

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

2 **Consumption**

3 **Abstract** This study explores the coping strategies that families apply when under time
4 pressure and stress (time stress) and how such strategies affect food consumption at dinnertime.
5 The data was based on photo interviewing methodology with a sample of 12 Norwegian
6 children (ages seven and eight) and their parents. In this case, the children were asked to take
7 photographs during their dinners at home and while shopping for groceries with their parents.
8 The findings show that the most dominant explanation for time stress was the children's
9 participation in sport activities. In this regard, the families applied several coping strategies,
10 such as skipping dinner and eating snacks instead, consuming convenience food, avoiding
11 preference conflicts, planning for healthy dinners, involving children and grandparents in food
12 preparation and practising compensatory healthy beliefs and behaviours. This might be the first
13 study that identifies parents' use of compensatory health beliefs to justify children's diets. More
14 specifically, the parents stated that the children's high activity levels could compensate for
15 unhealthy food consumption. The strategies that were applied had varying influences on the
16 families' food consumption, depending on the parents' confidence in cooking and meal-
17 planning skills. It was found that parents with high confidence and skills were more likely to
18 make healthy cooking a priority. Consequently, they served more healthy dishes at dinnertime
19 compared with other parents. Unlike previous studies, the findings indicate that children's
20 active lifestyles might not be directly related to healthy diets.

21 **Keywords:** Children; Sports; Qualitative research; Photograph; Compensatory Health Beliefs

22 **Background**

23 The increasing number of overweight people have mainly been explained by inactive
24 lifestyles and unhealthy diets (OECD, 2013). Moreover, there is a high concern for children's
25 diets since food habits tend to continue into adulthood and are decisive for their health as adults
26 (Marshall and O'Donohoe, 2010). The official recommendation has been to limit consumption
27 of processed meat, red meat, alcohol and foods with added sugar and salt (Nordic Council of
28 Ministers, 2014). A diet primarily consisting of vegetables, fruits, seafood, poultry, whole
29 grains, vegetable oils, low-fat dairy products, nuts and seeds is preferable. In Norway, where
30 the present study was performed, dinner at home is the meal that is most likely to provide the
31 majority of the recommended food groups, especially vegetables, seafood and poultry (Myhre
32 et al. 2016). This is supported by other studies that claim that home meals tend to be healthier
33 than meals eaten away from home (Nicklas and Johnson, 2004). Thus, conducting research in
34 home dinner contexts may give implications to how children's diets can be improved to limit
35 future health problems, such as cardiovascular disease and cancer.

36 As parents attempt to manage the demands of both work and family life, many feel time
37 pressure and stress (hereafter referred to as "time stress") (Beshara et al. 2010). Stress arises
38 when the demands of a situation exceed an individual's ability to cope with and resolve the
39 problem (Michels et al. 2012). Time stress, i.e. the feeling that one does not have sufficient time
40 to achieve what he/she has planned, have been used as one of the primary explanations of
41 chronic stress (Beshara et al. 2010; Jabs et al. 2007). Chronic stress leads to increased food
42 consumption, particularly, foods high in fat and sugar (Torres and Nowson, 2007), which may
43 be explained by biological processes. Chronic stress involves prolonged exposure to stress
44 hormones, particularly cortisol, which is important for regulating appetite (Francis et al. 2013;
45 Torres and Nowson, 2007). It has been estimated that approximately 70 percent of all humans
46 have high cortisol reactivity and they tend to eat more food with sugar and fat while under
47 chronic stress (Adam and Epel, 2007; Balantekin and Roemmich, 2012; Groesz et al. 2012).
48 One explanation for this is that fats and sugars target the brain as much as opiates do, thus
49 offering an inexpensive and easy form of short-term pleasure and relief from discomfort. Some
50 researchers argue that the stress level of the family may contribute to childhood obesity (Kovacs
51 et al. 2014). Therefore, the present study qualitatively explores the relationship between
52 experiences of time stress and food consumption.

53 Children who are physically active and participate in organised sports have been found
54 to eat healthier and have better physical health than their non-athletic counterparts (Croll et al.

55 2006; Maitland et al. 2014). In addition, it has been shown that physical activity may reduce the
56 effects of stressors. The study by Horsch et al. (2015) found that children who had been
57 physically active before being exposed to acute social stress generally ate healthier than those
58 who had been sedentary before the stressor. They also argued that overweight and obese
59 children benefit twice as much as normal weight children from the impact of physical activity
60 on energy balance. However, some parents have indicated that the children's participation in
61 sports activities gave them less time to plan and prepare healthy meals (Bauer et al. 2012;
62 Beshara et al. 2010; Brown et al. 2010; Devine et al. 2006; Jabs et al. 2007; McIntosh et al.
63 2010; Neumark-Sztainer et al. 2012). The present study argues that such experiences may lead
64 to chronic stress if people feel that they are unable to cope with and resolve their daily
65 challenges of eating healthy, especially if eating healthy is important for them. In general, time
66 stress has mainly been associated with increased consumption of unhealthy snacks, sugar-
67 sweetened beverages and fatty fast foods, and decreased consumption of vegetables, meat and
68 fish (Bauer et al. 2012; Louis et al. 2009; Neumark-Sztainer et al. 2012; Oliver and Wardle,
69 1999; Pocock et al. 2010).

