Explaining SES differences in dietary intake: a mediation analysis.

The role of intrapersonal, interpersonal and community factors

Master program: Social policy and public health

Thesis based on existing data

Janine van Diest

6216021

Supervisor: Carlijn Kamphuis

Wordcount: 7990

Abstract

Background: Socioeconomic differences in obesity among adolescents are growing. Poor dietary behaviour is an important factor causing obesity. Overall, dietary intake of people of high SES is closer to dietary recommendations. This study examined the association between socioeconomic status and dietary intake of adolescents and the role of intrapersonal, interpersonal and community factors.

Methods: Data were used from the TEMPEST project. Data included adolescents (age 10-17) from the Netherlands, the UK, Poland and Portugal (N=2621). Mediating factors were selected based on the framework by Story et al. (2002) and existing literature. Mediation was established using the joint-significance test. Socioeconomic status was measured using the family affluence scale [FAS]. Logistic regression analysis assessed associations between FAS and dietary intake, and the possible mediating factors: 'modelling', 'perceived importance of healthy eating', 'support by parents', 'support by friends', 'availability of foods at home', 'availability of foods at school'. Chi-square test were used to asses FAS differences in the mediating factors.

Results: Adolescents of low FAS (OR 1.34 (95% CI 1.02-1.76)) were more at risk to have low vegetable intake than high FAS adolescents. No similar results were found for fruit intake, intake of sugary drinks or snack intake. The association between FAS and vegetable intake decreased when 'modelling' or 'availability of FV at home' were added to the explanatory model. The association increased slightly when 'support by parents was added'.

Conclusion: 'Modelling', 'support by parents' and 'availability of FV at home' contributed to the explanation of socioeconomic differences in vegetable intake. Policies and interventions should focus on these factors to decrease disparities in dietary intake.

Keywords: socioeconomic status; dietary intake; modelling; support by parents; availability at home

Introduction

Widespread agreement is found in literature, that there is a relationship between socio-economic status [SES] and health. People of lower SES groups have increased risks of morbidity and premature mortality (Moor, Spallek & Richter, 2017). In the Netherlands, the biggest disparities in health inequality are based on social economic status. People with low educational level on average live 3.5 shorter and have 12 fewer years of good health, compared to people with university education (Hulshof et al., 2003). Risk factors corresponding to a reduction in life expectancy are high alcohol intake, smoking, physical inactivity, diabetes and obesity (Stringhini et al., 2017). Further, in economically advanced countries, people of lower SES are more likely to be overweight than individuals of high SES (McLaren, 2007).

Overweight and obesity are not only a problem in the adult population. In the 25 EU member states, approximately one out of four school-aged children is overweight (WHO, 2006). Frederick, Snellman & Putman (2014) found that socioeconomic differences in adolescent obesity are growing in the US. While obesity rates have fallen among adolescents of high SES, rates are still rising for low SES youth. The Health Behaviour in School-aged Children [HBSC] study found similar results for European adolescents, data from this study showed SES differences in obesity for 11- and 13-year olds (WHO, 2006).

Poor dietary behaviour is one of the most important lifestyle factors causing obesity (Lim et al., 2012). In a study on SES, dietary intake and trends over time, Hulshof et al. (2003) found that dietary intake among higher SES groups were closer to recommendations of 'the Dutch Food and Nutrition Council'. Adolescents of low SES in developed countries eat more high-fat food but consume fewer vegetables and fruits than adolescent of higher SES. It is critical to understand these differences in dietary intake from a young age, because nutrition during adolescence is crucial for healthy development (Ball et al., 2008). Furthermore, obesity may interfere with adolescents emotional and physical development and poor nutrition can negatively affect someone's ability to learn during school hours (WHO, 2006).

Opportunities for healthy eating habits are determined by social, economic and cultural factors and physical environments that influence access, availability and uptake (World Health Organization, 2006). Therefore, the World Health Organization [WHO] states that to tackle overweight and obesity, policies and interventions should address environmental determinants of unhealthy diets. Alongside environmental factors, personal factors are also important determinants for dietary intake (Odum, Housman and Williams, 2018). Attitudes and beliefs about healthy eating are likely to influence dietary behaviour (Ball et al.,2008).

Factors underlying socioeconomic differences in dietary behaviour are poorly understood (Wardle & Steptoe, 2003). The aim of this study is to identify possible underlying environmental and personal factors that affect the relation between SES and dietary intake. Understanding the impact of

these factors is of great importance, as this knowledge could be used to establish a more efficient and effective strategy to increase healthy dietary intake among adolescent of low SES.

Theoretical framework

De Jong and Mackenbach (2018) suggest that there are mediator factors in the relationship between SES and health, such as early childhood environment, material living conditions, social and psychological factors. A mediator is a factor that represents an intermediate step in the causal pathway between the independent variable SES and the dependent variable dietary behaviour (Baron & Kenny, 1986). For the present study, a theoretical framework based on theories of behaviour is formed to identify and measure mediator factors in the relationship between SES and dietary intake. The theoretical framework used in this study is based on a framework proposed by Story et al. (2002), integrating social cognitive theory [SCT] and social ecological perspective.

There are many theories of behaviour, one of these theories is social cognitive theory. SCT focuses on the motivational factors that underpin people's decision to carry or not carry out (healthy) behaviour (Armitage & Conner, 2000). SCT is often used to explain dietary intake (Krølner et al., 2011; Rasmussen et al., 2006). SCT explains behaviour as a 3-way reciprocal interaction between behaviour, personal factors and environmental influence (Story et al., 2002). Core determinants in SCT are: knowledge, perceived self-efficacy that one has control over one's behaviour, outcome expectations, goals and perceived facilitators or boundaries (Bandura, 2004). Ball et al. (2008) tested if SCT constructs can be used to explain socio-economic differences in dietary behaviour. They conducted a mediation analysis with the factors: self-efficacy for healthy eating, perceived importance of nutrition and health, modelling and support and availability of foods at home. Results indicated that all four factors did mediate socioeconomic variations in adolescent's dietary behaviour.

The ecological perspective adds to SCT because it considers the connections between individuals and their environment (Story et al., 2002). Ecological models are fit to incorporate constructs from models that focus on psychological factors, such as SCT, in a framework that also considers environmental influences. A central conviction of ecological models is that a combination of individual- and environmental level interventions is best to achieve changes in health behaviour (Sallis, Owen & Fisher, 2015). Thus, motivating and educating people to change their behaviour works best when the environment supports the intended behaviour. In Bronfenbrenner's ecological model, environmental influences on behaviour are divided in 4 interacting levels: micro-, meso-, exo- and macrosystems.

The framework by Story et al. (2002) integrates SCT and the ecological perspective. The model emphasizes the reciprocal influence of factors on 4 levels: individual, social environmental, physical environmental and macrosystem. Individual (intrapersonal) influences that affect eating behaviour include psychosocial-, behavioural, and lifestyle factors. Social environmental

(interpersonal) influences are measured in the model, because adolescent's eating behaviour is strongly influenced by family, friends and peers. Interpersonal factors can influence food behaviour through observational learning (modelling), social support and perceived norms. Physical environmental (community) factors influence accessibility and availability of foods. For adolescents these community settings can be schools, fast-food restaurants, vending machines etc. Lastly, the model by Story et al. (2002) considers macrosystem (societal) influences. Societal factors have a more distal and indirect influence of food behaviour. These factors include mass media, advertisements, cultural & societal norms and laws.

This study focusses on intrapersonal, interpersonal and community influences. Because this study is limited to an existing data source, it is not possible to measure factors on the societal level. *Figure 1* displays the proposed framework for this study.
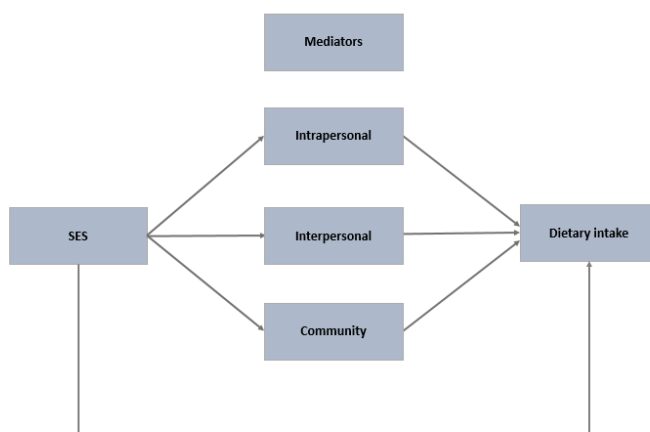

Figure 1 theoretical framework based on Story et al. (2002)

Based on this theoretical framework, the following research question will be answered in this study:

To what extend is dietary intake of adolescents related to socio-economic status and what is the role of intrapersonal, interpersonal and community factors in explaining socioeconomic differences in dietary intake?

This leads to the first hypothesis of this study.

H1: Low socioeconomic status is associated with unhealthy dietary intake (Hulsof et al., 2003; Krølner et al., 2011; Rasmussen et al., 2006).

The factors that will be included as possible mediating factors, together with corresponding hypothesis are described below.

Intrapersonal factors

Previous mediation studies suggest that intrapersonal factors such as knowledge, attitudes, self-efficacy, preferences and intentions can partially explain socioeconomic differences in food behaviour (Zarnowiecki, Dollman and Parletta, 2014). One way to measure attitude is through the factor: 'perceived importance of health'. Multiple studies found that 'perceived importance of health' mediates the relation between SES and eating behaviour (Ball et al., 2008), and between SES and fruit and vegetable consumption (Stephens, McNaughton, Crawford, MacFarlane, & Ball, 2011). 'Perceived importance of health' can be considered a relatively broad concept when looking at the mediating effect between SES and 'dietary behaviour'. This study, therefore, looks more specifically at the mediating role of '*Perceived importance of healthy eating'*. Fielding-Sing and Wang (2017) found socioeconomic differences in the way mothers talk to their children about food. In in-depth interviews, low-SES mothers reported that they had few conversations about healthy eating while high-SES families reported regular conversations about healthy eating. Further, when discussing foods in low-SES families the price of foods is frequently mentioned. Mothers of low SES underscore the trade-off between food's healthiness, quality and price. Low-SES adolescents could perceive the price of foods to be more important than the nutritional value.

H2: Adolescents who perceive low importance of healthy eating are more likely to have unhealthy dietary intake (Ball et al., 2008; Stephens et al., 2011).

Interpersonal factors

One of the ways through which parents can influence their children is social learning. Social learning of dietary intake entails that children observe their parent's food intake and eventually model this behaviour (Larsen et al., 2015). Positive parental modelling of healthy eating is associated with higher consumption of fruits and vegetables and lower consumption of sugary drinks and unhealthy snacks (Loth, MacLehose, Larson, Berge & Neumark-Sztainer, 2016). In the study by Fielding-Sing and Wang (2017) low-SES mothers reported that they were not modelling healthy eating practices. One mother reported that she felt like she could not tell her children to eat healthy because she was not eating healthy herself. In contrast, high-SES mothers did report to be positive role models for healthy eating.

Another interpersonal factors is social support, social support refers to support by parents and peers to eat healthy (Michels et al., 2018). Parental support or encouragement of healthy eating is positively associated with fruit and vegetable consumption (Cutler, Flood, Hannen & Neumark-Sztainer, 2011; Pearson, Biddle & Gorely, 2009). Research by Ball et. (2008) showed that adolescents of low SES receive less social support for healthy eating than adolescents of high SES. Lower support for healthy eating by low-SES parents could be explained by 'the hierarchy of risk

behaviours'. Food choices and healthy eating seems to be given low priority by parents of low-SES in the hierarchy of risky teenage health related and social behaviours. Parents living in disadvantaged circumstances and with fewer resources may prioritize other risk behaviours over healthy eating (Backett-Milburg, Wills, Gregory & Lawton, 2006).

The influence of peers and conforming to group norms are of high importance during adolescence (Story et al, 2002). There is an association between peer support for unhealthy eating and unhealthy food behaviour (Fitzgerald, Heary, Nixon & Shevlin, 2013). Further, discouragement of healthy eating will negatively affect consumption of healthy food. In a study by Evans, Wilson, Buck, Torbett and Williams (2006), participants from low SES reported that when they try to eat healthy foods their friends will comment negatively.

