

# **The effect of language in the effectiveness of a written health narrative**

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*Final version*

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## **Abstract**

Governments over the years launched various health campaigns in order to increase public health. One tool which proved to be effective in health communication is the imbedding of the health message in a story, also called a narrative (Jansen, 2015). However, the effect of reading the narrative in a first or second language is unclear. Especially in regions where people with varying language backgrounds live, such as border regions or bilingual regions, knowledge about the effect of language on narratives could have practical implications for the design of health narratives. Therefore, this study will examine the effect of language usage on identification, transportation, story consistent beliefs, behaviour intention and knowledge of the health narrative, with a specific focus on the effect of language proficiency. A total of 136 Dutch students participated in the experiment. The materials used in this experiment consisted out of one Dutch narrative, which was also translated into German and English. The participants were divided into four groups, who either read one of the narratives, or read no narrative at all, thereby forming the control group. The results of this study indicate that language does have some effects on a written health narrative. The language of the narrative influences both identification with the protagonist in the story and gained knowledge through the narrative, which contradicts Van Den Berg (2015). No direct effects of language on transportation, story consistent beliefs and behaviour intention were found, which is in line with Beentjes et al. (2009) and Duizer et al. (2014).

## **Introduction**

Governments over the years launched various health campaigns in order to increase public health. Unfortunately however, a large number of these campaigns failed (Jansen, 2015). Theoretical and empirical health communication research has provided insights regarding why these attempts failed, and also provided insights regarding options that might lead to a more successful health campaign. One tool which proved to be effective in health communication is the imbedding of the health message in a story, also called a narrative (Jansen, 2015). However, more research is still needed to examine what factors influence the effectiveness of these narratives. For example, the effect of reading the narrative in a first or second language is unclear. Especially in regions where people with varying language backgrounds live, such as border regions or bilingual regions, knowledge about the effect of language on narratives could have practical implications for the design of health narratives. Therefore, this study will examine the effect of language usage on the effectiveness of the health narrative.

### **Persuasive Health Communication**

Scientists from various disciplines, such as physicians and biologists, collaborate to prevent health problems and try to treat them. Over the last decades, health communication proved to be an influential tool to reach public health goals (Bernhardt, 2004). Health communication is focused on informing the public and keeping important health issues on the public agenda (Nutbeam, 1998). However, many health communication methods do not only focus on informing the reader, but also on influencing their behaviour. For example, a brochure about healthy nutrition that positively influences the reader's attitude about nutrition is a good start, but the ultimate goal of the brochure is that the reader will in fact eat healthier. Bernhardt (2004) therefore describes health communication as the use of methods to both inform and influence individual and community decisions that enhance health. Since health communication aims at behavioural change, the communication needs to be persuasive in order to be effective (Jansen, 2015).

Persuasion is a successful attempt to change people's mental state by means of communication (O'Keefe, 2002). Since the goal of persuasive communication is ultimately to change people's behaviour, this definition is remarkable because it describes the change of someone's mental state, rather than his or her behaviour. The absence of the term "behaviour" in the definition of O'Keefe is explained by Hoeken, Hornikx and Hustinx (2009) by the fact that persuasion occurs through communication: the transfer of

information. One form of communication through which persuasion occurs, are persuasive documents. Persuasive documents aim to influence the attitude of the reader, by means of transfer of information (Hoeken et al., 2009). One important difference between the definition of persuasion by O’Keefe (2002) and the definition of persuasive documents of Hoeken et al. (2009) is that in the latter, only the intention of the writer matters, while in the definition by O’Keefe (2002) the outcome of the communication attempt should also be taken into account.

As described above, communication can indirectly influence behaviour through influencing people’s attitudes (Hoeken et al., 2009). An attitude is “a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour” (Eagly & Chaiken, 1993, p.1). There are two types of attitudes, namely implicit and explicit attitudes. Implicit attitudes stem from past, and largely forgotten, experiences, whereas explicit attitudes reflect more recent or accessible events (Rudman, 2004). Hoeken et al. (2009) add to this that implicit attitudes are based on automatic associations between an object and an evaluation which people have. Meanwhile, explicit attitudes are the result of a rational consideration process. Implicit and explicit attitudes are determinants of automatic and reasoned behaviour.