70 Devine et al. (2006) used the term 'food choice coping strategies' to explain the
71 behavioural mechanisms that people employ to manage stress and fatigue related to their eating
72 behaviours or food consumption. Previous studies have found that such strategies can be
73 speeding up the cooking and eating process (e.g. cooking convenience food), planning meals
74 (e.g. cooking more on days off and using leftovers on busy days), skipping meals, engaging
75 one's partner or children in cooking, eating take-out food, individualising meals for different
76 family members, multi-tasking (e.g. performing house chores while dinner is cooking) and
77 eating at different times (Devine et al. 2009; Devine et al. 2006; Jabs et al. 2007). The study by
78 Devine et al. (2006) regarding low-wage employed parents found that one of the most typical
79 coping strategies, eating take-out foods, was aimed at managing feelings by using comfort food
80 as a treat or reward to make up for a difficult workday or week. Contrary to the study by Norman
81 et al. (2015), Devine et al. (2006) also found that many parents prioritised activities such as
82 children's homework and sport activities at the expense of food and eating. Furthermore,
83 Devine et al. (2006) noted that most parental coping strategies were less efficient in dealing
84 with time stress. The chosen strategies rarely gave parents a sense of coping and control, and
85 such strategies even made them feel guilty or dissatisfied about their food choices. Jabs et al.
86 (2007) clustered parents into three groups according to how they related to time scarcity: 1)
87 those that wanted to be in control; 2) those that had no control; and 3) those that had given up

88 control. They found that, compared to the other two clusters, the mothers who wanted to control
89 their family's time generally used more beneficial coping strategies by planning their family's
90 meals, coordinating various activities (such as doing laundry while cooking dinner) and making
91 cooking and eating a priority over other activities. They also found that the mothers who
92 described themselves as having cooking skills and confidence in cooking various meals were
93 more able to handle time and stress, compared to their counterparts.

94 It appears that the majority of studies on the influence of time stress on families' diets
95 have been conducted on American samples (e.g. Bauer et al. 2012; Devine et al. 2009; Devine
96 et al. 2006; Jabs et al. 2007; Neumark-Sztainer et al. 2012). Meanwhile, one study was
97 conducted in a Nordic context (Norman et al. 2015), while another examined the influence of
98 time stress on Australian families (Beshara et al. 2010). All of these studies exclusively used
99 parents in their samples. Four of the studies applied surveys as data collection tools (Beshara et
100 al. 2010; Bauer et al. 2012; Devine et al, 2009; Neumark-Sztainer et al. 2012), while three used
101 in-depth interviews (Devine et al. 2006; Jabs et al. 2007; Norman et al. 2015).

102 Many of the former studies have focussed on parents with limited resources such as
103 lower-income families (Devine et al. 2006; Jabs et al. 2007), ethnic and racial minority groups
104 (Neumark-Sztainer et al. 2012) or parents with poor working conditions (Bauer et al. 2012;
105 Devine et al. 2009). These studies argued that time-stressed parents with limited resources and
106 low socioeconomic status (SES) generally had healthier diets than those with greater
107 resources and high SES (Devine et al. 2006). Beshara et al. (2010) argued that, with the
108 increasing number of dual-income households and higher education levels, some positive
109 alternatives may buffer the potentially negative effects of time constraints on family meals.
110 Families with high SES may 'purchase' time through services, such as childcare or
111 housekeeping, and they can buy healthier and more expensive meals prepared outside of the
112 home. Some researchers have suggested that other factors, such as parents' confidence in their
113 ability to prepare healthy meals (Beshara et al. 2010) and parents' prioritization of planning
114 family meals (Devine et al. 2009; Jabs et al. 2007; McIntosh et al. 2010), are more decisive for
115 the family's food consumption than SES. Jenkins et al. (2005) argued that there is a need for
116 studies that include children's experiences of stress and how it affects their food consumption.
117 Hayman et al. (2014) found that many parents believe that their children rarely experienced
118 sufficient negative emotions that cause stress, but research has shown that children (even as
119 young as three years of age) experience stress similarly to adults (Lumeng et al. 2014). Thus,
120 studies that include both parents and children from non-American countries as well as more

121 resourceful families are required to investigate what causes time stress, how families cope with
122 such stress and how it influences their food consumption.

