2.3 Coping with time pressure and stress: Consequences for families' food consumption

Coping with Time Pressure and Stress: Consequences for Families' Food Consumption

Abstract Time pressure and stress (time stress) affect human emotions, cognition and food consumption. Since parents are important role models for children's food consumption, researching parents' strategies for handling time stress in their families is important to improve the quality of family members' diet. This study explores the coping strategies that families apply while under time stress and how those strategies affect food consumption at dinnertime. The data presented were obtained through use of participant photo interviewing methodology with 12 Norwegian children, age seven and eight, and their parents. During one week, children took photographs of their food while eating dinner at home and while shopping for groceries with their parents. The photographs provided a foundation for the individual interviews. Interview transcripts and photographs was content analysed using NVivo 10 qualitative data analysis software. The most dominant explanation for time stress was children's participation in sport activities. Both children and parents had negative perceptions of time stress. Unhealthy food consumption during busy days was often a consequence of substituting snacks for traditional dinners and avoiding food preference conflicts with the children. Confidence in cooking, meal planning skills and engaging children and grandparents in cooking improved families' food consumption, whereas low confidence in cooking -and planning skills was more likely to result in unhealthy food consumption. By using compensating behaviour, most families treated weekend dinners as a family reward and as a chance to make up for time-stressed weekdays; thus, in some cases, they tended to choose popular foods over healthy ones on those occasions. This may be the first study to identify parents' use of compensatory health beliefs (CHBs); specifically, parents expressed the belief that children's high activity level could compensate for unhealthy food consumption. The authors discuss how the applied coping strategies have important implications for understanding unhealthy eating, and they recommend that future food interventions should aim at improving families' skills for meal planning, as well as engaging other family members in cooking healthy dinners.

Key words: Children; Sports; Qualitative; Photograph; Compensatory Health Beliefs

Background

Children who are physically active and participate in organised sports have been found to eat healthier and have better physical health than their non-athletic counterparts (Croll et al., 2006; Maitland, Stratton, Foster, Braham, & Rosenberg, 2014). However, some parents have also indicated that children's participation in sport activities is a barrier to practising healthy eating behaviours (Devine et al., 2006). As they attempt to manage the demands of both work and family life, many parents feel time pressure and stress (hereafter referred to as "time stress") (Beshara, Hutchinson, & Wilson, 2010), leaving them with less time to plan and prepare meals for their children (Bauer, Hearst, Escoto, Berge, & Neumark-Sztainer, 2012; Beshara et al., 2010; Brown, Broom, Nicholson, & Bittman, 2010; Jabs et al., 2007; McIntosh et al., 2010; Neumark-Sztainer et al., 2012). Parents are important role models for children's eating behaviour, and their ways of coping with time stress may be copied by their children and may become decisive for their own health as adults (Chen & Kennedy, 2005).

In most cultures, dinner is the meal that provides the most important nutrients (Gillman et al., 2000). Since both children and adults are advised to increase their consumption of seafood and vegetables (The Norwegian Directorate of Health, 2011) and since such foods are mostly eaten for dinner (Totland et al., 2012), researching families' dinners offers the potential to significantly enhance the quality of people's diet. Thus, in this paper we will explore the food-related coping strategies that families apply when under time stress, along with the consequences of these strategies for their food consumption and their practice of sharing dinner as a family. The aim is to determine which strategies for handling time stress are most likely to make family dinners either healthy or unhealthy and to identify suggestions for assisting families under time stress.

Whereas previous studies of time stress and its effect on families' eating behaviour have focussed mainly on parents' employment situation (e.g. Bauer et al., 2012; Beshara et al., 2010; Brown et al., 2010; Devine et al., 2009; Jabs et al., 2007), this study may be the first to focus on children's healthy physical activity habits and how they may influence families' food consumption. We use ideas from the compensatory health belief (CHB) literature, regarding the belief that certain healthy behaviours can compensate for other unhealthy behaviours (Radtke, Kaklamanou, Scholz, Hornung, & Armitage, 2014), to illustrate how parents justify their children's unhealthy eating. In addition, this is one of the few studies to include both children and parents in data collection, so as to investigate how time stress is perceived by all family members. To our knowledge, most studies on the influence of time stress on families'

diet have been conducted with American samples (e.g. Bauer et al., 2012; Devine et al., 2009; Devine et al., 2006; Jabs et al., 2007; Neumark-Sztainer et al., 2012). Studies from other cultures or countries are thus needed.

The structure of the paper is organised as follows. In the next section, we will provide a theoretical and empirical background regarding how time pressure and stress may influence families' food coping strategies and the consequences for food consumption. Second, we will describe the methodological approach used, involving participant photos and interviews. Third, we present study results. Finally, we offer research and policy implications related to food interventions for children and their families.

Time Stress and Food Consumption

Stress arises when the demands of a situation exceed an individual's ability to cope and resolve the problem (Michels et al., 2012). Researchers agree that stress can be triggered by unpredictable and uncontrollable conditions that individuals perceive as life-threatening or traumatic (Koolhaas et al., 2011). Such forms of stress, normally referred to as acute stress, trigger multiple biological processes in the body such as the increase of adrenaline and cortisol hormone levels, which fall rapidly once the situation has been dealt with (Torres & Nowson, 2007). Some researchers argue that daily annoyances and minor hassles can be important stressors as well (Francis, Granger, & Susman, 2013; Hayman, Lee, Miller, & Lumeng, 2014; Lumeng et al., 2014; Michels et al., 2014; Michels et al., 2012; Schrodt, Ledbetter, & Ohrt, 2007). These chronic types of stress involve prolonged exposure to stress hormones, particularly cortisol (which is important for regulating appetite), and may thus prevent the person from returning to a healthy resisting state (Torres & Nowson, 2007). Time pressure or time scarcity, the feeling that one does not have time to do everything one needs or wants to do, is one of the primary explanations of chronic stress (Jabs et al., 2007). Mothers who have jobs outside the home report the greatest time pressure, due to conflicts between their responsibilities at home and at work. In this paper, we use the concept of time stress to describe the participants' experiences of daily hassles that create time pressure and stress regarding preparation of dinners at home for the family (Beshara et al., 2010).

