Unhealthy Eating

How Sport and Stress are related to eating - specific Compensatory Health Behavior and Beliefs

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BACHELORTHESIS PSYCHOLOGY

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Abstract

One reason for eating unhealthy could be engaging and holding compensatory health beliefs (CHBs). CHBs are beliefs that different negative effects on unhealthy behavior like eating unhealthy food, could be reduced or counteracted by engaging in healthy behavior. Holding CHBs result in poor health. This Study aimed to get more insight about the relation between specific personal factors and holding eating-specific CHBs or general CHBs. A factor which could cause poor health and unhealthy eating behavior is perceived stress. One possibility to reduce the perceived stress level is being physically active, whereas other studies and literature suggested that being physically active could also lead to exhaustion. This is examined in this study, which looks for possible relations between general stress, exhaustion, physical activity and eating-specific CHB behavior and beliefs. Furthermore this study investigates if stress and exhaustion could befall people who are highly physically active. For measuring stress, exhaustion, physical activity and the CHB constructs an online survey was created and spread through several networks, also aiming at people who are physically active above the average. A total sample of 195 participants finished the questionnaire, of whom 45 participants were showing a very high level of being physically active. By examining these groups no significant findings where found confirming a moderation or mediation effect for physical activity exhaustion or stress related to CHB eating specific beliefs or CHB eating specific behavior. Findings suggests that high levels of exhaustion are related to CHB eating specific behavior (r=.26). Moreover findings suggests that the level of perceived stress and eating-specific CHB behavior are positively related (r=.16). Some relations between the other CHB constructs and exhaustion or stress was found. Furthermore it was found that proportion of participants meeting the norm of eating fruit and vegetables was significantly higher in the group of high and very high physical activity compared to the group of moderate and low physical activity (X^2= 17.60, N= 195, p < .0.05). As a conclusion it could be determined that high levels of stress and exhaustion results in negative health behavior, whereas higher level of physical activity tends to help people in engaging healthy behavior because of negative relations to all measured CHB constructs.

Key Words: compensatory health belief, eating behavior, perceived stress, physical activity

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1. Introduction

1.1 The effects of unhealthy food

The effects of eating behavior and eating unhealthy have been investigated in several studies. One effect of unhealthy food intake is an increased risk of chronic diseases like cardiovascular diseases, obesity and diabetes (World health organization [WHO], 2016; Daansen, 2010). According to the WHO processed food production and rapid urbanization causes people actually to consume more industrial trans fats, sugars salt and not enough fruit or vegetables. Moreover eating snacks containing a lot of sugar is rising in the past years (Cleobury & Trapper, 2013). This eating behavior is the reason that the number of people who are living with diabetes nearly quadrupled since 1980 to 422 million adults. Diabetes can lead to complications in many parts of the body , furthermore it increases the risk of dying prematurely (WHO,2016). Updated key facts given by the WHO (2016) are stating that diabetes is a major cause for blindness, kidney failure, heart attacks, stroke and lower limb amputation. CVDs caused 17.5 million deaths in 2012, which are 31% of all death causes worldwide (WHO,2016). As outlined by representing the Key Facts of the WHO reports unhealthy eating behavior and the level of being physically active are distinguished interrelated factors for the effects of unhealthy food intake like CVD, diabetes and overweight or obesity. Diabetes, which is a chronic disease will be according to the WHO (2016) the 7th leading cause of death in 2030. In the Netherlands 750000 people reported in 2013 suffering from diabetes, in general the numbers of people having diabetes is still raising, whereas people over the age of 55 are more affected than young adults (Centraal Bureau voor de Statistiek [CBS] , 2015).

Moreover Eating unhealthy leads to obesity whereas Torres and Nowson (2007) stated that stress may be related and a predictive factor for eating behavior like stress induced eating, which may be one factor for developing obesity. Research from Wadsworth, Rieckmann, Benson and Compas (2004) shows that emotion and stress-related or induced eating is a behavior which made people who are performing this eating habit 13.38 times more likely to be overweight or obese.

In contrast to diabetes, obesity doubled since 1980, overall about 13% of the global population were obese in 2014 (World health organization [WHO], 2015). According to the WHO (2015) a high impact and one of the most important behavioral risk factors for cardiovascular diseases (CVDs), which are the number 1 cause of death worldwide, are eating unhealthy and physical inactivity whereas the effects of these risk factors are also linked to overweight and obesity.

Consequently it becomes more important to understand how people are deciding for healthy or unhealthy food. One explanation could be compensatory health beliefs (CHBs).

1.2 Compensatory Health Beliefs

Rabiau Knäuper & Miquelon (2006) described in their Compensatory Health Beliefs model strategies how to take decisions when facing tempting unehalthy behavioral choices. First Rabiau et al., (2006) describes a behavioral strategy that people could just resist the temptation to eat candy or to watch internet videos and do the opposite healthy behavior like eating vegetables and doing sports. Moreover there are two strategies which are related to cognitive mechanisms. The second strategy addresses the perception of a possible risk caused by a behavior which is not matching with the own goal to perform a healthy behavior. The strategy includes compensatory health beliefs (CHBs). Third, there is the strategy to activate and create CHBs that the consequences of unhealthy behavior could be compensated by healthy behavior. (Knäuper, Rabiau, Cohen, & Patriciu, 2004).

CHBs can best be illustrated through presenting an example like being faced with different kind of temptations such as a piece of a cake, a cigarette or a drink and a person who is torn between the pleasure that the temptation would fullfill the desire and the knowledge that it will be bad for the own health (Knäuper et al., 2006). Rabiau et al. (2006) defined CHBs as beliefs that certain volitional, unhealthy (but pleasurable) behaviors can be compensated for by engaging in healthy behaviors. Berli et al., (2014) states that CBHs " [...] may be one possible factor for hindering people in adopting a healthier lifestyle."

The theory of compensatory health beliefs states that people have the attitude that unhealthy behavior could be compensated through healthy behavior (Knäuper et al., 2004). This attitude causes the risk to influence one's health negatively on a / at long-term. Research from Knäupers et al., (2004) states that People who have more CHBs suffer from more symptoms of disease, performing more health risk behaviors and are less efficient in their daily lives than people with less CHBs. Rabiau et al., (2009) also found that high CHBs are related to lower diabetes treatment adherence. High CHBs are also related to higher calories intake (Kronick & Knäuper, 2010). One way to improve health can be doing sports, but are all levels of being physically active beneficial for people's health?

1.3 The relation of physical activity and stress for athletes

Being physically active means, to do sports but it could also mean to do some housework according to the dutch index for healthy movements (Nederlandse Norm Gezond Bewegen). The NNGB fit norm defines physical fitness by working out at least three times

per week with at least 20 minutes heavy training, no matter at which age. Physical activity, exercise and physical fitness are three categories which are described in the NNGB fit norm.

Moreover the level and the definition of being physically active is determined by the international physical activity questionnaire (IPAQ), which subdivides physical activity into three categories: low, moderate and high level of physical activity. After collecting the responses on that questionnaire the IPAQ proposes these three levels of being physically active by determining a categorical score for each level. Based on the categorical score people could be distributed into the three levels of physical activity.

