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Who is teaching the kids to cook? Results from a nationally representative survey of secondary school students in New Zealand

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Abstract: Learning how to cook is an important skill for developing healthy eating behaviors. Moreover, involvement in home cooking may offer young people opportunities for skill building, identity development and social engagement with their families. Recently, there have been concerns that the current generation of young people may not have the opportunities to develop sufficient cooking skills. These concerns have been addressed by the initiation of numerous, localized interventions. Yet, little is known about where the current generation of young people learn cooking skills. The objective of this study was to describe where the current generation of young people report learning to cook, drawing on nationally representative data from New Zealand. Data were collected as part of Youth2012, a nationally representative survey of secondary school students ($n=8500$) in New Zealand. Almost all students reported learning to cook and from multiple sources. Almost all students reported learning to cook from a family member (mother, father, or other family member), approximately 60% of students reported that they learned to cook from certain media (cookbooks, TV, or the Internet) and half of all students reported learning to cook at school. There were numerous differences in where students learned to cook by socio-demographic characteristics. Findings from the current research highlight the important role that families play in teaching young people to cook and will be useful for those working with young people to develop these skills.

Keywords: adolescent; cooking; family; media; school.

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Introduction

Learning how to cook is an important skill for developing healthy eating behaviors that persist into adulthood. Adolescents who are involved with food preparation at home are more likely to enjoy cooking in adulthood (1) and adults who have adequate cooking skills prefer and buy more vegetables (2, 3). Likewise, adolescents who report cooking abilities and participate in home cooking are more likely to meet recommendations for fruit and vegetable consumption and share frequent meals with their families (4). Home-prepared foods are healthier than commercially prepared foods as commercially prepared foods come in preset portion sizes that encourage overconsumption (5), are more energy dense and lie on the causal pathway to obesity (6–9). Moreover, eating food prepared at home is associated with a range of nutritional benefits for children and adolescents (10–13).

Involvement in cooking and meal times may offer young people opportunities for skill building, identity development and social engagement with their families. A qualitative study of English children found that food was a central way for expressing love in families and that some students use foods as a way of reinforcing their ethnic identity (14). Young people who frequently share meals with their families report greater connection and communication with their families and better emotional wellbeing (12). Adolescents who report good cooking abilities have better mental health and stronger connections with their families (4). Furthermore, young people feel it is important that their family eats together and they enjoy eating with their family (15, 16).

In recent years, there have been concerns that the current generation of young people may not have the opportunities to develop sufficient cooking skills (17). This may be due to the growth in the availability and affordability of highly processed, convenience foods, meaning that families may no longer have to cook to be able to eat. Between the 1960s and 2000s, the proportion of energy consumed from home-prepared foods in the US dropped from 95% to 65% (18). Learning to cook has

also traditionally been part of school curricula. However, recent changes to the home economics curricula internationally has meant that there is now less of an emphasis on basic cooking skills and more of an emphasis on the industrial and commercial context of food manufacturers (19). Little data exist on the cooking skills and abilities of populations. In the UK, fewer than two-thirds of adults reported that they had prepared a main meal on five or more of the previous nights (20). In New Zealand, only 43% of high school students reported that they could cook a meal from basic ingredients, very easily (4).

The concerns over the limited opportunities for young people to learn to cook have been addressed by the initiation of numerous, localized interventions. The great majority of these interventions have been administered through school or community settings (21). While these settings are practical and feasible, it remains unknown if these are the best settings for teaching young people these necessary skills. In fact, little is known about where the current generation of young people learn to cook. This is particularly important as new technologies are providing today's young people with opportunities and resources that have not been available before.

The current research aims to address this gap. The objective of this study was to describe where the current generation of young people report learning to cook, drawing on nationally representative data from New Zealand. Findings from this research will be useful for developing new strategies and interventions to develop cooking skills for adolescents.

Methods

Data were collected as part of Youth'12, a nationally representative survey of the health and wellbeing of secondary school students in New Zealand. A report of the methodology and design of the Youth'12 survey has been published elsewhere (22).