An important factor of the home food environment is availability of fruit and vegetables, snacks, and sugary drinks. Availability of food at home is operationalized as an interpersonal factor in the framework by Story et al. (2002). Parents often buy the foods that are available at home, parental decisions about food purchases therefore influence adolescents' food intake. In a literature review of quantitative studies of fruit and vegetable [FV] intake, Rasmussen et al. (2006) found that availability and accessibility at home was one of the determinants of FV intake best supported by evidence. When asked about barriers to healthy eating adolescents in a focus group study mentioned lack of availability of healthy foods and easy access to unhealthy foods (Evans et al., 2006). In a study on home food environments, adolescents of low SES were more likely to report that unhealthy snacks and soft drinks were always or usually available at home (MacFarlane, Crawford, Ball, Savige & Worsley, 2007). Socioeconomic differences in soft drinks consumption are almost entirely mediated by availability of soft drinks (De Coen et al., 2012). Availability of fruits and vegetables was also found to mediate the relation between SES and diet quality (Michels et al, 2018).

Michels et al. (2018) found that parental influence, social support and availability of soft drinks and fruit at home mediates the relation between socio-economic status and diet quality of adolescents. Interpersonal factors that will be investigated in this study are modelling by parents, support by parents, support by peers, and home availability. Based on the available evidence, the following hypotheses will be tested.

H3: Adolescents whose parents do not model healthy dietary intake are more likely to have unhealthy dietary intake (Loth et al., 2016; Michels et al., 2018).

H4: Adolescents whose parents do not support healthy eating are more likely to have unhealthy dietary intake (Cutler et al., 2011; Michels et al., 2018; Pearson et al., 2009).

H5: Adolescents whose friends do not support healthy eating are more likely to have unhealthy dietary intake (Fitzgerald et al., 2013; Michels et al., 2008).

H6: When healthy foods are not available and unhealthy foods are available at home, adolescents are more likely to have unhealthy dietary intake (Michels et al., 2018; Rasmussen et al., 2006).

Community factors

The physical environment influences accessibility and availability of foods in a community. One of the community settings that is important for adolescent's food intake is the availability of foods at school. 52% of the time that adolescents do not consume food at home, they eat at school (Story et al., 2002). Many schools provide easy access to unhealthy snacks and soft drinks through vending machines (Jamie & Lock, 2009). Rovner, Nansel, Wang and Janotti (2011) found that food sold in vending machines is associated with dietary intake by students. Further, it is important to address the availability of foods in the proximity of schools. A study on school food environments in Utrecht (the Netherlands) found that overall, unhealthy options were better available in school environments than healthy options. This study further found differences in food environments between SES areas, for example: fast food outlets were more often located near schools in low SES areas than schools in high SES areas (Timmermans et al., 2018). No studies were found where availability of foods at school was included in mediation analysis. Based on the relation between food availability and dietary intake and the presumption that there are SES differences in food availability in school areas, food availability at school will be included as possible mediating factor.

H7: When unhealthy foods are available at school, adolescents are more likely to have unhealthy dietary intake (Rovner et al., 2011).

Based on the theory by Story et al. (2002) and existing empirical evidence, the following conceptual framework was formed including possible mediating factors that will be investigated in this study.
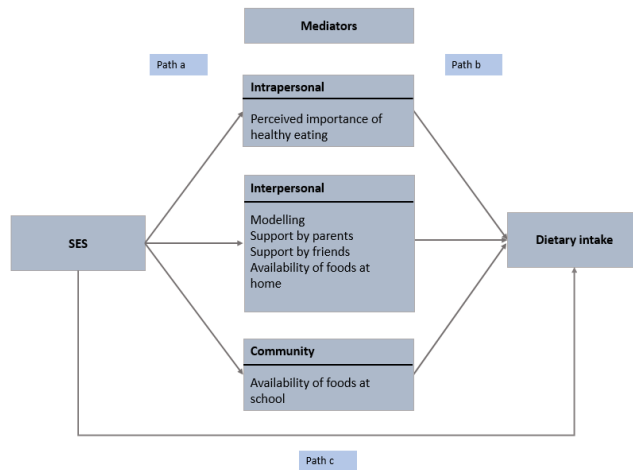
Figure 2 Conceptual framework including possible mediating factors

Methods

Quantitative data analysis is used to assess to what extent dietary intake of adolescents is associated to socio-economic differences and to what extent possible mediating factors play a role in this association.

<u>Data</u>

This study will make use of data from the dataset *self-regulation of eating behaviour in young people,* in specific data from the TEMPEST WP 3-4 survey. This data set is part of the EU TEMPEST project. The questionnaire has been carried out in 4 European countries: the Netherlands, United Kingdom, Poland and Portugal. The countries are selected to represent a range of overweight prevalence and socioeconomic status. Overweight prevalence is lower in the Netherlands and Poland than the UK and Portugal. Overall, the Netherlands and the UK are socio-economically more privileged than Poland and Portugal (de Vet et al., 2013). The target population are young people between the ages of 10 to 17. Participants completed the questionnaire at school in a classroom session, during a session of 30 till 45 minutes. Researchers were present during the session to answer questions. Data collection took place between September 2010 and March 2011. The questionnaire was similar for the four countries and was translated from English to each country's native language. A total of 24 schools participated in the study. Schools were recruited based on convenience sampling and selected to represent a variety in areas of lower and higher economic status. The data set consist of 2764 respondents to the survey. Participants with missing values for one of de outcome variables, the independent variable SES or one of the confounding variables were excluded from the analysis. This leaves a total of 2621 included in the study.

<u>Measures</u>

For this study we only use the questions in the data set assessing: SES, dietary behaviour, possible mediating factors and possible confounding factors.

Social economic status

Traditional measures of SES include employment, income or level of education (Shavers, 2007). Information on these measurements are not available in this study. The family affluence scale [FAS] is developed as a measurement for SES in context of the Health behaviour in School-Aged Children (HBSC) study (Boyce, Torsheim, Currie & Zambon, 2006). Data on family SES is hard to collect from young people, because they do not know or are not willing to share information on employment or income of their parents (Curry et al., 2008). The FAS is based on material living conditions. Respondents were asked if their family owned a car, delivery van or truck. Answer possibilities were: no [0]; yes, one [1]; yes, two or more [2]. Respondents were asked if they have their own bedroom (for themselves). Answer options were: no [0]; yes [1]. Respondents were further asked how many times they went on vacation in the last 12 months. Answer options were: not at all [0]; once [1]; twice [2]; more than twice [3]. Lastly, respondents were asked how many computers are owned by your family. Answer options were: none [0]; one [1]; two [2]; more than two [3]. The numbers in brackets corresponds to the score for a particular answer. Scores of the 4 items are summed to calculate a FAS score. FAS is used as a three-point ordinal scale where you can score FAS low (0,1,2), FAS medium (3,4,5), FAS high (6,7,8,9) (Boyce et al., 2006).

Dietary behaviour

Literature research showed that the importance of possible mediating factors differs per outcome measure for dietary behaviour (Ball et al., 2008; Loth et al., 2016). Several dietary behaviours will be measured in this study, namely intake of sugary drinks, fruit intake, vegetable intake and snack intake. Respondents were asked about multiple components of dietary intake in the questionnaire. Intake of sugary drinks: *How many glasses of soft drinks, lemonade or energy drinks do you drink on an average day? (Don't count: light soft drinks and mineral water)*. Fruit intake: *How many servings of fruit do you eat on an average day? (One serving is about one handful)*. Vegetable intake: *How many serving spoons of cooked or raw vegetables do you eat on an average day? (One serving spoon is about one handful)*. Snack intake: *How many snacks do you eat on an average day? (You may count the following as one snack: xxxx)*(see appendix C). Answer options for all items are: less than one, one, two, three, four, more than four. Intake of sugary drinks, fruit intake, vegetable intake and snack intake are used as separate outcome variables for dietary behaviour. For data analysis, the variables for dietary intake were recoded into dichotomous variables: low fruit intake, low vegetable intake, high intake of sugary drinks and high snack intake (see Appendix A).

Mediating factors

The mediating factors that will be assessed, and the corresponding items used to asses these can be found in the table below (table 1). Support by parents and support by friends will both be measured using 4 separate factors assessing encouragement and approval of fruit and vegetable consumption and discouragement and disapproval of consumption of snacks and soft drinks. Availability of foods at home will be measured using 3 separate factors assessing availability of FV; availability of unhealthy snacks; availability of sugary drinks. For data analysis all possible mediating factors were recoded into dichotomous variables. In short for most mediating factors agree and totally agree were recoded into 'agree' and totally disagree, disagree and neutral were recoded into 'disagree' (see Appendix A).

table 1 Description of mediating factors

Mediating factor	Measurement	Answer option
Intrapersonal		
Importance of healthy eating	Eating healthy is important to me	Totally disagree (1) – totally agree (5)
Interpersonal		
Modelling	My parents eat healthy themselves	Totally disagree (1) – totally agree (5)
Support by parents		
Parents encourage FV	My parents encourage me to eat fruit and vegetables	Totally disagree (1) – totally agree (5)
Parents discourage snacks and sugary drinks	My parents discourage me from eating snacks and drinking soft drinks	Totally disagree (1) – totally agree (5)
Parents approve FV	My parents approve when I eat fruit and vegetables	Totally disagree (1) – totally agree (5)
Parents disapprove snacks and sugary drinks	My parents disapprove of it when I eat snacks and drink soft drinks	Totally disagree (1) – totally agree (5)
Support by friends		
Friends encourage FV	My friends encourage me to eat fruit and vegetables	Totally disagree (1) – totally agree (5)
Friends discourage snacks and sugary drinks	My friends discourage me from eating snacks and drinking soft drinks	Totally disagree (1) – totally agree (5)
Friends approve FV	My friends approve when I eat fruit and vegetables	Totally disagree (1) – totally agree (5)
Friends disapprove snack and sugary drinks	My friends disapprove of it when I eat snacks and drink soft drinks	Totally disagree (1) – totally agree (5)
Availability		
Availability of FV at home	Are you allowed to get fresh fruits or vegetables at home without having to ask?	a) never b) rarely c) sometimes d) often e) always f) we never have this at home
Availability of snacks at home	Are you allowed to get snacks at home without having to ask?	a) never b) rarely c) sometimes d) often e) always f) we never have this at home
Availability of sugary drinks at home	Are you allowed to get soda at home without having to ask?	a) never b) rarely c) sometimes d) often e) always f) we never have this at home
Community		
Availability snacks and sugary drinks at school	If I want snacks or soda during the school break, I can get it easily.	Totally disagree (1) – totally agree (5)

Confounding factors

Possible confounding factors included in this study were sex (*Are you a boy or a girl?*), age (*How old are you?*) and country. The mean age of the respondents was 13.18 (SD=1.94). Therefore, the sample was divided in two age groups: 10-13 and 14-17.

Data analysis

Descriptive statistics were used to describe the study sample and the low, medium and high FAS groups. Figure 3 shows the model used for the mediation analysis, including al factors measured separately as possible mediating factor. Path c refers to the association between level of FAS and the different measures of dietary intake; path a refers to the association between FAS and the potential mediator factors; path b refers to the association between the possible mediators and dietary intake.

For the first hypotheses, regarding path c, univariate associations of FAS with low fruit intake, low vegetable intake, high intake of sugary drinks and high intake of snacks were investigated using logistic regression. Only outcome variables for which significant socioeconomic differences in intake were found were investigated in further analysis.

The joint-significance test was used to establish mediation between FAS and low vegetable intake. A variable is a mediator when both path a and path b are significant for this variable (MacKinnon, Lockwood, Hoffman, West and Sheets, 2002). For path a, Chi-square tests were used to examine whether potential mediating factors were unequally distributed across FAS categories. Hypotheses 2-7, regarding path b, were tested with logistic regression analysis (adjusted for FAS, gender, age and country) to asses which potential mediating factors were significantly associated with low vegetable intake. Mediation was established for factors which were unequally distributed across FAS categories and were associated with dietary intake. These mediator factors were included in a multilevel logistic regression model.