123 The present study explores the food-related coping strategies that families apply when
124 under time stress, along with the effects of such strategies on their food consumption and their
125 practice of sharing dinner as a family. The aim is to determine which strategies for handling
126 time stress most likely make family dinners healthy (or unhealthy), and make suggestions for
127 assisting families under time stress. One of the most interesting findings is that some parents
128 use their children's high activity levels to justify unhealthy food consumption through
129 compensatory health beliefs (CHBs); that is, beliefs that certain healthy behaviours may
130 compensate for other unhealthy behaviours (Radtke et al. 2014). As an example, people may
131 eat an extra piece of cake since they are going to the gym later in the day. Such beliefs are
132 automatically activated to make people resolve certain conflicts between their desires and long-
133 term goals for health-related issues such as dieting and quitting smoking. The use of CHBs
134 tends to be unfortunate for health, especially since people fail to complete their compensating
135 behaviour. Parents are important role models for their children's eating behaviours, and their
136 ways of coping with time stress may eventually be copied by their children as they become
137 adults (Chen and Kennedy, 2005). Thus, the finding on CHBs complements the existing
138 literature of time stress in relation to food consumption. This study emphasises the importance
139 of conveying children's experiences of time stress in order to understand the underlying factors
140 for children's food consumption. Furthermore, this study is one of the few that investigate the
141 food coping strategies of both children and parents while experiencing time stress in a European
142 context.

143

144 **Methods**

145 Data collection was conducted in February and March 2013 by the first author after
146 being approved by the Norwegian Social Science Data Services (NSD, 2016). Data for the
147 present paper is based on secondary findings from a previous published paper (Alm et al. 2015).
148 Thus, the interview guides that covered aspects of family communication and feeding practices
149 in relation to food do not apply in the present study. Information concerning children and
150 parents' experiences of time stress emerged through an inductive research process (Blaikie,
151 2007). Most of the information was elicited by the initial question of the interviews ('Can you

152 tell me about the dinner meals in your home?') and while discussing situational aspects of the
153 meals appearing in photographs. This study applied a photo elicitation method called participant
154 photo interviews to qualitatively explore the social processes of the families' dinners (Harper,
155 2002; Zartler and Richter, 2014). This method allows the participants to be actively engaged in
156 both the data collection process and the initial analysis of the data (Jorgenson and Sullivan,
157 2009). The first author provided each child with a digital camera and offered instructions on
158 how to use the device. Subsequently, the children were asked to take photographs that cover
159 the following topics: 'Food We Eat for Dinner'; 'Persons I Eat Dinner With; 'Persons Who
160 Prepare Dinner at Home; and 'Shopping for Dinner with My Family'. One week of data was
161 collected in order to identify typical dietary practices and food consumption, including both
162 school days and the weekend. No limitations were placed on the number of photographs taken.
163 Finally, each child was interviewed at the Norwegian after-school programmes, Skole Fritids
164 Ordning (SFO), while the parent(s) who usually prepared the dinners were interviewed in their
165 respective homes. The photographs were first downloaded to a computer and chronologically
166 viewed during the interviews.

167

168 **Participants**

169 From an invited group of 79 second graders from two SFOs, 12 children (seven girls
170 and five boys) and their parents volunteered to participate in this study. The SFOs are
171 municipally provided for first through fourth graders and paid for by parents who need child
172 care after regular school hours (Tromsø Municipality, 2016). The invited children represented
173 all of the second graders (aged seven and eight) at the two SFOs in Tromsø, Norway. The
174 children and parents were informed about the study, and formal consent to participate was
175 required by both parties (Alderson, 2004). All of the participants were homogeneous in terms
176 of origin (Norwegian cultural background), and they came from two-parent households. The
177 sample represented a wide variety of education levels, with most of the parents working full-
178 time. The average household income level (€132,000) can be described as above the average
179 of € 92,000, according to official Norwegian statistics (Statistics Norway, 2015). This
180 deviation is not surprising since all 12 of the families were two-income households. The total
181 sample consisted of 12 children and 17 parents, which is further described in Table 1.

182

183 **Table 1** Family characteristics on the study sample.