In line with the WHO (2016) Doing no sports or no physical activity leads to illness and it could lead to sudden death, for example death by a heart attack (in 't Panhuis et al.,2012). The risk of a sudden death and diseases like diabetes or obesity can be treated and its consequences avoided or delayed with physical activity (WHO,2016). Therefore one possibility to deal with overweight, obesity and the mentioned effects of being physically inactive is the opposite - being physically active.

In contrast being physically active seems to be healthy. However research from Urhausen, Gabriel and Kindermann (1995) also shows that overtraining is possible. Overtraining comes at the risk getting exhausted due to training itself, competition and other stressors, which are leading to an increase of stress hormones and a decrease of performance of an athlete (Urhausen et al., 1995). Moreover research from Graham et al. (1995) claims that participating in competitive sports places an athlete under intense physical, psychological and emotional demands. Stress is present in athletes and could be subdivided into competitive stress which is related to performance issues with dimensions like pressure, opponents, preparation or injury and into organizational stressors which are related to dimensions like: selection, training environment or competition environment (Flechter et al., 2016). Regarding to Fletcher et al., (2016) nutrition which is also related to organizational stressors is the most mentioned key factor and also a stressor for athletes to perform at their best. Therefore getting the best nutrition to perform at their best is important for athletes while not getting it is irritating for an athlete.

High level of stress are associated with poor self reported health, elevated blood pressure, depression and susceptibility to infection (Cohen, Kamarck & Mermelstein, 1983). Summed up findings suggest that stress is a threat to health and related to different unhealthy eating behaviors. Additionally findings suggest that physical active at high levels could lead to stress under specific circumstances. Therefore it could be assumed that the combination

between Physical activity and stress could cause CHBs concerning unhealthy eating behavior. This assumption leads to the aim and the research questions of the study.

1.4 Aim of the Study

Up to this moment no study examined how certain stress levels of athletes and those people who are more active like the third category of the IPAQ (high level of physical activity) states are related to general CHB and CHB specific eating behavior and beliefs. eating - specific CHB behavior and beliefs refer to the behavior and the belief that unhealthy eating can be compensated to healthy food or healthy behavior. Concerning the findings that stress could result of being highly physically active leads to the not researched question, if athletes who are training hard are more likely to experience stress and exhaustion which in turn causes unhealthy eating behavior like CHB eating-specific behavior and CHB eating-specific beliefs. Thus it is questioned if athletes are more likely to unhealthy behavior considering unhealthy eating behavior. Investigating the following research questions could be valuable for people who are performing at a higher level and more physical active than the norm. Therefore the hypothesis are stated that **(1) The level of physical activity has a positive effect on CHBs with perceived stress as a mediator (2) The level of physical activity has a positive effect CHBs with Exhaustion as a mediator.** This means that the relation between physical activity and CHB can be partly explained based on the level of perceived stress or the level of feeling exhausted through being physically active at a high level. Except paying attention to general CHB's, CHB eating-specific behavior and CHB eating-specific beliefs will be especially investigated as represented *in figure 1.*

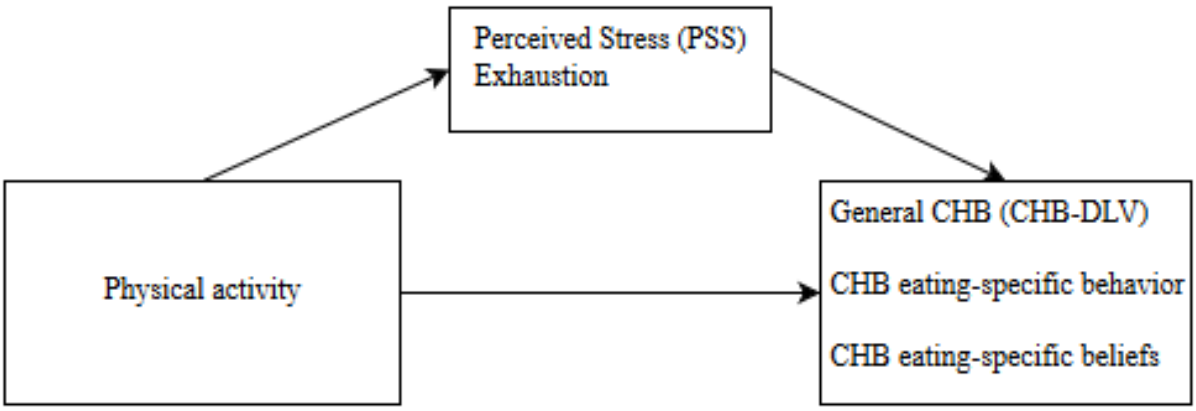

figure 1. Mediation model with the level of perceived stress functioning as mediator

Based on the findings that stress could cause unhealthy eating behavior like stress induced eating the second hypothesis is going to investigate whether physical activity is acting as a

moderator between perceived stress and exhaustion and the eating habits of people and the target group, athletes *illustrated in figure 2*. The following hypothesis is based on the idea that stress and exhaustion among athletes probably causes unhealthy eating behavior. Thereby the role of physical activity of athletes and people who are less physical active will be investigated to find out whether physical activity has an effect on the relation between exhaustion, perceived stress and the CHB constructs. Furthermore it will be investigated how the stress and exhaustion are related to the eating habits by investigating the following moderation model:

(3) Perceived stress or Exhaustion has an effect on CHB eating specific behavior and beliefs or general CHBs (CHB-DLV) with physical activity as a moderator.