Research on what causes time stress, how it is handled and how it influences families' food consumption has mainly been conducted with adult samples (Jenkins, Rew, & Sternglanz, 2005). Many of these studies have focussed on parents with little resources, such as lower-income people (Devine et al., 2006; Jabs et al., 2007), ethnic and racial minority groups

(Neumark-Sztainer et al., 2012) or parents with poor working conditions (Bauer et al., 2012; Devine et al., 2009). These studies argue that time-stressed parents with little resources generally have unhealthier diets than those with greater resources (Devine et al., 2006). Some researchers have suggested that other factors, such as parents' confidence in their ability to prepare healthy meals (Beshara et al., 2010) and parents' prioritization of planning family meals (Devine et al., 2009; Jabs et al., 2007; McIntosh et al., 2010), are more decisive for the family's food consumption than socioeconomic status (SES).

How children and adolescents perceive stressful situations and how this may affect their eating behaviours and food consumption are less researched than the effects of stress on adults (Jenkins et al., 2005). Even less research has been done on physically active or healthy children as compared to children in illness-related situations (Chen & Kennedy, 2005). To our knowledge, no studies have researched how time stress may influence children's eating behaviour. Thus, the literature review presented here concerning children is based on stress in general (i.e. psychological stress), not time stress directly. Hayman et al. (2014) found that many parents believed that their children rarely experienced sufficient negative emotions to cause stress, but research has shown that children even as young as three years old experience stress similarly to adults (Lumeng et al., 2014). Low self-esteem, social issues (e.g. moving), economic issues (e.g. a parent's job loss), academic issues, physical appearance, family issues (e.g. divorce) and social issues have been found to be important causes of stress in healthy school-age children (Chen & Kennedy, 2005; Martyn-Nemeth, Penckofer, Gulanick, Velsor-Friedrich, & Bryant, 2009; Michels et al., 2014).

Food Coping Strategies Associated with Time Stress and Food Consumption

Stress coping consists of automatic, voluntary or involuntary processes that individuals perform to manage the demands that are perceived as stressful, as well as the emotions generated (Carver & Connor-Smith, 2010). The degree of stress and how humans cope with it depend on the capabilities of the individual under stress (Koolhaas et al., 2011; Patterson, 2002). Coping strategies tend to become habitual and stable over time (Carver & Connor-Smith, 2010). For example, some individuals tend to be problem-focussed and often carry out cognitive activities that prevent or diminish stressors, whereas others are more emotionally focussed and tend to seek emotional support from others or express negative emotions by yelling or crying.

Devine et al. (2006) used the term 'food choice coping strategies' to explain the behavioural mechanisms that people employ to manage stress and fatigue related to their eating

behaviours or food consumption. This paper refers simply to 'food coping strategies', since it focus on families, in which the actual food choices are often made by parents, not children. Previous studies have found that typical food coping strategies applied by *parents* include speeding up (e.g. cooking convenience food), planning meals (e.g. cooking more on days off and using leftovers on busy days), skipping meals, engaging one's partner or children in cooking, eating take-out food, individualising meals for different family members, multitasking (e.g. doing house chores while dinner is cooking) and eating at different times (Devine et al., 2009; Devine et al., 2006; Jabs et al., 2007). The study by Devine et al. (2006) of low-wage employed parents found that one of the most typical coping strategies, eating take-out foods, was aimed at managing feelings by using comfort food as a treat or reward for the family to make up for a difficult workday or week. Contrary to the study by Norman, Berlin, Sundblom, Elinder, and Nyberg (2015), Devine et al. (2006) found that many parents tended to prioritise activities such as children's homework and sport activities at the expense of food and eating.

Devine et al. (2006) also noted that most parental coping strategies were actually less efficient ways of dealing with time stress and that the chosen strategies rarely gave parents a sense of coping and control. In addition, the strategies often made parents feel guilty or dissatisfied about their food choices. Jabs et al. (2007) clustered parents into three groups according to how they related to time scarcity: those who wanted to be in control, those who had no control and those who had given up control. They found that compared to the other two clusters, mothers who wanted to control their family's time tended to use more beneficial coping strategies by planning their family's meals, coordinating various activities (such as doing laundry while cooking dinner) and making cooking and eating a priority over other activities. They also found that mothers who described themselves as having cooking skills and confidence in cooking a variety of meals were more able to handle time and stress than other mothers. Researchers have argued that some of the behavioural responses to stress are socially learned (Chen & Kennedy, 2005; Louis, Chan, & Greenbaum, 2009). For example, children who perceive that their parents associate negative, stressful feelings with hunger may learn to eat food as a way to cope with stress (Michels et al., 2014).

Children tend to use more distraction and avoidance coping strategies in response to general psychological stress than adults do (Chen & Kennedy, 2005). Young children usually have less developed cognitive abilities and resources to deal with stress than adults and adolescents, who have learned to use more cognitive approaches as they have matured (Michels et al., 2014). Thus, some specific coping strategies are age-dependent. For example, young

children (age six to eight) have been found to cope with stress through increased physical activity more often than older children (age nine to eleven) (Michels et al., 2014). A suggested explanation for this tendency is that older children may have more time constraints on physical activity because of other priorities, such as schoolwork, and tend to rely more heavily on sedentary coping strategies like watching TV. Since there appear to be no studies on children's coping strategies for dealing with time stress, the existing literature describes only children's responses to other stressors. In general, children tend to cope with stress by means of increased physical activity, eating and drinking, drawing, playing games, watching TV, saying they are sorry and trying to relax (Balantekin & Roemmich, 2012; Chen & Kennedy, 2005; Michels et al., 2014). Even children realise that some of these strategies are less constructive than others. In the study by Chen and Kennedy (2005), most children perceived watching TV as less constructive, whereas drawing was viewed as the most constructive strategy to deal with stress. Only white American children in their sample viewed eating and drinking as one of the best ways to cope with stress. Since children's food consumption is highly dependent on what their parents make available to them (van Ansem, Schrijvers, Rodenburg, & van de Mheen, 2014), we suggest that their food coping strategies in response to time stress are similar to those used by their parents.

