Food, Cooking Skills, and Health: A Literature Review

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A Literature Review

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ABSTRACT

Over the past century, a major shift in North American food practices has been taking place. However, the literature on this topic is lacking in several areas. Some available research on food and cooking practices in the current context is presented, with a focus on how these are affecting health and how they might be contributing to health inequalities within the population. First, cooking and cooking skills are examined, along with the ambiguities related to terms associated with cooking in the research literature. Food choice, cooking, and health are described, particularly in relation to economic factors that may lead to health inequalities within the population. The importance of developing an understanding of factors within the wider food system as part of food choice and cooking skills is presented, and gaps in the research literature are examined and areas for future research are presented. Cooking practices are not well studied but are important to an understanding of human nutritional health as it relates to cultural, environmental, and economic factors.

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RÉSUMÉ

Depuis le dernier siècle, on observe un changement majeur dans les pratiques liées à l'alimentation en Amérique du Nord. Cependant, la littérature sur le sujet présente des lacunes sur plusieurs plans. Quelques recherches disponibles portant sur les pratiques liées aux aliments et à leur préparation dans le contexte actuel sont présentées. L'accent est mis sur la manière avec laquelle dont elles influent sur la santé et pourraient contribuer aux inégalités sur le plan de la santé dans la population. Dans un premier temps, la préparation des aliments et les compétences en cuisine sont examinées, de pair avec les ambiguïtés relatives aux termes associés à la cuisine dans la littérature de recherche. La santé, le choix des aliments et la préparation des aliments sont décrits, particulièrement en faisant référence aux facteurs économiques qui pourraient mener à des inégalités sur le plan de la santé dans la population. L'importance de développer une compréhension des facteurs propres au plus vaste système alimentaire dans le contexte du choix des aliments et des compétences en cuisine est expliquée. De plus, la littérature de recherche est étudiée afin de déterminer les lacunes, et des sujets de recherche potentiels sont présentés. Les pratiques relatives à la préparation des aliments ne sont pas très étudiées. Toutefois, elles sont importantes pour comprendre la santé nutritionnelle des humains qui est associée aux facteurs économiques, culturels et environnementaux.

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INTRODUCTION

In the 2005 Agriculture and Agri-Food Canada report *Canadian Food Trends to 2020: A Long Range Consumer Outlook*, a major trend in Canadians' relationship to food is described: "Consumers will become even more disconnected from food preparation. Shopping and eating habits will be sporadic; meal planning cycles will be shorter, snacking will replace courses, as well as whole meals, and food will become even more portable" (1, p. i). The report goes on to cite food industry statistics as evidence of this trend. For instance, it states that "over half of dinners consumed in Canadian homes in 2003 included a prepared or semi-prepared item as part of the meal" (p. 27). The report paints a vivid picture of the type of market for food that is currently

taking shape, or, it could be argued, that the food industry is banking on having Canadians accept.

PURPOSE

Some literature on cooking and related skills in the current context has been examined; the purpose is to identify gaps in the understanding of how these skills are related to health and nutritional health inequalities. Ideas for future study and practice also are proposed.

METHODS

PubMed, HealthSTAR, and Web of Science were searched, using key words such as "cooking," "cooking practices," and "cooking skills" in combination with "health." Articles published since 1990 were examined for references to other potential, mostly academic, sources, and some authors were contacted for advice on accessing further relevant information. Overall, writing that specifically touched on cooking and health was included.

Much of the anthropological and sociological research on cooking was not included because it did not focus on health, and was therefore beyond the scope of this article. This review does not cover all writing relevant to cooking and health, but instead is intended to illuminate some key issues and highlight potential areas for further research. Little of the research reviewed was conducted in the Canadian context, and therefore it must be applied with some caution.