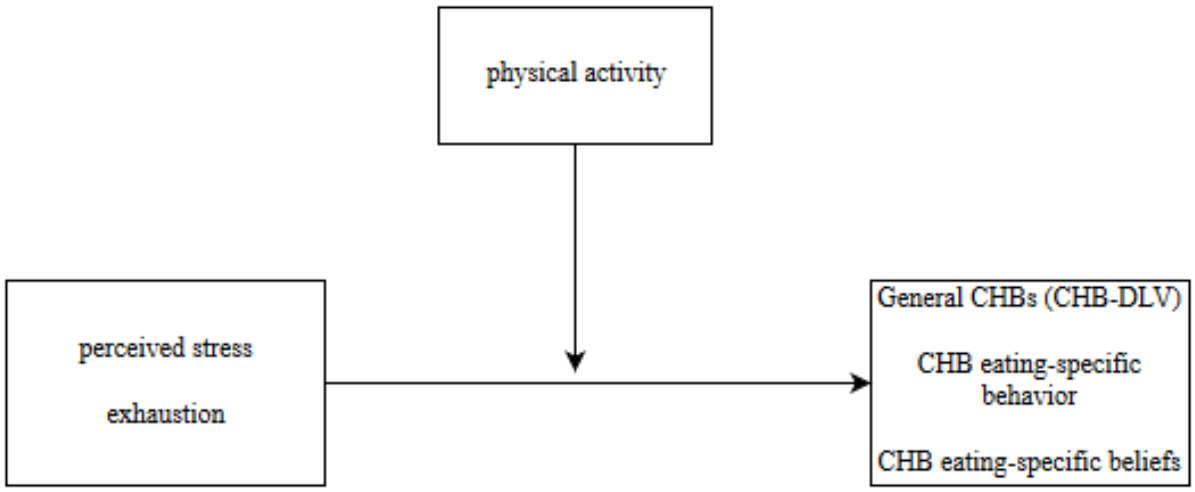

figure 2. Moderation model with physical activity functioning as a moderator

2. Method

2.1 Procedure and Participants

A Dutch questionnaire was created with *Qualtrics Survey Software*, a tool to create online surveys. This study was designed as a cross-sectional study, where only one measurement at a one given time point was necessary. First several questions were translated from English to Dutch. The questionnaire and the study was checked and approved by the ethical commission of the University of Twente on 4th april 2016. Because this study was supposed to be an online survey it was spread by social media services like *Facebook*. Participants also were recruited through the research system *Sona*. The *Sona System* is a management tool which enables a researcher to recruit student respondents through giving them study credits, which students need to finish their study. By participating at this study psychology and communication science students from the University of Twente received 0,5 credits. Additionally physical activity education students were contacted via e-mail with the intention to reach athletes with a high level of physical activity for this study. The target group was supposed to be students who are doing sports at different levels. By contacting the students from Windesheim the chance for getting particpants performing on high levels of physical activity was higher. The questionnaire contained demographical questions for determining the target group and for getting descriptive information for analyzing. Respondents were asked to answer honestly on questions about their lifestyle concerning doing sports or eating behavior and how they stressed and exhausted they felt. Detailed information considering the understanding and the concept of CHBs and the aim of it was not given to avoid incorrect answers. Participants had the opportunity to take part in the online survey from 12th of April, up to 30th of April, 2015. After respondents reached the end of the questionnaire they were informed about the main goals of the study, which was to measure the relation between certain stress and physical activity levels and compensatory health beliefs as well as eating habits.

2.2 Measures

2.2.1 Perceived Stress Scale (PSS)

To determine the level of stress the Perceived Stress Scale (PSS) was used which measures whether people perceive their lives as stressful. Example question are the following: " In the last month how often have you felt nervous and "stressed" ? or "In the last month, how often have you been upset because of something happened unexpectedly ? " answered on a five point likert scale. Cronbach's alpha was sufficiently high with $\alpha = .78$ for this

questionnaire (Cohen et al., 1983). Reliability analysis of the PSS showed for this study that Cronbach's alpha for this study was even higher with $\alpha = .86$. It was not possible to get a higher Cronbach's alpha by deleting Items. Recoding into different variables was applied for the perceived stress scale (PSS) for items 4,5,7 and 8 to measure the perceived stress score properly. The lowest score respondents could get was a total score of 10 which states the lowest perceived stress level and the highest total score of 50 which states the highest perceived stress level based on a 5 point-likert scale.

2.2.2 Exhaustion RESTQ-Sport-76 Questionnaire

Furthermore, the questionnaire contained 7 Items from the RESTQ-Sport-76 questionnaire for athletes to determine how stressful an athlete felt by taking into account 4 dimensions (Kellmann & Kallus, 2001). Questions like: " I felt burned out by my sport " were translated to Dutch. The general RESTQ-Sport-76 measures 4 dimensions which are: "general stress, " stress in sport", " general recovery and "recovery in sport". The Items selected for this study were used to measure how exhausted an athlete feels in relation with the kind of sport they are doing. Item 3 and 7 from this questionnaire were deleted because of low reliability measures. Recoding these Items did not result to a higher internal consistency of this construct. After excluding Item 3 " I was convinced that I performed well" and Item 7 " My body felt strong" Cronbach's alpha $\alpha = .74$ was even higher than by using the recoded Items 3 and 7 with Cronbach's alpha $\alpha = .61$. Thus these 5 Items used to measure the level of being exhausted through training or doing sport.

2.2.3 International Physical Activity Questionnaire (IPAQ)

The level of being physically active was determined by using the short version of the International Physical Activity Questionnaires (IPAQ) described by Booth (2000) It comprises a set of 4 questionnaires. The used questionnaire for this study consisted of seven items, divided into vigorous physical activity (e.g. heavy lifting), moderate physical activity (e.g. bicycling) and mild physical activity (walking). It was translated to dutch. Furthermore respondents got questions concerning their sitting behavior. Participants had to answer how many days in the past week and how much time (minutes per day) they usually spend with those activities per day. One example of a question is: “During the last 7 days, on how many days did you walk for at least 10 minutes at a time?” and “How much time did you usually spend walking on one of those days?” To avoid or prevent mistakes in reporting time spend in physical activity examples were presented for the particpant.

To compute a total physical activity score the IPAQ Scoring Protocol prescribes how to calculate a categorical score (IPAQ Research Committee, 2005). Therefore the categorical

score was calculated for low, moderate and high physical activity. In addition, a continuous total physical activity score (in minutes per week) was computed based on continuous scores for walking, moderate and vigorous activity. The short version of the IPAQ has acceptable reliability and validity to measure physical activity among people from 18 to 65 years of age in different contexts. (Craig et al., 2003)

2.2.4 Compensatory Health Beliefs Scale-DLV

For measuring the CHB the Compensatory Health Beliefs Scale-DLV from Knäuper et al. (2004) was used translated by Nooijer, Puijk-Hekman & Assema (2009) . This questionnaire contains 17 Items measuring general compensatory health beliefs with four factors/subscales*: substance use, eating and sleeping habits, stress and weight regulation*. According to Knäuper et al. (2004) the internal consistency was good with Cronbach's alpha α = .80, whereas the 4 subscales showed internal consistency values between α = .63 and α = .74, except for *weight regulation* α = .57. The test-retest reliability scores which were collected after a 4.5-5 month interval with a test-retest correlation indicates a high stability over the comparably long time period (Knäuper et al. 2004). The reliability analysis of this study shows that cronbach's alpha α = .70 of a 16 Item scale was a lower than the earlier measured internal consistency of cronbach's alpha α = .80 by Knäuper et.al (2004). Item 13 " The effects of drinking coffee can be balanced by drinking equal amounts of water" was not included in this study. This Item could not be added to measure General CHBs (CHB-DLV).

2.2.5 Eating-specific CHB scales

For this study the questionnaire was divided to measure beliefs and behavior independently. To measure eating-specific CHB behavior and beliefs a 7-item questionnaire developed by Te Wilde (2013) in an earlier study was used. In the study from Natrup (2015) this questionnaire was also used and modified ending with a Cronbach's alpha α = .86, which measures the eating specific behavior people were performing in the past. Moreover the eating-specific CHB belief scale measures what people belief concerning snacking. The eating specific behavior scale consists 9 Items with α = .85 measured in this study. The eating-specific beliefs scale consist 7 items with a internal consistency value of cronbachs α = .81. An example question for CHB eating-specific beliefs was: " It is ok to eat chips or candy in the evening when I ate less during the day." An example question for CHB eating-specific

behavior was: " How often during the last two weeks did you eat chips or candy in the evening because you ate less during the day?"

2.3 Analysis

For analyzing all collected data the statistical programm for analyzing the data *SPSS 23* was used. First of all reliability analysis was applied for all questionnaires which were used for this study. Before applying the reliability analysis and testing the internal consistency of each construct the data was cleaned from respondents which not finished the questionnaire. An alpha of 0.05 was used for all the analyses to determine the significance of the data. Before starting the main analyses descriptive statistics were conducted like the age, gender, nationality, study and the status of actual education . Means and standard deviations were estimated for the population, also by looking on the 4 groups of physical activity. To determine differences within the groups of physical activity in the population a X^2 chi-square test was used. For further analysis Pearson correlation analysis was done to examine bivariate correlations between the used CHB eating-specific constructs of interest. A Anova test was determined to examine differences between the scores on the used constructs. To get insight about the research question whether stress and eating specific behavior or beliefs are related with the level of physical activity as a moderator, moderation analysis using linear/multiple regression analysis described by Baron and Kenny (1986) was used. Therefore the process tool for SPSS described and programmed by Andrew Hayes (2013) was used, which is useful to determine whether moderation or mediation occurs considering the research questions.