Time stress has mainly been associated with unhealthy food consumption. In general, time-stressed parents have been found to consume more unhealthy snacks, sugar-sweetened beverages and fatty fast food and are less likely to eat vegetables, meat and fish on a regular basis (Bauer et al., 2012; Louis et al., 2009; Neumark-Sztainer et al., 2012; Oliver & Wardle, 1999; Pocock, Trivedi, Wills, Bunn, & Magnusson, 2010). Experiencing acute high-level stress tends to suppress appetite, but chronic stress leads to increased food consumption, particularly of foods high in fat and sugar, and may cause people to become overweight (Torres & Nowson, 2007). Reasons for increased sugar and fat consumption may be explained by biological processes. It is estimated that about 30 percent of all people have low cortisol reactivity under stress and therefore tend to eat less than usual, whereas most have high cortisol reactivity and usually eat more food with sugar and fat (Adam & Epel, 2007; Balantekin & Roemmich, 2012; Groesz et al., 2012). The explanation for this food choice is that fats and sugars target the brain much as opiates do, offering an inexpensive and easy form of short-term pleasure and relief from discomfort. With the increasing number of dual-income households and higher education levels, some positive alternatives have been suggested to buffer the potentially negative effects of time constraints on family meals. Families with high SES may 'purchase' time through

services such as child care or housekeeping and can buy healthier and more expensive meals prepared outside the home (Beshara et al., 2010).

Psychological stress in children and adolescents has also been associated with various types of unhealthy food consumption, such as eating more or less food, eating when not hungry, increased consumption of foods high in fat and sugar and decreased consumption of fruits and vegetables (Cartwright et al., 2003; Hayman et al., 2014; Michels et al., 2014; Michels et al., 2012). A particular explanation for children's increased consumption of unhealthy food is that such foods are frequently available in their environments and present an easy remedy for negative experiences of stress. Psychological stress has also been found to provoke emotional eating (in response to negative feelings), external eating (in response to the sight and smell of food) and restrained eating in children and adolescents (Hou et al., 2013; Michels et al., 2014) . In addition, stress may contribute to psychological feelings, such as low self-esteem (Fryer, Waller, & Kroese, 1997; Jenkins et al., 2005), depression and anxiety (Hou et al., 2013; Michels et al., 2014), that have been associated with disturbed eating behaviour amongst children and adolescents.

Methods

The present study sought initially to explore how family communication occurs around dinner and how parents' feeding practices may influence children's food preferences (Alm, Olsen, & Honkanen, 2015). The study applied *participant photo interviews* as a methodological approach (Zartler & Richter, 2014), inviting children to take photographs while eating dinners at home and while shopping for groceries with their parents. The photographs were later used during interviews with the family members to collectively explore the subjective meanings of the images (Jorgenson & Sullivan, 2009). Information concerning children's and parents' experiences of time stress was obtained through an inductive research process (Patton, 2002), since this was not the information we were initially looking for, but was elicited as the participants talked about their photographs and discussed their dinners and grocery shopping habits. The final data provided rich descriptions of how the participants tried to cope with time stress and how their coping affected their food consumption. We found these data very interesting and realised that they could make a valuable contribution to existing literature on time stress, giving us a foundation for the present paper.

Participants

From an invited group of 79 second-graders from two Norwegian after-school programmes known as Skole Fritids Ordning (SFO), 12 children (seven girls and five boys) and their parents volunteered to participate in the study. SFO is municipally provided, voluntary child care for first- through fourth-graders, paid for by parents who need child care after regular school hours (Tromsø municipality, 2014). The invited children represented all second-graders, aged seven and eight, at two SFOs in the city of Tromsoe, Norway. Both children and parents were informed about the study, and formal consent to participate was required by both parties (Alderson, 2004). All participants were homogeneous in terms of origin (Norwegian cultural background), and all came from two-parent households. The sample represented a broad variety of education levels, with most parents working full-time. The average household income level (€ 132.000) can be described as above the average of € 92.000 according to official Norwegian statistics (Statistics Norway, 2013); this deviation is not surprising since all 12 families were two-income households. The total sample consisted of 12 children and 17 parents and is further described in the appendix.

Data Collection

Each child was given a digital camera and was shown how to use it. During one week, the children were asked to take photographs covering the following topics: 'food we eat for dinner', 'persons I eat dinner with', 'persons who prepare dinner at home' and 'shopping for dinner with my family'. One week of data were collected in order to identify dietary practices and food consumption during a typical week, including both schooldays and a weekend. No limitation was placed on the number of photographs taken.

After one week of photographing, the first author met each child for an interview at SFO, while the parents who usually prepared dinner for the family were interviewed in their home. Photographs were first downloaded to a computer and viewed chronologically during the children's interviews, while presented at the end of parents' interviews. The interviews were semi-structured and based on two short interview guides that we prepared, one for the children and one for the parents. The guides contained questions about the meals, food preferences, family communication and feeding practices, but most questions (e.g. 'How do you feel about that?' and 'Can you tell me more about that?') were posed to follow up on the participants' statements when explaining the photographs. Most of the information on participants' experience of time stress was elicited by the initial question about dinners ('Can you tell me

about the dinner meals in your home?') and while discussing situational aspects of the meals appearing in the photographs, such as on which day the meal was eaten.

