hasler, 2004; *Food for Today*, Kowtaluk, 2006; *Discovering Life Skills*, Glencoe McGraw Hill, 2004; *Today's Teen*, Kelly-Plate & Eubanks, 2004; *Creative Living Skills*, Couch, Felstehausen, & Clark, 2006; *Guide to Good Food*, Largen & Bence, 2004; *Adventures in Food and Nutrition*, Byrd-Bredbenner, 2003; *Nutrition, Food and Fitness*, West, 2004; *Building Life Skills*, Liddell & Gentzler, 2003; *Skills for Personal and Family Living*, Parnell, 2004; *Goals for Living*, Wehlage & Larson-Kennedy, 2006; and *Take Charge of Your Life*, Ross & Owens-Kristenson, 2004) from two publishers were analyzed. Figure 2 illustrates the number of textbooks examined in this review that devote chapters to obesity-related topics. Goodheart Willcox's *Nutrition, Food, and Fitness* (2004) included a specific chapter for each of the four topics. Glencoe's *Nutrition & Wellness* (2004) addressed three of the four topics. Given these findings, the possibility that obesity-related topics could be examined in classrooms using reviewed textbooks exists. However, no research is available to substantiate this possibility as a reality.

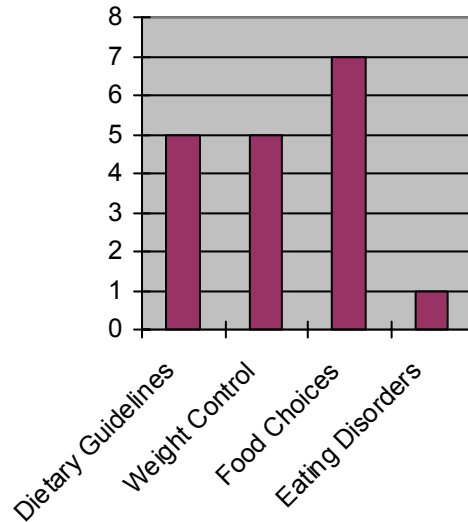


Figure 2: Obesity-related Topics in Selected Secondary FCS Textbooks

Conclusion

The purpose of this research was to identify research-based evidence that secondary-level FCS food and nutrition courses are effective in the lives of students at the secondary level. Limited evidence to support this claim is provided in this review. This conclusion is made based on (1) minimal, if any, available research; (2) research conducted with small sample sizes and, at best, conducted on a regional basis; and (3) FCS standards that rarely mention obesity. Although available secondary textbooks have sections related to obesity, there is no evidence that these topics are taught. If obesity issues are taught, there is no evidence that they are taught effectively. This conclusion is similar to one associated with the study by Gentzler, Hausafus, Browne and Myers (2004) wherein research to support secondary-level FCS programs, generally, was sought and limited evidence was identified.

What are some possible consequences for FCS secondary programs if little or no research-based evidence supports program effectiveness? Some may not be aware that FCS programs exist. Others may conclude that secondary FCS food and nutrition programs are ineffective—believing no research is available to prove otherwise. And others may not believe, given limited research-based evidence to the contrary, that secondary-level programs are worthy of funding.

As previously noted, the *Preventing Childhood Obesity* report (Kaplan, Liverman, & Kraak, 2005) does not mention FCS programs as contributors to obesity prevention programs. This omission may be warranted if FCS programs are not responding to the obesity epidemic. However, FCS programs have been omitted from, or hidden within, previous national reviews of national nutrition programs, notably a 1996 report, *Nutrition Education in Public Elementary and Secondary Schools* (Celebuski, Ferris & Carpenter, 1996). FCS secondary-level programs contributions are not mentioned in the report’s executive summary, although these programs’ contributions are mentioned⁴ within the body of the report (Celebuski, Ferris & Carpenter, 1996). The *Preventing Childhood Obesity* report (2005) indicated that 60 percent of states required students to complete health education courses. Few states require FCS-related courses—even

⁴ FCS programs are referred to as “home economics” programs in this report.

though FCS courses may satisfy health, technology, and economics high school graduation requirements.

Recommendations

What should be done about the lack of research-based evidence available to support food and nutrition courses within secondary family and consumer sciences programs? Should FCS professionals, and FCS educators in particular, be concerned about the lack of evidence that validates the need for FCS food and nutrition programs at the secondary level? Could it be that the lack of evidence is a factor in FCS professionals' inability to validate program effectiveness, thereby keeping the curriculum as an elective in many schools nationwide? The authors recommend that:

1. FCS professionals gather data with present and former *students* related to secondary-level FCS programs documenting the impact of programs on student knowledge, attitudes and behaviors. Although research with students under the age of 18 may require parental permission, such research is done with students in other content areas. Such research should be achieved using a variety of methodologies and research strategies.
2. A national effort be initiated to evaluate secondary FCS students' performance related to basic competencies in the FCS content areas of food, nutrition and wellness; textiles, clothing and apparel; child, family and human development; career education and housing and interior design.
3. In conjunction with the *Child Nutrition and WIC Reauthorization Act of 2004*, FCS professionals coordinate efforts with child nutrition program team members to promote and maintain nutrition and wellness in schools⁵. FCS teachers and programs can play a vital role in the development and implementation of these plans.
4. FCS teachers develop partnerships with Family Career and Community Leaders of America (FCCLA) chapters to encourage participation in *Student Body*, a national FCCLA peer education program designed to help young people learn to eat right, be fit, and make healthy choices (FCCLA, 2006). Research could be conducted with participating students to determine program impacts as previous research has demonstrated a positive impact related to involvement in extracurricular organizations for students.
5. A central database be established and maintained to store FCS secondary program effectiveness-related research. This database should describe research in secondary FCS programs and provide information regarding resources such as state contacts, state standards, state reports, lesson plans, and the like that are germane to these programs. Previous studies have emphasized the importance of having a central database. This database could build upon the information found on the *Family and Consumer Sciences: Effectiveness of Secondary Programs* website (available on February 1, 2006 at <http://www.aeshm.hs.iastate.edu/fceds/effectiveness/>).
6. FCS professional associations should appoint a task force to develop guidelines for key words so that researchers can locate research associated with secondary FCS programs in the databases. These descriptors are critical in locating and identifying relevant research.

⁵ Information related to model nutrition and wellness programs is available from the National Alliance for Nutrition Activity, (n.d.)

Although most FCS educators can show that FCS secondary programs make a significant contribution to nutrition education of secondary students and their families, the research base to support this declaration was not revealed in this literature review.

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