184 Data Analysis

185 The interviews with the children lasted 48 minutes (on average), whereas the interviews
186 with the parents averaged 62 minutes. The total number of photographs collected was 408, with
187 an average of 34 photographs per child. All of the interviews were audio-recorded with a digital
188 recorder and transcribed (verbatim) with the participants' permission. Since the information in
189 some of the photographs was repetitive or irrelevant (e.g. food consumed for breakfast or
190 lunch), some of the photographs were excluded from the data analysis. A total of 259
191 photographs and the transcripts from the 24 interviews were selected for analysis. Information
192 about time stress and how it affected the families' food consumption was obtained through an
193 inductive research strategy since the aim was to produce detailed descriptions of the families'
194 strategies for handling time stress as well as their consequences on dinner consumption (Blaikie,
195 2007). The data was analysed by conventional content analysis (Hsieh and Shannon, 2005).
196 This approach was chosen to gain a rich understanding of the families' experiences of time
197 stress without placing too much emphasis on theoretical development or the description of
198 various experiences, as grounded theory and phenomenology tend to highlight. NVivo 10
199 qualitative data analysis software (QSR International, 2012) was used as a tool to code and sort
200 the data. Although the first author conducted the primary data analysis, confusing findings,
201 alternative codes and categories were discussed and agreed upon between the two authors.

202

203 The transcripts were individually analysed. In regard to some information that was
204 indistinct, the photographs and interview of another family member were used to determine
205 the meaning. If, for instance, an informant could not remember which weekday a dish in a
206 photograph was eaten, then it was possible to determine the date by simply examining the
207 date that the photograph was taken. In some instances, it was helpful to use information from
208 the parents' interviews, especially if the child had difficulty describing which ingredients a
209 dish contained. In addition, the photographs were analysed together with the children's and
210 parents' transcripts, since it was important to base the analysis on their descriptions of the
211 images. In order to achieve a more objective analysis of the dinners, the photographs of the
212 dinners were separated into the weekday that they were consumed. By using the NVivo 10
213 software, it was easy to code the texts and photographs together. For example, a photograph
214 of grilled chicken in the fresh-food counter was coded 'Buy Food on Impulse', after which it
215 could be analysed with the texts that discussed this particular topic. Through this approach, it
216 was possible to perceive the diversity of each code, thus creating the foundation for the
217 following subcategories: skipping dinner and snacking, consuming convenience food,

218 avoiding preference conflicts, planning meals, engaging others in food preparation, practising
219 compensatory health beliefs and behaviours. These were categorised into healthy and
220 unhealthy food-choice coping strategies, which established the foundation for the present
221 study on the relationship between families' food-choice coping strategies and time stress. In
222 order to ensure trustworthiness we have prepared table 2 which illustrates how the codes,
223 subcategories, and theme were derived from the materials. It is influenced by suggestions by
224 Graneheim and Lundman (2004). Parents' low (LC) and high confidence (HC) in their
225 cooking skills emphasise that such confidence had different outcomes on the applied food-
226 choice coping strategy.

227

228 **Table 2** Codes, sub-categories, categories and them from the conventional content analysis of
229 families' food choice coping strategies to time stress.

230

231 **Results**

232 All of the parents in the sample were concerned with providing their family with healthy
233 meals. The most dominant explanation for time stress was the children's participation in
234 organised sports activities. All of the children attended various organised leisure and sports
235 activities several times a week. Two of the boys had three different activities spread across five
236 days of the week. The parents mentioned grocery shopping, picking their children up at school,
237 cooking dinner, helping with their children's homework, driving them to friends' birthday
238 parties and participating in their own sports activities, all of which were additional explanations
239 for time stress. Some of the children indicated that they felt bad when the dinners had to be
240 rushed before the sports activities, as shown in the following excerpt:

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

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

245 Table 3 presents the types of food categories that the various families consumed for
246 dinner during the week of data collection. The dinners eaten outside of the respondents' homes
247 and the dinners not consumed together as a family are not included. Three of the children went
248 on a school trip, and one child visited the grandparents during the weekend of data collection,

249 which led to less relevant data in regard to weekend dinners. Except for these four instances,
250 the data presented a typical week for the families. In addition, no relevant seasonal effects were
251 registered. In order for the ingredients to be included in the table, they had to be one of the main
252 ingredients of a dish. For instance, frozen pizza was coded with cheese and flour, since these
253 are the main ingredients of the most popular frozen pizza on the Norwegian market (Arsky,
254 2010). Homemade pizza was coded with red meat since it generally contained more meat than
255 frozen pizza. Moreover, if the pizza was served with a side salad, then the vegetables were also
256 coded. The findings indicate that red meat (usually minced meat) was the most consumed
257 protein source during the week. Poultry and seafood was less consumed, whereas no seafood
258 was consumed for dinner during the weekend. Finally, vegetables were less likely to be
259 consumed on Saturdays, and potato, rice pasta and flour products, such as pizza crust, pancakes
260 and bread rolls, were served at most of the dinners.

261 **Table 3** Consumed food categories during data collection. Letters A-L indicates consumption
262 by the participating family.

