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Research report

Family meal frequency, weight status and healthy management in children, young adults and seniors. A study in Sardinia, Italy ☆

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ABSTRACT

Objective: To examine family meal frequency, and weight management as a protective factor throughout life. *Participants:* Selected by city and by town in Sardinia (Italy), the 522 participants were divided into 162 children (7–11 years), 187 young adults (19–30 years), and 173 seniors (65–90 years). *Method:* Chi-square analyses were used to compare the frequency of family meals, weight (self-reported and perceived) and healthy management (physical activity, dieting, perceived appetite) between age groups. In addition, multinomial regression analyses were carried out to find associations, with age group as the dependent variable and frequency of family meal, weight status, and healthy management categories as independent variables, adjusted for moderating effects. *Results:* Significant associations with age variables were observed in mealtime frequency (skipping breakfast and mid-morning snack in adults and lunch in children and seniors), in decreasing self-reported normal weight with age and increasing perceived overweight with age, and in physical activity, dieting and perceived appetite. *Conclusions and Implications:* The results suggest the protective nature of family meals for adults and seniors, and identify significant associations (and some differences) between age groups. Discrepancies suggest the importance of education about body weight awareness throughout life.

Introduction

Nowadays, our focus on obesity as a 'social epidemic' (WHO, 2000) stems from our opinion about this phenomenon and its expansion in recent decades. In the US, two out of three adults and one child or teenager out of six are labelled as overweight or obese (Flegal, Carroll, Ogden, & Curtin, 2010), and in other Western countries, the number of overweight/obese children and teenagers is increasing. In Northern Italy, a study of 10 and 11 year old children shows a prevalence of 16% and 7% respectively (Gnavi et al., 2000). Given that childhood obesity persists in adulthood, excess weight is a strong predictor of obesity and the risk of related conditions such as cardiovascular illness, type 2 diabetes and hypertension (WHO, 2000).

The impact of excess weight and obesity on health has given rise to many studies on predictive factors for its prevention. Some have not yet been fully explored while others confirm the multidimensional nature of obesity, due to factors which influence dietary models and weight at a psycho-social and socio-economic level (Berge et al., 2012; Eisenberg, Olson, Neumark-Sztainer, Story, & Bearinger, 2004; Øvrum, Gustavsen, & Rickertsen, 2014). Among these protective factors, the frequency of family meals (FFM) plays an important role, in which there is an inverse relationship with conditions of overweight and obesity (Chan & Sobal, 2011; Mestdag, 2005; Neumark-Sztainer, Wall, Story, & Fulkerson, 2004).

FFM can influence both dietary behaviour and body weight qualitatively and quantitatively. Several studies show an inverse relationship between FFM and body weight in parents and children (Chan & Sobal, 2011; Neumark-Sztainer et al., 2004; Sen, 2006). This relationship seems to apply to gender, region, ethnic group and socio-economic status (Larson et al., 2013; Rollins, Belue, & Francis, 2010; Veltsista et al., 2010). Longitudinal studies show a positive association between FFM and healthy eating habits in teenagers and young adults (Burgess-Champoux, Larson, Neumark-Sztainer, Hannan & Story, 2007; Larson, Neumark-Sztainer, Hannan, & Story, 2007), whereas a positive association with Body Mass Index (BMI) is not always confirmed (Berge et al., 2012; Sen, 2006; Taveras et al., 2005; Utter et al., 2013).

Eating meals together does not just mean the physical presence of parents around the table or "sitting down and mechanically eating with others" (Chan & Sobal, 2011), but it is also an important ritual for interacting with family members, keeping the family united and solving conflicts. The importance of the psychological factor of FFM and its potential long-term benefits derives from the influence of this important daily moment of socialisation, which

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leads to psychophysical wellbeing and correct eating habits (Boutelle, Lytle, Murray, Birnbaum, & Story, 2001).

Research into FFM shows how this moment is a protective factor in monitoring and modelling the choice of the quality and quantity of food (Hays, Power, & Olvera, 2001). In fact, this habit in adolescence is associated with better diet and health in adult life. Even in later years, it promotes parental cohesion and is a protective factor for psychological wellbeing, due to its positive association with social competences, future prospects and self-esteem (Eisenberg et al., 2004; Larson et al., 2007). Instead, it has a negative association with high-risk behaviours (Fulkerson, Kubik, Story, Lytle, & Arcan, 2009), eating disorders, alcohol and substance use (Eisenberg et al., 2004; Franko, Thompson, Affenito, Barton, & Striegel-Moore, 2008), stress and depressive symptoms (Roberts & Duong, 2013; White, Haycraft, & Meyer, 2014).

Data suggest that the majority of young people in the US eat meals with their family 4–5 days a week (Abraczinskasa, Fisak, & Barnesc, 2012; Boutelle et al., 2001), but highlights the progressive temporal and social deconstruction of the dietary model based on 3 meals a day (Mestdag, 2005). There is a decline in FFM in Southern Europe and Italy and in Sardinia, where there is a fall in the intake of breakfast and the Mediterranean diet, both of which are replaced by the Anglo-Saxon diet and fast food (Tessier & Gerber, 2005). Associated with improved health and longevity (Zbeida et al., 2014), the Mediterranean diet is characterised not only by food choices (e.g. olive oil), but also by time and importance of meals (ISTAT, 2013; Tessier & Gerber, 2005).