A two-stage sampling design was used for the Youth'12 survey. From 125 schools randomly selected to participate, 91 took part in the survey. From the participating schools, 12,503 students were randomly selected and 8500 students consented to participate in the survey. Reasons for non-participation were largely unknown or due to students being absent from school on the day of the survey (22).

The University of Auckland Human Participants Ethics Committee granted ethical approval for the study. Consent was obtained from school principals on behalf of the Boards of Trustees. Students and parents were provided with information sheets about the survey. Parents were encouraged to discuss the survey with their child and could withdraw their child from participation. Students consented themselves to participate in the survey.

Data collection took place at school during the school day. On the day of the survey, students were asked to come to a designated

room. Upon arrival students were given an anonymous login code to access the survey. The survey included a 608-item multimedia questionnaire administered on an Internet tablet. The multimedia nature of the questionnaire meant that all students could read each question and response options themselves, while listening to the questions and responses being read aloud through individual headphones.

Measures

Where students learned to cook was assessed by the question, "Where did you learn to cook?" (You may choose as many as you need.) Possible responses included: mother or someone who acts as your mother, father or someone who acts as your father, grandparents/other family members, school, cookbooks, TV, Internet, friends, other (e.g. church, Marae/indigenous Māori sacred gathering place), or never learned. The demographic variables, age, sex, age and ethnicity, were assessed by self-report. Household poverty was assessed by the presence of any two of the following nine indicators: household food insecurity (often/all the time), moving homes frequently (two or more times in past year), not having a working car at home, not having a telephone at home, not having a computer at home, overcrowding (more than two people per bedroom), both parents unemployed, use of rooms other than bedrooms for sleeping (e.g. living room, garage), and not going away on a family holiday during the past 12 months (23). Students orally provided their residential address to identify the student's census meshblock number. The meshblock was used to determine the geographical location of the small area in which a student lived (approximately 90 households per meshblock). This information was linked to the New Zealand deprivation index (24), a well-validated instrument measuring the extent of deprivation in small areas of New Zealand.

Analysis

All analyses were conducted with the SURVEY procedures in the SAS software (version 9.2, SAS Institute, Cary, NC, USA, 2008) to account for the clustering and weighting of the data. Prevalence estimates were derived using bivariate analyses to examine the simple associations between the variables of interest. Associations are considered to be statistically significant where 95% confidence intervals (CIs) are non-overlapping.

Results

Almost all students reported more than one source of learning to cook (Figure 1). Family (mother, father, or other family member) was reported by 93% of students. Approximately 60% of students reported that they learned to cook from certain media (cookbooks, TV, or the Internet) and half of all students reported learning to cook at school. More than one-third of students reported learning to cook from all three sources (family, media and school).

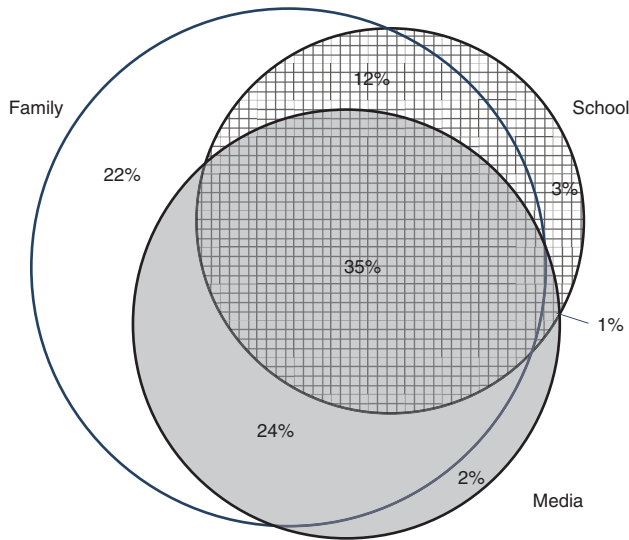


Figure 1: Visual representation describing the multiple sources of adolescents learning to cook.