The contribution of mediating factors to the association between FAS and outcomes for which significant socioeconomic differences had been observed (path c) was examined. First the odds ratios of the measure of dietary intake by FAS group were calculated adjusted by age, gender and country, resulting in the base model (model 1). Then, the factor modelling was added separately (model 2). Support by parents (parents approve FV) (model3); and availability of FV at home (model 4) were also added separately. Lastly, all mediating factors were added to the model simultaneously (model 5).
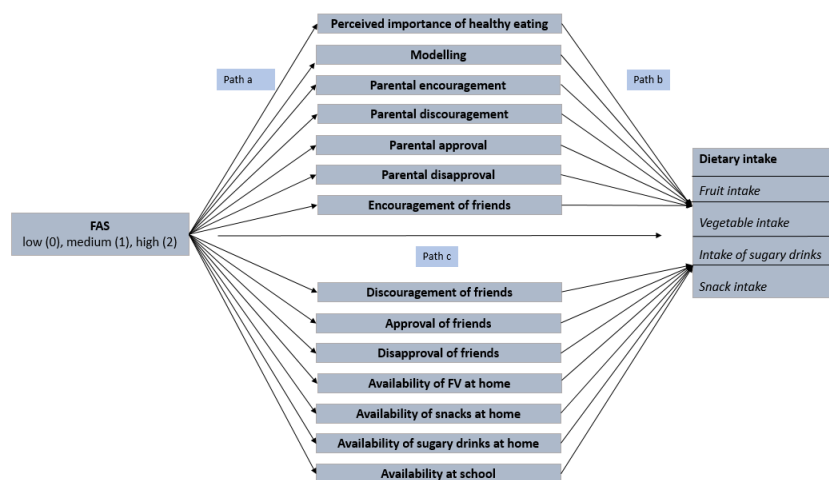
Figure 3 Model of analyses

Results

The demographic characteristics of the study sample are provided in Table 2. A total of 2621 participants were included in the sample. 310 respondents scored low on the FAS scale, 931 medium and 1380 respondents scored high. The data consist of 546 respondents from the Netherlands, 490 from Portugal, 774 from the UK and 811 from Poland. Respondents in the low FAS group were more likely to live in a country other than the Netherlands. Compared with the higher FAS groups, people in the low FAS group were more likely to be female and belong to the 10-13 age group. The characteristics were related to most of the outcome variables. Therefore, gender, age and country were taken into account as confounders in further analysis.

FAS differences in dietary intake

As presented in table 2, adolescents of medium FAS (OR 1.44 (95% CI 1.20-1.73)) and low FAS (OR 1.34 (95% CI 1.02-1.76)) were more likely to have low vegetable intake than their high FAS counterparts. A significant result was also found for high snack intake. Adolescents of medium FAS (OR 0.80 (95% CI 0.67-0.96)) were less likely to have high snack intake than adolescents of high FAS. No significant association was present for adolescents of low FAS compared to high FAS. Low fruit intake and high intake of sugary drinks were not associated with FAS. Adolescents of low FAS had a higher risk of low vegetable intake compared to high FAS. These results were not found for the other outcome variables. Mediation analysis will be carried out to investigate what factors contribute to the explanation of the difference in vegetable intake.

Table 2 Characteristics of study sample by FAS category and unadjusted Odds ratio's for dietary intake (path a).

	Total		Low FAS	Medium FAS	High FAS	Unadjusted ORs for low fruit intake	Unadjusted ORs for low vegetable intake	Unadjusted ORs for high intake of sugary drinks	Unadjusted ORs for high snack intake
	N	%	%	%	%				
Total sample	2621	100							
Fruit intake									
Low	1823	69.6	66.8	70.0	69.9				
High	798	30.4	33.2	30.0	30.1				
Vegetable intake									
Low	1794	68.4	71.3	72.7	64.9				
High	827	31.6	28.7	27.3	35.1				
Intake of sugary drinks									
Low	1825	69.6	68.1	70.2	69.6				
High	796	30.4	31.9	29.8	30.4				
Snack intake									
Low	1786	68.1	65.5	71.3	66.6				
High	835	31.9	34.5	28.7	33.4				
FAS									
Low	310	11.8				0.87 (0.67-1.13)	**1.34 (1.02-1.76)***	1.07 (0.82-1.39)	1.05 (0.81-1.36)
Medium	931	35.5				1.01 (0.84-1.21)	**1.44 (1.20-1.73)****	0.97 (0.80-1,16)	**0.80 (0.67-0.96)***
High	1380	52.7				1	1	1	1
Gender									
Boy	1333	50.9	43.2	50.8	52.6	1	1	1	1
Girls	1288	49.1	56.8	49.2	46.4	0.98 (0.83-1.16)	**1.20(1.02-1.41)***	**0.57 (0.48-0.68)****	**0.85 (0.72-1.00)***
Age									
10- 13	1458	55.6	56.8	56.5	54.8	1	1	1	1
14-17	1163	44.4	43.2	43.5	45.3	**1.70 (1.43-2.02)****	**1.20 (1.01-1.41)***	**1.23 (1.04-1.46)***	**1.50 (1.28-1.77)****
Country									
Netherlands	546	20.8	7.7	16.2	26.9	1	1	1	1
Portugal	490	18.7	30	22.6	13.6	**0.31 (0.23-0.43)****	0.81 (0.62-1.05)	**0.59 (0.46-0.77)****	0.94 (0.73-1.23)
Uk	774	29.5	20	26.5	33.7	**0.28 (0.21-0.37)****	**0.75 (0.59-0.94)***	**0.39 (0.30-0.49)****	1.26 (1.00-1.59)
Poland	811	30.9	42.3	34.7	25.9	**0.27 (0.20-0.36)****	1.23(0.97-1.56)	**0.783 (0.63-0.98)***	0.82 (0.64-1.03)

Selection of mediating factors

Importance of healthy eating, modelling, support by parents (parents encourage FV & parents approve FV) and availability of foods at home (FV, snacks & sugary drinks) had a significant positive association with low vegetable intake (see table 3, path c). Adolescent who disagreed with statements about these factors had higher odds to have low vegetable intake. As presented in table 3 (path b) adolescent of low and medium FAS groups reported more often that their parents did not model healthy eating; that parents did not approve of eating FV; that friends did not approve of eating FV; and that FV was not always available at home. For these factors low and medium FAS showed significant higher prevalence of disagreeing with the statement than the high FAS group. An unequal distribution was also found for the factor friends encourage FV. However, this factor showed higher prevalence of disagreeing in the high FAS group and therefore cannot explain the raised odds for low vegetable intake for the low FAS group.

Based on the joint significance test, factors that were considered in the explanatory model were the factors that are significantly associated with low vegetable intake and also show significant higher prevalence in lower FAS groups. Therefore, the factors that were investigated in further explanatory analysis to explain the association between FAS and low vegetable intake were: modelling, support by parents (parents approve FV) and availability of FV at home.

Table 3 prevalence rates of possible mediating factors by FAS (path b) and adjusted odds ratios (OR)[a] for high vegetable intake and high snack intake (path c).

	Total group		Low FAS % (310)	Medium FAS % (931)	High FAS % (1380)	X^2	Sig.	OR[a] for low vegetable intake		
	N	%						OR	(95% CI)	P
Intrapersonal										
Importance of health eating						1.183	0.553		(1.20- 1.76)	**<0.001***
Agree	1724	67.1	66.8	68.4	66.3			1		
Disagree	846	32.9	33.2	31.6	33.7			1.46		
Interpersonal										
Modelling						29.206	**<0.001***		(1.17-1.73)	**<0.001***
Agree	1758	68.5	61.2	64.0	73.1			1		
Disagree	810	31.5	38.8	36.0	26.9			1.42		
Support by parents										
Parents encourage FV						4.718	0.095		(1.29-1.87)	**<0.001***
Agree	1656	65.7	60.2	66.1	66.7			1		
Disagree	863	34.3	39.8	33.9	33.3			1.56		
Parents discourage snack & sugary drinks						1.490	0.475		(0.92-1.30)	0.340
Agree	1119	44.6	41.8	45.8	44.4			1		
Disagree	1391	55.4	58.2	54,2	55.6			1.09		
Parents approve FV						16.368	**<0.001***		(1.09-1.65)	**0.006***
Agree	1893	73.2	63.5	74.0	74.9			1		
Disagree	673	26.8	36.5	26.0	25.1			1.34		
Parents disapprove snack & sugary drinks						2.889	0.236		(0.92-1.31)	0.304
Agree	921	36.9	38.6	38.6	35.3			1		
Disagree	1577	63.1	61.4	61.4	64.7			1.10		
Support by friends										
Friends encourage FV						14.706	**0.001***		(1.00- 1.48)	0.050
Agree	632	25.3	31.5	27.6	22.4			1		
Disagree	1864	74.7	68.5	72.4	77.6			1.22		
Friends discourage snack & sugary drinks						3.903	0.142		(0.95-1.44)	0.144
Agree	522	20.8	22.7	22.4	19.3			1		
Disagree	1983	79.2	77.3	77.6	80.7			1.17		
Friends approve FV						7.247	**0.027***		(1.00-1.43)	0.052
Agree	987	39.4	34.6	37.6	41.8			1		
Disagree	1516	60.6	65.4	62.4	58.2			1.20		
Friends disapprove snack & sugary drinks						1.341	0.511		(0.95-1.47)	0.127
Agree	469	18.7	19.5	19.8	17.9			1		
Disagree	2035	81.3	80.5	80.2	82.1			1.18		
Availability										
Availability of FV at home						19.999	**<0.001***		(1.17-1.78)	**0.001***
Always available	2020	77.3	69.1	75.7	80.2			1		
Not available	593	22.7	30.9	24.3	19.8			1.45		
Availability of snacks at home						0.409	0.815		(1.03-1.47)	**0.024***
Not available	1346	51.6	51.8	52.4	51.0			1		
Available	1263	48.4	48.2	47.6	49.0			1.23		
Availability of sugary drinks at home						1.384	0.501		(1.08-1.54)	**0.004**
Not available	1211	46.5	44.0	45.9	47.4			1		
Available	1395	53.5	56.0	54.1	52.6			1.29		
Community										
Availability of snacks and sugary drinks at school						4.536	0.103		(0.95-1.35)	0.156
Not available	1147	44.4	40.4	43.1	46.3			1		
Available	1434	55.6	59.6	56.9	53.7			1.14		

X^2 = chi square, a= adjusted for age, sex, country and FAS

Table 4 Odds ratios for low vegetable intake by FAS, mediated by modelling, friends encourage FV, parents approve FV and availability FV at home

	Model 1 (Base): FAS + age + gender+ country	Model 2: Base + modelling	Model 3: Base + support by parents	Model 4: Base+ availability of FV at home	Model 5: Base + modelling+ support by parents+ availability of FV at home
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
FAS					
Low	1.31 (0.99-1.73)	1.24 (0.93-1.64)	1.28 (0.96-1.69)	1.26 (0.96-1.67)	1.18 (0.88-1.56)
Medium	**1.44 (1.19-1.73)****	**1.36 (1.13-1.64)****	**1.45 (1.20-1.75)****	**1.42 (1.18-1.71)****	**1.36 (1.12-1.65)****
High	1	1	1	1	1
Age					
10-13	1	1	1	1	1
14-17	**1.23 (1.03-1.45)***	1.17 (0.99-1.40)	**1.22 (1.02-1.45)***	**1.23 (1.04-1.46)***	1.18 (0.99-1.42)
Gender					
Boy	1	1	1	1	**1**
Girl	1.17 (0.99-1.38)	1.16 (0.98 -1.38)	1.18 (0.99-1.40)	**1.20 (1.01-1.42)***	**1.19 (1.00-1.42)***
Country					
Netherlands	1	1	1	1	1
Portugal	**0.75 (0.58-0.99)***	0.77 (0.59-1.01	0.77 (0.58-1.01)	**0.71 (0.54-0.94)***	**0.75 (0.57-0.99)***
UK	**0.72 (0.57-0.92)****	**0.71 (0.56-1.01)****	**0.68 (0.53-0.87)****	**0.73 (0.57-0.92)****	**0.67 (0.53-0.86)****
Poland	1.16 (0.90-1.48)	1.11 (0.86-1.42)	1.06 90.82-1.37)	1.17 (0.92-1.50)	1.06 (0.81-1.37)
Modelling					
Agree		1			1
Disagree		**1.42 (1.17-1.73)****			**1.34 (1.10-1.64)****
Parents approve FV					
Agree			1		1
Disagree			**1.34 (1.09-1.65)****		**1.28 (1.03-1.58)***
Availability FV at home					
Available				1	1
Not available				**1.45 (1.17-1.78)****	**1.38 (1.11-1.72)****

* significance P<0.05, **significance P<0.01

Mediating the association between FAS and low vegetable intake

The OR for low vegetable intake for the medium FAS (OR 1.44 (95% CI 1.19-1.73)) and low FAS group (OR 1.31 (95% CI 0.99-1.73) decreased when 'modelling' was added to the model (model 2); or when 'availability of FV at home' (model 4) was added. When 'parents approve FV' (model 3) was added to the base model, OR for the medium FAS group increased slightly (OR 1.45 (95% CI 1.20-1.75)). When all mediating factors were added to the base model the OR of both medium FAS (OR 1.36 (1.12-1.65) and low FAS (OR 1.18 (95% CI 0.88-1.56)) decreased. In the final model all mediating factors stayed significant: 'modelling' (OR 1.34 (95% CI 1.10-1.64)); 'parents approve FV' (OR 1.28 (95% CI (1.04-1.61)) and 'availability of FV at home' (OR 1.38 (95% CI 1.11-1.72)).