263

264 To organise the result, the following time-stress model was prepared to link the different
265 coping strategies with their consequences on the families' unhealthy versus healthy food
266 consumption (Fig. 1). The model indicates that the different strategies had various outcomes,
267 depending on the parents' confidence in their cooking skills.

268

269

270 **Fig. 1** A time stress model linking families' food coping strategies with consequences for
271 families' food consumption.

272

273 *Skipping Dinner and Snacking*

274 The children as well as the parents explained that they sometimes did not have enough
275 time to cook and eat dinner before going for the sports activities. Families G and H stated that
276 when they had to skip dinner, they usually stopped by the grocery store to buy snacks for the
277 children, who then ate the snacks while travelling to or from the activities. In this case, typical
278 snacks were unhealthy alternatives such as chocolate bars, buns or chocolate-flavoured milk.
279 Boy H stated that eating snacks after soccer practice often caused a stomach ache, which

280 disturbed his appetite for dinner. Some children expressed negative feelings for this coping
281 strategy, as seen in the following excerpt:

282

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

285 Girl G: *It's a little dumb because sometimes, I have to buy a chocolate or something,*
286 *to gain some strength to do things.*

287

288 Most families compensated for skipping dinner by creating hot evening meals. Typical
289 meals included oatmeal porridge, grilled cheese sandwiches and frozen pizza, all of which
290 rarely contained vegetables, poultry and seafood.

291

292 *Consuming Convenience Food*

293 For all of the families, it was important to finish meals quickly on time-stressed days.
294 The most common food-coping strategy was to speed up the eating process by cooking
295 convenience foods. Eating at fast-food restaurants was less common, especially since the
296 families considered fast food to be unhealthy and expensive. In addition, which dishes the
297 parents considered convenient and quick to make varied, depending on their confidence in their
298 cooking skills. The parents with high confidence had greater variations in the dishes that they
299 prepared on time-stressed days, and they were more likely to serve their family seafood and
300 vegetables for dinner compared to those with low confidence in their cooking skills. For
301 example, Mother C, who enjoyed making food and felt confident in her cooking skills,
302 considered chicken wok, fish cakes and pre-packaged fish gratin to be quick and convenient
303 meals. Most of her dinners contained vegetables.

304 Mother C: *It can be anything from something simple like spaghetti or premade porridge,*
305 *which we just heat in the microwave (...), to chicken wok, depending on how busy things are.*

306

307 *Avoiding Preference Conflicts*

308 Many parents emphasised that it was important to serve food that did not lead to
309 conflicts between them and their children since any negotiations would take too much time.
310 The dishes were frequently selected not according to the parents' preferences but simply
311 because the children would accept them. Some parents, such as those in Family G, even made

312 dishes that they disliked and did not eat themselves on the basis of the fact that their children
313 liked them. Typical compromising dishes included frozen pizza, oatmeal porridge, sausages,
314 omelettes, grilled cheese sandwiches and pasta Bolognese.

315

316 Father G: *We do have some salmon and trout fillets that we only put in the oven for a*
317 *couple of minutes.*

318 Mother G: *But the boys do not eat that*

319 Interviewer: *Do the children get different food, then?*

320 Mother G: *That's why we do not cook that. I do not want to cook two dishes every day.*
321 *I do not have the time. So that's why we often have sausages.*

322 Interviewer: *What do you think of sausages for dinner?*

323 Mother G: *Terrible. It's not my favourite, so to speak.*

324

325 *Planning for Healthy Meals*

326 Planning to serve convenience food was also used as a coping strategy to save time on
327 busy days. The parents who took control of their family's meals and felt confident in their
328 cooking skills were much better at planning the meals. These parents often made shopping lists
329 and generally had one main shopping day each week (preferably Saturdays), along with
330 occasional shopping during the week. They often bought frozen food, which they could store
331 in their freezers. Planning meals usually occurred the day before or on the morning of the meal
332 on the basis of what was available at home and the children's activities that day. The parents
333 who were good at planning often cooked large Sunday dinners, which provided them with
334 leftovers for the busy weekdays. Sunday dinners were often described as proper, traditional
335 food that took a considerable amount of time to cook, such as meat stew, homemade meatballs,
336 roast and oven-baked salmon, all of which were frequently served with vegetables.

337 Families A, F, G, H and J discussed their challenges in planning family dinners. Their
338 afternoons were often so busy that they felt that they did not have enough time to plan their
339 meals. In addition, the meals often had low priority compared to the various activities. The
340 parents often expressed a lack of confidence in their cooking skills and they felt tired of making
341 dinners that fit with their busy schedules. Some of them also admitted that poor planning made
342 them feel more time-stressed. The families that were bad at planning tended to make more
343 frequent trips to the grocery store, and their food purchases were often the result of impulse
344 buying. In this regard, frozen pizza and grilled chicken were typical foods bought on impulse.