The relationships between where students learn to cook and the demographic characteristics of students are described in Table 1. In total, 4% of students reported that they have never learned to cook, and males (6.4%; 95% CI 5.4, 7.3) were more likely to report never learning to cook than females (2.6%; 95% CI 1.9, 3.2). Female students were more likely than male students to report learning to cook from a variety of sources, including mothers, other family members, all media sources, and friends. Older students (i.e. 16 years and older) were more likely to report never learning to cook than 13-year-old or younger students. In general, younger students were more likely to report learning to cook from school, than older students. In contrast, the students aged 17 years or older were more likely to report learning to cook from the Internet (35.1%; 95% CI 31.7, 38.5) than the 13-year-old students (28.6%; 95% CI 26.1, 31.2).

There were several differences in learning to cook by the ethnicity of the students. Notably 9% of Asian students (95% CI 7.1, 11.0) reported that they have never learned to cook, compared with 3% of New Zealand European and other students (95% CI 2.7, 4.0), 3% of Māori (indigenous New Zealander) students (95% CI 2.5, 4.4), and 5% of Pacific Island students (95% CI 7.1, 11.0). Asian students were less likely to report learning to cook from family members and school than New Zealand Europeans, but more likely to report learning to cook from the Internet than the other ethnic groups of students. Pacific Island students and Māori students were more likely to report learning to cook from other family members (e.g. grandparents), TV, and other places (e.g. church) than Asian and New Zealand European/other students.

There were also several indications of a social gradient in learning to cook. Students living with household poverty were more likely to report never learning to cook (5.8%; 95% CI 4.7, 6.9) than students not living with poverty (4.0%; 95% CI 3.3, 4.6). Moreover, students living with poverty and students living in areas of high socio-economic deprivation were less likely to learn to cook from their mothers, cookbooks, and the Internet, and more likely to learn to cook from other places (e.g. churches).

Discussion

The aim of the current study was to describe where young people learn to cook. We found that only a small percentage of young people report that they have never learned to cook, and that most young people learn to cook from more than one source. Overall, families (mothers, fathers, and other family members) are the most reported sources for learning to cook. There were several differences in learning to cook by socio-demographic characteristics of the students. Perhaps most notable was the social gradient, where students experiencing socio-economic deprivation were less likely to learn to cook from their mothers and media, but more likely to learn to cook from other places (e.g. churches).

Findings from the current study are unique; as such it is difficult to compare our key findings to other studies. We identified only one other study attempting to describe where adults learn how to cook (25), specifically a survey of more than 5000 English adults conducted in 1993. Findings from the English survey also suggested that mothers were an important source of learning to cook and that there was a social gradient in resources for learning to cook. For example, adults experiencing socio-economic deprivation were less likely to learn to cook from their mothers, but more likely to learn to cook at school.

Only half of students reported learning to cook from school. This is surprising as the New Zealand curriculum states that “all students will have had opportunities to learn... practical cooking skills by the end of year 8” (26). However, approximately 70% of students report learning to cook from cookbooks, television or the Internet. This is a rapidly evolving area and media may provide new opportunities for engaging young people in learning cooking skills.

The current study provides timely data on where the current generation of young people are learning to cook. That said, there are a few limitations to consider when interpreting these findings. First, our data was collected from a nationally representative sample of high school

Table 1: Where students learned to cook, by socio-demographic characteristics.

