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Research report

Importance of cooking skills for balanced food choices ☆

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ABSTRACT

A cooking skill scale was developed to measure cooking skills in a European adult population, and the relationship between cooking skills and the frequency of consumption of various food groups were examined. Moreover, it was determined which sociodemographic and psychological variables predict cooking skills. The data used in the present study are based on the first (2010) and second (2011) surveys of a yearly paper-and-pencil questionnaire (Swiss Food Panel). Data from 4436 participants (47.2% males) with a mean age of 55.5 years (SD = 14.6, range 21–99) were available for analysis. The cooking skills scale was validated using a test–retest analysis, confirming that this new scale is a reliable and consistent instrument. Cooking enjoyment was the most important predictor for cooking skills, especially for men. Women had higher cooking skills in all age groups. Cooking skills correlated positively with weekly vegetable consumption, but negatively with weekly convenience food consumption frequency, even while holding the effect of health consciousness related to eating constant. In summary, cooking skills may help people to meet nutrition guidelines in their daily nutrition supply. They allow people to make healthier food choices. It is, therefore, important to teach children and teenagers how to cook and to encourage them to develop their cooking skills.

Introduction

Today's cooking practice and its relationship to diet quality and to people's health are not well studied (Caraher, Dixon, Lang, & Carr-Hill, 1999; Engler-Stringer, 2010). A fundamental issue and core problem in the study of cooking skills is the lack of a reliable, universally applicable cooking skill measurement.

In *Cookery for working-men's wives*, Gordon (1890) wrote the following:

> ...there are very many good, nutritious dishes to be made... Unhappily, there are comparatively few who will take enough thought or trouble to prepare them. How many homes would be healthier, brighter, and happier if our women could only be brought to see how much depends on them, and bestir themselves in the matter. (p. 8)

This clear position taken by Gordon demonstrates that home-prepared meals are regarded as very important for health affairs as early as the past centuries and that concerns about a lack of cooking skills is not a phenomenon of the modern times. The same issue has been written about since the late 19th century. In earlier years, people suffered from poor health because of bad food practices (Mitchel, 2011). Today, it is assumed that a decline in cooking skills is connected to bad diet quality and obesity (James, 2008). Food guidelines simply inform people about healthy food choices and good eating practices. However, to translate food guidelines into actual daily meal preparation needs more than nutrition knowledge alone. Other important aspects that affect food choices are household characteristics, such as financial resources, available means of transportation, kitchen equipment, and household members' skills in food acquisition, transportation, storage, and preparation (Popkin & Haines, 1981).

Food management skills, especially cooking skills, were compulsorily taught in schools in the past century. In a UK sample, 49% of women and 15% of men mentioned cookery classes in schools as a resource for learning cooking skills (Caraher et al., 1999; Lang, Caraher, Dixon, & Carr-Hill, 1999). Today, mothers are reported as the major source of learning about basic cooking skills from an early age (Caraher et al., 1999; Lang et al., 1999).

Two core problems are discussed as responsible for todays supposed lack of cooking skills. First, there is a decline in the intergenerational transmission of basic cooking skills at home (Lyon et al., 2011), and cooking classes in schools are no longer formally taught in most countries (Stitt, 1996). Secondly, because people's daily lives are influenced by a chronic feeling of time scarcity, people tend to adopt a more time-saving behaviour even in relation to daily food consumption (Jabs & Devine, 2006). This is evident in the current speedy food preparations with minimal effort and in the decreased amount of time allotted for eating. Improvements in food technology enabled the food industry to respond to people's demands with an increasing availability of convenience and ready-to-eat food (Jekanowski, 1999). People consider time and

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effort when making food choices and attach great importance to convenience (Gofton, 1995). Consequently, cooking skills become less frequently practiced on a daily basis because it is no longer necessary to cook to get one's daily nutrition supply. The question arises if the availability of convenience food has resulted in a decline in cooking skills or if these factors have only coincided with each other. Additionally, different employment opportunities and female's participation in the labour market increased in the last century (Lyon et al., 2011). According to a study from Sayer (2005), women's time routinely spend in daily household tasks including food preparation declined in the last years. More detailed, women invested on average 33 min per day more time in daily meal preparation in 1965 compared to 1998, while men's time investment in daily meal preparation slightly increased in this time frame. However, it is still largely the female partner in most households who takes greater responsibility for food preparation (Furey, McIlveen, Strugnell, & Armstrong, 2000).

