

Building Healthier Children Through Family-Style Service in School Cafeterias

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ABSTRACT

Schools are recognized as ideal environments to promote and enhance the health of children. Previous research has shown a positive association exists between increased prevalence of family-style meals and children's health. Use of family-style service provides opportunities to improve children's overall health and well-being through increased adult role-modeling, peer to peer interactions, and teaching of mealtime etiquette. The potential impact of incorporating family-style service into school cafeterias could include enhanced development of children's physical, social, and emotional health.

Keywords: family-style service; school-age children; school cafeterias; National School Lunch Program.

INTRODUCTION

Traditionally school feeding, administered primarily by the National School Lunch Program (NSLP), has improved children's health and well-being through policy, regulation, and targeted research in schools. Established in 1946, the purpose and philosophy of the NSLP was "to safeguard the health and well-being of the nation's children and to encourage the domestic consumption of nutritious agricultural commodities and other food." The NSLP has remained true to this purpose and philosophy as daily program participation has expanded from approximately 6 million children in 1942 to about 30 million children in 2013-2014 (Food Research and Action Center, 2015; Gunderson, 2014).

Along with the steady expansion of NSLP, a growing emphasis has been placed on improving the nutritional quality of food served in schools. In 2010, the Healthy, Hunger Free Kids Act (2010) was authorized, calling for the most substantial changes in NSLP nutritional standards since its inception. The authorization specifically amended the NSLP to better align school meals with standards set forth by the 2010 Dietary Guidelines for Americans (U.S. Department of Agriculture [USDA] & U.S. Department of Health and Human Services, 2012). In January 2012, the USDA issued a final rule that markedly changed the nutrition standards of school meals (USDA, Food and Nutrition Service [FNS], 2012). Focused on variety, recommendations included increasing fruits, vegetables, and whole grain offerings while lowering the amount of saturated fats, sodium, and calories served in school meals (Institute of Medicine, 2009). The reauthorizations of NSLP meal standards are encouraging; however, optimal implementation is challenging.

Establishing healthier eating practices in schools demands innovative approaches and purposefulness that reaches beyond the focus of meeting children's physical food and nutrition

requirements and economic hurdles. Synchronous approaches must be identified within the current school environment that are more comprehensive and holistic to provide a means of enriching children's health, and allowing for children to better understand and appreciate the role food plays in their lives. Implementation of a family-style service in schools could more fully develop the physical, mental, emotional and social well-being of children through rich food related experiences such as increased communication, adult to child and peer to peer interactions, and teaching of mealtime etiquette. Presently, this is an area of research that remains largely unexplored. The purpose of this paper is to review the current literature and to support the need for integrated research, which addresses the role of family-style service in school meals programs.

SCHOOL FOODSERVICE DELIVERY METHODS

Currently cafeteria, buffet-style, and a la-carte are common approaches used in school meal delivery and service. On the other hand, family style service is an approach that is less frequent to non-existent in this environment. The USDA indicates that "family-style service" allows a student to serve themselves from common dishes of food. Assistance is given from supervising adults and the supervising adult should initially offer the full planned serving of each food component/food item to each student. The supervising adult should encourage additional portions and selections as appropriate. Family style service allows students to make choices in selecting foods. Family style service must meet all of the daily and weekly food component/food item requirements, as well as the weekly dietary specifications. Since replenishment is immediately available at each table, the initial serving of a food component/food item may be less than the full-required minimum serving size (USDA-FNS, 2014).

Family-Style Service and School Cafeterias

At present, two studies have investigated family-style service in school cafeterias with both studies primarily examining the effect of family-style service versus cafeteria-style service on children's dietary intake, and food waste. Cain (1984) randomized forty students (grades 4 to 6) to a family-style or cafeteria-style service and served them two menus. The menus contained both popular and non-popular items (menu 1- macaroni/ground beef and tomato, green beans, coleslaw, cinnamon roll, mixed fruit cup, and milk, menu 2- glazed ham, broccoli, carrot sticks, dinner roll, cherry crisp, and milk). Measurable outcomes included changes in food preferences and dietary intake during snack-time, lunch, and dinner.

Overall, children served family style meals showed significant differences in energy and nutrient intakes compared to children served cafeteria-style; however, these findings were dependent on the mealtime and menu served. For example, higher intakes of key nutrients including protein, thiamin, riboflavin, niacin, and iron were reported during the service of menu one. When served menu two during lunch, increased energy intake and consumption of vitamin A was observed among children participating in family-style service. Lastly, meeting Recommended Dietary Allowances (RDA) during the dinner meal was higher for children served family-style (46% RDA) versus cafeteria-style (36% RDA).