Discussion

The goal of this study was to investigate to what extend intrapersonal, interpersonal and community factors mediate the association between socioeconomic status and dietary intake of adolescents. This study found socioeconomic differences in vegetable intake, no socioeconomic differences were found for fruit intake, intake of sugary drinks or snack intake. The interpersonal factors modelling (parents eat healthy themselves), support by parents (parents approve FV) and availability of FV at home were found to mediate the association between FAS and vegetable intake. Findings for these mediating factors are consistent with findings from previous studies by Ball et al. (2008) and Michels et al. (2018).

This study investigated four different measures of dietary intake: fruit intake, vegetable intake, intake of sugary drinks and snack intake. As described in the first hypothesis, it was expected that adolescents of low FAS had unhealthier dietary intake. Thus, consumed less fruits, less vegetables and had higher intake of sugary drinks and snacks than adolescents of high FAS. This study only found socioeconomic differences in vegetable intake. Previous studies by Ball et al. (2008) and Michels et al. (2018) did find socioeconomic differences in multiple components of dietary intake. These studies incorporated parental education and parental occupation in the measurement of SES. The findings of this study could indicate that FAS is a less relevant measure when focusing on dietary behaviour. FAS is an indicator of a family's affluence, rather than someone's knowledge and cognitive performance. Irrespective of affluence, parents who are highly educated may be more inclined to use knowledge concerning healthy dietary intake than low educated parents (Ottovaere et al, 2011).

In accordance with expectations from literature review this study found that 'perceived importance of healthy eating' (H2), 'modelling' (H3), 'support by parents' (H4), and 'availability at home' (H5) were associated with vegetable intake (Cutler et al., 2011; Loth et al., 2016; Rasmussen et al., 2006; Stephens et al., 2011). Contrary to findings from Fitzgerald et al. (2013) and Rovner et al. (2011) 'support by friends' (H5) and 'availability at school' (H7) were not associated with vegetable intake. Fitzgerald et al. (2013) found that higher peer support for unhealthy eating was associated with intake of unhealthy food. It was expected that peer support was associated more with intake of unhealthy foods than intake of healthy foods. Similar expectations hold for 'availability at school'. The association between 'support of friends' and 'availability at school' with intake of sugary drinks and snacks was not investigated in this study because no socioeconomic differences were found in these outcome variables.

Contrary to findings from previous studies by Ball et al. (2008) and Stephens et al. (2011), this study did not find a mediating effect for the intrapersonal factor perceived importance of healthy eating. Respondents who stated that healthy eating was not important for them did have a higher chance to have low vegetable intake (OR 1.447 (95% CI 1.20-1.74)). However, there was no lower

prevalence in low FAS groups for importance of healthy eating. It is possible that no results were found because this study measured perceived importance of healthy with only one statement: '*eating healthy is important to me'* . In the study by Ball et al. (2008) perceived importance of health was measured using 4 questions about the importance of eating healthy foods, limiting junk foods, exercising and limiting TV time. It could be that people indicate that healthy eating is important to them, but different results arise when they are asked about multiple aspects of healthy eating. Someone who indicates that healthy eating is important may think that eating fruit and vegetables is not important. Therefore, different results may have been found when respondents were asked about the importance of eating FV and limiting the consumption of snacks and sugary drinks.

This study has some limitations. To be able to conduct the analysis, dependent variables for dietary intake and possible mediating factors had to dichotomised. Although it was attempted to make informed decisions about cut-off values, it is not possible to prevent all loss of information leading to a reduction in statistical power to detect an association between the independent variable and outcome. Furthermore, data used in this study to calculate family affluence, the measures for dietary intake and mediating factors were all self-reported. Self-reporting can lead to several problems. First it is possible that adolescents gave socially desirable answers to the question about family affluence because they are ashamed or simply do not wish to share this information. It is expected that low FAS respondents are at highest risk to report socially desirable answers regarding FAS. This could lead to a false representation of the low FAS group in the sample, where people of low socioeconomic status score medium or high on the FAS scale because they give socially desirable answers. Researcher hope that this was not a problem in this study because answers were fully anonymous, and participation was voluntarily. Second, when reporting dietary intake adolescents could fall victim to recall bias and under- or overestimate their dietary intake.

The data set used for this study included respondents from the Netherlands, Portugal, UK and Poland. It was chosen to include the four countries in analysis because a larger data set leads to higher statistical power. However, it is important to note that results could differ per country. Socio-economic differences in fruit and vegetable consumption do differ per country. A previous study found that in some eastern and southern European countries socioeconomic status is not associated with fruit and vegetable intake. The results of this study even suggest that in regions where fruit and vegetable consumption is more common, the lower SES classes consume more FV than their high SES counterparts (Roos, Johansson, Kasmels. Klumbiené & Prättälä, 2001). Further, Sandvik et al. (2005) found country differences in factors affecting fruit and vegetable intake. Therefore, it is advised that future research investigates the between-country differences. It is also advised that future studies investigate country specific determinants of dietary intake.

Conclusion

To conclude, the present study confirmed that socioeconomic status is associated with vegetable consumption of adolescents and that this association is mediated by modelling of parents, support by parents and availability of fruits and vegetables at home. Socioeconomic differences for fruit intake, intake of sugary drinks and snack intake were not found in this study. It is recommended that additional research is conducted regarding mediating factors in the relation between SES and dietary intake. Further, it is recommended that future research investigates between-country differences in mediating factors and used educational level of parents as measure of SES. Based on the results of this study it is recommended that future policy and interventions, aimed at decreasing disparities in vegetable intake, focus on parental influence on low vegetable intake. Positive modelling, support for fruit and vegetable consumption and availability of fruits and vegetables at home should be stimulated for parents of low socioeconomic status.

References

Armitage, C. J., & Conner, M. (2000). Social cognition models and health behaviour: A structured review. *Psychology and health*, *15*(2), 173-189.

Ball, K., MacFarlane, A., Crawford, D., Savige, G., Andrianopoulos, N., & Worsley, A. (2008). Can social cognitive theory constructs explain socio-economic variations in adolescent eating behaviours? A mediation analysis. *Health education research*, *24*(3), 496-506. *behavior*, *31*(2), 143-164.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, *51*(6), 1173.

Backett-Milburn, K.C., Wills, W.J., Gregory, S., Lawton, J., 2006. Making sense of eating, weight and risk in the early teenage years: views and concerns of parents in poorer socio-economic circumstances. *Social Science & Medicine, 63, 624- 635*

Cutler, G. J., Flood, A., Hannan, P., & Neumark-Sztainer, D. (2011). Multiple sociodemographic and socioenvironmental characteristics are correlated with major patterns of dietary intake in adolescents. *Journal of the American Dietetic Association*, *111*(2), 230-240.

De Coen, V., Vansteelandt, S., Maes, L., Huybrechts, I., De Bourdeaudhuij, I., & Vereecken, C. (2012). Parental socioeconomic status and soft drink consumption of the child. The mediating proportion of parenting practices. *Appetite*, *59*(1), 76-80.

Evans, A. E., Wilson, D. K., Buck, J., Torbett, H., & Williams, J. (2006). Outcome expectations, barriers, and strategies for healthful eating: a perspective from adolescents from low-income families. *Family & Community Health*, *29*(1), 17-27.

Fielding-Singh, P., & Wang, J. (2017). Table talk: How mothers and adolescents across socioeconomic status discuss food. *Social Science & Medicine*, *187*, 49-57.

Fitzgerald, A., Heary, C., Kelly, C., Nixon, E., & Shevlin, M. (2013). Self-efficacy for healthy eating and peer support for unhealthy eating are associated with adolescents' food intake patterns. *Appetite*, *63*, 48-58.

Frederick, C. B., Snellman, K., & Putnam, R. D. (2014). Increasing socioeconomic disparities in adolescent obesity. *Proceedings of the National Academy of Sciences*, *111*(4), 1338-1342.

Hulshof, K. F. A. M., Brussaard, J. H., Kruizinga, A. G., Telman, J., & Löwik, M. R. H. (2003). Socio-economic status, dietary intake and 10 y trends: the Dutch National Food Consumption Survey. *European journal of clinical nutrition*, *57*(1), 128.

De Jong, J. P., Mackenbach, J. (2018). Health inequalities an interdisciplinary exploration of socioeconomic position, health and causality. *Knaw*.

Krølner, R., Rasmussen, M., Brug, J., Klepp, K. I., Wind, M., & Due, P. (2011). Determinants of fruit and vegetable consumption among children and adolescents: a review of the literature. Part II: qualitative studies. *International Journal of Behavioral nutrition and physical activity*, *8*(1), 112.

Larsen, J. K., Hermans, R. C., Sleddens, E. F., Engels, R. C., Fisher, J. O., & Kremers, S. P. (2015). How parental dietary behavior and food parenting practices affect children's dietary behavior. Interacting sources of influence?. *Appetite*, *89*, 246-257.

Lim, S. S., Vos, T., Flaxman, A. D., Danaei, G., Shibuya, K., Adair-Rohani, H., ... & Aryee, M. (2012). A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and

risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The lancet*, *380*(9859), 2224-2260.

Loth, K. A., MacLehose, R. F., Larson, N., Berge, J. M., & Neumark-Sztainer, D. (2016). Food availability, modeling and restriction: How are these different aspects of the family eating environment related to adolescent dietary intake? *Appetite*, *96*, 80-86.

MacFarlane, A., Crawford, D., Ball, K., Savige, G., & Worsley, A. (2007). Adolescent home food environments and socioeconomic position. *Asia Pacific journal of clinical nutrition*, *16*(4), 748- 756.

McLaren, L. (2007). Socioeconomic status and obesity. *Epidemiologic reviews*, *29*(1), 29-48.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological methods*, *7*(1), 83.

Michels, N., Vynckier, L., Moreno, L. A., Beghin, L., Forsner, M., Gonzalez-Gross, M., ... & Leclercq, C. (2018). Mediation of psychosocial determinants in the relation between socio- economic status and adolescents' diet quality. European journal of nutrition, 57(3), 951-963.

Moor, I., Spallek, J., & Richter, M. (2017). Explaining socioeconomic inequalities in self-rated health: a systematic review of the relative contribution of material, psychosocial and behavioural factors. *J Epidemiol Community Health*, *71*(6), 565-575.

Odum, M., Housman, J. M., & Williams, R. D. (2018). Intrapersonal factors of male and female adolescent fruit and vegetable intake. *American journal of health behavior*, *42*(2), 106-115.

Neumark-Sztainer, D., Hannan, P. J., Story, M., Croll, J., & Perry, C. (2003). Family meal patterns: associations with sociodemographic characteristics and improved dietary intake among adolescents. *Journal of the american dietetic association*, *103*(3), 317-322.

Ottevaere, C., Huybrechts, I., Benser, J., De Bourdeaudhuij, I., Cuenca-Garcia, M., Dallongeville, J., ... & Manios, Y. (2011). Clustering patterns of physical activity, sedentary and dietary behavior among European adolescents: The HELENA study. *BMC public health*, *11*(1), 328.

Pearson, N., Biddle, S. J., & Gorely, T. (2009). Family correlates of fruit and vegetable consumption in children and adolescents: a systematic review. *Public health nutrition*, *12*(2), 267-283.

Rasmussen, M., Krølner, R., Klepp, K. I., Lytle, L., Brug, J., Bere, E., & Due, P. (2006). Determinants of fruit and vegetable consumption among children and adolescents: a review of the literature. Part I: quantitative studies. *International Journal of Behavioral Nutrition and Physical Activity*, *3*(1), 22.

Roos, G., Johansson, L., Kasmel, A., Klumbiené, J., & Prättälä (2001). Disparities in vegetable and fruit consumption: European cases from the north to the south. *Public Health Nutrition*, *4*(1), 35-43.

Rovner, A. J., Nansel, T. R., Wang, J., & Iannotti, R. J. (2011). Food sold in school vending machines is associated with overall student dietary intake. *Journal of adolescent health*, *48*(1), 13-19.