	Mother	Father	Other family	School	Cookbooks	TV	Internet	Friends	Other (e.g. church)	Never learned
	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)
Total	83.9 (82.8, 85.0)	41.3 (39.9, 42.7)	37.4 (35.7, 39.0)	49.0 (46.3, 51.6)	49.7 (46.5, 52.9)	28.2 (27.0, 29.5)	30.6 (28.6, 32.6)	19.3 (18.0, 20.5)	5.4 (4.6, 6.2)	4.3 (3.7, 4.9)
By sex										
Males	79.1 (77.4, 80.7)	40.8 (38.6, 42.9)	31.9 (29.8, 33.9)	47.0 (43.9, 50.2)	36.0 (33.5, 38.5)	25.9 (24.3, 27.5)	24.4 (22.3, 26.5)	14.2 (12.8, 15.6)	4.7 (4.0, 5.5)	6.4 (5.4, 7.3)
Females	87.9 (86.7, 89.0)	41.8 (40.1, 43.5)	41.9 (40.0, 43.8)	50.6 (47.2, 54.0)	61.1 (57.9, 64.3)	30.2 (28.5, 31.9)	35.7 (33.3, 38.1)	23.4 (22.0, 24.9)	6.0 (4.8, 7.2)	2.6 (1.9, 3.2)
By age										
13 Years and younger	83.3 (80.9, 85.7)	42.4 (39.9, 44.9)	40.4 (37.7, 43.1)	57.5 (53.8, 61.1)	52.6 (49.3, 56.0)	29.6 (27.3, 31.9)	28.6 (26.1, 31.2)	19.6 (17.4, 21.8)	5.4 (4.0, 6.7)	3.0 (2.1, 3.8)
14 Years	83.5 (81.7, 85.2)	42.1 (40.0, 44.3)	38.6 (36.2, 40.9)	52.9 (49.8, 56.1)	50.1 (46.1, 54.1)	28.8 (26.1, 31.5)	27.5 (25.0, 30.0)	17.7 (15.8, 19.6)	5.6 (4.6, 6.7)	3.9 (3.0, 4.9)
15 Years	84.1 (82.4, 85.8)	40.2 (37.7, 42.6)	37.7 (34.7, 40.8)	48.3 (44.7, 52.0)	48.0 (43.9, 52.1)	27.6 (25.3, 29.8)	29.5 (26.7, 32.2)	19.6 (17.0, 22.2)	6.1 (4.7, 7.5)	4.3 (3.1, 5.5)
16 Years	84.0 (81.9, 86.0)	40.3 (37.5, 43.2)	37.2 (34.0, 40.4)	44.1 (40.6, 47.7)	49.1 (45.7, 52.4)	28.2 (25.6, 30.7)	34.0 (30.5, 37.4)	19.1 (17.2, 21.1)	5.8 (4.6, 7.0)	5.2 (4.1, 6.3)
17 Years and older	84.8 (82.8, 86.8)	41.4 (38.6, 44.1)	31.5 (28.9, 34.2)	39.1 (34.7, 43.6)	48.4 (43.7, 53.1)	26.8 (24.2, 29.2)	35.1 (31.7, 38.5)	20.6 (18.3, 23.0)	4.0 (2.8, 5.2)	5.5 (4.0, 6.9)
By ethnicity										