Data Analysis

Interviews with the children lasted an average of 48 minutes; parent interviews averaged 62 minutes. The total collected number of photographs was 408, with an average of 34 photographs per child. All interviews were audio-recorded with a digital recorder and transcribed verbatim with the participants' permission. Since the information in some photographs was repetitive or irrelevant (e.g. food consumed for breakfast or lunch), we chose to exclude some photographs from the data analysis. Transcripts from the 24 interviews and 259 selected photographs were analysed by conventional content analysis (Hsieh & Shannon, 2005) using Nvivo 10 qualitative data analysis software (QSR International, 2012). From repeated reading of the transcripts, discussions between the authors and use of the search tools in NVivo 10, themes concerning the participants' means of coping with time stress emerged, and we perceived the influence of perceptions of time stress on the families' coping strategies and food consumption, as will be discussed below.

Results

In this section, we discuss the participants' food coping strategies for handling time stress and the consequences of these strategies for their food consumption. To protect confidentiality, families are identified by letter, from A to L (see appendix).

Perceptions of Time Stress

Most parents and children finished work and SFO, respectively, around 4:00 in the afternoon and had multiple chores to do before bedtime. The most dominant explanation for time stress was children's participation in organised sport activities. All children attended various organised leisure and sport activities several times a week. Two of the boys each had three different activities, spread across five days of the week. Parents described grocery shopping, picking up children at school, cooking dinner, helping with children's homework, driving them to friends' birthday parties and doing their own sport activities as additional explanations for time stress.

Interviewer: *Can you tell me about the dinner meals in your home?*

Mother C: *Yes, they are hectic, to put it briefly. … We do not have much time before going*

to training and activities that we engage in. We've got two days a week the girls … attend. And then I have one day of the week I do exercise and my husband as well. So it is difficult to make [dinner] fit with each schedule.

Children had similar experiences of time stress as their parents. Several stated that they often had little time to eat dinner on weekdays. Doing homework and eating dinner were sometimes viewed as inconvenient tasks that had to be completed before activities. Time stress clearly influenced the children's feelings. Some children indicated that they felt bad when dinners had to be rushed before sport activities.

Interviewer: *How is a regular dinner at your home on a typical day when you have been at school?*

Girl A: *It is usually stressful. But not on Tuesdays, because I have nothing that I need to do then. … Mondays are very busy, because I'm going to swimming class at ten to seven, and then I have to eat dinner. It takes some time to cook it, so we must eat in a hurry. I also have to do some homework, then I have to pack my swimming clothes, and then we have to drive for a while so that I have time to change clothes. … We are used to stress, we stress a lot.*

Interviewer: *What do you think of such stressful days?*

Girl A: *I think this is a bit like—it's like a creepy feeling, because you have to hurry so much* [touches her stomach]. *So, I think it's better on Tuesday, for then I can sit and eat the food in peace, not just hurry.*

Families' Coping Strategies Associated with Food Consumption

The families applied multiple different coping strategies to fit dinner into their busy schedules. Most of these strategies had negative consequences for the quality of the families' food consumption and health.

Skipping Dinner and Snacking Instead

Both children and parents explained that they sometimes did not have time to cook and eat dinner before driving to the children's sport activities. Families G and H said that when they had to skip dinner, they usually stopped by the grocery store to buy snacks for the children, who ate while travelling to or from the activities. Boy I, who had sport activities five days a week, said that he often bought waffles from his teammates' parents after finishing ice hockey practice. Girl G expressed that she disliked not having dinner before going to exercise:

Interviewer: *What do you think about the fact that you do not have time to eat dinner every day and need to go straight to ballet training?*

Girl G: *It's a little dumb, because otherwise I buy a chocolate or something, so I get a little strength to do things.*

Buying snacks usually caused children to eat more unhealthy food such as chocolate bars, buns or chocolate-flavoured milk. Boy H said that eating snacks after soccer practice often caused stomach aches and disturbed his appetite for dinner when he got home. Thus, unhealthy snacks became his final meal during a busy day (fig. 1).

Fig. 1 Cinnamon buns purchased after soccer practice (photo from family I).

Most families had hot supper in the evening if they had not eaten dinner before children's sport activities. Supper on those days was always a convenience food such as oatmeal porridge, a grilled cheese sandwich or frozen pizza and never more traditional dishes with vegetables or protein sources such as seafood. As we analysed information from the participants about children's meals during the day, it became clear that children's food consumption on time-stressed days was lacking important nutrients. Usually the children ate bread both at breakfast, at lunch during school and in their afternoon meals at SFO. These meals, combined with the children's typical consumption of unhealthy snacks and convenience-food suppers, indicated that several of the families did not consume recommended amounts of seafood and vegetables on time-stressed days.

Interviewer: *Do you eat anything before you take the children to swimming class?*

Mother A: *No, … often there will be no dinner. For … we are not back until half past*

seven or eight. So we have more like pizza, leftovers or bread, omelettes, that kind of food.

Consuming Convenience Food

For all families it was important to finish meals quickly on time-stressed days. The most common food coping strategy was to speed up eating by cooking convenience foods. Eating at fast-food restaurants was less common, since the families considered fast food too unhealthy and expensive to eat on a regular basis.

Interviewer: *How are your dinners usually in your home?*
Mother D: *It varies according to how much time we have … because we are a rather big family and some afternoons there is much going on, and we have to make quicker meals. I usually think that we should make food from scratch, even if it takes longer. But it does not always turn out that way on busy weekdays.*

Which dishes the parents considered convenient and quick to make varied depending on their confidence in their cooking skills. Parents with high confidence had greater variation in the dishes they prepared on time-stressed days and were more likely to serve their family seafood and vegetables for dinner than those with low confidence in cooking skills. For example, mother C, who liked to make food and felt confident in her cooking skills, considered chicken wok, fish cakes and pre-packaged fish gratin to be quick and convenient meals. Most of her dinners contained vegetables (Fig. 2).

Fig. 2 Pre-packaged fish gratin with potatoes, carrots and boiled eggs (photo from family C).

Avoiding Preference Conflicts

Many parents emphasised that it was important to serve food that did not lead to conflicts between them and their children, since negotiating an agreement would take too much time. Dishes were frequently selected not according to parents' preferences, but because the children would accept them. Some parents, such as family G, even made dishes that they disliked and did not eat themselves, just because their children liked them.