Sallis, J. F., Owen, N., & Fisher, E. (2015). Ecological models of health behavior. *Health behavior: Theory, research, and practice*, *5*, 43-64.

Stephens, L. D. A., McNaughton, S. A., Crawford, D., MacFarlane, A., & Ball, K. (2011). Correlates of dietary resilience among socioeconomically disadvantaged adolescents. *European journal of clinical nutrition*, *65*(11), 1219.

Sandvik, C., De Bourdeaudhuij, I., Due, P., Brug, J., Wind, M., Bere, E., ... & de Almeida, M. D. V. (2005). Personal, social and environmental factors regarding fruit and vegetable intake among schoolchildren in nine European countries. *Annals of Nutrition and Metabolism*, *49*(4), 255-266.

Story, M., Neumark-Sztainer, D., & French, S. (2002). Individual and environmental influences on adolescent eating behaviors. *Journal of the American Dietetic Association*, *102*(3), S40-S51.

Stringhini, S., Carmeli, C., Jokela, M., Avendaño, M., Muennig, P., Guida, F., ... & Chadeau- Hyam, M. (2017). Socioeconomic status and the 25× 25 risk factors as determinants of premature mortality: a multicohort study and meta-analysis of 1· 7 million men and women. *The Lancet*, *389*(10075), 1229-1237.

Timmermans, J., Dijkstra, C., Kamphuis, C., Huitink, M., van der Zee, E., & Poelman, M. (2018). 'Obesogenic'School Food Environments? An Urban Case Study in The Netherlands. *International journal of environmental research and public health*, *15*(4), 619.

De Vet, E., de Wit, J. B., Luszczynska, A., Stok, F. M., Gaspar, T., Pratt, M., ... & de Ridder, D. T. (2013). Access to excess: how do adolescents deal with unhealthy foods in their environment?. *The European Journal of Public Health*, *23*(5), 752-756.

World Health Organization. (2006). Addressing the socioeconomic determinants of healthy eating habits and physical activity levels among adolescents.

Zarnowiecki, D. M., Dollman, J., & Parletta, N. (2014). Associations between predictors of children's dietary intake and socioeconomic position: a systematic review of the literature. *Obesity reviews*, *15*(5), 375-391

Appendix

A. Recoding variables into dichotomous variables

New variable	Question	Old values	Recoded	New Values
Fruit_intake	How many servings of fruit do you eat on an average day?	0=less than one - 5=more than four	(0=1) (1=1) (2=1) (3=0) (4=0) (5=0)	0 = high (fruit intake) 1 = low (fruit intake)
Vegetable_intake	How many serving spoons of cooked or raw vegetables do you eat on an average day?	0=less than one - 5=more than four	(0=1) (1=1) (2=1) (3=0) (4=0) (5=0)	0 = high (vegetable intake) 1= low (vegetable intake)
Drinks_intake	How many glasses of soft drinks, lemonade or energy drinks do you drink on an average day?)	0=less than one, 1= one, 2= two, 3= three, 4= four, 5=more than four	(0=1) (1=1) (2=1) (3=0) (4=0) (5=0)	0= low (intake of sugary drinks) 1= high (intake of sugary drinks)
Snack_intake	How many snacks do you eat on an average day?	0=less than one - 5=more than four	(0=1) (1=1) (2=1) (3=0) (4=0) (5=0)	0 = low (snack intake) 1 = high (snack intake)
modelling	My parents eat healthy themselves	1 = totally disagree 2= disagree 3= neutral 4= agree 5= totally agree	(1=1) (2=1) (3=1) (4=0) (5=0)	0 = agree 1= disagree
importance	Healthy eating is important to me	1 = totally disagree ….. 5= totally agree	(1=1) (2=1) (3=1) (4=0) (5=0)	0 = agree 1= disagree
PencourageFV	My parents encourage me to eat fruits and vegetables	1 = strongly disagree 2= disagree 3= neutral 4 = agree 5 = strongly agree	(1=1) (2=1) (3=1) (4=0) (5=0)	0 = agree 1= disagree
PdiscourageSnack	My parents discourage me from eating snacks or drinking soft drinks	1= strongly agree – 5 = strongly agree	(1=1) (2=1) (3=1) (4=0) (5=0)	0 = agree 1= disagree
FencourageFV	My friends encourage me to eat fruits and vegetables	1= strongly agree – 5 = strongly agree	(1=1) (2=1) (3=1) (4=0) (5=0)	0 = agree 1= disagree
FdiscourageSnack	My friends discourage me from eating snacks or drinking soft drinks	1= strongly agree – 5 = strongly agree	(1=1) (2=1) (3=1) (4=0) (5=0)	0 = agree 1= disagree
PapproveFV	My parents approve of my eating fruits or vegetables	1= strongly agree – 5 = strongly agree	(1=1) (2=1) (3=1) (4=0) (5=0)	0 = agree 1= disagree
PdisapproveSnack	My parents disapprove of my eating snacks or drinking soft drinks	1= strongly agree – 5 = strongly agree	(1=1) (2=1) (3=1) (4=0) (5=0)	0 = agree 1= disagree
FapproveFV	My friends approve of my eating fruits or vegetables	1= strongly agree – 5 = strongly agree	(1=1) (2=1) (3=1) (4=0) (5=0)	0 = agree 1= disagree

FdisapproveFV	My friends disapprove of my eating snacks or drinking soft drinks	1= strongly agree – 5 = strongly agree	(1=1) (2=1) (3=1) (4=0) (5=0)	0 = agree 1= disagree
HomeFV	Are you allowed to help yourself to fresh fruits or vegetables in your home?	1= never, 2= rarely, 3= sometimes, 4= often, 5=always, 6= we never have '' in home	(1=1) (2=1) (3=1) (4=1) (5=0) (6=1)	0= Always available 1= Not always available
HomeSnack	Are you allowed to help yourself to snacks in your home	1= never, 2= rarely, 3= sometimes, 4= often, 5=always, 6= we never have '' in home	(1=0) (2=0) (3=0) (4=1) (5=1) (6=0)	0= Not available 1= Available
HomeSugarydrinks	Are you allowed to help yourself to soda, lemonade or energy drinks in your home?	1= never, 2= rarely, 3= sometimes, 4= often, 5=always, 6= we never have '' in home	(1=0) (2=0) (3=0) (4=1) (5=1) (6=0)	0= Not available 1= Available
AvailabilitySchool	Whenever I feel like having a snack or soft drink during school breaks, I can easily get it	1 = totally disagree ….. 5= totally agree	(1=0) (2=0) (3=0) (4=1) (5=1)	0= Not available 1= Available

B: Questionnaire

*highlights are not related to this study, but could not remove these after converting pdf to word document.

Tempest Vragenlijst eten en omgeving

IN TE VULLEN DOOR ONDERZOEKER:

Datum	
School #	
Klas #	
Participant #	

Klas / groep	
Niveau	

Instructies

Door vandaag onze vragenlijst in te vullen help je het Tempest project. Dank je wel daarvoor!

Lees de instructies (*schuin* gedrukt) voor elk deel goed door voordat je begint met de vragen. Om de vragen te beantwoorden moet je soms iets schrijven. Soms moet je een hokje invullen: als dat zo is, moet je altijd het antwoord kiezen dat het beste bij **jou** past. Soms moet je het goede antwoord omcirkelen. Als dat zo is, moet je altijd het antwoord kiezen dat **jou** het beste beschrijft.

Denk niet te lang na over je antwoorden: je eerste idee is meestal het best.

Het is niet erg als je af en toe een fout maakt: zet dan een kruis door het foute antwoord en omcirkel of kies het goede antwoord.

Als je vragen hebt, kun je je hand opsteken. De onderzoeker komt je dan helpen.

Als er vragen zijn die je echt niet begrijpt, zet er dan een kruisje voor. Als je dit doet, willen we alsnog graag dat je toch probeert om wel een antwoord te geven.

Je antwoorden op de vragen zijn anoniem, wat betekent dat we jouw naam nergens opschrijven. Niemand komt te weten wat jij hebt geantwoord.

Als je je ongemakkelijk gaat voelen over de vragen, of als je niet meer door wil gaan, mag je stoppen. Vertel dit aan de onderzoeker en dan zal hij of zij de vragenlijst wegnemen.

1. Hoe oud ben je?

..…. jaar

2. Ben je een jongen of een meisje?

O jongen
O meisje

3. Welke taal spreek je meestal met je ouders?

0 Nederlands
0 Andere taal, namelijk …………

4. Welke taal spreek je meestal met je vrienden?

0 Nederlands
0 Andere taal, namelijk …………

5. Heeft jouw gezin een auto, bestelbusje of vrachtwagen?

0 nee
0 ja, één
0 ja, twee of meer

6. Heb je een eigen slaapkamer (voor jou alleen)?

0 nee
0 ja

7. Hoe vaak ben je de laatste 12 maanden op vakantie geweest?

0 helemaal niet
0 één keer
0 twee keer
0 meer dan twee keer

8. Hoeveel computers heeft jullie gezin?

0 geen één
0 één
0 twee
0 meer dan twee

9. Heb je je eigen geld dat je kunt uitgeven aan wat je maar wilt (zoals zakgeld of geld dat je verdient door het doen van huishoudelijke klusjes of een baantje)?

0 ja (ga naar vraag 10)
0 nee (ga naar vraag 11)

10. Hoeveel van je eigen geld geef je per week uit aan de volgende dingen?
(Omcirkel het goede antwoord.)

Spelletjes, speelgoed, muziek of DVD's	Niets	Minder dan de helft	De helft	Meer dan de helft	Alles
Mobiele telefoon/sms-en	Niets	Minder dan de helft	De helft	Meer dan de helft	Alles
Snacks/tussendoortjes of frisdrank	Niets	Minder dan de helft	De helft	Meer dan de helft	Alles
Kleding of accessoires	Niets	Minder dan de helft	De helft	Meer dan de helft	Alles

11. Hoe lang ben je? ……….cm
Als je het niet zeker weet, probeer dan zo goed mogelijk te schatten

12. Hoeveel weeg je? ………kg
Als je het niet zeker weet, probeer dan zo goed mogelijk te schatten

13. Wat vind je van je gewicht?
0 ik ben veel te dik 0 ik
ben te dik
0 ik heb een normaal gewicht 0 ik
ben te dun
0 ik ben veel te dun

14. Wat vind je van jouw eetgedrag?
0 ik eet heel ongezond 0 ik
eet ongezond
0 ik eet niet gezond, maar ook niet ongezond 0
ik eet gezond
0 ik eet heel gezond

Geef nu aan in hoeverre je het eens bent met de volgende uitspraken. Omcirkel het antwoord dat het beste bij jou past.

13. Ik zou best gezonder willen eten	Helemaal mee oneens	Mee oneens	Niet mee eens, niet mee oneens	Mee eens	Helemaal mee eens
14. Ik ben van plan om gezonder te gaan eten	Helemaal mee oneens	Mee oneens	Niet mee eens, niet mee oneens	Mee eens	Helemaal mee eens
15. Mijn ouders zeggen dat ik gezond moet eten	Helemaal mee oneens	Mee oneens	Niet mee eens, niet mee oneens	Mee eens	Helemaal mee eens
16. Mijn ouders eten zelf gezond	Helemaal mee oneens	Mee oneens	Niet mee eens, niet mee oneens	Mee eens	Helemaal mee eens
17. Gezond eten is belangrijk voor mij	Helemaal mee oneens	Mee oneens	Niet mee eens, niet mee oneens	Mee eens	Helemaal mee eens
18. Ik let er zelf op dat ik gezond eet	Helemaal mee oneens	Mee oneens	Niet mee eens, niet mee oneens	Mee eens	Helemaal mee eens
19. The mensen om mij heen helpen me om gezonder te eten	Helemaal mee oneens	Mee oneens	Niet mee eens, niet mee oneens	Mee eens	Helemaal mee eens
20. Er worden veel dingen gedaan om mij en andere jonge mensen te helpen om gezonder te eten	Helemaal mee oneens	Mee oneens	Niet mee eens, niet mee oneens	Mee eens	Helemaal mee eens
23. Als ik zin heb in snacks of frisdrank tijdens de schoolpauze, kan ik die makkelijk krijgen (zoals uit een automaat, de kantine of een winkel).	Helemaal niet mee eens	Niet mee eens	Niet mee eens, niet mee oneens	Mee eens	Helemaal mee eens
24. Als ik zin heb in snacks of frisdrank als ik met mijn vrienden ben, kan ik die makkelijk krijgen (zoals uit een automaat, een winkel of een snackbar).	Helemaal niet mee eens	Niet mee eens	Niet mee eens, niet mee onees	Mee eens	Helemaal mee eens

De volgende vragen gaan over jouw eetgewoontes.