A subsequent study randomized students (grades 3 to 6) to a family-style (n=130) or traditional style meal service (n=126) and served the children the same menus for an eight-week period

(Donnelly Jacobsen, Legowski, Johnson, & McCoy, 2000). Research staff randomly observed students five times over the eight-week period to assess for changes in food waste and dietary intake relative to energy and macronutrients. A key finding, although not statistically significant, was that students participating in the family-style meal service had increased intakes of energy, protein, and fat and decreased food waste.

Findings from these studies suggest that family-style service in school settings positively enhances children's physical health by increasing consumption of key nutrients and decreasing the prevalence of food waste, yet the relationship is not well understood due to the paucity of research. Despite limited attention on family-style service in school cafeterias, the positive association between a family-style service and children's health has been documented in other environments including childcare centers and the home environment.

Family-Style Service and Childcare Centers

Current evidence suggests family-style meal service promotes the development of healthy behaviors and eating practices in young children and provides an environment conducive for adult role modeling and adult-child interactions. One study examined differences in three meal services based on a survey of front-line staff and directors from four western state childcare facilities (Sigman-Grant, Christiansen, Branen, Fletcher, & Johnson, 2008). The meal services included: 1) family-style service (children serve themselves from common bowls and platters); 2) pre-plated (food placed onto plates); and 3) lunch box (some or all food brought from home). Results indicated that adult role modeling for children increased during the family-style service. Teachers reported trying new foods with children at a higher frequency (69%) during the family-style meal service as compared to teachers during the pre-plated (42%) and lunch box (40%) service. Additionally teachers participating in family-style meal service reported talking to children more about food (95%) compared to teachers taking part in the pre-plated (79%) and lunchbox (77%) service (Sigman-Grant et al., 2008).

Similarly, Gable (2001) reported an increase in adult role modeling through the use of a family-style meal service with young children in a childcare setting. A key finding included teachers promoting healthful learning practices with children by engaging in positive versus negative nutrition behavior during mealtimes. Examples of positive practices included encouraging children to try new foods, teaching children the name of new foods, and actively engaging in conversations with the children. Overall these studies suggest that a family-style meal service may promote development of positive eating behaviors in young children when adults are present during mealtimes and there is an increase in adult-role-modeling of these behaviors.

During family-style meal service, food is placed at the center of the table in common dishes and children are allowed to serve themselves. This characteristic affords children a unique opportunity to take responsibility for the food selected and eaten, thus enhancing self-regulation of energy intake (Mogharreban & Nahikiam-Nelms, 1996; National Food Service Management Institute [NFSMI], 2013). Despite this belief, research examining the effect of family-style meal service on children's self-regulation of food intake has produced conflicting results. Presently, one study reported greater energy intake among children served family-style versus the pre-portioned service (Branen, Fletcher, & Myers, 1997). On the other hand, another study reported

lower energy intakes in children served family-style versus the pre-portioned method (Harnack et al., 2012).

Clearly, more research is needed related to children's intake of food relative to nutrition and the ability to self-regulate when served meals family-style. Additional areas for future research may include: (1) whether placing fruits, vegetables, and whole grains in the common dishes during this method of service increases children's selection of these healthier foods and (2) the effect of adult-role-modeling healthy energy intake and portion control practices while eating with the children during the family-style meal service.

The NFSMI reports that motor skills are developed when a child is allowed to pass food around the table and use real silverware, dishes, and napkins during family-style meal service (NFSMI, 2003). Positive social skills are encouraged as shared meals between childcare providers and children increase the facilitation of conversation and interaction with adults during mealtimes. Sigman-Grant et al. (2008) reported an association between family-style meal service and children's social development. As reported by childcare providers, a majority (80%) believed they could facilitate children's motor skill development and nurture children's table manners, conversational skills, and social behavior, when the family-style meal service was implemented (Sigman-Grant et al., 2008).