RESULTS AND DISCUSSION

Cooking and cooking skills

Evolution of cooking skills: Shapiro (2) examines the evolution of cooking over the past century, from the use of almost entirely raw ingredients (i.e., foods in their original forms transformed into meals in the home) to today's thousands of available food products that are mostly processed and often require little or no transformation before consumption. Using evidence from both academic and journalistic sources, she argues against the common assumption that "convenience foods" were developed as a market reaction to women's need to spend less time cooking, particularly during the post-World War II period. Gussow (3) makes a similar argument in previous research. Shapiro (2) explains: "Decade by decade, as the proponents of packaged-food cuisine worked tirelessly to make it the center of American cookery, they met less resistance from women who lacked the taste memory and the skills their mothers or grandmothers had brought to the kitchen" (pp. 79-80). This observation is important because it shows that advertising for pre-packaged food products began long before middle class women moved into the workforce. In addition, it illustrates that the food industry at least partially created the notion that time for cooking was lacking, and that prepared foods therefore were necessary. This the industry did through advertising campaigns in women's publications, beginning in the early 20th century.

This does not mean that the issue of time for food tasks is not of concern today. Time scarcity, the juggling of household tasks and responsibilities, the convenience of food, and women's continued central role in domestic tasks are continually referenced in research literature (4-8). At the same time, evidence suggests that people (usually women) working many hours in the non-domestic sphere are not necessarily more likely to choose convenience foods than are their counterparts who spend more time in the home (5,9-11). The choice to use convenience products may depend more on other personal, social, and economic factors, such as cost of food, knowledge/skill, and education.

Defining cooking skills: Domestic cooking practices are complex to deconstruct and comprehend in a food system with an increasing prevalence of highly processed foods. This is due in part to a changing understanding of concepts such as "cooking" and "processed foods" (12,13). Terms related to cooking are open to interpretation in different cultural, historical, and generational contexts. Furthermore, few research data are available on food preparation practices in the home (12-15). Clear definitions of terms such as "cooking skills," "from scratch," "basic ingredients," and "pre-prepared foods" are rarely present (13,14,16,17). The literature usually describes domestic cooking as either real, traditional, and skilled or artificial, technologically reliant, and unskilled, which is inaccurate and simplistic (14). This dichotomy is artificial because many foods are difficult to categorize as either "basic" or "pre-prepared." For example, into which of these two categories do dried pasta and canned tomatoes fall? In addition, very few people prepare meals from one category or the other on all occasions.

Cooking skills today: Basing her observations on her study of English people of diverse ages and social and economic backgrounds, Short (13,14) describes the types of skills involved in today's cooking as mechanical, technical, perceptual, conceptual, organizational, and academic. She specifies that these skills are difficult to define and are significantly more complex than how they have been presented in much of the research literature to date. For example, reducing cooking skills to the ability to do tasks such as baking, broiling, poaching, and stir-frying is an oversimplification of activities involved in planning, organizing, and preparing a meal. The level of complexity involved in these tasks also depends on the size and composition of the household being fed, and on other aspects of the social context of cooking, such as the household economic situation. Short (13) also notes that cooking with pre-prepared foods must be acknowledged to involve cooking skills (such as using a microwave). In addition, she (13) explains that although a relationship exists between skills and knowledge and practices, the relationship is not straightforward: cooks do not necessarily use convenience foods because they cannot cook, but for other reasons, including, for example, a lack of time or a lack of interest. Short (14) found that study participants' approach to cooking was what mattered most when it came to how much, how often, and what they cooked. She states: "Rather than our technical skills, it is our approach to cooking that influences what and how we cook, 'approach to cooking' being made up of the attitudes and beliefs about cooking that we share with others, our personal identifications as people who cook and our confidence in cooking and

the degree to which we find it an effort, arising in part from our tacit, unseen skills and academic knowledge" (p. 93).