Father G: *We do have some salmon and trout fillets that we only put in the oven for a couple of minutes.*
Mother G: *But the boys do not eat that ….*
Interviewer: *Do the children get different food, then?*
Mother G: *That's why we do not cook that. I do not want to cook two dishes every day. I do not have the time. So that's why we often have sausages.*
Interviewer: *What do you think of sausages for dinner?*
Mother G: *Terrible. It's not my favourite, so to speak.*

Analysing photographs taken on time-stressed weekdays made it clear that most 'child-friendly' dishes could be categorised as having low nutritional value. Typical dishes were convenience foods such as frozen pizza, oatmeal porridge, sausage, omelettes, grilled cheese sandwiches and spaghetti Bolognese. None of the dishes contained seafood and they rarely contained vegetables (Fig. 3).

Fig. 3 Fried sausage with ketchup and mashed potatoes from a bag (photo by family G).

Planning for Healthy Meals

Planning to serve convenience food was also used as a coping strategy to save time on busy days. Parents who took control of their family's meals and felt confident in their cooking skills were much better at planning the meals. These parents often made shopping lists and tended to have one main shopping day each week, preferably on Saturdays, along with occasional shopping during the week. They often bought frozen food, which they could store in their own freezer. Planning meals usually took place the day before or on the morning of the meal, based on what was available at home and the children's activities that day. Parents who were good at planning often cooked large Sunday dinners, which provided them with leftovers for busy weekdays.

> Mother I: *I look through the refrigerator and freezer in the morning, without including him* [looks at husband] *and just see what we have. For I know that as a rule, ninety percent of the time it is I who cook it, so it is okay if I know what we have, so I can plan. I always ask if we have something we need to do in the afternoon, and if not I can make a dinner that takes longer to cook.*

Families A, F, G, H and J talked about their challenges in planning family dinners. Their afternoons were often so busy that they often felt they did not have time to plan their meals. In

these families, meals often had low priority compared to the various other activities. Parents often expressed lack of confidence in their cooking skills and felt tired of making dinner fit with their busy schedules. Some of them admitted that poor planning even made them feel more time-stressed.

> Father G: *We could be less busy if we were better at planning. Both when it comes to grocery shopping and setting aside time to plan.*

Families who were bad at planning tended to make more frequent trips to the grocery store, and their food purchases were often the result of impulse buying in the store. Family G would call older siblings at home on the cell phone to check what food was available in the house.

> Interviewer: *Do you make a shopping list at home before you go shopping?*
> Girl G: *No. We call them,* [big brother's name] *and* [oldest brother's name], *at home and ask. When we're supposed to have tacos, we will call and ask if we have tortillas. And they go in the kitchen and see, and then they say no.*

Families who were good at planning their meals and grocery shopping were more likely to have protein-rich dishes with vegetables. They often made large Sunday meals to provide leftovers on busy days. Sunday dinners were often described as including proper, traditional food that took a long time to cook, such as meat stew, homemade meatballs, roast and oven-baked salmon, frequently served with vegetables. Families who experienced difficulties in planning their dinners usually had less healthy food consumption and rarely ate seafood or vegetables on time-stressed days. They could buy heated chicken from the fresh food counter, which they ate without any side dish, or they bought a frozen pizza that could be heated quickly when they came home (Fig. 4).

Fig. 4 Preheated chicken at the fresh food counter (photo by family G).

Involving Other Family Members in Food Preparation

Two families engaged older children in cooking dinner for the family on busy days. Family G had a 15-year-old son who came home before the rest of the family and cooked dinner once a week so that the rest of the family could eat quickly before driving to their activities. In family L, the oldest daughter (age 12) and son (age 11) cooked dinners on busy weekdays as well. The mother explained that the children had become more confident in their cooking skills after studying home economics at school, making it possible to delegate cooking to the children. By cooking dinner, the children received pocket money from the parents.

> Interviewer: *When did you figure out that you could delegate cooking to the kids?*
> Mother L: *Having home economics has helped a lot. I just have to say—home economics is a gift package. Suddenly, they found out that they could do it themselves. And they really liked to cook at home. … They needed to feel confident enough that they could cook. So when they were ready, we just had to grab that opportunity. But it's not until the last year or six months that they have felt it's safe to cook.*

Amongst the families who engaged their children in cooking, the parents always decided what dishes the children should make. The mother in family L took more control of her family's meals and expressed more confidence in her cooking skills than the mother in family G. Thus, the children in family L cooked much more varied dishes than family G, who always had

lasagne with salad when their oldest son cooked. In contrast, the children of family L cooked different kinds of bag soups with added vegetables, various seafood and chicken dishes with vegetables (such as oven-baked cod and chicken wok), salad and homemade pizza.

Fig. 5 Son, age 11, making chicken with rice and broccoli for family L.

Interviewer: *Do you have a recipe, or how do you figure out what they should cook?*
Mother L: Yes, sometimes. [Oldest daughter's name] *made pizza dough on Friday; she had to have the recipe for the dough. Otherwise it was more on impulse that topping the boys made. When* [Oldest son's name] *made oven-baked cod, I explained to him how to make it the day before; it's really easy. So we try to make it easy, so that it should not be too advanced.*

Family J lived within walking distance of the children's grandparents, who often provided boy J with a meal between school and sport activities. The family usually dined on Fridays and Sundays at the grandparents' home, often providing them with leftovers that could be reheated on time-stressed weekdays. The food provided by grandparents was usually healthy, but could also be unhealthy snacks such as wheat buns.

