The Scientific Newsletter

N° 81 • September 2013

« PARENTING PRACTICES AND THEIR CONSEQUENCES ON CHILDREN »

Editorial

The three articles in this edition explore factors which may explain why children eat the foods they do. Khanolkar *et al.* presents the results from a large scale study in Sweden and concludes that the best predictors of a child's CVD risk factors (including BMI) are the parents' diet and exercise.

Melbye *et al.* argue from their study in Norway that a child's own cognitions are the best predictors of their fruit and vegetable intake, above and beyond the impact of parental factors.

The third US paper by Margarello and Smith concludes that fruit and vegetables are rarely advertised to parents, that most advertisements are for snack foods and packaged foods and that they key messages relate to taste, saving time and family bonding.

A child's diet would therefore seem to be the product of a range of influences. For me this reflects a three pronged method of parenting in the context of both obesity and eating disorders. Such a method emphasises the following:

I) be a good role model and behave in a way you want your child to behave;

II) say the right things about food and activity to give your child a healthy script in their head that can carry them into adulthood; and

III) manage their environment in ways that makes healthy behaviour easier.

If parents could use this method with their children then maybe they could help them adopt a healthier approach to food, even within a world which seems intent on making children increasingly unhealthy.

Jane Ogden
Professor in Health Psychology
University of Surrey, UK

Forthcoming book: Ogden, J. The good parenting food guide. Managing what children eat without making food a problem.
Wiley: London.
Publication date: Jan 2014.

© Ph. Dubuc/Interfel

IFAVA Contacts info

HEAD OFFICE
International Fruit And Vegetable Alliance
c/o Canadian Produce Marketing Association
162 Cleopatra
Ottawa, Canada, K2G 5X2

IFAVA CO-CHAIR
Paula Dudley - New Zealand
paula@5aday.co.nz

IFAVA CO-CHAIR
Sue Lewis - Canada
slewis@cpma.ca

Parental influences on cardiovascular risk factors in Swedish children aged 5-14 years

— Amal R. Khanolkar[1,2], Liisa Byberg[3] and Ilona Koupil[1] —

1. Centre for Health Equity Studies (CHESS), Stockholm University/Karolinska Institutet, Stockholm, Sweden

2. Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden,

3. Department of Surgical Sciences, Orthopedics, Uppsala University, Uppsala, Sweden

Precursors of cardiovascular diseases (CVD) may originate in childhood and track into adulthood[1-4]. The extent of the contribution of socioeconomic and psychosocial environments on the development of CVD risk factors in children is debated. No study has comprehensively investigated these influences on a range of CVD risk factors in children.

We investigated associations of:

1. Parental Socioeconomic Position (SEP),

2. Parental lifestyle habits (smoking, alcohol consumption and physical activity) and

3. Parental CVD risk factors,

with CVD risk factors in their children that could contribute to accumulation of CVD risk that tracks into adulthood.

The Uppsala Family Study

The Uppsala Family Study was initiated in 2000-2001 and comprises 602 families (parents and their two biological children; aged 5-14 years)[5].

Parental SEP (measured by occupational class and educational level of both parents), and lifestyle habits [smoking, physical activity, and alcohol consumption] were obtained from questionnaires. CVD risk factors (serum cholesterol, ApoB/ApoA1 ratio, leptin, adiponectin, blood pressure, BMI and overweight/obesity combined) in parents and their children were measured by routine methods.

Overweight and obesity in children were calculated using the age and sex-specific cut-offs as described by the International Obesity Task force, whereas that in parents were calculated according to WHO criteria. Associations between parental exposures and CVD risk factors in their children were analysed using multivariable linear regression. Only associations with the binary outcome of normal BMI and overweight or obesity combined in children were analysed using multivariate logistic regression. All analyses were adjusted for child's age, gender, pubertal stage and family clustering. Analyses of associations between parental lifestyle habits and children's outcomes were additionally adjusted for parental SEP, and analyses of associations between parental and children's CVD risk factors were additionally adjusted for parental SEP and parental lifestyle habits.