Lang and Caraher (12) agree that the issue might be a lack of confidence in using basic skills, rather than necessarily a decline in skills. They describe what they refer to as a "culinary transition," a "process in which whole cultures experience fundamental shifts in the pattern and kind of skills required to get food onto tables and down throats" (p. 2). One particularly interesting aspect of this culinary transition is that food acquisition (e.g., shopping), in addition to food "assembly," has increased as more people travel farther to reach grocery stores (12,13). In many communities, grocery stores have become more concentrated in suburban areas, while inner city areas are serviced less well. Food "assembly" refers to meals that are made using several pre-prepared components (for example, heated packaged soup, bagged salad greens with prepared salad dressing, cooked frozen, seasoned, and cut meat, and dessert mixes).

Could a decline in cooking skills teaching be contributing to obesity and diabetes?

Lang and Caraher (12) focus on the reasons for this culinary transition, or why the skills required to prepare food are changing. They explain that influences such as globalization, changing production and processing methods, the growth of processed/prepared food, and the increase in takeout meals all are important reasons. They also emphasize that some of these factors have not been included in research on food practices; data tend to focus on individual behaviours rather than on factors in the food system.

Learning cooking skills: Cooking and food skills learning in the home, with family members, in school and other more formal learning environments, and through forms of mass media also is of interest. Mothers are most often reported as the major source of cooking learning in childhood (14,16). Caraher et al. (16) found that in England, the importance of school cooking classes for learning was greatest for people in lower-income groups, while cookery books were cited as being more important to people from higher-income groups. This raises some important questions about the decline in cooking skills teaching in Canadian schools. For example, could a decline in cooking skills teaching be contributing to the heavier burden of nutrition-related problems such as obesity and diabetes in lower-income Canadians?

Food choice, cooking skills, and health

A significant body of research demonstrates that diets based on lean meats, vegetables, and fruit tend to be associated with higher costs than are energy-dense diets rich in added sugars and fats (18-26). In fact, according to this research, refined grains, added sugars, and added fats (all food components present in large quantities in many packaged and pre-prepared foods) are among the lowest-cost sources of dietary energy: "An inverse relationship between energy density of foods (kilojoules per gram) and their energy cost (dollars per megajoule) means that the more energy-dense diets are associated with lower daily food consumption costs and may be an effective way to save money" (22, p. 900). In addition, food-costing research conducted in Canada has shown the extreme difficulty, if not impossibility, for a low-income family to consume a nutritious diet based on Canadian government recommendations (27). As a result, Lang and Caraher (12) emphasize that a focus on cooking skills classes "aimed at the poor without context run the risk of further disadvantaging the poor and missing the bigger picture of why people cannot or choose not to cook. The choice not to cook from basics is not always related to lack of skills but to aspects of food culture" (p. 3). Food culture here includes the relative costs for nutritious versus less nutritious foods.

The culinary transition described by Lang and Caraher (12) might lead to a number of health consequences. First, as cooking changes, reliance on ready-prepared foods could mean an unwitting intake of fats and insufficient intake of fruit and vegetables, both of which are major concerns for health educators. Lang and Caraher (12) speculate that this may have a differential impact on lower-income people because higher incomes mean people can afford pre-prepared "health food" that has greater quantities of vegetables and fruit and is lower in fat and sodium.

Few assessments focus on food preparation practices and the influence of cooking skills on dietary nutritional quality. When assessments have been completed, they have been primarily in the context of program evaluations that have included only program participants and in self-reports of cooking behaviour; direct measures of at-home cooking practices are not readily available (15). Database searches result mostly in evaluations of different types of food skills programs aimed at improving individual health behaviours. These include programs in schools, colleges, universities, and low-income communities (28-31). Most show promising results with post-tests, which indicate positive dietary change and increased confidence in food preparation. However, generally the results reveal only small changes, and research design limitations often exist; for example, few investigators look at changes beyond a few months after program completion.