NZ European/ other	86.2 (84.9, 87.5)	41.5 (39.9, 43.0)	35.1 (33.2, 37.1)	48.8 (45.7, 51.8)	56.1 (53.0, 59.2)	25.3 (23.9, 26.7)	30.7 (29.0, 32.5)	18.7 (17.1, 20.3)	2.4 (1.9, 2.9)	3.3 (2.7, 4.0)
Māori	81.6 (79.5, 83.6)	45.5 (42.7, 48.2)	47.0 (44.6, 49.4)	53.3 (50.2, 56.3)	52.2 (49.2, 55.1)	32.9 (30.6, 35.3)	28.0 (25.5, 30.5)	22.9 (20.3, 25.4)	12.0 (10.1, 14.0)	3.4 (2.5, 4.4)
Pacific	83.3 (81.4, 85.3)	43.4 (40.7, 46.1)	41.8 (38.8, 44.9)	51.4 (46.1, 56.7)	33.5 (29.7, 37.4)	31.3 (27.6, 35.0)	22.6 (19.0, 26.2)	18.6 (17.1, 20.1)	10.0 (7.9, 12.2)	4.9 (4.0, 5.7)
Asian	78.2 (74.3, 81.6)	31.8 (28.4, 35.3)	26.6 (23.8, 29.5)	40.4 (35.3, 45.6)	36.6 (32.9, 40.3)	30.2 (26.4, 34.0)	43.3 (39.5, 47.1)	16.8 (14.1, 19.5)	2.7 (1.8, 3.6)	9.1 (7.1, 11.0)
By household poverty										
No household poverty	85.3 (84.1, 86.5)	41.8 (40.3, 43.3)	36.7 (34.9, 38.5)	48.9 (45.9, 51.8)	51.7 (48.5, 54.8)	27.4 (26.0, 28.7)	31.8 (30.1, 33.6)	19.1 (17.7, 20.5)	4.4 (3.7, 5.1)	4.0 (3.3, 4.6)
Household poverty	77.5 (75.5, 79.6)	39.1 (36.9, 41.3)	40.4 (38.0, 42.9)	49.5 (45.9, 53.0)	41.2 (37.0, 45.4)	32.3 (29.7, 34.8)	25.3 (22.2, 28.5)	20.2 (18.3, 22.1)	10.0 (8.3, 11.6)	5.8 (4.7, 6.9)
By small area deprivation										
Low deprivation	86.7 (84.9, 88.5)	41.2 (38.9, 43.5)	34.7 (32.4, 37.0)	46.0 (41.9, 50.1)	55.8 (52.1, 59.9)	26.5 (24.7, 28.4)	33.7 (30.9, 36.4)	18.5 (16.3, 20.7)	2.5 (1.7, 3.2)	4.0 (2.9, 5.0)
Mid-deprivation	84.4 (82.6, 86.2)	42.0 (40.2, 43.8)	37.0 (34.6, 39.4)	49.5 (46.8, 52.3)	52.2 (48.3, 56.0)	28.4 (26.6, 30.3)	32.8 (30.5, 35.0)	19.8 (18.0, 21.6)	5.0 (4.2, 5.9)	3.8 (3.1, 4.6)
High deprivation	80.9 (79.1, 82.7)	40.8 (38.0, 43.6)	40.4 (38.1, 42.7)	51.1 (47.4, 54.9)	41.3 (37.4, 45.2)	29.6 (27.6, 31.7)	25.1 (22.7, 27.6)	19.4 (17.8, 21.0)	8.7 (7.4, 10.0)	5.0 (4.2, 5.9)