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

347

348 *Involving Other Family Members in Food Preparation*

349 Two families engaged the older children in cooking dinner for the family on busy days.
350 For example, Family G had a 15-year-old son who came home before the rest of the family and
351 cooked dinner once a week so that the rest of the family could eat quickly before driving to
352 their activities. In Family L, the oldest daughter (age 12) and son (age 11) also cooked dinners
353 on the busy weekdays. The mother explained that the children had become more confident in
354 their cooking skills after studying home economics at school, thus making it possible to delegate
355 the cooking tasks among the children. By cooking the dinners, the children even received pocket
356 money from their parents. However, the parents always decided what dishes the children should
357 make. The mother in Family L took more control of her family's meals and expressed more
358 confidence in her cooking skills than the mother in Family G. Consequently, the children in
359 Family L cooked more varied dishes than Family G, who always had lasagne with salad when
360 their oldest son cooked. In contrast, the children of Family L cooked different types of bag
361 soups with added vegetables, various seafood and chicken dishes with vegetables (such as oven-
362 baked cod and chicken wok) and salad and homemade pizza (Fig. 5). Family J lived within
363 walking distance of the children's grandparents, who often provided Boy J with a meal between
364 school and his sports activities. The family usually dined on Fridays and Sundays with the
365 grandparents, who often provided them with leftovers that could be reheated on time-stressed
366 weekdays.

367 **Fig. 2** Son, age 11, making chicken with rice and broccoli for family L

368

369 *Practising Compensatory Health Beliefs and Behaviours*

370 Since the families' weekdays were often stressful, it was important for them that the
371 weekend meals compensated for the weekday meals. Weekends were defined as the time from
372 Friday afternoon to Sunday evening. Compared to the weekdays, the parents explained that they
373 had more time for planning, grocery shopping and cooking on weekends. Weekend meals were
374 characterised by democratic processes in which the children could choose what they wanted to
375 have for dinner. Tacos, one of the children's favourites, were generally served on Fridays when
376 the parents had more time to cook food, sometimes together with their children. During these

377 meals, both the children and parents described a ‘cozy’ atmosphere in which they had more
378 time to talk together. The Norwegian word ‘kos’ (cozy) was often used to describe such meals,
379 emphasising peace and harmony between the family members.

380 *Mother C: On Fridays, we sit a little longer because we mostly eat cozy food. It could*
381 *either be pizza or tacos or — yes, wok is also the one of those cozy dishes. So we sit a*
382 *little longer, and we mess with each other since we have more time We tend to*
383 *have late dinners on Fridays and Saturdays. Since so much is always happening, it is*
384 *nice to take the time to cook on Friday and do it in peace and quiet.*

385 When the parents were asked how many of their dinners were considered as healthy or
386 unhealthy, several had the impression that their weekday meals were generally healthy,
387 whereas their weekend dinners were usually unhealthy. Most of the families consumed high-
388 calorie snacks, such as potato chips and soda, during the weekends. Upon analysis of the
389 photographs, it was found that the weekend dinners were not necessarily as unhealthy as many
390 of the parents had believed. Tacos, the most eaten dish on Fridays, consisted of various salad
391 ingredients, and it contained the most vegetables of the week. Meanwhile, Saturday dinners
392 were less likely to contain vegetables, while traditional Sunday dinners usually included
393 vegetables and unprocessed meat sources, such as roast beef and turkey

394

395 **Fig. 3** Tacos with chicken, tortilla, tomato, avocado, salad leafs, corn, cucumber and sour
396 cream (photo from family D).

397

398 Many of the parents used their children’s sports activities to justify unhealthy food
399 behaviours and consumption. The children’s participation in sports activities often held a higher
400 priority than taking time to cook healthy meals. Most of the parents did not express any concern
401 nor did they have a bad conscience if they had to skip dinner, buy their children snacks or cook
402 less healthy convenience foods on busy days. They emphasised that it was the children’s choice
403 to participate in the activities and therefore, practising unhealthy food behaviours was justified.
404 The only mother in the sample with an overweight child (Mother K) explained that her son’s
405 active lifestyle compensated for his overeating behaviours and consumption of unhealthy
406 snacks:

407 Mother K: *He practises handball on Tuesdays, soccer on Wednesdays and swimming on*
408 *Thursdays, but it is only until the summer. He has soccer again on Saturdays and*
409 *sometimes Sundays. He is also in a children's choir and he enjoys downhill skiing. This*
410 *is something that we adults talk about — if he did not want to be so active, then we would*
411 *have to do something more with his diet.*

412 The parents who used their children's activities to justify unhealthy food practices were
413 more likely to skip dinners and eat snacks on busy days. In addition, they were less likely to
414 serve their children recommended food groups, such as seafood and vegetables, for dinner.
415 Finally, those parents with high confidence in their cooking skills were good at planning their
416 family meals and were more likely to eat recommended food groups, compared to their
417 counterparts.