More difficult to find are examinations of cooking skills in different population groups, and how these relate to diet quality. In a study in which food habits were examined in people aged 18 to 24, 18.3% of young women and 23.2% of young men reported having inadequate cooking skills (32). The investigators also found that the participants with the highest dietary quality cooked more often and cooked meals with more complex preparation steps. In general, however, the study group did not cook very much. In another study, McLaughlin et al. (15) used 24-hour intake dietary recall data to estimate the extent of at-home food preparation in a group of low-income women. The authors specifically examined the relationship between food preparation activity and household food security. They found that increased complexity of at-home food preparation was associated with

living in more food-secure settings. However, the study design did not make clear whether greater preparation complexity may have contributed to the women's abilities to avoid more severe food insecurity, or whether more food-secure participants had greater amounts of food available and therefore more complex meal preparation.

Few Canadians know the conditions under which the food they consume has been produced.

Food knowledge and other skills

The discussion of changing food skills at the population level is incomplete without an examination of the knowledge and skills required to make informed food choices, which are based not only on individual health, but also on the health of the surrounding and larger communities. One must understand elements of the food and political systems, such as sustainable food systems, globalization, and human rights. Jaffe and Gertler (33) write about deskilling in their work on the ongoing transformation of food systems. They describe certain dimensions of this phenomenon as most significant: "In what aspects of food lore and culture may contemporary consumers lack, lose, or fail to acquire requisite skills or practical knowledge? The overlapping domains of interest include selection of foods and particular products (e.g. informed shopping), food storage and preservation, and cooking and related activities of food preparation. Gaps in these areas of consumer knowledge and know-how impinge on the cost of eating, on nutrition, on health, and on the environment. They also increase the negative social impacts of food consumption and decrease the aesthetic and cultural enjoyment of foods" (p. 148).

The political, economic, social, and environmental implications of today's North American food system are diverse, complex, and well-documented (34-40). Few Canadians know the conditions under which the food they consume has been produced. Few understand the effects of the globalized food system on agricultural communities around the world, as well as on global warming and diminishing fossil fuel resources. This is a type of deskilling, according to Jaffe and Gertler (33). They argue that food and cooking skills include those required to make informed choices, not only about the nutritional quality of food, but also about how food choices affect society as a whole.

CONCLUSION

The food system described in *Canadian Food Trends to 2020: A Long Range Consumer Outlook* (1) is likely to lead to health problems, particularly among people who cannot afford the more nutritious versions of highly processed foods discussed in the report. Shapiro (2) links the health- and nutrition-related problems of today with the changing food system over the course of the past century or so: "Back at the turn of the twentieth century, we began the long process of turning over to the food industry many of the decisions about what we eat, in the name of habit or convenience or taste. Today our staggering rates of obesity and diabetes are testimony to the faith we put in corporations to feed us well. But the food industry is a business, not a parent; it doesn't care what we eat as long as we're willing to pay for it…. Home cooking these days has far more than sentimental value; it's a survival skill" (pp. 252-3).

When cooking skills have been evaluated in a research context, often no clear definitions of terms are included. This leaves them open to interpretation and puts research results into question. In addition, what and how people are cooking do not necessarily reflect the skills they have or lack. Furthermore, an examination of how cooking skills are related to dietary quality is seldom included in available research.

Domestic cooking must be examined in different life contexts, focusing on different generations, different income and education levels, and different lifestyles (such as, for example, rural versus urban living). This should also include examinations of grocery shopping practices, which would permit the gathering of important information on the topic of cooking practices; this would involve observing distances travelled, the time spent on food acquisition, and the thought and planning required for families to purchase the foods that become household meals. These data could help in a determination of whether the culinary transition described by Lang and Caraher (12) is part of the Canadian cooking experience.

The study of cooking poses significant methodological challenges. Direct observation is challenging because it is labour intensive, it can be intrusive, and the observer is likely to have an impact on the practices of the observed. Meanwhile, self-reporting in nutrition research is notoriously inaccurate (41). In-depth interviews in which significant rapport is built between the researcher and the participant can yield a great deal of important information, but this is a labour-intensive form of research that is not practical for large-scale studies. Reliable in-depth survey tools must be developed if the practices of different population groups are to be captured accurately, and if their food and cooking skill needs are to be understood.