Interviewer: *Does he have time to go home to eat before soccer practice?*
Father J: *Yes … on Wednesdays he usually walks … from school and to my mom. And [he] gets food at her place. … Sometimes she makes dinner or a sandwich, or some buns—something filling.*

Mother J: *… The reason why he started walking to your mother is that last year, soccer practice started at 4:30 and we did not have time to cook anything.*

Practising Compensatory Health Beliefs and Behaviour

The parents expressed two different coping strategies to compensate for the negative experiences of time stress. They compromised between their goals of supporting their children in sport activities and making healthy dinners for the family, and they behaved and ate differently on stressful weekdays as opposed to relaxing weekends. Since the families' weekdays were often stressful, it was important for them that weekend meals compensated for weekday meals. Weekends were defined as the time from Friday afternoon to Sunday evening. Compared to weekdays, parents explained that they had more time for planning, grocery shopping and cooking on weekends. Weekend meals were characterised by democratic processes, letting children choose what to have for dinner. Tacos, one of the children's favourites, were mostly served on Fridays when the parents had more time to cook food, sometimes together with their children. During these meals, both children and parents described a 'cozy' atmosphere where they had more time to talk together. The Norwegian word 'kos' (cozy) was often used to describe such meals, emphasising peace and harmony between the family members.

Mother C: *On Fridays we sit a little longer, because we mostly eat "*kos *food. It could be either pizza or tacos or—yes, wok is also the one of those* kos *dishes. So we sit a little longer and we mess with each other, because we have more time …. We tend to have late dinners on Friday and Saturday. Because so much is always happening, it is sort of nice to take the time to cook on Friday and do it in peace and quiet. Then I'm finished shopping. … So when the evening comes, like seven or eight, dinner is served. Saturdays are like that as well, because we are always busy doing something.*

When parents were asked how many of their meals were considered healthy or unhealthy, several had the impression that their weekday meals where mostly healthy, whereas weekend dinners tended to be unhealthy.

Interviewer: *How many—if we tried to think percent—of the dinner meals would you say are healthy or proper meals?*

Mother L: *I would think, intuitively, like seventy …*

Stepfather L: *Yes. Four to three, five to two, compared to the weekdays.*

Mother L: *On Fridays and Saturdays there is Friday-Saturday food, usually.*

But when we analysed interview transcripts and photographs, we found that weekend dinners were not necessarily as unhealthy as many parents believed. Participants in our study used *kos* to refer not only to high-calorie snacks, such as potato chips and soda, but also to dinner dishes such as tacos, homemade pizza and fresh prawns, which were liked by most family members. Tacos, the most eaten dish on Fridays, consisted of various salad ingredients and could be a weekday dish as well, one containing various vegetables (Fig. 6).

Fig 6 Tacos with chicken, tortilla, tomato, avocado, salad leafs, corn, cucumber and sour cream (photo from family I).

Many of the parents used children's sport activities to justify unhealthy food behaviour and consumption, which indicated use of CHBs. Children's participation in several sport activities often held a higher priority than taking time to cook healthy meals. Most parents did not express any concern or have a bad conscience if they had to skip dinner, buy their children snacks or cook less healthy convenience foods on busy days. They emphasised that it was the children's choice to participate in the activities, and that therefore practising unhealthy food behaviours was justified. The only mother in the sample with an overweight child (Mother K) explained that her son's active lifestyle compensated for his overeating behaviour and consumption of unhealthy snacks:

> Mother K: *He practises handball on Tuesday, has Wednesday soccer and swimming lessons on Thursdays, but that's only until the summer. He has soccer again on Saturdays and sometimes Sundays too. He also is in a children's choir and goes downhill skiing.*

That is something we adults talk about—if he did not want to be so active we would have to do something more with his diet.

Parents who used CHBs to justify unhealthy food practices were more likely to skip dinner and eat snacks on busy days or to serve their children unhealthy convenience foods, such as frozen pizza and sausages. Thus, using CHBs decreased the chance of eating a varied diet with seafood and vegetables for dinner. Those parents who had high confidence in their cooking skills, were good at planning their family meals and/or engaged other family members in cooking could use CHBs as well, but were more likely to have healthier food consumption than the other families (Fig. 7).

Fig. 7 Frozen pizza served on a time-stressed weekday (photo by family K).

Discussion and Implications

The aim of the present study was to explore families' food coping strategies under time stress and their consequences for families' food consumption at dinner. Contrary to previous research (Beshara et al., 2010; Hayman et al., 2014; Jabs et al., 2007), both children and parents experienced time stress concerning dinner on busy days. Being physically active is normally viewed as an efficient coping strategy in response to stress, since it may generate euphoric feelings, increase social support and decrease stress responses (Balantekin & Roemmich, 2012; Tsatsoulis & Fountoulakis, 2006). Our findings, however, indicated that joining organised sport

activities made parents and children feel time-stressed, which sometimes had negative consequences for their healthy eating behaviour (Bauer et al., 2012; Fryer et al., 1997; Hou et al., 2013; Jenkins et al., 2005; Louis et al., 2009; Michels et al., 2014; Neumark-Sztainer et al., 2012; Oliver & Wardle, 1999; Pocock et al., 2010). Contrary to the study by Norman et al. (2015) and similar to the findings of (Devine et al., 2006), our results indicated that families sometimes viewed engaging their children in sports and leisure activities as more important than eating healthy dinners.

By using participant photo interviews and involving both children and their parents in our methodological approach, we uncovered several coping strategies that had varying influence on the families' food consumption: skipping dinner and eating snacks instead, consuming convenience food, avoiding preference conflicts, planning for healthy dinners, involving children and grandparents in food preparation and practising compensatory healthy beliefs and behaviours. To organise our discussion section, we have prepared the following time-stress model, linking the different coping strategies applied with their consequences for families' unhealthy versus healthy food consumption (Fig. 8).