3. Results

3.1 Descriptive Statistics

Table 1 gives an overview of the reliability of each construct used for this study. The results are shown for Exhaustion (RESTQ-5), the perceived stress scale (PSS), the Compensatory Health Beliefs Scale-DLV (CHB-DLV), the CHB eating-specific beliefs scale and the CHB eating-specific behavior scale. All constructs had a sufficiently high internal consistency.

Table 1. Reliability analysis of the used constructs

Construct	Cronbach's Alpha (α)
CHB eating-specific beliefs	.81
CHB eating-specific behavior	.86
General CHBs CHB-DLV	.70
Perceived Stress (PSS)	.86
Exhaustion (RESTQ-5)	.74

For determining the distribution of the participants and how physically active participants are the answers were coded and distributed into 4 categories by applying the IPAQ scoring protocol. The target group of this study is supposed to be athletes being physically active at a very high level. Therefore a total MET score was calculated. The IPAQ prescribes 3 Categories of the MET scores: low physical activity, moderate physical activity and high physical activity. For this study a fourth category was added to examine the target group, which are described as athletes. In total n= 275 respondents took part of this survey whereas 195 finished it completely, which is a dropout nearly 29%. Table 2 gives an overview over statistics and demographics of the participants. After applying the proposed categorical scores by the scoring protocol results showed that 6.7% of the participants (N= 13) are physically inactive or at a low level physically active. In the next category 8.7% (N=17) are moderately physical active, whereas the majority of 61.5% (N=120) are physically active at a high level. The last category which is set for athletes who are physically active at a very high level is surprisingly the second largest sample with 23.1 % (N=45). This distribution shows that the intention to reach the target group (athletes) performing on a higher level than the scoring protocol prescribes worked out well. The following analysis was made for the whole sample and including the target group athletes. At first the descriptive statistics are conducted for the whole Sample including athletes being highly physically active. To be part of the study

every respondent had to finish the online survey completely.

Table 2. Descriptive Statistics and Demographics from 195 respondents.

		n	Percentage (%)
Gender	Male	81	41.5
	Female	114	58.5
Age	mean (standard deviation)	22,62	(4.90)
Nationality	Netherlands	141	72.3
	German	53	27.2
	Other	1	0.5
Study	Psychologie	73	37.4
	Sportopleiding Hogeschool Windesheim	34	17.4
	Other	88	45.1
Actual education	VMBO	1	0.5
	HAVO, Gymnasium	30	15.4
	MBO	2	1.0
	HBO	50	25.6
	WO	109	55.9
	no education	3	1.5
Physically active	Low	13	6.7
	Moderate	17	8.7
	High	120	61.5
	Very High	45	23.1

The following Table 3 presents the means and standard deviations of the used constructs and questionnaires for 195 respondents. The 195 respondents are subdivided into the different levels of physical activity. By this results for the 45 athletes are presented, too. Thus athletes could also be compared to low, moderate and high level of physical activity within 150 respondents who are less physically active than the group of 45 athletes. It was found that people who are moderate physically active had the highest perceived stress scores. In contrast people who are physically active at very high levels had the lowest scores on the stress scale, which is a first indication against the assumption that very high levels could lead to higher perceived stress levels. Surprisingly 45 athletes had lower scores on exhaustion, whereas the three lower levels of physical activity showed higher scores on exhaustion. This means that athletes are less exhausted than people who are physically active on lower levels than athletes. In general the results showed that the higher the level of physical activity the lower the scores are on each measured construct. The scores on General CHBs (CHB-DLV),

CHB eating-specific beliefs and CHB eating-specific behavior are the lowest for people being physically active at very high levels. The highest scores on the CHB construct were reached by people who where physical active at low and moderate levels. This means that people who are low and moderate physically active are showing more CHBs than people performing at high or very high levels of physical activity.

To examine possible significant differences on the different constructs a Anova test was determined by the univariate analysis of variance which includes tests of between-subject effects. There was a significant difference found for perceived stress at the p <. 01 level for the four levels of physical activity [$F(3,191) = 9.77$, $p < .01$)]. This means that the scores calculated on perceived stress are different within and among the population and thus also among the 4 physical activity levels. One marginally not significant finding was determined for Exhaustion of which scores tend to differ [$F(3,191) = 2.28$, $=.08$)]. For all the other construct no significant differences and tendencies are determined.

Table 3. Descriptive Statistics from 195 respondents being physically active at different levels

	Total (N=195)		low physical activity (N=13)		moderate physical activity (N=17)		High physical activity (N=120)		Very high physical activity (N=45)	
	M	SD	M	SD	M	SD	M	SD	M	SD
Exhaustion	13.23	4.92	16.38	7.05	13.76	5.26	13.10	4.98	12.47	3.48
Perceived Stress	26.12	6.55	26.62	4.87	32.47	5.35	26.30	6.28	23.09	6.36
CHB-DLV	39.76	7.08	40.85	6.26	41.06	8.14	39.49	6.94	39.67	7.39
CHB eating-specific beliefs	23.38	6.83	24.62	7.54	26.00	9.23	23.38	6.54	22.04	6.23
CHB eating-specific behavior	13.75	4.61	13.46	4.65	14.65	5.30	13.98	4.64	12.87	4.24
Physical activity (MET)	4996.74	4923.30	113.12	206.25	1054.56	242.31	3579.77	1307.21	11675.42	617.21

3.2 Fruit and vegetables consumption

To compare the different physical activity (PA) groups whether they meet the norm of eating 200 grams of vegetables or fruits there are Pie Charts represented in the following figures 1-4. Most of the athletes 53,33% (N= 24) reported that they are consuming almost every day 200 grams fruit or vegetables. The second largest group 24,44 % (N = 11) are

consuming this amount of fruits and vegetables every day. At least the largest groups 17,8 % (N = 8) and 4,4% (N=2) reported more than never or never eating fruits or vegetables. Summing up the majority is consuming fruits and vegetables almost every day or every day 77,7% (N =35). Furthermore a Pearson X^2 chi-square test was used to determine whether the different physical activity (PA) groups are delivering significant differences concerning meeting the norm of eating 200 grams of vegetables or fruits. Results showed that the norm of eating fruits or vegetables are not equally distributed among the PA groups (X^2= 17.60, N= 195, p < .0.05).

