

Research and Professional Briefs

Involvement of Young Australian Adults in Meal Preparation: Cross-Sectional Associations with Abdominal Obesity and Body Mass Index

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ABSTRACT

Previous research has shown that involvement in meal preparation is positively associated with better diet quality. However, it is unclear whether there is an association between involvement in meal preparation and being overweight or obese. This study investigated whether the level of involvement in meal preparation was associated with objectively measured weight status in young adults. During 2004-2006, a national sample of 1,996 Australian adults aged 26 to 36 years completed a self-administered questionnaire including questions on sociodemographic characteristics, diet, and physical activity. Participants were asked to report who usually prepared the main meal on working days and responses were categorized as "myself," "shared," or "someone else." Waist circumference, weight, and height were measured by trained staff. Moderate abdominal obesity was defined as waist circumference ≥ 94 cm for men and ≥ 80 cm for women. Overweight was defined as body mass index (calculated as kg/m^2) ≥ 25 . Prevalence ratios were calculated using log binomial regression. After adjusting for age, education, and leisure time physical activity, men who shared the meal preparation had a slightly lower prevalence of moderate abdominal obesity (prevalence ratio=0.92; 95% confidence interval [CI]: 0.86 to 0.99) than those whose meals were usually prepared by someone else. There was no association with having sole responsibility (prevalence

ratio=0.99; 95% CI: 0.92 to 1.06). There were no associations between level of involvement in meal preparation and being overweight (shared responsibility prevalence ratio=0.99; 95% CI: 0.92 to 1.07; sole responsibility prevalence ratio=0.98; 95% CI: 0.91 to 1.05). For women, level of involvement was not associated with moderate abdominal obesity (shared responsibility prevalence ratio=0.93; 95% CI: 0.84 to 1.03; sole responsibility prevalence ratio=0.94; 95% CI: 0.86 to 1.03) or being overweight (shared responsibility prevalence ratio=0.93; 95% CI: 0.84 to 1.02; sole responsibility prevalence ratio=0.93; 95% CI: 0.85 to 1.02). In this sample of young adults, level of involvement in meal preparation was not strongly related to weight status.

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With the rapid increase in the prevalence of obesity in recent decades, there has been interest in examining the socioecological determinants of overweight and obesity at the environmental, social, and individual levels. One possible individual or social (family/household) determinant of overweight and obesity that has not been well examined is involvement in meal preparation. Women have traditionally been responsible for purchasing and preparing the food for the household. However, a larger proportion of women are now in the workforce, and recent data show that men have increased the amount of time they spend doing domestic chores (1). In a national sample of young Australian adults, it was recently reported that women predominantly had sole responsibility for preparing the main meal; however, more than half of the men were also involved with either shared or sole responsibility (2). Data collected for the 1994 Continuing Survey of Food Intakes of Individuals in the United States suggest that younger men are more involved in meal preparation than older men (34% of men aged 35 years or younger compared with 17% of men aged 56 years or older) (3).

The person responsible for meal preparation has the potential to influence the dietary intake and weight status of the household because he or she can influence the types and amounts of foods consumed. However, there are very few studies examining this. Previous studies have reported involvement in food purchasing and preparation and shown associations with diet quality in adolescents (4) and young adults (5). A study of 4,746 11- to 18-year-olds reported higher involvement in meal preparation was associated with higher vegetable (females

only) and fruit consumption and lower consumption of soft drinks (4). Similarly, 18- to 23-year-olds who were more involved in meal preparation were more likely to meet dietary objectives for fruit, vegetables, and whole grains and had a lower intake of fast food compared with those with low involvement (5). High intakes of fast food and energy-containing drinks and low intakes of fruits, vegetables, and whole-grain products have been shown to be associated with being overweight or obese (6). Although level of involvement in meal preparation is associated with better diet quality, it is unclear whether there is a link between involvement in meal preparation and being overweight or obese. Only one previous study has examined this issue and it was reported that involvement in meal preparation was not associated with body mass index (BMI; calculated as kg/m^2); however, these results were limited by the use of self-reported height and body weight to calculate BMI (5). No previous studies have examined associations between level of involvement in meal preparation and abdominal obesity. Abdominal obesity is thought to be a better indicator of cardiovascular disease and type 2 diabetes risk than BMI (7,8), as fat distributed around the waist is more harmful than overall obesity.