25. Hoeveel dagen <u>per week</u> neem je gemiddeld een ontbijt?
0 nul
0 één tot drie 0
vier tot zes 0
zeven

26. **Hoeveel glazen frisdrank, limonade of sportdrank drink je gemiddeld <u>per dag</u>?** *(Niet meetellen: light frisdranken en mineraalwater)*
0 minder dan 1
0 1
0 2
0 3
0 4
0 meer dan 4

27. **Hoeveel porties fruit eet je gemiddeld <u>per dag</u>?** *(Één portie fruit is ongeveer een handvol)*
0 minder dan 1
0 1
0 2
0 3
0 4
0 meer dan 4

28. **Hoeveel opscheplepels groenten of porties rauwkost eet je gemiddeld <u>per dag</u>?** *(Één opscheplepel groente is ongeveer een handvol)*
0 minder dan 1
0 1
0 2
0 3
0 4
0 meer dan 4

29. Hoeveel snacks en/of tussendoortjes eet je gemiddeld <u>per dag</u>?
(Als één tussendoortje telt bijvoorbeeld: een bakje friet, een kroket, een hamburger, een pak sultana's, een grote koek, een handje chips, kleine koekjes of snoepjes)
0 minder dan 1
0 1
0 2
0 3
0 4
0 meer dan 4

30. **Hoeveel honger heb je <u>op dit moment</u>?** *Omcirkel het getal dat het beste overeenkomt met jouw antwoord (van 1 = helemaal geen honger tot 7 = hele erge honger).*

Helemaal geen honger	1	2	3	4	5	6	7	Hele erge honger

31. Mag je thuis zonder het te hoeven vragen vers fruit of groenten pakken (zoals appels, sinaasappels, bananen, tomaten, wortels of komkommers)?
a) nooit b) zelden c) soms d) vaak e) altijd
f) we hebben nooit vers fruit of groenten thuis

32. Mag je thuis zonder het te hoeven vragen snacks pakken (zoals chips, pinda's, koekjes of chocoladerepen)?
a) nooit b) zelden c) soms d) vaak e) altijd
f) er zijn bij mij thuis nooit snacks in huis

33. **Mag je thuis zonder het te hoeven vragen frisdrank pakken?** *(Light-frisdranken en mineraalwater niet meetellen)*
a) nooit b) zelden c) soms d) vaak e) altijd
f) er zijn bij mij thuis nooit frisdrank, limonade en energiedrank snacks in huis

34. Hoe vaak ontbijt je samen met alle (of de meeste) van je gezinsleden? *(bijvoorbeeld je ouders en broers/zussen)*
a) minder dan één keer per week b) 1-2 dagen per week
c) 3-4 dagen per week d) 5-6 dagen per week
e) elke dag van de week

35. Hoe vaak eet je 's avonds samen met alle (of de meeste) van je gezinsleden?
a) minder dan één keer per week b) 1-2 dagen per week
c) 3-4 dagen per week d) 5-6 dagen per week e) elke dag van de week

36. Hoe vaak eten jullie fast food voor het avondeten in jouw gezin? *(zoals McDonald's of eten dat wordt bezorgd of afgehaald van de Chinees of de snackbar)*
a) nooit of zeer zelden
b) minder dan 1 keer per maand c) 1-2 keer per maand
d) 1-2 keer per week
e) de meeste dagen van de week

Tegenwoordig is er overal lekker maar vaak ongezond eten te krijgen. Er is op bijna elke hoek van de straat wel een snackbar. Ook op scholen of bij de sportvereniging wordt vaak eten met veel suiker en vet verkocht. Hoe ga jij om met al dat lekkere eten in je omgeving? We willen weten wat jij doet met al dat eten in jouw omgeving.

Hieronder staan een aantal uitspraken over omgaan met eten. Omcirkel steeds het antwoord dat het beste bij jou past. Denk hierbij aan de afgelopen twee weken.

Een voorbeeld: Neem de uitspraak "Als ik iets zoets gegeten heb, poets ik mijn tanden". Als je dat in de afgelopen twee weken nooit gedaan hebt, omcirkel je het antwoord "nooit". Als je dat vaak gedaan hebt, omcirkel je het antwoord "vaak".

Als ik veel gesnoept heb, ga ik daarna meer bewegen	nooit	soms	regelmatig	vaak	altijd
Als ik 's avonds een feestje heb, snoep ik overdag niet	nooit	soms	regelmatig	vaak	altijd
Als ik tussen de middag veel eet, neem ik geen tussendoortjes tot het avondeten	nooit	soms	regelmatig	vaak	altijd
Als ik de ene dag te veel gegeten heb, eet ik de dag erna minder	nooit	soms	regelmatig	vaak	altijd
Als ik een luie dag heb waarop ik niet veel doe, eet ik minder	nooit	soms	regelmatig	vaak	altijd

Als ik dorst heb, neem ik water in plaats van frisdrank	nooit	soms	regelmatig	vaak	altijd
Als ik zin heb in iets lekkers, neem ik fruit in plaats van snoep	nooit	soms	regelmatig	vaak	altijd
Als ik een toetje eet, kies ik fruit in plaats van vla	nooit	soms	regelmatig	vaak	altijd
Als ik trek heb in frisdrank, neem ik iets zonder suiker	nooit	soms	regelmatig	vaak	altijd
Als ik voor de tv zit en iets lekkers wil, neem ik cherrytomaatjes of komkommer in plaats van chips	nooit	soms	regelmatig	vaak	altijd

Als ik naar school ga, neem ik mijn eigen boterhammen mee	nooit	soms	regelmatig	vaak	altijd
Als ik de deur uitga, neem ik fruit mee	nooit	soms	regelmatig	vaak	altijd
Als ik iets met mijn vrienden ga doen, zorg ik ervoor dat ik thuis al gegeten heb	nooit	soms	regelmatig	vaak	altijd
Als ik ergens heen ga, neem ik een flesje water mee	nooit	soms	regelmatig	vaak	altijd
Ik ontbijt goed zodat ik niet zo snel honger krijg	nooit	soms	regelmatig	vaak	altijd

In de schoolpauze blijf ik uit de buurt van de supermarkt	nooit	soms	regelmatig	vaak	altijd
Als ik in de stad ben, zorg ik ervoor dat ik niet in de buurt kom van McDonalds of de snackbar	nooit	soms	regelmatig	vaak	altijd
Als ik langs een bakkerij kom, kijk ik niet naar het lekkers in de etalage	nooit	soms	regelmatig	vaak	altijd
Als ik naar de supermarkt ga, vermijd ik de snoepafdeling	nooit	soms	regelmatig	vaak	altijd
Als ik me verveel, blijf ik weg uit de keuken	nooit	soms	regelmatig	vaak	altijd

Als ik iets lekkers wil, neem ik een klein beetje en berg de rest op	nooit	soms	regelmatig	vaak	altijd
Als ik TV kijk, zorg ik ervoor dat de chips buiten bereik liggen	nooit	soms	regelmatig	vaak	altijd
Als ik achter de computer zit, zorg ik dat er iets gezonds te eten vlakbij is	nooit	soms	regelmatig	vaak	altijd
Als ik snoepjes wil eten, neem ik er een paar en leg de rest weg	nooit	soms	regelmatig	vaak	altijd
Als ik zin heb in chips, eet ik de hele zak leeg	nooit	soms	regelmatig	vaak	altijd

Als ik iets lekkers wil, vraag ik of mijn ouders willen zeggen dat ik gezond moet eten	nooit	soms	regelmatig	vaak	altijd
Ik vraag mijn ouders om te waarschuwen als ik te veel eet	nooit	soms	regelmatig	vaak	altijd
Ik vraag mijn ouders om fruit voor me klaar te maken	nooit	soms	regelmatig	vaak	altijd
Ik kijk welk soort eten mijn klasgenoten meenemen naar school	nooit	soms	regelmatig	vaak	altijd
Ik vraag mijn ouders om te helpen een gezonde lunch voor school klaar te maken	nooit	soms	regelmatig	vaak	altijd

Als ik iets lekkers wil, denk ik eraan dat snoep ongezond is	nooit	soms	regelmatig	vaak	altijd
Als ik wil snoepen, stel ik me voor hoe ik eruit zou zien als ik dikker was	nooit	soms	regelmatig	vaak	altijd
Als ik het gevoel heb dat ik te veel eet, denk ik eraan dat dit niet goed is voor het sporten	nooit	soms	regelmatig	vaak	altijd
Als ik geen zin heb in een appel, zeg ik tegen mezelf dat fruit gezond is	nooit	soms	regelmatig	vaak	altijd
Als ik zin heb in iets lekkers, bedenk ik dat ik er leuk wil blijven uitzien	nooit	soms	regelmatig	vaak	altijd

Voor ik iets lekkers neem, vraag ik me af of ik wel echt honger heb	nooit	soms	regelmatig	vaak	altijd
Als ik een tussendoortje wil, probeer ik eraan te denken dat fruit echt lekker smaakt	nooit	soms	regelmatig	vaak	altijd
Als ik zin heb in iets ongezonds, denk ik na of ik het echt wel wil	nooit	soms	regelmatig	vaak	altijd
Als ik honger heb, denk ik eerst na of ik iets gezond wil nemen	nooit	soms	regelmatig	vaak	altijd
Als ik denk dat ik te veel eet, let ik erop hoe vol ik me al voel	nooit	soms	regelmatig	vaak	altijd

Ik weet in wat voor soort situaties ik vaak te veel eet	nooit	soms	regelmatig	vaak	altijd
Ik houd bij of ik genoeg fruit eet per dag	nooit	soms	regelmatig	vaak	altijd
Als ik snoep, weet ik precies hoe veel ik heb gegeten	nooit	soms	regelmatig	vaak	altijd
Ik probeer mijn snack-gewoontes beter te begrijpen	nooit	soms	regelmatig	vaak	altijd
Als ik het avondeten heel lekker vind, eet ik door tot ik helemaal vol zit	nooit	soms	regelmatig	vaak	altijd

Ik maak plannen om fruit mee naar school te nemen	nooit	soms	regelmatig	vaak	altijd
Ik spreek met mezelf af hoeveel snoepjes ik mag hebben per dag	nooit	soms	regelmatig	vaak	altijd
Als ik iets lekkers wil eten, neem ik eerst een stuk fruit	nooit	soms	regelmatig	vaak	altijd
Ik neem alleen een toetje als ik mijn groenten op heb	nooit	soms	regelmatig	vaak	altijd
Ik stel doelen voor mezelf om gezond te eten	nooit	soms	regelmatig	vaak	altijd

Als ik honger heb, kan ik alleen nog maar aan eten denken	nooit	soms	regelmatig	vaak	altijd
Als ik in de verleiding kom om snoep te kopen, leid ik mezelf af	nooit	soms	regelmatig	vaak	altijd
Als ik zin heb om iets te eten, ga ik in plaats daarvan een vriend(in) bellen	nooit	soms	regelmatig	vaak	altijd
Als ik honger krijg voor het avondeten, probeer ik mezelf bezig te houden	nooit	soms	regelmatig	vaak	altijd
Als ik zin heb om te snoepen, ga ik iets anders doen	nooit	soms	regelmatig	vaak	altijd

Als ik langs een bakker loop, negeer ik de geur van lekker eten	nooit	soms	regelmatig	vaak	altijd
Als ik ongezonde dingen wil eten, zeg ik gewoon "nee!" tegen mezelf	nooit	soms	regelmatig	vaak	altijd
Ik gebruik mijn wilskracht om uit de buurt te blijven van ongezond eten	nooit	soms	regelmatig	vaak	altijd
Als ik zin heb in snoep, eet ik het ook gewoon	nooit	soms	regelmatig	vaak	altijd
Als ik naar een feestje ga waar heel veel lekkers is, negeer ik het eten	nooit	soms	regelmatig	vaak	altijd

We willen nu graag iets over jou weten. In hoeverre ben je het eens met de volgende uitspraken?

Ik besteed vaak tijd aan dingen voor mezelf doen	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Ik neem de verantwoordelijkheid voor mijn eigen fouten	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Ik geef mijn eigen geld op een verstandige manier uit	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Ik denk altijd aan interessante manieren om mijn tijd te besteden	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens

In hoeverre ben je het met de volgende uitspraken eens?