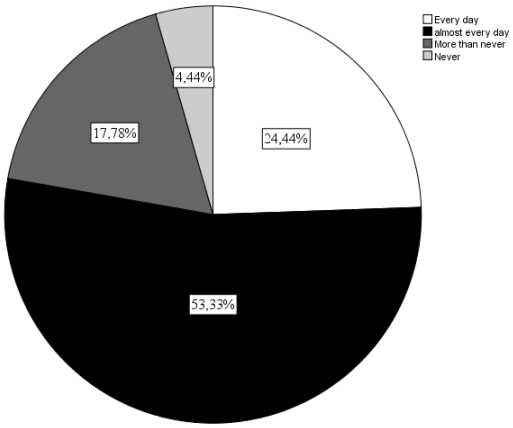

Figure 1. Consumption Athletes

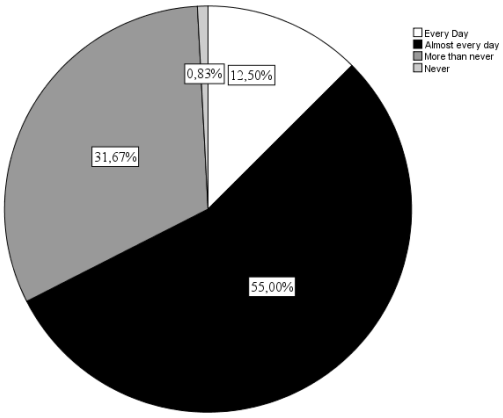

Figure 2. Consumption High level of PA

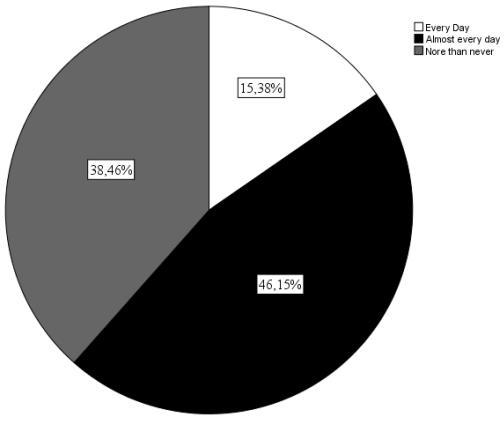

Figure 3. Consumption. low PA

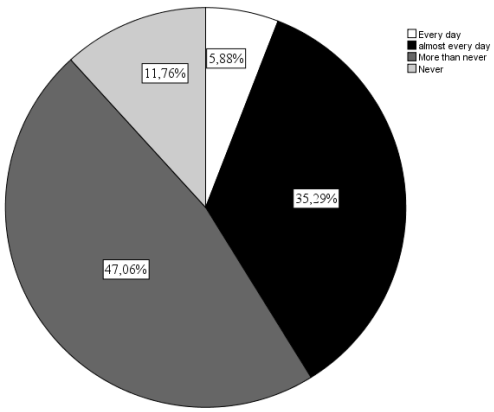

Figure 4. Moderate level of PA

3.3 Correlation analysis

For knowing whether CHB eating specific behavior and CHB eating specific beliefs are correlated a Pearson correlation analysis was conducted for the whole sample of 195 respondents

including all levels of being physically active. Table 4 shows as expected a strong correlation between the CHB eating specific behavior and the CHB eating specific beliefs (r = .57, p < 0.01). That means that the beliefs and the behavior correlated positively with each other. In other words the CHB eating specific belief is consistent with the CHB eating specific behavior and people who are scoring high on eating specific beliefs are also scoring high on eating specific behavior. Also general CHB's (CHB-DLV) had a moderate positive relationship with CHB eating-specific behavior (r = .45, p < 0.01) and eating specific beliefs (r =.58, p< 0.01). Moreover being exhausted regarding doing sport has a positive relation with CHB eating-specific behavior, but surprisingly it is not correlating with general CHB's (r = .13, p = .06) and CHB eating specific beliefs. Physical activity is moderate negatively correlated with CHB eating specific behavior and CHB eating-specific beliefs. That means that people who are more physically active score lower on CHB eating-specific behavior and CHB eating-specific beliefs which is a first indication against hypothesis (1). A high level of being physically active is negatively correlated with perceived stress, which is also a indication against the assumption that a high level of being physically active could lead to a higher level of perceived stress. As expected the Level of perceived stress and exhaustion is correlating positive and significant (r = .18, p <0.05).

Table 4 . *Correlations between the variables and constructs with 195 respondents*

		1	2	3	4	5
1	Exhaustion					
2	Perceived Stress (PSS)	.18*				
3	General CHBs (CHB-DLV)	.12	.09			
4	CHB eating-specific beliefs	.13	.13	.58**		
5	CHB eating-specific behavior	.26**	.16*	.45**	.58**	
6	Physical activity	-.09	-.28**	-.04	-.15*	-.15*

*.P< .05 Correlation is significant at the 0.05 level (2-tailed).
**. P <.01 Correlation is significant at the 0.01 level (2-tailed).

The next table 5 represents the correlations between the variables and constructs for 45 athletes performing their sport by being physical active at a high level. The Pearson correlation analysis shows different significant results. The level of Stress has a moderate but significant positive relation to General CHBs (CHB-DLV) (r = .35, p = 0.18). In contrast the measurement with 195 respondents being physically active at different levels shows no

significant results for the relation between the level of stress and General CHBs (CHB-DLV) (r =.09, p = 0.21). There is a positive relation between perceived stress (PSS) and CHB eating- specific beliefs (r =.39, p < 0.01) but based on that result there is surprisingly not a correlation found between the level of stress and CHB eating specific behavior (r =.20, p = 0.18). As expected there is strong correlation between the CHB eating-specific beliefs and the CHB eating-specific behavior (r =.53, p < 0.01), which is in line with the results for 195 respondents. Against the expectation physical activity did not correlate positively with CHB eating-specific behavior (r = -.25, p = 0.09) and CHB eating-specific beliefs (r = -.12, p = 0.45). Moreover high level of physical activity is not related to General CHBs (CHB-DLV) (r = .00, p = 0.98). A High level of exhaustion is related to more CHB eating-specific behavior (r =.30, p < .05) but not to CHB eating-specific beliefs (r = .06, p = .68).

The results for the first correlation analysis with 195 respondents are in line with the results for the excluded 45 athletes regarding to the correlation of physical activity and the level of stress. It shows a negative but not significant relation between physical activity and the level of stress (r = -.14, p = .36). For both sample/population sizes this relation is negative and for the first analysis with 195 respondents it is a highly significant negative relation (r = -.28, p < .01), represented in table 4. The outstanding finding within 45 athletes was, that CHB eating-specific beliefs are strongly related to perceived stress. However CHB eating-specific behavior is not related to perceived stress.

Table 5. *Correlations between the variables and constructs with 45 athletes*

		1	2	3	4	5
1	Exhaustion					
2	Perceived Stress (PSS)	.15				
3	General CHBs (CHB-DLV)	.17	.35*			
4	CHB eating-specific Beliefs	.06	.39**	.47**		
5	CHB eating-specific behavior	.30*	.20	.48**	.53**	
6	Physical activity	-.04	-.14	.00	.11	.25

*.P< .05 Correlation is significant at the 0.05 level (2-tailed).