students in New Zealand. Our findings may not reflect the experiences of young people not attending mainstream education, or young people in other countries. This may be particularly true for the role school plays in teaching young people to cook. Second, our list of sources for learning to cook may have overlooked some sources. Last, while our data is timely, it may not be current enough to capture the rapid changes in media use by young people. For example, popular cooking programs may have emerged or the use of social media may have increased since the survey was conducted.

Conclusion

Findings from the current research highlight the important role that families play in teaching young people to cook. Our findings may be useful for those working with young people to develop these skills as they suggest that interventions that teach young people to cook with their families may be well received. Likewise, the findings related to media suggest that the Internet and television may be useful vehicles for delivering resources to families with young people.

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References

- Laska MN, Larson NI, Neumark-Sztainer D, Story M. Does involvement in food preparation track from adolescence to young adulthood and is it associated with better dietary quality? Findings from a 10-year longitudinal study. *Public Health Nutr* 2012;15:1150–8.
- Wansink B, Lee K. Cooking habits provide a key to 5 a day success. *J Am Diet Assoc* 2004;104:1648–50.
- Winkler E, Turrell G. Confidence to cook vegetables and the buying habits of Australian households. *J Am Diet Assoc* 2009;109:1759–68.
- Utter J, Denny S, Lucassen M, Dyson B. Cooking and the health and wellbeing of adolescents. *J Nutr Educ Behav* 2016;48:35–41.
- Wansink B. Environmental factors that increase the food intake and consumption volume of unknowing consumers. *Annu Rev Nutr* 2004;24:455–79.
- Niemeier HM, Raynor HA, Lloyd-Richardson EE, Rogers ML, Wing RR. Fast food consumption and breakfast skipping: predictors of weight gain from adolescence to adulthood in a nationally representative sample. *J Adolesc Health* 2006;39:842–9.
- Pereira MA, Kartashov AI, Ebbeling CB, Van Horn L, Slattery ML, et al. Fast-food habits, weight gain, and insulin resistance (the CARDIA study): 15-year prospective analysis. *Lancet* 2005;365:36–42.
- Taveras EM, Berkey CS, Rifas-Shiman SL, Ludwig DS, Rockett HR, et al. Association of consumption of fried food away from home with body mass index and diet quality in older children and adolescents. *Pediatrics* 2005;116:e518–24.
- Thompson OM, Ballew C, Resnicow K, Must A, Bandini LG, et al. Food purchased away from home as a predictor of change in BMI z-score among girls. *Int J Obes Relat Metab Disord* 2004;28:282–9.
- Eisenberg ME, Olson RE, Neumark-Sztainer D, Story M, Bearinger LH. Correlations between family meals and psychosocial well-being among adolescents. *Arch Pediatr Adolesc Med* 2004;158:792–6.
- Larson NI, Neumark-Sztainer D, Hannan PJ, Story M. Family meals during adolescence are associated with higher diet quality and healthful meal patterns during young adulthood. *J Am Diet Assoc* 2007;107:1502–10.
- Utter J, Denny S, Robinson E, Fleming T, Ameratunga S, et al. Family meals and the well-being of adolescents. *J Paediatr Child Health* 2013;49:906–11.
- Utter J, Denny S, Robinson E, Fleming T, Ameratunga S, et al. Family meals among New Zealand young people: relationships with eating behaviors and body mass index. *J Nutr Educ Behav* 2013;45:3–11.
- Caraher M, Baker H, Burns M. Children's views of cooking and food preparation. *Br J Nutr* 2004;106:255–73.
- Fulkerson JA, Neumark-Sztainer D, Story M. Adolescent and parent views of family meals. *J Am Diet Assoc* 2006;106:526–32.
- Neumark-Sztainer D, Story M, Ackard DM, Moe J, Perry C. Family meals among adolescents: findings from a pilot study. *J Nutr Educ* 2000;32:335–40.
- Lichtenstein AH, Ludwig DS. Bring back home economics education. *J Am Med Assoc* 2010;303:1857–8.
- Smith LP, Ng SW, Popkin BM. Trends in US home food preparation and consumption: analysis of national nutrition surveys and time use studies from 1965–1966 to 2007–2008. *Nutr J* 2013;12:45.
- Stitt S. An international perspective on food and cooking skills in education. *Br Food J* 1996;98:27–34.
- Adams J, Goffe L, Adamson AJ, Halligan J, O'Brien N, et al. Prevalence and socio-demographic correlates of cooking skills in UK adults: cross-sectional analysis of data from the UK National Diet and Nutrition Survey. *Int J Behav Nutr Phys Act* 2015;12:99.
- Utter J, Denny S, Fay A. Child and youth cooking programs: more than good nutrition? *J Hunger Environ Nutr*. DOI: 10.1080/19320248.2015.1112758.
- Clark T, Fleming T, Bullen P, Crengle S, Denny S, et al. Youth'12 prevalence tables: the health and wellbeing of New Zealand secondary school students in 2012. Auckland: The University of Auckland, 2013.
- Denny S, Lewycka S, Utter J, Fleming T, Peiris-John R, et al. The association between socioeconomic deprivation and secondary school students' health: findings from a latent class analysis.

- sis of a national adolescent health survey. *Int J Equity Health* 2016;15:109.
24. Atkinson J, Salmond C, Crampton P. NZDep2013 index of deprivation. Wellington: University of Otago, 2014.
25. Lang T, Caraher M, Dixon P, Carr-Hill R. *Cooking Skills and Health*. London: Health Education Authority, 1999.
26. Ministry of Education. *The New Zealand Curriculum*. Wellington: Ministry of Education, 2007.