418

419 **Discussion and Implications**

420 The aim of the present study was to explore families' food-coping strategies under time
421 stress, and determine their effects on families' food consumption at dinner in order to assist
422 families under stress. The parents in the sample were concerned about eating healthy dinners,
423 which often conflicted with their children's sport activities. In addition, these experiences have
424 been interpreted as chronic time stress (Beshara et al. 2010; Jabs et al. 2007). Like Lumeng et
425 al. (2014) we found that children had similar negative experiences with time stress as their
426 parents. This is an important finding considering children's tendency to adopt parents'
427 behaviour to guide their own food choices as they become older (Chen and Kennedy, 2005).

428 By conducting participant photo interviews with 12 Norwegian families, the following
429 coping strategies had varying influences on the families' food consumption: skipping dinner
430 and eating snacks instead, consuming convenience food, avoiding preference conflicts,
431 planning for healthy dinners, involving children and grandparents in food preparation and
432 practising compensatory healthy beliefs and behaviours. The consequences of these strategies
433 mostly depended on how confident the parents felt in their cooking skills.

434 *Skipping dinner and eating unhealthy snacks* was one of the most unfortunate strategies
435 for the families' food consumption. Eating unhealthy snacks after sports activities sometimes
436 spoiled the children's appetite for potentially more healthy evening meals. This finding

437 contradicts other studies on the impact of stress on food consumption. For example, Horsch et
438 al. (2015) found that children's physical activities reduce their intake of high-energy foods after
439 being exposed to acute social stress. This illustrates the importance of distinguishing between
440 acute and chronic stress (Koolhaas et al. 2011; Torres and Nowson, 2007). The findings in the
441 present study indicate that physical activity may not reduce the consumption of unhealthy
442 snacks when experiencing chronic stress. Thus, the authors propose that chronic stress, such as
443 time stress, is more likely to influence long-term food consumption, which has a greater impact
444 on health compared to acute stress. This imply that future research on chronic stress' influence
445 on food consumption may provide more valuable information to the health debate as opposed
446 to research on acute stress.

447 The most frequently applied coping strategy, *consuming convenience food*, is consistent
448 with the findings of similar studies (Devine et al. 2009; Jabs et al. 2007). In contrast to other
449 studies that have been conducted in the United States (e.g. Bauer et al. 2012; Devine et al. 2006;
450 Jabs et al. 2007; Neumark-Sztainer et al. 2012), none of the families in the present study coped
451 with time stress by eating at fast-food restaurants and buying take-out foods. In accordance with
452 arguments by Olsen et al. (2010) it is believed that this reflects moral attitudes common amongst
453 Norwegians, rather than costs, since all of the families had the necessary financial resources to
454 apply such a strategy

455 Parents' strategy to *avoid preference conflicts* with their children usually implied that
456 dinners were less likely to contain the recommended food groups, thus supporting the
457 arguments of Norman et al. (2015). These findings are not surprising since children in the
458 investigated age group have been found to prefer soft, high-energy foods, such as pancakes and
459 French fries, and dislike vegetables (Zeinstra et al. 2007). Children's preferences may be
460 explained by neophobia, - the tendency to avoid unfamiliar foods (Cooke et al. 2003).
461 Neophobia is argued to be a result of evolutionary adaptations, since plants may contain toxins
462 and animal foods are a primary source of food poisoning bacteria. Thus, children, tend to avoid
463 such foods and prefer foods that are safe to consume, usually sweet and fatty foods. There is a
464 consensus that in order to help children develop preferences towards healthy food groups, such
465 as vegetables and seafood, it is important that parents expose their children to such foods (e.g.
466 Cooke 2007; Alm and Olsen, 2013). These findings imply that parents should aim at cooking
467 healthy convenience foods and continue exposing children for such foods, even if the children
468 do not initially accept them. Cooking method may be decisive for children's acceptance. For
469 example, young children tend to like vegetables with soft textures, whereas older children prefer

470 crisp and hard textures (Zeinstra et al. 2010). Thus, young children may prefer their vegetables
471 cooked or steamed, while older might prefer them raw.