**. P <.01 Correlation is significant at the 0.01 level (2-tailed).

3.4 Mediator Analysis

It was assumed that that perceived stress or exhaustion could function as a mediator between the relation of physical activity the three CHB constructs. To test the first hypothesis (1) The level of physical activity has an effect on the level of perceived stress and the CHBs constructs with the level of perceived stress or Exhaustion as a mediator, a mediation analysis was conducted by using the process tool as described by Andrew Hayes (2013). Therefore the continuous MET scores have been used concerning the independent variable physical activity. The hypothesis could not be confirmed. Neither Perceived stress nor Exhaustion functioned as a mediator between physical activity and the three CHB constructs. All models which were tested are presented in table 6. For determining if complete mediation exists the sobel test was used. The scores from the sobel test are also presented in table 6. However it was found that physical activity had a significant direct and negative effect on perceived stress, which means that high levels of PA are associated with lower scores on perceived stress. In addition it was found that exhaustion had a highly significant effect on CHB eating-specific behavior but surprisingly not significantly on CHB eating-specific beliefs. Based on that findings further analysis was conducted testing whether physical activity is mediating the relationship between perceived stress or Exhaustion and the three CHB constructs. First of all it was found that perceived stress had an effect on physical activity (ß = -.030 p = .00). Perceived stress also had a significant effect on CHB eating specific behavior (ß = .010, $p < .05$). Results from all models with physical activity as a mediator showed that there was also no mediation effect of physical activity found.

Table 6. Mediator analyses for each stated model of 195 respondents

Model	Dependent	Independent	B	SE_B	T(z)	p
1a	Perceived stress (PSS)	Physical activity	.00**	.00	-3.97	.00
1b	General CHBs (CHB-DLV)	Physical activity	.00	.00	-0.25	.80
		PSS	.09	.08	1.14	.26
		Physical activity * PSS^{+}	.00	.00	(-1.06)	.29
2a	Perceived stress (PSS)	Physical activity	.00**	.00	-3.97	.00
2b	CHB eating-specific beliefs	Physical activity	.00	.00	-1.6	.11
		PSS	.10	.78	1.35	.17
		Physical activity * PSS^{+}	.00	.00	(-1.25)	.22
3a	Perceived stress (PSS)	Physical activity	.00**	.00	-3.97	.00
3c	CHB eating-specific behavior	Physical activity	.00	.00	-1.50	.13
		PSS	.09	.05	1.76	.08
		Physical activity * PSS^{+}	.00	.00	(-1.57)	.12
4a	Exhaustion	Physical activity	.00	.00	-1.24	.21
4b	General CHBs (CHB-DLV)	Physical activity	.00	.00	-.44	.65
		Exhaustion	.17	.10	1.6	.10
		Physical activity * Exhaustion $^{+}$	.00	.00	(-.89)	.37
5a	Exhaustion	Physical activity	.00	.00	-1.24	.21
5b	CHB eating-specific beliefs	Physical activity	.00	.00	-1.90	.06
		Exhaustion	.17	.09	1.7	.08
		Physical activity * Exhaustion $^{+}$	.00	.00	(-.90)	.36
6a	Exhaustion	Physical activity	.00	.00	-1.24	.21
6b	CHB eating-specific behavior	Physical activity	.00	.00	-1.79	.07
		Exhaustion	.23**	.06	3.57	.00
		Physical activity * Exhaustion^{+}	.00	.00	(-1.13)	.26

* $p < .05$, ** $p < .01$, $^{+}$ Interaction effect determined by Sobel-test, (z-value)

3.5 Moderation analysis

To test whether physical activity is a moderator between Exhaustion or Stress and the three different dependent variables: general CHB's, CHB eating-specific beliefs or CHB eating-specific behavior a moderation analysis was conducted including the whole sample size of 195 respondents being physically active at a low, moderate and high level . For all the moderation analyses the process tool described by Hayes (2013) was used. The categorical scores concerning physical activity were used as the moderator. All moderation models which were tested on 195 respondents are represented in table 7.

The analysis on 195 respondents presented in table 7 testing moderation of physical activity between stress, exhaustion and the three CHB constructs delivered no significant findings concerning whether moderation occurs. All models tested were not significant.

However a significant relation was found between perceived stress and CHB eating-specific behavior. Furthermore Exhaustion and General CHB's (CHB-DLV) are related

significantly. The analysis also delivered a significant positive relation between Exhaustion and CHB eating-specific behavior. One model showed that physical activity marginally tends to moderate the relation between Exhaustion and general CHB's (CHB-DLV), this finding was not significant.

Thus the moderation analysis discovers that physical activity does not moderate the relation between perceived stress or exhaustion and CHB eating specific beliefs or CHB eating specific behavior. The moderation analysis concerning athletes showed that physical activity is negatively but not significantly related to all CHB constructs. This is a indication that people performing at higher levels of physical activity are showing less General CHBs, CHB eating-specific beliefs and CHB eating-specific behavior.

Table 7. Moderation analyses for each stated model of 195 respondents

Model		B	SE_B	t	p
7	Physical Activity (PA)	-0.30	0.69	-0.43	.67
	Perceived Stress (PSS)	0.08	0.08	1.01	.31
	PA*PSS	0.14	0.11	1.29	.20
		R^2	F	df	p
		0.02	1.14	3; 191	.33
8	Physical Activity (PA)	-.17	.45	-.39	.69
	Perceived Stress (PSS)	.10*	.05	2.07	.04
	PA*PSS	-.01	.07	.83	.83
		R^2	F	df	p
		0.27	1.7	3; 191	.15
9	Physical Activity (PA)	-.97	.66	-1.48	.14
	Perceived Stress (PSS)	.10	.07	1.33	.18
	PA*PSS	.12	.10	1.13	.26
		R^2	F	df	p
		.03	2.28	3; 191	.08
10	Physical Activity (PA)	-.48	.68	-.71	.48
	Exhaustion	.22*	.10	2.03	.04
	PA*Exhaustion	.20	.12	1.60	.09
		R^2	F	df	p
		.03	1.94	3; 191	.12
11	Physical Activity (PA)	-.26	.43	-.62	.54
	Exhaustion	.26**	0.07	3.89	.00
	PA*Exhaustion	.11	.07	1.50	.12
		R^2	F	df	p
		.07**	5.43	3; 191	.00
12	Physical Activity (PA)	-1.07	.65	-.1.64	.10
	Exhaustion	.17	.10	1.64	.10
	PA*Exhaustion	.05	.11	.44	.66
		R^2	F	df	p
		.17	2.09	3; 191	.10

* $p < .05$ significant at the 0.05 level, ** $p < .01$ significant at the 0.01 level, Outcome variables per moderation model: 7= General CHBs, 8= CHB eating-specific behavior, 9=CHB eating-specific beliefs, 10= General CHBs, 11= CHB eating-specific behavior, 12 = CHB eating-specific beliefs

4. Discussion

This study investigates the relationship between physical activity, the level of stress, exhaustion and general CHB's, CHB eating-specific behavior and CHB eating-specific beliefs. The results of the bivariate relations delivered significant relations between stress and CHB eating-specific behavior or beliefs. Additionally exhaustion through training is positively and significantly related to perceived stress and also related to CHB eating-specific behavior, but surprisingly not significantly to CHB eating-specific beliefs. Though there is a strong relation found between CHB eating specific behavior and beliefs, but somehow the two constructs are different related to Exhaustion. This means that people who are more exhausted are holding CHB eating-specific behavior but their belief about eating-specific CHB is different from how they actually perform.

No significant results were found considering the stated mediation model, which represents the first hypothesis and the second hypothesis that the level of physical activity has an effect on the level of perceived stress or the level of exhaustion and CHB's with the level of perceived stress or Exhaustion as a mediator.