In the Childhood Determinants of Adult Health study, a national sample of young Australian adults, it has previously been shown that women who shared the meal preparation had slightly higher intakes of vegetables and dairy products, and men who had sole responsibility had higher intakes of lean meat and alternatives (2). In the Childhood Determinants of Adult Health sample, overweight and obesity has been shown to be associated with eating takeout food more than once per week (9) and being obese as a child (10). The aim of this article was to investigate whether the level of involvement in meal preparation is associated with objectively measured BMI and abdominal obesity in young adults aged 26 to 36 years in the Childhood Determinants of Adult Health study.

METHODS

The Childhood Determinants of Adult Health study is a follow-up of children who participated in the 1985 Australian Schools Health and Fitness Survey, a nationally representative study of 7- to 15-year-old children (11). The sampling methods used have been described in detail elsewhere (9). Briefly, the first stage of sampling involved selecting schools with a probability proportional to student enrollment (school participation rate, 90.1%). The second stage involved simple random sampling within each age and sex category to select children within those schools (child participation rate, 67.5%). During 2001-2002, there were 6,840 (80%) participants successfully traced and 5,170 (61%) agreed to participate in the Childhood Determinants of Adult Health study. Thirty-four clinics were held in every state and territory around Australia during 2004-2006 when the participants were 26 to 36 years old. The clinics included anthropometric measurements. Questionnaires on demographics, diet, food habits, and physical activity were posted to participants 2 weeks before their clinic appointment. Participants were asked to bring their completed questionnaires with them to the clinic. The Southern Tasmania Health

and Medical Research Ethics Committee approved the study. All participants gave written informed consent.

Involvement in Meal Preparation

As part of the questionnaire concerning food habits, respondents were asked "Who normally prepares your main meal at home on working days?" Response options were "I do not have meals at home on working days," "myself," "my partner," "my mother or father," "someone else (please specify)," "myself, together with (please specify)." For analysis, answers were collapsed into three groups: myself, shared (myself together with), and someone else (partner, parent, someone else).

Anthropometric Measurements

All anthropometric measurements were taken following standardized protocols, and the staff were trained by the same qualified anthropometrist. In total, seven staff took the anthropometric measurements. Halfway through the clinics in every state, the trainer attended the clinics to check technique. Participants were standing, without shoes, and wearing light clothing. Waist circumference was measured at the narrowest point between the lower costal border and the iliac crest at the end of normal expiration. Measurements were taken using a Lufkin steel (nonstretch) tape measure and were recorded to the nearest 0.5 cm. Three measurements were taken and the mean value was used in the analysis. Moderate abdominal obesity was defined as waist circumference ≥ 94 cm for men and ≥ 80 cm for women (12). Body weight was measured using a portable digital scale (Heine, Dover, NH) and height was measured using a portable stadiometer (Invicta, Leicester, UK). BMI was calculated using the formula kg/m^2 , and overweight was defined as BMI ≥ 25 .

Covariates

Demographic variables used in the analysis included age, marital status (married or living as married vs other), education (university, vocational, no postsecondary education), occupation (professional or manager, nonmanual, manual, not in the workforce), and parity (0, 1, 2, 3+). The long version of the International Physical Activity Questionnaire was used to assess physical activity (13). The Leisure Time Physical Activity (LTPA) domain was used in the analysis because it was more strongly correlated with abdominal obesity than total physical activity. Time spent watching television was assessed using a separate item (14). Dietary intake was assessed using a 127-item food frequency questionnaire (15) and short questions on usual fruit, vegetable, and takeout food consumption (9). The number of daily servings of breads and cereals, dairy, lean meat, and alternatives and extra foods (foods that do not fit into the five core food groups) were calculated by summing the daily equivalents calculated from the food frequency questionnaire (9). Daily fruit and vegetable consumption was assessed using the two short questions: "How many serves of fruit do you usually eat each day?" and "How many serves of vegetables (excluding potatoes) do you usually eat each day?" (16).

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