In planning interventions to promote healthy dietary patterns, it is important to know whether cooking skills positively contribute to healthy eating. Based on the published literature, it remains unclear how cooking skills influence one's dietary behaviour. One reason for this research gap is the lack of a reliable cooking skill scale. Previous research was focused on cooking habits (Pettinger, Holdsworth, & Gerber, 2006), general preparation techniques (e.g. steaming or grilling) (Lyon et al., 2011), and preparation techniques related to a specific food type (e.g. filleting fish) (Caraher et al., 1999). These measurements are likely subjected to cultural and traditional influences as well as personal preferences and eating habits. To apply a cooking skill scale to most persons, the scale should be constructed as culturally independent as much as possible. Therefore, the first aim of the present study was to design a cooking skill scale that is reliable and applicable to most people. The second objective of this study was to explore the following question: What factors promote cooking skills? It was determined which sociodemographic and psychological variables are predictors of cooking skills. Furthermore, the consequences of the presence or the absence of cooking skills were examined. It was hypothesised that high cooking skills go along with a more balanced diet especially because consumption of various vegetables requires advanced food preparation skills. Therefore, the third aim was to study the associations between the consumption frequency of various food groups and the presence of cooking skills.

Methods

Participants

This study analysed data from the Swiss Food Panel, a population-based longitudinal study of the eating behaviour of the Swiss population. The Swiss Food Panel started in 2010. Mail surveys were sent out to 20,912 randomly selected household addresses from the telephone book in the German-speaking and French-speaking parts of Switzerland. Altogether, 6189 persons responded in 2010 (a response rate of 29.6%). All respondents in 2010 were contacted for the second survey period in 2011, except for 75 participants who were excluded from the survey because of missing addresses, death, or unwillingness to participate in the second survey. The response rate in 2011 was 78.5%. After data cleaning, 4726 participants remained in 2011, whose data were paired with the data from 2010. Data from respondents for whom gender and date of birth were different across the two surveys were deleted ($n = 290$). Finally, 4436 participants remained in the final sample, and only these respondents were included in the cross-sectional and longitudinal analyses of this study. In the 2011 sample, 47.2% of the participants were male, and the mean age was 55.5 years (SD = 14.6, range 21–99).

Swiss Food Panel Questionnaire

The Swiss Food Panel is a paper-and-pencil questionnaire. It includes a food frequency questionnaire (FFQ) and questions related to cooking skills, sociodemographic variables, and psychological variables.

Cooking skills

Based on the items from Brunner, van der Horst, and Siegrist (2010) and van der Horst, Brunner, and Siegrist (2010) the following seven items and corresponding cooking skills scale were developed. Respondents were asked to evaluate their own cooking skills on a six-point scale.

1. I consider my cooking skills as sufficient.
2. I am able to prepare a hot meal without a recipe.
3. I am able to prepare gratin.
4. I am able to prepare soup.
5. I am able to prepare sauce.
6. I am able to bake cake.
7. I am able to bake bread.

Based on these seven items, mean values were calculated for each person to reflect his or her cooking skills ($\alpha = 0.91$) (Table 1).

Sociodemographic characteristics

Age, gender, and having children ($\leqslant$16 years old) were also assessed in the Swiss Food Panel Questionnaire. Educational level was categorised into three groups: (1) low (primary and secondary schools), (2) medium (vocational school), and (3) high (college and university schools). For statistical analysis, education was coded as a binary variable (low versus medium; low versus high). Furthermore, we asked the respondents two questions related to meal preparation responsibilities in their households: 'Which person in your household most often prepares main meals during the week?' 'Which person in your household most often prepares main meals during the weekend?'

Psychological variables

We examined the respondents' health consciousness related to eating as well as four more psychological constructs related to cooking: willingness to invest time, willingness to invest physical effort, willingness to invest mental effort, and cooking enjoyment (see Appendix A). All psychological variables were rated on a six-point scale ranging from 1 = do not agree at all to 6 = totally agree. The scales from the variables willingness to invest time, willingness to invest physical effort and willingness to invest mental effort were recoded (6 = do not agree at all to 1 = totally agree) with the result that high values indicate high willingness to invest time or effort. For each person, mean values were calculated based on the items. Additionally, Cronbach's α was explored for the psychological variables (Appendix A).

First of all, health consciousness related to eating ($\alpha = 0.83$) was assessed with the following four items: 'I think it is important to eat healthily.' 'My health is dependent on how and what I eat.' 'If one eats healthily, one gets ill less frequently.' 'I am prepared to leave a lot, to eat as healthily as possible' (Schifferstein & Ophuis, 1998). Furthermore, the respondents' willingness to invest time in meal preparation ($\alpha = 0.82$) was analysed with the following three items: 'Since I'm always under time pressure, I try to save time while cooking' (Brunner et al., 2010). 'Preferable, I spend as little time as