Regarding to the third hypothesis, if physical activity is a moderator between stress or exhaustion and the three CHB constructs, no moderation model was moderately significant. Combinations with CHB eating-specific behavior or CHB eating-specific beliefs were not significant and delivered no tendencies. However results showed that perceived stress is significantly related to the unhealthy eating constructs CHB eating-specific behavior and CHB eating-specific beliefs. This finding enriches the findings of Wadsworth et al., (2004) that stress is related to unhealthy eating behavior.

This study also focuses on a small sample size of 45 athletes and compared the different groups considering the level of physical activity. Because of the different population sizes within the groups it could be beneficial for further research to get equal population sizes, which may deliver different results considering the comparison between the physical activity groups. Especially the group sizes of low physical activity and moderate physical activity were much smaller than the groups with high and very high levels of physical activity. This could be explained through focusing on participants with high levels of activity.

Thus, one aim of this study was to target athletes who are performing on a high professional level. This aim was reached partially by contacting physical education students from Windesheim. However the sample did not reach many athletes performing at a professional level. According to Fletcher et al., (2016) specific stressors are affecting

especially professional athletes. It is not clear if all athletes participating in this study are affected by these specific stressors, furthermore it is not clear how and if there are professional athletes reached in this study. Therefore for further research it could be recommended and useful to test a greater sample size targeting professional athletes. This specified target group differs in several ways from the athletes which participated in this study. Targeting professional athletes may possibly deliver outstanding results which may differ from the results in this study. Findings from Fletcher et al., (2016) are based on professional athletes who are not reached in this study.

Additionally the short questionnaire measuring exhaustion used in this study could be further developed by adding more items for more insight. The selection of the items could possibly influence the content validity of the questionnaire, which supposed to measure exhaustion through training. Because of just using the selected items participants could possibly perceive the questions considering exhaustion as general daily exhaustion and not as exhaustion through training. Therefore it would be useful to use the original RESTQ-Sport-76 questionnaire by Kellmann et al., (2001) to refine and get greater insight on the measurements considering exhaustion. By this it will be possible to get a more sophisticated measurement of exhaustion. The original questionnaire could not be used in this study because of group work with 4 other students who also needed to provide their measurements within the same questionnaire. Adding RESTQ-Sport-76 questionnaire would take the respondent a lot of time to finish the questionnaire.

With respect to exhaustion one interesting finding was, that people who are highly physically activity are less exhausted. This finding was against the expectation and could possibly explained by a greater and better fitness level which possibly could be related to better regeneration after sport and training. As stated earlier this could possibly explained through the non professional background of the athlete or the person performing on high levels of physical activity. Therefore using more Items from the RESTQ-Sport-76 questionnaire could be valuable to examine or refine this finding.

Considering eating behavior this study suggests that athletes and people who are highly physically active are possibly not eating healthy every day. This finding could be explained through lack of enlightenment considering healthy food. Major Percentages regarding fruit and vegetables consumption showed that athletes are not eating fruit and vegetables every day, which means that they not fulfill the daily norm of eating fruits and vegetables. However people with high levels of physical activity are eating healthier than people with a moderate or low level of physical activity. Furthermore consumption and

meeting the norm of eating fruit and vegetables is different among the 4 PA groups. With regard to fruit and vegetables consumption this study did not measure a opposite unhealthy eating behavior like snacking (e.g eating food with high amounts of fat or sugar), thus it was not possible to determine what people and athletes are eating except eating fruit and vegetables. Adding a questionnaire considering unhealthy eating could bring more possibilities for examining eating healthy things and eating unhealthy things. Measurements which are in line with the idea to examine unhealthy eating are the used questionnaires which contained constructs considering CHB eating-specific behavior and beliefs. This study did not focus and examine a specific risk behavior considering unhealthy eating like snacking (e.g eating food with high amounts of fat or sugar). Due to not valid data of the measured risk behavior snacking the focus of this study changed to CHB eating-specific belief and behavior. These constructs were measured properly. During analysis it was also found that the CHB-DLV questionnaire had one missing item. This did not seem to affect the reliability negatively of the CHB-DLV questionnaire. Further research could address the risk behavior snacking regarding eating chips or sweets and investigate the relations between healthy eating and unhealthy eating, snacking, perceived stress, physical activity and the CHB constructs. By this it will be possible to get a broader view concerning eating behavior. This study did not make clear in which way people are eating unhealthy. Including this measurement could possibly deliver additional results helping to understand how unhealthy and healthy eating are related to the used constructs in this study.

Summed up this study produces some interesting findings regarding eating behavior and the relations to physical activity and stress and it may be the begin of further research. At last these findings could help to understand if all levels of physical activity promote healthy behavior or maybe showing up some distinctions. In case of this study it could be concluded that high levels of stress and exhaustion could result in negative health or eating behavior, whereas higher level of physical activity tends to help people in engaging healthy behavior, reduce the perceived stress level and the level of exhaustion. Confirming these findings and testing other relations concerning healthy and unhealthy eating in further studies could be valuable for developing interventions considering health improvement for people performing sports at different levels.

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6. Appendix

Questionnaire 1: Eating-specific CHbehavior scale

Hoe goed beschrijven de volgende uitspraken jouw gedrag

Hoe vaak in de laatste twee weken heb je

… de rest van de dag minder gegeten, omdat je iets ongezonds gegeten had?

Nooit, Zelden, Soms, Meestal, Altijd

… snoep en/of chips in de avond gegeten, omdat je die dag niet veel gegeten had?

Nooit, Zelden, Soms, Meestal, Altijd

… de rest van de dag minder gegeten om te compenseren voor het ongezond eten?

Nooit, Zelden, Soms, Meestal, Altijd

… je snacks of ongezonde dingen gegeten, omdat je die dag gesport had?

Nooit, Zelden, Soms, Meestal, Altijd

… je gesport om te compenseren voor het ongezond eten van de dag ervoor?

Nooit, Zelden, Soms, Meestal, Altijd

… een ongezonde maaltijd proberen te neutraliseren door het eten van een gezonde maaltijd (fruit, groenten)?

Nooit, Zelden, Soms, Meestal, Altijd

… één of twee ongezonde dingen gegeten omdat je de hele dag gezond gegeten hebt?

Nooit, Zelden, Soms, Meestal, Altijd

… alleen eten met weinig calorieën gegeten om te compenseren voor een ongezonde maaltijd?