RELEVANCE TO PRACTICE

Significant limitations in understanding add to the difficulty of planning interventions and making suggestions for policy changes that might improve the health of populations. While cooking today may require skills that differ from those used by previous generations, the argument that these skills continue to be complex is compelling. Regardless of whether Canadians are becoming deskilled in cooking, significant health consequences ensue from a diet that relies heavily on highly processed foods. Also important is an examination of how changes in the types of foods consumed may contribute to disempowerment in the face of the industrial food system; food insecurity must be evaluated among low-income segments of the population as they follow the societal trend toward using pre-prepared foods in progressively greater numbers.

Programs to encourage cooking and a greater understanding of the production of food should continue to be developed with the help of the existing evidence. This would enable dietitians and other health professionals to build on the needs and interests already understood, and to work within the contexts in which people live. The current food environment is one in which processed foods are everywhere, and any programs developed need to take this reality into account.

Examinations of food skills learning, both in terms of pedagogical objectives and direct study of the process and skills transferred, could enable a better understanding of the importance of schools in food skills learning. In terms of policy, a way of reaching the largest number of people during their formative years could be the reintroduction of greater study of food and the food system in primary and secondary education. The value of this policy should be examined carefully because it could benefit individual, social, and environmental health.

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References

1. Serecon Management Consulting. Canadian food trends to 2020: a long range consumer outlook. Ottawa: Agriculture and Agri-Food Canada; 2005.
2. Shapiro L. Something from the oven. New York: Penguin; 2004.
3. Gussow JD. The fragmentation of need: women, food and marketing. Heresies. 1987;21:39-43.
4. Bava CM, Jaeger SR, Park J. Constraints upon food provisioning practices in 'busy' women's lives: trade-offs which demand convenience. Appetite. 2008;50:486-98.
5. Candel M. Consumers' convenience orientation towards meal preparation: conceptualization and measurement. Appetite. 2001;36:15-28.
6. Glanz K, Basil M, Maibach E, Goldberg J, Snyder D. Why Americans eat what they do: taste, nutrition, cost, convenience and weight control concerns as influences on food consumption. J Am Diet Assoc. 1998;98:1118-26.
7. Jabs J, Devine CM. Time scarcity and food choices: an overview. Appetite. 2006;47:196-204.
8. Warde A. Convenience food: space and timing. Br Food J. 1999;101(7):518-27.
9. Darian J, Tucci L. Convenience-oriented food expenditures of working-wife families: implications for convenience food manufacturers. J Food Prod Mark. 1992;1:25-36.
10. Darian J, Klein S. Food expenditures of working-wife families: meals prepared away from home versus convenience foods. J Consumer Policy. 1989;12:139-64.
11. Kim C. Working wives' time-saving tendencies: durable ownership, convenience food consumption and meal purchases. J Econ Psychol. 1989;10:391-409.
12. Lang T, Caraher M. Is there a culinary skills transition? Data and debate from the UK about changes in cooking culture. J Home Econ Inst Aust. 2001;8(2):2-14.
13. Short F. Domestic cooking skills—what are they? J Home Econ Inst Aust. 2003;10(3):13-22.
14. Short F. Kitchen secrets: the meaning of cooking in everyday life. Oxford: Berg; 2006.
15. McLaughlin C, Tarasuk V, Kreiger N. An examination of at-home food preparation activity among low-income, food-insecure women. J Am Diet Assoc. 2003;103(11):1506-12.