Ik gedraag me op school	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Ik doe wat ik zou moeten doen op school	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
In de klas kom ik soms in de problemen	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Ik houd me aan de regels die bij mij in de klas gelden	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens

De volgende vragen gaan over jou en je ouders. In hoeverre ben je het eens met de volgende uitspraken?

	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Ik kan op mijn ouders rekenen om me te helpen als ik een probleem heb	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Als ik een slecht cijfer krijg op school, moedigen mijn ouders me aan om het de volgende keer beter te doen	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Als ik een goed cijfer krijg op school, geven mijn ouders mij complimenten	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Mijn ouders maken tijd vrij om gewoon even met me te praten	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Ons gezin maakt regelmatig tijd vrij om iets leuks samen te doen	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Mijn ouders PROBEREN te weten waar ik meestal naartoe ga na school	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Mijn ouders weten ECHT waar ik meestal naartoe ga na school	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Mijn ouders PROBEREN te weten wat ik in mijn vrije tijd doe	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Mijn ouders weten ECHT wat ik in mijn vrije tijd doe	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens

Hoe kijken jouw ouders en vrienden tegen jouw eetpatroon aan?

Mijn ouders stimuleren me om fruit en groenten te eten	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Mijn ouders ontmoedigen me om snacks te eten en frisdrank te drinken	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Mijn vrienden stimuleren me om fruit en groenten te eten	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Mijn vrienden ontmoedigen me om snacks te eten en frisdrank te drinken	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Mijn ouders keuren het goed als ik fruit en groenten eet	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Mijn ouders keuren het af als ik snacks eet en frisdrank drink	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Mijn vrienden keuren het goed als ik fruit en groenten eet	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Mijn vrienden keuren het af als ik snacks eet en frisdrank drink	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens

De volgende vragen gaan over de maaltijden die jullie in jouw gezin samen eten. In hoeverre ben je het eens met de volgende uitspraken?

Mijn familie vindt het leuk om samen te eten	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Samen eten is een mogelijkheid voor ons gezin om elkaar op de hoogte te houden (zoals over wat er die dag is gebeurd)	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Als we als familie samen eten, eet iedereen dezelfde maaltijd	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
In mijn familie eten we onze maaltijden het liefst voor de tv	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
In mijn familie eten we onze maaltijden zo snel mogelijk op	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens

De volgende vragen gaan over reclame voor ongezond eten en drinken.

Hoe vaak zie of hoor je reclame voor snacks of frisdrank (zoals op televisie, de radio, in tijdschriften of op het internet)?	nooit	soms	regelmatig	vaak	altijd
Als je reclame voor snacks of frisdrank ziet of hoort, wil je deze snacks of frisdrank dan hebben?	nooit	soms	regelmatig	vaak	altijd

Hoe kijk je aan tegen reclame voor ongezond eten en drinken?

Reclame zorgt ervoor dat producten beter lijken dan ze eigenlijk zijn	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Het enige doel van reclame is het verkopen van producten	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Sommige producten waarvoor reclame wordt gemaakt zijn ongezond	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens

Er zijn veel manieren om jonge mensen te helpen om gezonder te eten. Hoe kijk je tegen de volgende strategieën aan?

	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Het is belangrijk dat ouders met hun kinderen praten over het belang van gezond eten	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Het is een goed idee om thuis regels te hebben over het eten van fruit en groenten	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Jonge mensen zouden op school meer moeten leren over gezond eten	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Scholen zouden geen ongezonde tussendoortjes en frisdranken moeten verkopen	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Leraren en docenten zouden jonge mensen moeten aanmoedigen om gezond te eten	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
De prijzen van snacks en frisdranken zouden verhoogd moeten worden zodat jonge mensen er minder van nemen	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Gezond eten en drinken zou goedkoper moeten zijn dan ongezonde producten	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Ongezond eten en drinken zou niet aan jonge mensen verkocht mogen worden	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Reclame voor snacks en frisdranken die speciaal gemaakt is voor jonge mensen zou verboden moeten worden	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens
Snacks en frisdranken zouden etiketten moeten hebben waarop staat dat het slecht is voor de gezondheid	helemaal niet mee eens	niet mee eens	niet mee eens, niet mee oneens	mee eens	helemaal mee eens

Nu hebben we nog één laatste vraag voor je.

Wie heeft de <u>meeste</u> verantwoordelijkheid om er voor te zorgen dat jij gezond eet?
0 mijn vader
0 mijn moeder
0 ik zelf
0 mijn school
0 professionals (bijvoorbeeld dokters en diëtisten) 0 de regering

Dit is het einde van de vragenlijst!

Bedankt voor het mee doen
Als dank krijg je aan het einde van de les nog een klein cadeautje.

C. Translation of question from the questionnaire that were used in this study.

1. Are you a boy or a girl?

   - o Boy
   - o Girl

2. How old are you?

…… years old

5. Does your family own a car, van or truck?

   - o No
   - o Yes, one
   - o Yes, two or more

6. Do you have your own bedroom (to yourself)?

   - o No
   - o Yes

7. How many times did you go on holiday the last 12 months?

   - o Not at all
   - o One
   - o Twice
   - o More than twice

8. How many computers does your family own?

   - o None
   - o One
   - o Two
   - o More than two

16. My parents eat healthy themselves

   - o Totally disagree
   - o Disagree
   - o Neutral
   - o Agree
   - o Totally agree

17. Healthy eating is important to me

   - o Totally disagree
   - o Disagree
   - o Neutral
   - o Agree
   - o Totally agree

23. Whenever I feel like having snacks or soft drinks during school breaks, I can easily get it. (from a vending machine, canteen or a shop)

   - o Totally disagree
   - o Disagree
   - o Neutral

o Agree
o Totally agree

26. How many glasses of soft drinks, lemonade or energy drinks do you drink on an average day? (Don't count: light soft drinks and mineral water).

o Less than 1
o 2
o 3
o 4
o More than 4

27. How many servings of fruit do you eat on an average day? (One serving is about one handful).

o Less than 1
o 2
o 3
o 4
o More than 4

28. How many serving spoons of cooked or raw vegetables do you eat on an average day? (One serving spoon is about one handful).

o Less than 1
o 2
o 3
o 4
o More than 4

29. How many snacks do you eat on an average day? (You may count the following as one snack: one portion of French fries, one packet of sultana's, one big cookie, one handful of crisps, little cookies or candy.

o Less than 1
o 2
o 3
o 4
o More than 4

31. Are you allowed to get fresh fruits or vegetables at home without having to ask (like apples, oranges, bananas, tomatoes, carrots or cucumbers)?

o Never
o Rarely
o Sometimes
o Often
o Always
o We never have this at home

32. Are you allowed to get snacks at home without having to ask (like crisps, peanuts, cookies or chocolate)?

o Never
o Rarely
o Sometimes
o Often

- o Always
- o We never have this at home

33. Are you allowed to get soda at home without having to ask? (Don't count: light soft drinks and mineral water)

- o Never
- o Rarely
- o Sometimes
- o Often
- o Always
- o We never have this at home

How do your parents and friends view your eating behaviour?

My parents encourage me to eat fruit and vegetables	Totally disagree	Disagree	Neutral	Agree	Totally Agree
My parents discourage me from eating snacks and drinking soft drinks	Totally disagree	Disagree	Neutral	Agree	Totally Agree
My friends encourage me to eat fruit and vegetables	Totally disagree	Disagree	Neutral	Agree	Totally Agree
My friends discourage me from eating snacks and drinking soft drinks	Totally disagree	Disagree	Neutral	Agree	Totally Agree
My parents approve when I eat fruit and vegetables	Totally disagree	Disagree	Neutral	Agree	Totally Agree
My parents disapprove of it when I eat snacks and drink soft drinks	Totally disagree	Disagree	Neutral	Agree	Totally Agree
My friends approve when I eat fruit and vegetables	Totally disagree	Disagree	Neutral	Agree	Totally Agree
My friends disapprove of it when I eat snacks and drink soft drinks	Totally disagree	Disagree	Neutral	Agree	Totally Agree

D: Syntax

*recode dependent variables for dietary intake into dichotomous variables.

RECODE eat3 (0=1) (1=1) (2=1) (3=0) (4=0) (5=0) INTO Fruit_intake.

VARIABLE LABELS Fruit_intake 'Low or high fruit intake'.

EXECUTE.

RECODE eat4 (0=1) (1=1) (2=1) (3=0) (4=0) (5=0) INTO Vegetable_intake.

VARIABLE LABELS Vegetable_intake 'Low or high vegetable intake'.

EXECUTE.

RECODE eat2 (0=0) (1=0) (2=0) (3=1) (4=1) (5=1)   INTO Drinks_intake.

VARIABLE LABELS Drinks_intake 'Low or high intake of sugary drinks'.

EXECUTE

RECODE eat5 (0=0) (1=0) (2=0) (3=1) (4=1) (5=1) INTO Snack_intake.

VARIABLE LABELS Snack_intake 'Low or high snack intake'.

EXECUTE.

*recode mediators into dichotomous variables.

DATASET ACTIVATE DataSet1.

FREQUENCIES VARIABLES=import4 import5 Accessibility1 Accessibility3

   Accessibility4 Accessibility5 social_influence1 social_influence2 social_influence3

   social_influence4 social_influence5 social_influence6 social_influence7 social_influence8

 /ORDER=ANALYSIS.

RECODE import4 (1=1) (2=1) (3=1) (4=0) (5=0) INTO modelling.

VARIABLE LABELS modelling 'Parents eat healthy themselves'.

EXECUTE.

RECODE import5 (1=1) (2=1) (3=1) (4=0) (5=0) INTO importance.

VARIABLE LABELS importance 'healthy eating is important to me'.

EXECUTE.

RECODE social_influence1 (1=1) (2=1) (3=1) (4=0) (5=0) INTO PencourageFV.

VARIABLE LABELS PencourageFV 'my parents encourage me to eat FV'.

EXECUTE.

RECODE social_influence2 (1=1) (2=1) (3=1) (4=0) (5=0)INTO PdiscourageSnack.

VARIABLE LABELS PdiscourageSnack 'my parents discourage me to eat snacks and drinking soft drinks'.

EXECUTE.

RECODE social_influence3 (1=1) (2=1) (3=1) (4=0) (5=0) INTO FencourageFV.

VARIABLE LABELS FencourageFV 'my friens encourage me to eat FV'.

EXECUTE.

RECODE social_influence4 (1=1) (2=1) (3=1) (4=0) (5=0) INTO FdiscourageSnack.

VARIABLE LABELS FdiscourageSnack 'my friends discourage me to eat snacks and drinking soft drinks'.

EXECUTE.

RECODE social_influence5 (1=1) (2=1) (3=1) (4=0) (5=0) INTO PapproveFV.

VARIABLE LABELS PapproveFV 'my parents approve of me eating FV'.

EXECUTE.

RECODE social_influence6 (1=1) (2=1) (3=1) (4=0) (5=0) INTO PdisapproveSnack.

VARIABLE LABELS PdisapproveSnack 'my parents disapprove of me eating snacks and drinking soft drink'.

EXECUTE.

RECODE social_influence7 (1=1) (2=1) (3=1) (4=0) (5=0) INTO FapproveFV.

VARIABLE LABELS FapproveFV 'my friends approve of me eating FV'.

EXECUTE.

RECODE social_influence8 (1=1) (2=1) (3=1) (4=0) (5=0)INTO FdisapproveSnack.

VARIABLE LABELS FdisapproveSnack 'my friends disapprove of me eating snacks and drinking soft drink'.

EXECUTE.

RECODE Accessibility3 (1=1) (2=1) (3=1) (4=1) (5=0) (6=1) INTO HomeFV.

VARIABLE LABELS HomeFV 'allowed to help yourself to FV in your home?'.

EXECUTE.

RECODE Accessibility4 (1=0) (2=0) (3=0) (4=1) (5=1) (6=0) INTO HomeSnack.

VARIABLE LABELS HomeSnack 'allowed to help yourself to snacks in your home?'.

EXECUTE.

RECODE Accessibility5 (1=0) (2=0) (3=0) (4=1) (5=1) (6=0) INTO HomeSugarydrinks.

VARIABLE LABELS HomeSugarydrinks 'allowed to help yourself to soda, lemonade or energy drinks in your home?'.

EXECUTE.

RECODE Accessibility1 (1=0) (2=0) (3=0) (4=1) (5=1) (6=0) INTO AvailabilitySchool.

VARIABLE LABELS AvailabilitySchool 'Whenever I feel like having a snack or soft drink during school breaks, I can easily get it '.