Studies on FFM suggest that the presence of children makes adults set an example when serving healthy food at mealtimes (Fulkerson, Larson, Horning, & Neumark-Sztainer, 2014). Other studies compare FFM with factors such as body weight and behaviour of family members (Berge et al., 2012; Chan & Sobal, 2011); it is the mother in particular who has a positive association with her child's diet (Boutelle, Birkeland, Hannan, Story, & Neumark-Sztainer, 2007; McIntosh, Kubena, Tolle, Dean, & Anding, 2010).

Empirical research has not yet studied FFM from a lifespan developmental perspective. Few studies consider adults except as relatives of children involved in dietary education projects (Berge et al., 2012; Boutelle et al., 2007; Larson, Harnack, & Neumark-Sztainer, 2011; Sobal & Hanson, 2011). Otherwise, they study elderly people only if they are widowed (Rosenbloom & Whittington, 1993), community-dwellers (Quigley, Hermann, & Warde, 2008; Shahar, Shai, Vardi, & Fraser, 2003), homebound (Locher et al., 2009) or deprived (Holmes, Roberts, & Nelson, 2008). In recent literature, a review by Fulkerson et al. (2014) about associations with eating meals with other people highlights that "there may be important positive nutritional benefits." Healthy choices remain during young adulthood and the negative influences of the socio-economic environment decrease (Larson et al., 2011), but there is also a protective effect of lifestyle choice, including physical activity which shows a positive association with family function (Berge, Wall, Larson, Loth, & Neumark-Sztainer, 2013; Øvrum et al., 2014). Since the meals involve all family members including adults and the elderly (Sobal & Hanson, 2011), further research is required to determine if there is any association with FFM from a lifespan developmental perspective.

FFM as a protective factor for the balanced development of a person has led us to differentiate between children and older age groups. The main aim of this study is to analyse the relationships between the different age groups with FFM (breakfast, snack, lunch and dinner), their body weight and their use of diets and physical exercise. We have assumed that children, young adults and the elderly have different relationships with i) family meals; ii) perception of body mass; iii) weight control strategies (diet, exercise and appetite).

Methods

Subjects and methods

A population-based cross-sectional survey according to demographic criteria (ISTAT, 2006) was conducted by recruiting a representative sample of inhabitants of Northern Sardinia (Italy) using a proportionate geographic cluster sampling method. The samples were selected from the city of Sassari (>100,000 inhabitants, 38%), from towns of under 50,000 inhabitants (35%), and from towns of under 5000 inhabitants (27%). In order to highlight any differences linked to age, the two intermediate groups of adolescents (12–18) and adults (31–64) were excluded from the final sample. In order to have a representative sample, participants were selected according to their residential district in the city (old town, suburbs) or according to the type of smaller place they live in (inland, coastal, mountain towns). Young people were chosen from school classes in the selected districts and towns. Young adults were selected from study courses and places of work. Elderly people were chosen according to their houses, social centres and residential centres.

The response rate obtained was 96.1% (593 questionnaires out of 650). After eliminating the respondents who had missing demographic data (n = 34), who did not complete all the answers (n = 13), or who had illnesses that would interfere with the study (n = 24), distribution by socio-economic status (SES) according to profession was: 18% low, 40% low-middle, 22% middle, 14% upper-middle, and 6% high class.

The sample was equally distinct for gender (50% males and 50% females), and for age group of children (7–11 years), adults (19–30 years) and seniors (65–90 years). The 522 participants were divided into 162 children (31%, mean = 9.8 years, SD = 1.08), 187 adults (36%, mean = 24.2 years, SD = 3.42), and 173 seniors (33%, mean = 78.2 years, SD = 7.79).

The researchers explained the study carefully to each participant and their informed consent was obtained (parents gave consent for their children). The interviewers read each question and the answer options to the participants who then marked their answer on the questionnaire.

No Italian Institutional Review Board approval was required for this research, but this paper complies with the rules of the ethical code for research and teaching of the Italian Association of Psychology, both in its general principles and in specific rules; it is also in accordance with Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Subjects.

Questionnaires

The questionnaire consisted of two parts. The first one included personal and demographic data, and in the second part, FFM was assessed with a question derived from one previously used in the University of Minnesota EAT (Eating Among Teens) study (Neumark-Sztainer, Larson, Fulkerson, Eisenberg, & Story, 2010). The questions about physical activity (Sánchez-Villegas et al., 2001; Taveras et al., 2005), dieting (Berge et al., 2012; Woodruff & Hanning, 2009), perceived body image (PBI) (Steenhuis, Bos, & Mayer, 2006), and self-described appetite (Rosenbloom & Whittington, 1993; Shahar et al., 2003) were derived from other previously published studies.

An Italian version of the questionnaire was developed using a back translation method. The original questions were translated into Italian and another person translated the new version of the questionnaire into English to find any discrepancies between the two versions. The questionnaire was tested both as the reformulation of the English version (with non-Italian children) and in its final