We found consistent associations between parental lifestyle habits and CVD risk factors in their children

However, associations between parental SEP and children's CVD risk factors were few and inconsistent[6]. Children of least educated parents (≤9 years of compulsory schooling) had higher mean BMI and increased odds for being overweight or obese compared to children of university educated parents (adjusted Odds Ratio, OR 2.07, 95% CI 1.21-3.55 and OR 1.75, 1.00-3.13 for children of least educated fathers and mothers respectively).

We found stronger and more consistent associations between parental lifestyle habits and CVD risk factors in their children that were independent of parental SEP[6]. For example, children of both smoking fathers and mothers had higher mean BMI (equivalent to an adjusted increase of 4%, 95% CI 1-7% and 3%, 1-7% respectively). In addition, children of smoking fathers also had higher mean leptin levels (27%, 1.00-61.60%). There were few associations between parental alcohol consumption and CVD risk factors in their children[6]. Children of fathers that consumed alcohol once per week or more than once per week had higher mean cholesterol levels compared to children of fathers that did not drink, whereas children of mothers that reported alcohol consumption had both higher mean BMI and cholesterol levels.

Children of mothers reporting vigorous physical activity had lower mean BMI, cholesterol, and decreased odds for being overweight or obese with a possible dose effect. Compared with mothers reporting no vigorous physical activity, mothers with ≤75minutes and 76-150minutes/week vigorous physical activity had 43% (OR 0.57, 95%CI 0.22-0.89) and 72% (0.28, 0.14-0.60) lower risk of having an overweight or obese child respectively, after adjustment for confounders. Similarly, all fathers that reported vigorous physical activity (≥90min/week) had children with lower mean BMI compared to those that reported no vigorous physical activity[6]. We found independent, consistently stronger and statistically significant associations between all studied parents' and children's CVD risk factors[6].

Main conclusion

In this study sample of Swedish families, indicators of parental socioeconomic position were less likely to predict CVD risk factors in children. On the other hand, parental lifestyle habits such as smoking, alcohol consumption, and low levels of physical activity were associated with higher levels of CVD risk factors (BMI, being overweight or obese, cholesterol) in children. Strong correlations in CVD risk factors within families which are not related to either parental SEP or lifestyle suggest a role of genetics in influencing children's CVD risk factors. Both parental lifestyle habits and genetics influence CVD risk factors in their children.

REFERENCES:

1. Berenson GS, Wattigney WA, Bao W, Srinivasan SR, Radhakrishnamurthy B (1995) Rationale to study the early natural history of heart disease: the Bogalusa Heart Study. Am J Med Sci 310 Suppl 1: S22-28

2. Boulton TJ, Cockington RA, Hamilton-Craig I, Magarey AM, Mazumdar J (1995) A profile of heart disease risk factors and their relation to parents' education, fathers' occupation and family history of heart disease in 843 South Australian families: the Adelaide Children's WHO Collaborative Study. J Paediatr Child Health 31: 200-206

3. Garn SM, LaVelle M (1985) Two-decade follow-up of fatness in early childhood. Am J Dis Child 139: 181-185

4. Kemper HC, Snel J, Verschuur R, Storm-van Essen L (1990) Tracking of health and risk indicators of cardiovascular diseases from teenager to adult: Amsterdam Growth and Health Study. Prev Med 19: 642-655

5. Leon DA, Koupil I, Mann V, et al. (2005) Fetal, developmental, and parental influences on childhood systolic blood pressure in 600 sib pairs: the Uppsala Family study. Circulation 112: 3478-3485

6. Khanolkar AR, Byberg L, Koupil I (2012) Parental influences on cardiovascular risk factors in Swedish children aged 5-14 years. European journal of public health 22: 840-847

Child consumption of fruit and vegetables: the roles of child cognitions and parental feeding practices

— Elisabeth Lind Melbye —
UiS Business School, University of Stavanger, Norway

The promotion of daily fruit and vegetable (F&V) consumption in children and adolescents is important since food habits established early in life may track into adulthood. Eating habits are often unstable during adolescence, a period of life which is characterized by the elaboration of identity and rapid cognitive development. Adolescence is also a time of growing independence when individuals want to make their own decisions including what and when to eat. However, the eagerness of adolescents to take over responsibility for food choice and meals is not necessarily matched with their ability to make healthy decisions, and nutrition interventions directed towards this group of the population have had mixed success.

