Time Spent on Home Food Preparation and Indicators of Healthy Eating

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Background: The amount of time spent on food preparation and cooking may have implications for diet quality and health. However, little is known about how food-related time use relates to food consumption and spending, either at restaurants or for food consumed at home.

Purpose: To quantitatively assess the associations among the amount of time habitually spent on food preparation and patterns of self-reported food consumption, food spending, and frequency of restaurant use.

Methods: This was a cross-sectional study of 1,319 adults in a population-based survey conducted in 2008–2009. The sample was stratified into those who spent <1 hour/day, 1–2 hours/day, and >2 hours/day on food preparation and cleanup. Descriptive statistics and multivariable regression models examined differences between time-use groups. Analyses were conducted in 2011–2013.

Results: Individuals who spent the least amount of time on food preparation tended to be working adults who placed a high priority on convenience. Greater amount of time spent on home food preparation was associated with indicators of higher diet quality, including significantly more frequent intake of vegetables, salads, fruits, and fruit juices. Spending <1 hour/day on food preparation was associated with significantly more money spent on food away from home and more frequent use of fast food restaurants compared to those who spent more time on food preparation.

Conclusions: The findings indicate that time might be an essential ingredient in the production of healthier eating habits among adults. Further research should investigate the determinants of spending time on food preparation.

Introduction

Food preparation habits and skills have been associated with healthier dietary intakes. In one study,[1] young adults who regularly prepared food consumed fast food less frequently and were more likely to meet dietary recommendations. Another study[2] found that families purchased a greater variety of vegetables on a regular basis when the main food preparer had confidence in preparing these foods. In a third study,[3] women who planned meals ahead of time and enjoyed trying new recipes were more likely to consume two or more servings of fruit per day whereas women who found cooking to be a chore and spent little time cooking were less likely to consume fruit. However, recent surveys from the U.S. have revealed that time spent on cooking and food preparation has declined substantially since the 1960s, with Americans currently spending an estimated 33 minutes per day on food preparation and cleanup.[4]

Limited time available for cooking may be one of the barriers to the adoption of more healthy diets. Time scarcity was prevalent among working parents earning low wages in the U.S. Even those parents who valued healthy family meals often served their children foods that were fast and easy to prepare,[5] including hot dogs, pizza, and macaroni and cheese.[6] Research on low- and middle-income working parents showed that they coped with time pressures by relying more on takeout and restaurant meals and basing family meals on prepared entrees and other quick options.[7] Lack of time was the leading barrier to adopting dietary guidance cited by European adults.[8]

The need for convenience may also be at odds with recommended meal plans that are optimized for

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nutrition and affordability. Economic analyses[9,10] of the U.S. Department of Agriculture's (USDA's) Thrifty Food Plan have found that these nutritious, low-cost meal plans were time-intensive to prepare and much more costly when time was explicitly accounted for. Other analyses[11] indicate that for single-headed households, time was a greater constraint than money in achieving the Thrifty Food Plan's dietary targets.

More research is needed to understand how time availability figures into the preparation and consumption of healthy diets, but relatively few studies have accounted for time use generally or food-related time use in particular. The purpose of this study was to quantitatively explore the interplay between food-related time use, restaurant use, and indicators of a healthy diet. Further, little is known about the associations between time spent on cooking and food spending. The present study analyzed data from a population-based study of adults to test the hypothesis that more time spent preparing, cooking, and cleaning up from meals at home would be associated with healthier patterns of food consumption and fewer meals consumed away from home.

Methods

Subjects

The Seattle Obesity Study was a population-based study of social determinants of diet and health.[12,13] A stratified sampling scheme ensured adequate representation by income range and race/ethnicity. Following standard procedures, randomly generated telephone numbers were matched with residential addresses using commercial databases. A pre-notification letter was mailed out to alert potential participants that their household had been randomly selected by the University of Washington School of Public Health for a research study. Telephone calls were placed in the afternoons and evenings by trained, computer-assisted interviewers with up to 13 follow-up calls. Once the household was contacted, an adult member of the household was randomly selected to be the survey respondent.

Exclusion criteria were cell phone numbers, numbers that were not associated with a residence, no person aged ≥18 years living in the residence, residents away for the duration of the interviewing period, English language not spoken, and discordance between address data obtained from the vendor and self-reported by the respondent. Over the course of the study, 16,500 pre-notification letters were mailed out and 5,102 of these were ruled out as ineligible by the exclusion criteria.

Eligibility could not be confirmed for a large fraction of the sample (9,292/16,500=56%). Of the 2,420 confirmed residential households, 23 refused to participate and another 291 asked to be called back but were not later reached; thus, eligibility for these households could not be confirmed. Of the 2,106 confirmed eligible households, 105 terminated the interview midway or only partially completed the survey.

A 20-minute telephone survey was then administered to 2,001 participants to collect self-reported data on cooking and eating habits; diet quality; and sociodemographic, lifestyle, and health measures. Data were collected in 2008–2009; the protocols were modeled on the Behavioral Risk Factors Surveillance System (BRFSS) surveys for Washington State[14,15] and were approved by the University of Washington IRB.

Measures

The main independent variable of interest was time spent on activities related to food preparation. Specifically, all participants were asked the following open-ended question: *How many hours on average do you spend preparing, cooking, and cleaning up from meals each time?* Responses were recorded on a per-week basis. This time-use question is similar to one currently used in the Flexible Consumer Behavior Survey (FCBS) module administered to participants in the National Health and Nutrition Examination Survey (NHANES).[16] Based on the distribution of responses, data were grouped into three time-use strata: <1 hour/day, 1–2 hours/day, >2 hours/day.

Food consumption, food spending, and restaurant use were the dependent variables of interest. Food consumption was measured by frequency of consumption of six food groups that reflected healthier and less-healthy intakes: fruit (excluding juice); green salad; vegetables other than salad or potatoes; fruit juice; sugar-sweetened beverages (including fruit drinks, soft drinks, and colas but excluding diet or sugar-free drinks); and sweetened grain-based snacks (including cookies and cakes).

These food groups were based on standard dietary questions used in the BRFSS: fruit, fruit juice, and vegetables, from the BRFSS core questionnaire[17]; sweet snacks, adapted from a module previously used to examine sources of fat[18]; and sugar-sweetened beverages, from state-specific BRFSS modules.[19] Respondents were asked to report their frequency of consumption for each food, which was coded in number of times per week by the survey administrator.

Two estimates of self-reported, household-level food spending were examined: total weekly food spending when eating out (including restaurants, coffee shops, and fast food outlets) and food spending excluding eating out, which primarily represented food expenditures at supermarkets and grocery stores. These questions were adapted from the NHANES FCBS[16] and were phrased as follows: *How much does your household spend on eating out in an average week, not including alcohol or tips?* and *Altogether, how much does your household spend on food in an average week, excluding eating out?* These household-level estimates were then divided by number of people in each household to obtain per-person weekly spending variables.

Restaurant use by the participant was documented by asking questions again based on the NHANES FCBS[16]: *When you eat out, how often you go to each type of restaurant?* Responses were recorded separately for full-service and fast food/quick-service restaurants. The five response options ranged from *never or less than twice a month* to *4+ times per week*. For analytic purposes, the variables were dichotomized into "once per week or more" versus "less than once per week."

Socioeconomic variables were educational attainment and household income. Both variables were re-grouped to reduce the degrees of freedom in multivariable models and cut points for regroupings were driven by the distribution of the sample and a priori categories of interest. Six categories of education were re-coded into three