EXECUTE.

*descriptives.

FREQUENCIES VARIABLES=fascat

 /ORDER=ANALYSIS.

CROSSTABS

 /TABLES=gender BY fascat

 /FORMAT=AVALUE TABLES

  /STATISTICS=CHISQ

 /CELLS=COUNT COLUMN

 /COUNT ROUND CELL.

MEANS TABLES=age BY fascat

 /CELLS=MEAN COUNT STDDEV.

CROSSTABS

 /TABLES=age_groups BY fascat

 /FORMAT=AVALUE TABLES

  /STATISTICS=CHISQ

 /CELLS=COUNT COLUMN

 /COUNT ROUND CELL.

CROSSTABS

 /TABLES=country BY fascat

 /FORMAT=AVALUE TABLES

  /STATISTICS=CHISQ

 /CELLS=COUNT COLUMN

 /COUNT ROUND CELL.

CROSSTABS

 /TABLES=Fruit_intake Vegetable_intake Drinks_intake Snack_intake BY fascat

 /FORMAT=AVALUE TABLES

 /STATISTICS=CHISQ

 /CELLS=COUNT COLUMN

 /COUNT ROUND CELL.

```
* logistische regressie descriptives

*fruit intake.

LOGISTIC REGRESSION VARIABLES Fruit_intake

 /METHOD=ENTER fascat

 /CONTRAST (fascat)=Indicator

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

LOGISTIC REGRESSION VARIABLES Fruit_intake

 /METHOD=ENTER gender1

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Fruit_intake

 /METHOD=ENTER age_groups

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Fruit_intake

 /METHOD=ENTER country_recoded

 /CONTRAST (country_recoded)=Indicator(1)

 /SAVE=PRED PGROUP COOK LEVER DFBETA

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).


*vegetable intake.

LOGISTIC REGRESSION VARIABLES Vegetable_intake

 /METHOD=ENTER fascat
```

/CONTRAST (fascat)=Indicator

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

 /METHOD=ENTER gender1

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

 /METHOD=ENTER age_groups

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

 /METHOD=ENTER country

 /CONTRAST (country)=Indicator(1)

 /SAVE=PRED PGROUP COOK LEVER DFBETA

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

*intake of sugary drinks.

LOGISTIC REGRESSION VARIABLES Drinks_intake

 /METHOD=ENTER fascat

 /CONTRAST (fascat)=Indicator

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

/CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

LOGISTIC REGRESSION VARIABLES Drinks_intake

 /METHOD=ENTER gender1

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Drinks_intake

 /METHOD=ENTER age_groups

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

DATASET ACTIVATE DataSet1.

LOGISTIC REGRESSION VARIABLES Drinks_intake

 /METHOD=ENTER country

 /CONTRAST (country)=Indicator(1)

 /SAVE=PRED PGROUP COOK LEVER DFBETA

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

*snack intake.

LOGISTIC REGRESSION VARIABLES Snack_intake

 /METHOD=ENTER fascat

 /CONTRAST (fascat)=Indicator

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(.05) POUT(.10) ITERATE(20) CUT(.5).

LOGISTIC REGRESSION VARIABLES Snack_intake

 /METHOD=ENTER gender1

```
 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Snack_intake

 /METHOD=ENTER age_groups

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Snack_intake

 /METHOD=ENTER country

 /CONTRAST (country)=Indicator(1)

 /SAVE=PRED PGROUP COOK LEVER DFBETA

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).


*crosstabs with chi-square voor path a.

CROSSTABS

 /TABLES=importance BY fascat

 /FORMAT=AVALUE TABLES

 /STATISTICS=CHISQ

 /CELLS=COUNT COLUMN

 /COUNT ROUND CELL.

CROSSTABS

 /TABLES=Modelling BY fascat

 /FORMAT=AVALUE TABLES

 /STATISTICS=CHISQ

 /CELLS=COUNT COLUMN

 /COUNT ROUND CELL.

CROSSTABS
```

```
    /TABLES=PencourageFV BY fascat

    /FORMAT=AVALUE TABLES

    /STATISTICS=CHISQ

    /CELLS=COUNT COLUMN

    /COUNT ROUND CELL.

CROSSTABS

    /TABLES=PdiscourageSnack BY fascat

    /FORMAT=AVALUE TABLES

    /STATISTICS=CHISQ

    /CELLS=COUNT COLUMN

    /COUNT ROUND CELL.

CROSSTABS

    /TABLES=FencourageFV BY fascat

    /FORMAT=AVALUE TABLES

    /STATISTICS=CHISQ

    /CELLS=COUNT COLUMN

    /COUNT ROUND CELL.

CROSSTABS

    /TABLES=FdiscourageSnack BY fascat

    /FORMAT=AVALUE TABLES

    /STATISTICS=CHISQ

    /CELLS=COUNT COLUMN

    /COUNT ROUND CELL.

CROSSTABS

    /TABLES=PapproveFV BY fascat

    /FORMAT=AVALUE TABLES

    /STATISTICS=CHISQ

    /CELLS=COUNT COLUMN

    /COUNT ROUND CELL.

CROSSTABS

    /TABLES=PdisapproveSnack BY fascat

    /FORMAT=AVALUE TABLES
```

```
 /STATISTICS=CHISQ

 /CELLS=COUNT COLUMN

 /COUNT ROUND CELL.

CROSSTABS

 /TABLES=FapproveFV BY fascat

 /FORMAT=AVALUE TABLES

 /STATISTICS=CHISQ

 /CELLS=COUNT COLUMN

 /COUNT ROUND CELL.

CROSSTABS

 /TABLES=FdisapproveSnack BY fascat

 /FORMAT=AVALUE TABLES

 /STATISTICS=CHISQ

 /CELLS=COUNT COLUMN

 /COUNT ROUND CELL.

CROSSTABS

 /TABLES=HomeFV BY fascat

 /FORMAT=AVALUE TABLES

 /STATISTICS=CHISQ

 /CELLS=COUNT COLUMN

 /COUNT ROUND CELL.

CROSSTABS

 /TABLES=HomeSnack BY fascat

 /FORMAT=AVALUE TABLES

 /STATISTICS=CHISQ

 /CELLS=COUNT COLUMN

 /COUNT ROUND CELL.

CROSSTABS

 /TABLES=HomeSugarydrinks BY fascat

 /FORMAT=AVALUE TABLES

 /STATISTICS=CHISQ

 /CELLS=COUNT COLUMN
```

```
 /COUNT ROUND CELL.

CROSSTABS

 /TABLES= AvailabilitySchool BY fascat

 /FORMAT=AVALUE TABLES

 /STATISTICS=CHISQ

 /CELLS=COUNT COLUMN

 /COUNT ROUND CELL.


* path b

*Vegetable intake logistische regressie.

LOGISTIC REGRESSION VARIABLES Vegetable_intake

 /METHOD=ENTER importance fascat age_groups gender1 country_recoded

 /CONTRAST (fascat)=Indicator

 /CONTRAST (country_recoded)=Indicator(1)

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

 /METHOD=ENTER modelling fascat age_groups gender1 country_recoded

 /CONTRAST (fascat)=Indicator

 /CONTRAST (country_recoded)=Indicator(1)

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

 /METHOD=ENTER PencourageFV fascat age_groups gender1 country_recoded

 /CONTRAST (fascat)=Indicator

 /CONTRAST (country_recoded)=Indicator(1)

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)
```

/PRINT=GOODFIT CI(95)

/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

/METHOD=ENTER PdiscourageSnack fascat age_groups gender1 country_recoded

/CONTRAST (fascat)=Indicator

/CONTRAST (country_recoded)=Indicator(1)

/SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

/CASEWISE OUTLIER(2)

/PRINT=GOODFIT CI(95)

/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

/METHOD=ENTER FencourageFV fascat age_groups gender1 country_recoded

/CONTRAST (fascat)=Indicator

/CONTRAST (country_recoded)=Indicator(1)

/SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

/CASEWISE OUTLIER(2)

/PRINT=GOODFIT CI(95)

/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

/METHOD=ENTER FdiscourageSnack fascat age_groups gender1 country_recoded

/CONTRAST (fascat)=Indicator

/CONTRAST (country_recoded)=Indicator(1)

/SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

/CASEWISE OUTLIER(2)

/PRINT=GOODFIT CI(95)

/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

/METHOD=ENTER PapproveFV fascat age_groups gender1 country_recoded

/CONTRAST (fascat)=Indicator

/CONTRAST (country_recoded)=Indicator(1)

/SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

/CASEWISE OUTLIER(2)

```
/PRINT=GOODFIT CI(95)

/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

/METHOD=ENTER PdisapproveSnack fascat age_groups gender1 country_recoded

/CONTRAST (fascat)=Indicator

/CONTRAST (country_recoded)=Indicator(1)

/SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

/CASEWISE OUTLIER(2)

/PRINT=GOODFIT CI(95)

/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).


LOGISTIC REGRESSION VARIABLES Vegetable_intake

/METHOD=ENTER FapproveFV fascat age_groups gender1 country_recoded

/CONTRAST (fascat)=Indicator

/CONTRAST (country_recoded)=Indicator(1)

/SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

/CASEWISE OUTLIER(2)

/PRINT=GOODFIT CI(95)

/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

/METHOD=ENTER  FdisapproveSnack fascat age_groups gender1 country_recoded

/CONTRAST (fascat)=Indicator

/CONTRAST (country_recoded)=Indicator(1)

/SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

/CASEWISE OUTLIER(2)

/PRINT=GOODFIT CI(95)

/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

/METHOD=ENTER  HomeFV fascat age_groups gender1 country_recoded

/CONTRAST (fascat)=Indicator

/CONTRAST (country_recoded)=Indicator(1)

/SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID
```

```
 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

 /METHOD=ENTER  HomeSnack  fascat age_groups gender1 country_recoded

 /CONTRAST (fascat)=Indicator

 /CONTRAST (country_recoded)=Indicator(1)

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

 /METHOD=ENTER  HomeSugarydrinks fascat age_groups gender1 country_recoded

 /CONTRAST (fascat)=Indicator

 /CONTRAST (country_recoded)=Indicator(1)

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

 /METHOD=ENTER  AvailabilitySchool fascat age_groups gender1 country_recoded

 /CONTRAST (fascat)=Indicator

 /CONTRAST (country_recoded)=Indicator(1)

 /SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).


*Explanatory model

LOGISTIC REGRESSION VARIABLES Vegetable_intake

 /METHOD=ENTER fascat age_groups gender1 country_recoded

 /CONTRAST (fascat)=Indicator
```

```
/CONTRAST (country_recoded)=Indicator(1)

/SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

/CASEWISE OUTLIER(2)

/PRINT=GOODFIT CI(95)

/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
LOGISTIC REGRESSION VARIABLES Vegetable_intake

/METHOD=ENTER fascat age_groups gender1 country_recoded

/METHOD=ENTER modelling

/CONTRAST (fascat)=Indicator

/CONTRAST (country_recoded)=Indicator(1)

/SAVE=PRED PGROUP COOK LEVER DFBETA ZRESID

/CASEWISE OUTLIER(2)

/PRINT=GOODFIT CI(95)

/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

/METHOD=ENTER fascat age_groups gender1 country_recoded

/METHOD=ENTER PapproveFV

/CONTRAST (fascat)=Indicator

/CONTRAST (country_recoded)=Indicator(1)

/SAVE=PRED COOK LEVER DFBETA ZRESID

/CASEWISE OUTLIER(2)

/PRINT=GOODFIT CI(95)

/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).

LOGISTIC REGRESSION VARIABLES Vegetable_intake

/METHOD=ENTER fascat age_groups gender1 country_recoded

/METHOD=ENTER HomeFV

/CONTRAST (fascat)=Indicator

/CONTRAST (country_recoded)=Indicator(1)

/SAVE=PRED COOK LEVER DFBETA ZRESID

/CASEWISE OUTLIER(2)

/PRINT=GOODFIT CI(95)

/CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

```
LOGISTIC REGRESSION VARIABLES Vegetable_intake

 /METHOD=ENTER fascat age_groups gender1 country_recoded

 /METHOD=ENTER modelling

 /METHOD=ENTER PapproveFV

 /METHOD=ENTER HomeFV

 /CONTRAST (fascat)=Indicator

 /CONTRAST (country_recoded)=Indicator(1)

 /SAVE=PRED COOK LEVER DFBETA ZRESID

 /CASEWISE OUTLIER(2)

 /PRINT=GOODFIT CI(95)

 /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```