Child and parental influences on child eating

While cognitions (which refer to mental processes such as individual perceptions, memory and thinking) are important internal effectors of eating behavior in children, the most important external influence may be their parents. Parents affect children's diet and eating behaviors in numerous ways, for instance by encouraging them to eat certain foods and restricting others. Thus, parents' food-related practices work together with the children's own cognitions and decisions about food choice and eating behaviors. Therefore, the impact of both child cognitions and parental food-related behaviors should be assessed to assist in the development of concurrent parent and child nutrition intervention programs.

The aim of the present work was to examine the roles of child cognitions and parental feeding practices in explaining child intentions and behavior regarding F&V consumption.

A Norwegian survey among 10-12-year-olds and their parents

Cross-sectional surveys were performed among 10-12-year-olds and their parents recruited from 18 schools in southwest Norway. The rationale for focusing on 10-to-12-year-olds is that children of this age have reached a cognitive level that makes them able to report their cognitions and behaviour, yet they are still highly influenced by their parents. Accordingly, it might be easier to implement intervention programs involving parents among individuals within this age range than among older adolescents. The child questionnaire included measures of F&V consumption and cognitions regarding F&V consumption as postulated by the Attitude-Social Influence-Self-Efficacy (ASE) model. The parent questionnaire included measures of parental feeding practices adapted from the Comprehensive Feeding Practices Questionnaire (CFPQ), which is a relatively new feeding practices measure including 12 dimensions on parental feeding practices.

The roles of child cognitions and parental feeding practices in explaining child intentions and behavior regarding child F&V consumption were assessed by running four regression models. Only parent-child dyads with complete data sets for each of the four models tested were included in our analyses (regression on child intention to eat fruit/child fruit consumption: n=643/n=628, regression on child intention to eat vegetables/child vegetable consumption: n=658/n=622).

The impact of child cognitions and parental feeding practices on child intentions and behavior regarding F&V consumption

Our analyses revealed that a relatively large portion of child intention and behavior regarding fruit consumption could be explained by child-reported cognitions (29% and 25%, respectively). This also applied to child intention and behavior regarding vegetable consumption (42% and 28%, respectively). Parent-reported feeding practices added another 3% to the variance explained for child intention to eat fruit, and 4% to the variance explained for child vegetable consumption. Thus, in the present study child cognitions appeared as far stronger correlates of child intention and behavior regarding child F&V consumption than parental feeding practices. It is important to note, however, that possible indirect associations were not investigated in the current study. We therefore suggest that future research address potential mediating effects of child cognitions on the associations between parental feeding practices and child healthy eating intention and behavior. Extended knowledge about the pathways of these variables is warranted to inform future parent-child intervention programs.

BASED ON: Melbye, E.L., Øverby, N.C. and Øgaard, T. (2011). Child consumption of fruit and vegetables: the roles of child cognitions and parental feeding practices. Public Health Nutrition;15(6):1047-1055.