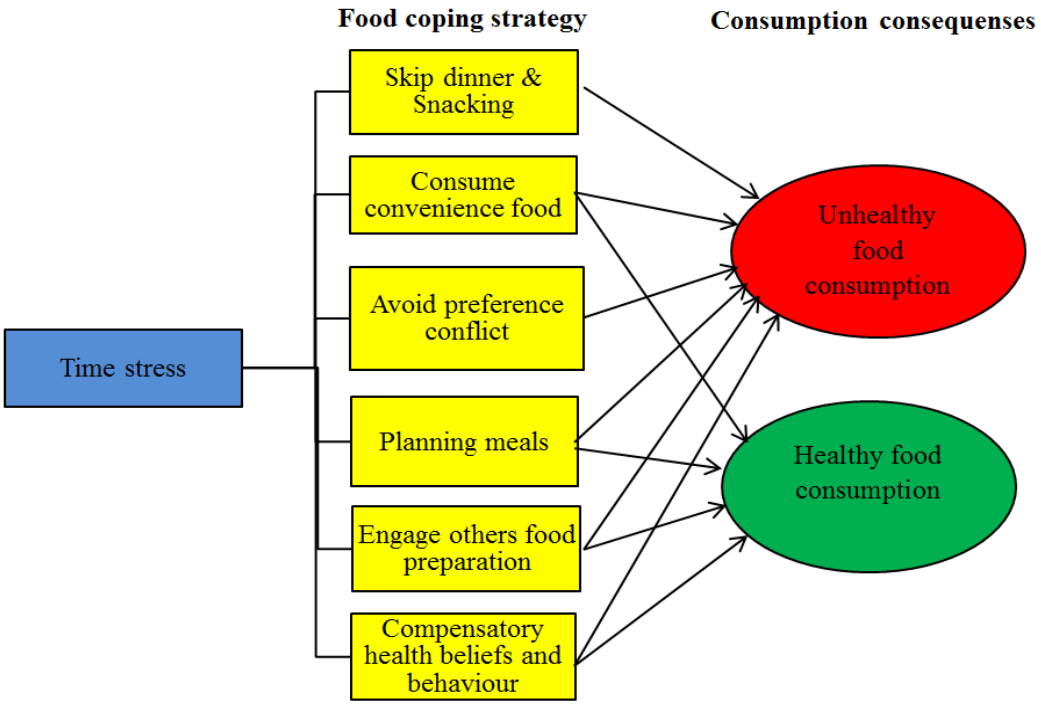

Fig. 8 A time stress model linking families' food coping strategies with consequences for families' food consumption.

Skipping dinner and eating unhealthy snacks was a common coping strategy in response to time stress. In such cases, the families often ate unhealthy snacks and made hot suppers with low nutritional value. Skipping dinner is known as a common coping response to time stress (Devine et al., 2006), and snacking has been viewed as a consequence of stress (Louis et al., 2009; Oliver & Wardle, 1999). We propose that snacking should rather be viewed as another coping response to time stress, since it is one way in which family members manage their demands on busy days (Carver & Connor-Smith, 2010). The study results also showed that eating snacks after sport activities sometimes spoiled children's appetite for supper. We argue that such situations may cause children to be undernourished, especially considering their high activity level and physical growth. These findings have important implications for both policy makers and parents. Children's meals at schools and child-care centres, such as SFO, should contain more seafood and vegetables, since they are sometimes not provided at family meals. Parents have a particular responsibility to provide their children with healthy options for snacks and hot suppers. Parents need to be aware of their important influence as role models (Louis et al., 2009).

The most frequently applied coping strategy, *consuming convenience food*, is consistent with multiple stress studies (Devine et al., 2009; Jabs et al., 2007), while parents' strategy to *avoid preference conflicts* with their children by serving food that children liked has, to our knowledge, been discussed only by Norman et al. (2015). The concern to avoid conflict often meant that dinners had low nutritional value with lots of bread and pasta and rarely contained seafood and vegetables. If parents had low confidence in their cooking skills, they were more likely to have unhealthy food consumption than those who felt confident in their cooking skills, supporting arguments presented by Norman et al. (2015). These findings have significant implications for future food interventions. Convenience foods need first and foremost to be accepted by the children. Thus, to make families consume more nutritional convenience food, parents must be able to prepare such food so that the children like them. For example, young children tend to like vegetables with soft textures, whereas older children prefer crisp and hard textures (Zeinstra, Koelen, Kok, & de Graaf, 2007).

Considering the high SES of the sample, the results confirmed a previous study's finding that families with high SES are more likely to participate in sport activities (Wijtzes et al., 2014), but contradicted studies claiming that high-SES families are more likely to have healthy food consumption (Fismen, Smith, Torsheim, & Samdal, 2014; Neumark-Sztainer et al., 2012; Rasmussen et al., 2006; van Ansem et al., 2014). We found that families with high SES were

just as likely to eat less healthy dishes as families with low SES. In addition, previous research has found that eating at fast-food restaurants and buying take-out foods are common coping responses to time stress (Devine et al., 2009; Devine et al., 2006; Jabs et al., 2007). Our finding that eating at fast-food restaurants was a less frequently used coping strategy amongst participating families may also be new to the time stress literature. Even though our sample consisted of relatively high-SES families, parents argued that eating at fast-food restaurants was too expensive on a regular basis. Most studies on coping with time stress and food have been conducted in the United States (e.g. Bauer et al., 2012; Devine et al., 2006; Jabs et al., 2007; Neumark-Sztainer et al., 2012), and fast-food restaurants are somewhat more expensive in Norway than in America. For example, the annual Big Mac Index shows that a Big Mac in Norway costs EUR 5.43, compared to the equivalent of EUR 4.13 in the U.S. (The Economist, 2015). Thus, all families in our sample, independent of SES, have an economic motivation to buy healthy food in the grocery store and prepare meals at home. These results indicate that future research on time stress should consider other characteristics besides SES in investigating differences in families' food consumption, and that future food interventions should not focus solely on low-SES groups, but should include all SES groups in seeking to improve families' diet.

We found, just as in previous studies (Beshara et al., 2010; Devine et al., 2009; Jabs et al., 2007; McIntosh et al., 2010), that parents who took control of their family's meals and felt confident in their cooking skills often *planned* their family dinners and served healthy dishes with seafood and vegetables on stressful days. Parents who rarely planned their family meals and had low confidence in their cooking skills often viewed cooking dinner as an inconvenient task that they had to do before driving children to their sport activities (Jabs et al., 2007). These parents coped by buying food on impulse, and they rarely cooked dishes with fish and vegetables. Thus, they had little control over their family members' food consumption. These findings too have implications for future food interventions. Parents' sense of confidence in their own cooking and planning skills seems crucial for families' nutritional diet. Food interventions can be effective for parents who feel that they want to improve their cooking and planning skills, teaching them to cook healthy convenience food that children tend to like.