472 Similar to previous studies (Beshara et al. 2010; Devine et al. 2009; Jabs et al. 2007;
473 McIntosh et al. 2010), the present study found that the parents who took control of their family's
474 meals and felt confident in their cooking skills often *planned* their family dinners. These parents
475 usually served dishes with seafood, poultry and vegetables on stressful days, compared to their
476 counterparts. These findings also have the following implications for families experiencing
477 time stress: parents should make time to plan meals prior to busy days; create weekly dinner
478 plans; make shopping lists; buy frozen food that they can be stored at home; and make fewer
479 trips to the grocery store.

480 The finding that some parents *engaged older children and grandparents in food*
481 *preparation* is also consistent with previous studies (Devine et al. 2006; Jabs et al. 2007). Other
482 studies indicated that this may be a promising coping strategy, not only to offload parents'
483 duties, but also to engage children in cooking, which often motivates them to try different foods
484 (van der Horst et al. 2014). By applying such a strategy, it is important that children and
485 grandparents feel confident in their cooking skills, which is an argument supported by Bauer et
486 al. (2012).

487 Parents' *compensating behaviours* in making different meals on weekends (instead of
488 weekdays) explained why consuming food associated with togetherness and relaxation was
489 important on less time-stressed days. These results are comparable to those of Devine et al.
490 (2006), who found that parents used comfort food as a treat to make up for a difficult week.
491 Hence, the authors of the present study suggest that recommended food groups, such as
492 vegetables and seafood, may not be considered as 'cozy' foods by the participants, but it is
493 something that should be investigated in the future.

494 Contrary to previous research (Devine et al. 2006; Pocock et al. 2010), the parents in
495 the present sample did not indicate feeling bad about their family's diet. We suggest that
496 parents' use of justifications reflects CHB. However, To the best of the authors' knowledge,
497 such a coping strategy has never been described in the time-stress literature. The traditional
498 understanding of CHBs is that people use them to justify their own unhealthy behaviours
499 (Radtke et al. 2014). The present results indicate that the parents used CHBs to justify their
500 children's diets; that is, the beliefs were applied to people other than the ones promoting them.
501 Moreover, based on the present results, the parents' use of CHBs represented their prioritisation

502 of their children's activities, above controlling their children's food consumption by cooking
503 healthy meals for the family. It is argued that using CHBs in this situation is particularly
504 unfortunate, considering that children's activity levels tend to decrease as they grow older
505 (Michels et al. 2014) and that food habits established in childhood tend to continue into
506 adulthood (Mikkiläet al. 2005). Furthermore, the results of the present study indicate that having
507 high confidence in cooking skills and applying other coping strategies, such as planning family
508 meals and engaging children and grandparents in cooking, can offset the negative impact of
509 CHBs. Thus, parents should be aware that using CHBs to justify the consumption of unhealthy
510 foods and skipping meals may negatively influence both their own and their children's physical
511 and psychological well-being.

512 Considering the high SES of the sample, the results confirm a previous study's finding
513 that families with high SES are more likely to participate in sports activities (Wijtzes et al.
514 2014). Interestingly, the findings seem to contradict previous studies that claimed that high-
515 SES families are more likely to have healthy food consumption (Evans et al. 2012; Fismen et
516 al. 2014; Neumark-Sztainer et al. 2012; Rasmussen et al. 2006; van Ansem et al. 2014; Wijtzes
517 et al. 2014). Several families applied coping strategies that had negative consequences for their
518 food consumption such as skipping meals and snacking instead. Therefore, it is suggested that
519 engaging children in sports activities may have other drivers than living a healthy lifestyle. Such
520 drivers may be allowing children to have fun with friends. Finally, eating healthy becomes less
521 important than being physically active. In this regard, the authors urge researchers to consider
522 other characteristics besides SES in investigating the differences in families' food consumption.
523 Furthermore, future studies should investigate the drivers for children's sports activities, and if
524 other factors, such as parents confidence in their cooking skills, are more decisive for food
525 consumption than SES.

526

527 **Limitations**

528 This research was a relatively small qualitative and exploratory study of 12 high-SES
529 Norwegian families. Consequently, the results cannot be considered representative. Hence,
530 future research on food-coping strategies and their consequences on families' food consumption
531 should use a larger and more varied demographic as well as apply a quantitative approach to
532 confirm or verify the findings. Another limitation is that the findings were based on secondary
533 findings from a previously published paper (Alm et al. 2015). Thus, other findings might have

534 been discovered, especially if data collection was more focused on the coping strategies to time
535 stress. One more weakness is that the collected data were limited to the families' dinners, other
536 parts of food consumption were only briefly discussed with some families. Future research could
537 benefit from more systematic reports of the overall food consumption to investigate if
538 recommended food groups are consumed at other meals. Finally, the data analysis was mainly
539 conducted by the first author. Therefore, the use of more researchers could help determine
540 additional coping strategies.

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