16. Caraher M, Dixon P, Lang T, Carr-Hill R. The state of cooking in England: the relationship of cooking skills to food choice. Br Food J. 1999;101(8):590-609.
17. Lang T, Caraher M, Dixon P, Carr-Hill R. Cooking skills and health. London, UK: Health Education Authority; 1999.
18. Maillot M, Darmon N, Vieux F, Drewnowski A. Low energy density and high nutrition quality are each associated with higher energy costs in French adults. Am J Clin Nutr. 2007;87:690-6.
19. Monsivais P, Drewnowski A. The rising cost of low-energy-density foods. J Am Diet Assoc. 2007;107:2071-6.
20. Drewnowski A, Darmon N. The economics of obesity: dietary energy density and energy cost. Am J Clin Nutr. 2005;82:265S-73S.
21. Drewnowski A. How to modify the food environment: energy density, food costs, and portion size. J Nutr. 2005;135:889-99.
22. Drewnowski A, Darmon N. Food choices and diet costs: an economic analysis. J Nutr. 2005;135:900-4.
23. Brimblecombe JK, O'Dea K. The role of energy cost in food choices for an aboriginal population in northern Australia. Med J Aust. 2009;190(10):549-51.
24. Epstein LH, Dearing KK, Paluch RA, Roemmich JN, Cho D. Price and maternal obesity influence purchasing of low- and high-energy-dense foods. Am J Clin Nutr. 2007;86(4):914-22.
25. Newby PK. Examining energy density: comments on diet quality, dietary advice, and the cost of healthful eating. J Am Diet Assoc. 2006;106(8):1166-9.
26. Rush E, Puniani N, Snowling N, Paterson J. Food security, selection, and healthy eating in a Pacific community in Auckland New Zealand. Asia Pac J Clin Nutr. 2007;16(3):448-54.
27. Dietitians of Canada. The cost of eating in BC 2007. Vancouver: Dietitians of Canada, BC Region, and the Community Nutritionists Council of BC; 2007.
28. Wrieden WL, Anderson AS, Longbottom PJ, Valentine K, Stead M, Caraher M, et al. The impact of a community-based food skills intervention on cooking confidence, food preparation methods and dietary choices—an exploratory trial. Public Health Nutr. 2007;10(2):203-11.
29. Brown BJ, Hermann JR. Cooking classes increase fruit and vegetable intake and food safety behaviors in youth and adults. J Nutr Educ Behav. 2005;37:104-5.
30. Levy J, Auld G. Cooking classes outperform cooking demonstrations for college sophomores. J Nutr Educ Behav. 2004;36:197-203.
31. Liquori T, Koch PD, Contento I, Castle J. The Cookshop Program: outcome evaluation of a nutrition education program linking lunchroom food experiences with classroom cooking experiences. J Nutr Educ Behav. 1998;30:302-13.
32. Larson NI, Perry CL, Story M, Neumark-Sztainer D. Food preparation by young adults is associated with better diet quality. J Am Diet Assoc. 2006;106(12):2001-7.
33. Jaffe J, Gertler M. Victual vicissitudes: consumer deskilling and the transformation of food systems. Agric Hum Values. 2006;23(2):143-62.
34. Barndt D. Women working the NAFTA food chain: women, food and globalization. Toronto: Second Story Press; 1999.
35. Lang T, Heasman M. Food wars. London, UK: Earthscan; 2004.
36. Lappé F, Lappé A. Hope's edge: the next diet for a small planet. New York: Penguin Putnam; 2002.
37. Nestle M. Food politics: how the food industry influences nutrition and health. Berkeley: University of California Press; 2002.
38. Pawlick T. The end of food: how the food industry is destroying our food supply—and what you can do about it. Vancouver: Greystone Books; 2006.
39. Pollan M. The omnivore's dilemma: a natural history of four meals. New York: Penguin Group; 2006.
40. Winson A. The intimate commodity: food and the development of the agro-industrial complex in Canada. Guelph, ON: Garamond Press; 1992.
41. Maurer JJ, Taren DL, Teixeira PJ, Thomson CA, Lohman TG, Going SB. The psychosocial and behavioral characteristics related to energy misreporting. Nutr Rev. 2006;64(2 Pt 1):53-66.