The finding that some parents *engaged older children and grandparents in food preparation* for the family is also consistent with some previous studies (Devine et al., 2006; Jabs et al., 2007). Our study results indicated that this may be the most promising coping strategy and may improve the diets of time-stressed families as long as the children and

grandparents involved feel confident in their cooking skills—an argument supported by Bauer et al. (2012). Previous studies have found that engaging children in cooking often makes them more motivated to try different foods and consume a varied diet (van der Horst, Ferrage, & Rytz, 2014). Future food interventions could be arranged in the form of cooking courses that involve both children and parents, so as to enhance children's confidence in their cooking skills. In addition, home economics instructors may teach the children healthy dinner recipes that are easy for them to make by themselves at home.

Parents' *compensating behaviour* in making different meals on weekends than on weekdays explained why consuming food associated with togetherness and relaxation was important on less time-stressed days. These results are comparable to those of Devine et al. (2006), who found that parents used comfort food as a treat to make up for a difficult week. Even though our findings indicated that weekend dinners sometimes had better nutritional value than weekday dinners (despite the parents' own beliefs), overall most families increased their consumption of unhealthy snacks on weekends. Many families' total consumption of unhealthy snacks was probably too high, taking into account their snacking behaviour on both weekends and time-stressed weekdays. Also, time scarcity had important consequences for families' food consumption. When families had more time to prepare shared dinners at home, they were more likely to prepare dishes with high amounts of protein and vegetables than when they had less time to prepare food. Future food interventions should emphasise that unhealthy snacks should be avoided regardless of the day and they should promote healthy options such as fruits and vegetables as snacks. In addition, parents should be aware that letting children participate in many sport activities may actually negatively influence both their own and their children's physical and psychological well-being.

Contrary to previous research (Devine et al., 2006; Pocock et al., 2010), parents in our sample did not indicate feeling bad about their family's diet. Our discovery of parents' use of CHBs presents novel information for both the time stress literature and our understanding of CHBs. To our knowledge, such a coping strategy has never been described in the time stress literature. The traditional understanding of CHBs is that people use them to justify their own unhealthy behaviours (Radtke et al., 2014). Our results indicated that parents used CHBs to justify their children's diet; in other words, the beliefs were applied to people other than the ones promoting them. In our interpretation of these results, parents' use of CHBs was an expression of their prioritisation of children's activities above controlling their children's food consumption or cooking healthy meals for the family. We argue that using CHBs in this

situation is particularly unfortunate, considering that children's activity levels tend to decrease as they grow older (Michels et al., 2014) and that food habits established in childhood tend to continue into adulthood (Mikkilä, Räsänen, Raitakari, Pietinen, & Viikari, 2005). Our results indicated that having high confidence in cooking skills and applying other coping strategies, such as planning family meals and engaging children and grandparents in cooking, could offset the negative impact of CHBs. As Berli, Loretini, Radtke, Hornung, and Scholz (2013) have noted, policy makers should be aware that parents use CHB processes, and food interventions should clarify the inaccuracy of such beliefs and their potential negative impact on families' health.

Limitations

The described study is a small qualitative and exploratory study of 12 Norwegian families. Consequently, the results cannot be considered representative. Future research on food coping strategies and their consequences for families' food consumption should use larger and varied demographic samples and apply quantitative approaches to confirm or verify our findings. Despite the limitation of sample size, we consider participant photo interviews to be a valuable methodological approach that can yield new and useful information on how families perceive and cope with time stress. Through this method, children participated in the data collection process and were respected as co-researchers, an approach known for increasing a study's reliability (Smith, Monaghan, & Broad, 2002).

Conclusion

Having an active lifestyle is good for health, but as this study has implied, it can also lead to unfortunate food behaviours. Food interventions should teach children and parents constructive coping skills for handling time stress (Jenkins et al., 2005). Of the coping strategies identified here, teaching parents good planning skills and developing their confidence (as well as that of their children and grandparents) in preparing healthy, convenient and tasteful dinners represent the most promising approaches for future food interventions.

Appendix

Family characteristics on the study's sample

Family	Child gender	Child age	Parent interviewed	Family situation	No. Children in household	Mothers education	Fathers education	Household income €	Occupation mother	Occupation father
A	Girl	7	Mother	Primary family	2	4-5 y. college/ university	N/A	131.000	Working full time	N/A
B	Girl	7	Mother	Primary family	2	<5 y.college/ university	N/A	96.000	Working full time	N/A
C	Girl	8	Mother	Foster family	3	High school/ trade certificate	N/A	102.000	Working part time	N/A
D	Boy	7	Mother & Father	Primary family	4	<5 y.college/ university	High school/ trade certificate	120.000	Working full time	Working full time
E	Girl	7	Mother	Primary family	2	High school/ trade certificate	N/A	54.000	Long term sick leave	N/A
F	Girl	7	Mother	Second ary family	4	High school/ trade certificate	N/A	359.000	Student	N/A
G	Girl	7	Mother & Father	Primary family	3	High school/ trade certificate	High school/ trade certificate	102.000	Working full time	Working full time
H	Boy	8	Mother	Second ary family	5	4-5 y. college/ university	N/A	96.000	Maternity leave	N/A
I	Boy	7	Mother & Father	Primary family	2	4-5 y. college/ university	4-5 y. college / university	84.000	Working full time	Working full time
J	Boy	8	Mother & Father	Primary family	2	High school/ trade certificate	High school/ trade certificate	107.000	Working full time	Working full time
K	Boy	7	Mother	Primary family	1	1-3 y. college/ university	N/A	191.000	Working full time	N/A
L	Girl	8	Mother & Stepfather	Second ary family	4	1-3 y. college/ university	1-3 y. college/ university	138.000	Working full time	Working full time

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