Nooit, Zelden, Soms, Meestal, Altijd

Questionnaire 2: Eating-specific CHB scale (CHB)

Hoe goed beschrijven de volgende uitspraken jouw opvattingen? **Ik denk dat …**

het oké is om af en toe ongezond te eten zolang ik de rest van de dag minder eet

sterk mee oneens, oneens, niet eens en niet oneens, mee eens, sterk eens

het oké is om snoep en/of chips in de avond te eten, wanneer ik de rest van de dag niet veel gegeten heb

sterk mee oneens, oneens, niet eens en niet oneens, mee eens, sterk eens

het minder eten de rest van de dag kan compenseren voor het ongezond eten

sterk mee oneens, oneens, niet eens en niet oneens, mee eens, sterk eens

dat het oké is om snacks of ongezonde dingen te eten zolang ik tijdens die dag sport

sterk mee oneens, oneens, niet eens en niet oneens, mee eens, sterk eens

ik vandaag kan sporten om te compenseren met het ongezond eten van gisteren

sterk mee oneens, oneens, niet eens en niet oneens, mee eens, sterk eens

sporten kan compenseren voor ongezond eten

sterk mee oneens, oneens, niet eens en niet oneens, mee eens, sterk eens

ik een ongezonde maaltijd kan neutraliseren door het eten van een gezonde maaltijd (groenten, fruit)

sterk mee oneens, oneens, niet eens en niet oneens, mee eens, sterk eens

dat wanneer ik gezond eet tijdens de hele dag, dat ik één of twee ongezonde dingen mag eten

sterk mee oneens, oneens, niet eens en niet oneens, mee eens, sterk eens

dat wanneer ik vandaag ongezond eet, ik dat kan compenseren door morgen voedsel met weinig calorieën te eten

sterk mee oneens, oneens, niet eens en niet oneens, mee eens, sterk eens

dat voedsel met weinig calorieën kan compenseren voor een ongezonde maaltijd

sterk mee oneens, oneens, niet eens en niet oneens, mee eens, sterk eens

Questionnaire 3: Items from the RESTQ-74

Ik voelde mij uitgeblust door mijn sport

nooit, zelden, soms, vaak, meer dan vaak, heel vaak, altijd

Ik worstelde mijzelf door de training heen

nooit, zelden, soms, vaak, meer dan vaak, heel vaak, altijd

Ik was ervan overtuigd dat ik goed gepresteerd had

nooit, zelden, soms, vaak, meer dan vaak, heel vaak, altijd

Ik voelde dat ik wilde stoppen met mijn sport

nooit, zelden, soms, vaak, meer dan vaak, heel vaak, altijd

Ik voelde me gefrustreerd door mijn sport

nooit, zelden, soms, vaak, meer dan vaak, heel vaak, altijd

Ik voelde me fysiek uitgeput

nooit, zelden, soms, vaak, meer dan vaak, heel vaak, altijd

Mijn lichaam voelde sterk/krachtig

nooit, zelden, soms, vaak, meer dan vaak, heel vaak, altijd

Questionnaire 4: Perceived Stress Scale

PSS

De vragen in deze lijst vragen naar uw gevoelens en gedachten **tijdens de afgelopen maand**.

Bij elke vraag kunt u aanduiden *hoe vaak* u op een bepaalde manier gedacht of zich gevoeld hebt. U kunt een cirkeltje plaatsen rond het cijfer dat het beste bij u past.

	0= Nooit	**1= Bijna nooit**	**2= Soms**	**3= Tamelijk vaak**	**4= Zeer vaak**
1. Hoe vaak bent u tijdens de afgelopen maand overstuur geweest door iets dat onverwacht gebeurde?	0	1	2	3	4
2. Hoe vaak hebt u tijdens de afgelopen maand het gevoel gehad dat u niet in staat was de belangrijke dingen in uw leven onder controle te houden?	0	1	2	3	4
3. Hoe vaak hebt u zich tijdens de afgelopen maand zenuwachtig en gespannen gevoeld?	0	1	2	3	4
4. Hoe vaak hebt u zich tijdens de afgelopen maand zelfverzekerd gevoeld over uw vermogen om uw persoonlijke problemen aan te pakken?	0	1	2	3	4
5. Hoe vaak hebt u tijdens de afgelopen maand het gevoel gehad dat de dingen u meezaten?	0	1	2	3	4
6.Hoe vaak hebt u tijdens de afgelopen maand het gevoel gehad dat u niet opgewassen was tegen al de dingen die u moest doen?	0	1	2	3	4
7. Hoe vaak bent u tijdens de afgelopen maand in staat geweest om irritaties in uw leven onder controle te houden?	0	1	2	3	4
8. Hoe vaak hebt u tijdens de afgelopen maand het gevoel gehad dat u de dingen de baas bleef?	0	1	2	3	4
9. Hoe vaak hebt u zich tijdens de afgelopen maand boos gemaakt om dingen die buiten uw controle om gebeurden?	0	1	2	3	4
10. Hoe vaak hebt u tijdens de afgelopen maand het gevoel gehad dat de moeilijkheden zich zo hoog opstapelden dat u ze niet te boven kon komen?	0	1	2	3	4

Questionnaire 5: General CHBs (CHB-DLV)

Compensatory Health Beliefs Scale – DLV

Instructies: Mensen hebben verschillende ideeën over hun gezondheid. Hieronder staat een lijst van ideeën die iemand kan hebben over gezond blijven. Lees elke zin zorgvuldig en geef aan in hoeverre u het eens of oneens bent met elke zin door een van de volgende antwoorden te kiezen: helemaal mee oneens; enigszins mee oneens; neutraal; enigszins mee eens; helemaal mee eens.

Onthoudt dat er geen goede of foute antwoorden zijn omdat iedereen andere ideeën heeft.

2. Het gebruik van kunstmatige zoetstoffen (zoals in koffie en thee) compenseert de inname van extra calorieën.

helemaal mee oneens	enigszins mee oneens	neutraal	enigszins mee eens	helemaal mee eens

3. Bewegen kan roken compenseren

helemaal mee oneens	enigszins mee oneens	neutraal	enigszins mee eens	helemaal mee eens

5. Geen alcohol drinken doordeweeks kan de effecten van te veel alcohol drinken in het weekend compenseren.

helemaal mee oneens	enigszins mee oneens	neutraal	enigszins mee eens	helemaal mee eens

6. Het overslaan van het hoofdgerecht kan het eten van een dessert compenseren.

helemaal mee oneens	enigszins mee oneens	neutraal	enigszins mee eens	helemaal mee eens

8. ‘s Avonds eten wat je maar wilt is oké als je gedurende de dag niet veel hebt gegeten.

helemaal mee oneens	enigszins mee oneens	neutraal	enigszins mee eens	helemaal mee eens

9. Gezond eten kan de effecten van regelmatig alcohol drinken compenseren.

helemaal mee oneens	enigszins mee oneens	neutraal	enigszins mee eens	helemaal mee eens

12. Het beginnen van een nieuw dieet morgen maakt verbreken van een dieet vandaag goed.

helemaal mee oneens	enigszins mee oneens	neutraal	enigszins mee eens	helemaal mee eens

14. Het is oké om het ontbijt over te slaan als je tijdens de lunch of het avondeten meer eet.

helemaal mee oneens	enigszins mee oneens	neutraal	enigszins mee eens	helemaal mee eens

16. Het is prima om veel alcohol te drinken zolang je er maar veel water bij drinkt om het weg te spoelen.

helemaal mee oneens	enigszins mee oneens	neutraal	enigszins mee eens	helemaal mee eens

17. Af en toe roken is oké als je gezond eet.

helemaal mee oneens	enigszins mee oneens	neutraal	enigszins mee eens	helemaal mee eens

Questionnaire 6: The norm for fruit and vegetables consumption

De norm voor het eten van groente en fruit is per dag minstens 200 gram fruit (2 stuks) en 200 gram groente. Geef op een schaal van 1 (elke dag) tot 4 (nooit) aan in hoeverre u voldoet aan de norm voor het eten van groente en fruit?

1	2	3	4
Elke dag	Bijna elke dag	Vaker niet dan wel	Nooit