Family-Style Meal Service and the Home Environment

Several epidemiological studies show that frequency of family meals (FFM) is positively associated with adolescent dietary behaviors, (Burgess-Champoux, Larson, Neumark-Sztainer, Hannan, & Story, 2009; Christian, Evans, Hancock, Nykjaer, & Cade, 2013; Gillman et al. 2000; Larson, Neumark-Sztainer, Hannan, & Story, 2007; Neumark-Sztainer, Hannan, Story, Croll, & Perry, 2003; Utter, Scragg, Schaaf, & Mhurchu, 2008), weight status (Fulkerson, Neumark-Sztainer, Hannan, & Story, 2008; Gillman et al. 2000; Sen 2006; Taveras et al. 2005), and academic success (Eisenberg, Olson, Neumark-Sztainer, Story, & Bearinger, 2004; Snow & Beals, 2006). Adolescents reporting higher FFM have increased intake of fruits, vegetables, grains, and key nutrients such as calcium, iron, folate, fiber, and vitamins C, E, and B₆ (Burgess-Champoux et al., 2009; Christian et al., 2013; Gillman et al., 2000; Larson et al., 2007; Neumark-Sztainer et al., 2003; Utter et al., 2008). Furthermore, one study reported a positive influence between increased FFM and dietary intake during the transition from early (middle school) to middle (high school) adolescence (Burgess-Champoux et al., 2009). More specifically, increased intakes of vegetables, calcium-rich foods, dietary fiber, and key nutrients including calcium, magnesium, potassium, and iron were observed among adolescents who reported a greater frequency of family meals 5 years prior. This finding suggested that dietary behaviors learned early in life are beneficial to the long-term health of adolescents.

The positive association between increased FFM and adolescent weight status is well documented in the literature. A 3-year longitudinal study based on the 1997 National Longitudinal Survey examined the prevalence of overweight and FFM in an ethnically diverse sample of adolescents (Sen, 2006). Results indicated that non-Hispanic white adolescents reporting 3-4 and 5-6 family meals per week in 1999 had a 66% reduction in odds of becoming overweight in 2000 compared to those reporting no family meals per week. Consistent with these findings are other longitudinal studies reporting decreased prevalence of overweight in subjects reporting increased FFM (Gillman et al., 2000; Taveras et al., 2005). Cross-sectional analyses of

FFM and weight status by gender have demonstrated a reduced prevalence of overweight for girls (16.7%) and boys (22.7%) who reported FFM “everyday,” compared to those who reported FFM “most days” (16.6% girls; 23.3% boys) and “never or some days” (19.4% girls; 24.6% boys) (Taveras et al., 2005). In addition to dietary intake and weight status, FFM is positively associated with the academic success of children and adolescents. Collectively, these studies demonstrate that greater FFM positively influences children’s literacy and language development, grade point average, and test scores (Eisenberg et al., 2004; Snow et al., 2006).

CONCLUSIONS AND FUTURE RESEARCH DIRECTIONS

Participation in family-style meals in the home or childcare settings helps children develop healthier eating behaviors while concurrently promoting child and adolescent social development and emotional health. This reflects the overarching goal of the NSLP to “safeguard the health and well-being of the nation’s children.” The World Health Organization (1948) defines health as not merely the absence of disease and infirmity but a complete state of physical, mental, and social well being. Based on preliminary evidence to date, serving children meals using a family-style meal service is a more-holistic approach to health promotion that accounts for the social, emotional, and physical well being of children.

School meals create opportunities to bring school communities together. During a meal -people not only enjoy food but also bond socially by building relationships, conversing, and learning from one another. The school cafeteria is a natural environment to teach table manners, encourage supportive relationships and nurture social skills for children through peer and adult role models. The ability for children to learn these skills in the school cafeteria through a family-style service creates a unique learning opportunity, outside of the classroom and mandatory school curriculum.

Integrating family-style service into school cafeterias as a way to deliver school meals to children is of utmost importance. The literature suggests that family-style service in schools and childcare settings results in greater autonomy, enhanced intakes of key nutrients, and increased opportunities for adult role-modeling and social interaction with adults and peers. Moreover, family-style meals in the home are beneficial to the development of child and adolescent health with greater effects observed as the frequency of family-meals per week increases.

These preliminary research findings are relevant and should be taken into account when considering new avenues to enhance the quality of children’s food experiences in the school cafeteria and increase the effectiveness of the NSLP. From these findings, we propose that a family-style service in school cafeterias be further evaluated as it may allow all the nation’s children from various backgrounds an opportunity to develop the skills necessary to be successful whether related to learning about life, health, or fully being in the presence of others.

Future research directions should investigate the promoters, barriers, and perceptions of parents, teachers, and children towards a family-style meal service, particularly related to social development and the beneficial aspects of an adult presence during mealtimes. The association between dietary intake and this method of service needs to be further evaluated using observational and interventional research study designs. Lastly, qualitative research with school

and government officials are needed to fully examine how a family-style meal service in a school foodservice setting can meet NSLP guidelines.

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