A consideration of food marketing to parents

— Jennifer Manganello[a] & Katherine C. Smith[b] —

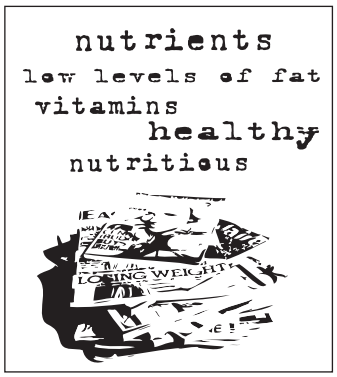
a. Department of Health Policy, Management, and Behavior, University at Albany School of Public Health, USA

b. Department of Health, Behavior and Society, Johns Hopkins Bloomberg School of Public Health, USA

The increase in obesity rates among children is a significant global public health concern, and diet is a known contributing factor[1]. Parents play an important role in a child's diet, and there are many potential influences on parents' dietary knowledge and attitudes. For instance, parents have been demonstrated to obtain nutritional information from professionals, social networks, and media including magazines, newspapers, and television[2,3]. While many studies have examined how foods are marketed directly to children, no studies have specifically looked at food marketing to parents. If we seek to improve how and what children eat, we need to understand what types of food products are marketed to parents, and what appeals are used to promote these products.

A content analysis conducted of parenting magazines

Data came from a content analysis study using a sample of six parenting and family-oriented magazines published in 2008 (24 issues total from four months - March, June, September and December). We categorized products by product type, and looked at messages, themes, photos, mentioned ingredients, and claims about the product being nutritious or contributing to health benefits.



Fruit and vegetables rarely advertised

Only seven advertisements were for fruit products (26 advertisements were for fruit juices) and three advertisements were for vegetable products. The most frequently advertised foods were snack products. Other products advertised routinely included dairy products, meats, baked goods, fast food, and packaged meals.

Taste most commonly used message

The most popular promotional theme was taste, with over half of ads mentioning a product's taste and a quarter highlighting a product being new or improved. Other themes we observed seemed to offer solutions to parenting challenges with messages that these products could save time, ensure kids have fun, or create opportunities for quality family bonding. While many advertisements provided information about the content of the product, others used a more indirect route to persuasion, such as images evoking emotional responses. A majority of adver-tisements showed people with positive expressions, and often showed children playing, or families cooking or eating together. Such images are likely to engage a reader in an emotional way, while text about attributes of the product engages a reader in a logical way.

Claims about health

Advertised food products routinely made health claims by reporting levels of specific vitamins and nutrients, or low levels of fat, sodium, sugar, additives, or preservatives. More than half of the advertisements incorporated the words "healthy" or "nutritious" into product descriptions. Approximately one-fifth of advertisements made a direct claim that the product could improve health, for example, by enhancing physical or mental performance or boosting the immune system.

Helping parents understand ad messages about food

Designing and evaluating interventions, including media literacy efforts, may be warranted to help parents be more aware of the advertisements they are exposed to and how to interpret and use the information provided[4]. Studying nutrition information provided to parents in other forms of media, including websites, is also clearly of interest, as is longitudinal research to see if exposure to nutritional messages, both positive and negative, influence parental attitudes about food and nutrition over time. Increasing consumption of foods like fruits and vegetables to address obesity has been recommended by the World Health Organization, so identifying how media can be used to promote fruit and vegetable consumption would be useful[1]. A better understanding of the role of media in influencing parents' food choices is critical if we are to fully appreciate the role that food marketing plays in promoting and potentially combating the growing obesity problem for both children and adults.

BASED ON: Jennifer A Manganello, Katherine Clegg Smith, Katie Sudakow and Amber C Summers. A content analysis of food advertisements appearing in parenting magazines. Public Health Nutrition, available on CJO 12/7/12. doi:10.1017/S1368980012005216.

REFERENCES:

1. World Health Organization. (March 2013). Obesity and overweight: Fact sheet. Available at: http://www.who.int/mediacentre/factsheets/fs311/en/

2. Carruth B, Skinner J. Mothers' sources of information about feeding their children ages 2 months to 54 months Journal of Nutrition Education. 2001;33(3):143-7.

3. EUFIC. Consumer Attitudes to food, nutrition and health. Food Today. 1998, August.

4. Hindin T, Contento I, Gussow J. A media literacy nutrition education curriculum for Head Start parents about the effects of television advertising on their children's food requests. Journal of the American Dietetic Association. 04;104(2):192-8.