To be able to influence behaviour one has to focus on the determinants of behaviour. Thereby it is important to distinguish automatic behaviour from reasoned behaviour (Hoeken et al., 2009). Automatic behaviour is often thoughtlessly executed. Reasoned behaviour is behaviour that we think about, it is consciously executed. Reasoned behaviour, which relies on explicit attitudes, is easier to change by means of communication than automatic behaviour, which relies on implicit attitudes. When the determinants of reasoned behaviour can be influenced, the chance of influencing the actual (health) behaviour increases (Hoeken et al., 2009). Reasoned behaviour has three determinants. First of all reasoned behaviour is the result of a process in which the pros and cons of the behaviour are assessed, also called (explicit) attitude. Furthermore, the pressure one perceives from the social environment, (perceived norm) and the extent to which one feels able to execute the behaviour (self-efficacy) play important roles (Hoeken et al., 2009). To successfully change behaviour it is important to know which of the determinants has to be changed. Attitude may not always be the strongest predictor for behaviour. For example, Bandura (2004) claims that other core determinants which affect health practices are knowledge of health risks and perceived self-efficacy. Knowledge of health risks creates a necessary precondition for change. If people are

unaware of health risks, they have little reason to adapt their behaviour. Furthermore, beliefs of self-efficacy are the foundation of human motivation and action. Unless people believe that they are able to engage in health behaviour and can produce the desired effects by their actions, they have little incentives to adapt their health behaviour. Persuasive documents which aim to influence health behaviour may help in changing people's attitudes, increasing knowledge and stimulating self-efficacy beliefs. One form of such a persuasive document is a narrative.

### **Narratives**

Health messages with an obvious intention to change the health behaviour of the recipient, increase resistance of the recipient to the proposed behaviour change (Jansen, 2015). People want to determine their own norms, beliefs, attitudes and behaviour. Messages which are aimed at changing health behaviour of recipients are therefore often seen as a threat to their individual freedom. As a consequence people are more inclined to reject the message (Jansen, 2015). Empirical research has shown that messages which are embedded in stories, offer a solution. When a message is embedded in a story, the intention of the message becomes less obvious, so people feel less threatened in their individual freedom (Jansen, 2015). Such a message embedded in a story is also called a narrative.

A narrative is defined as “any cohesive and coherent story with an identifiable beginning, middle, and end that provides information about scene, characters and conflict; raises unanswered questions or unresolved conflict; and provides resolution” (Hinyard & Kreuter, 2007, p.778). Communicating health messages via a narrative is a form of entertainment-education. Entertainment-education is the implementation of a message with the intent to increase knowledge about an issue, to create more favourable attitudes towards this issue, and to change behaviour regarding the issue in an entertainment program (Vaughan, Rogers, Singhal & Swalehe, 2000). Since the information is presented in a narrative, the recipient is not aware of the informative character of the message. The narrative is primarily perceived as entertainment. The recipient is engaged with the storyline and gets involved with the characters. When the recipient is engaged with the storyline, this can cause unawareness of the persuasive intent of the message (Moyer-Gusé, 2008). In addition, when the recipient is unaware of the persuasive intent of the message, he or she builds less resistance or contra-arguments against the message. This can have a positive influence on the effects of the message on

the attitude or the behaviour of the recipients (Moyer-Gusé, 2008; Duizer, Jagt & Jansen 2014).

The power of narratives to influence health beliefs has been demonstrated by multiple studies. For example, Morgan, Movius and Cody (2009) examined the impact of four different television shows with organ donation storylines on participants' attitudes, knowledge and behaviours relating to organ donation. In an online survey they examined the impact of the television shows. The results of their study indicated that emotional involvement in the narrative, also called transportation, and perceived accuracy of the information about organ donation issues, influence learning about organ donation issues and motivation to become an organ donor. Furthermore, Murphy, Frank, Moran and Patnoe-Woodley (2011) examined how involvement with a specific character, transportation, and viewers' emotional reaction to the narrative produce entertainment-education effects. Entertainment-education refers to entertainment programming designed to exert a social effect on viewers, such as providing information or promoting health behaviour (Moyer-Gusé & Nabi, 2010). Entertainment-education is expected to influence individuals' beliefs and attitudes in distinctive ways (Slater & Rouner, 2002). They assessed this with a pretest/posttest online survey amongst regular viewers of the television show "desperate housewives", which contains a cancer storyline in the fourth season. The results indicated that transportation was the best predictor of change in knowledge, attitudes and behaviour.

In the studies of Morgan et al. (2009) and Murphy et al. (2011) a returning concept is the concept of transportation. Transportation is, together with identification, a mechanism through which narratives reduce resistance against the message, and thereby influence beliefs (Duizer et al., 2014; De Graaf, Hoeken, Sanders & Beentjes, 2012). These concepts will be discussed below.

### **Transportation and Identification**

As mentioned above, transportation and identification are mechanisms that reduce resistance against the message. Transportation is the experience of the recipient to be absorbed into the narrative world of the message (Green & Brock, 2000; Duizer et al., 2014), thereby losing track of the real world as he or she experiences the unfolding events in the story (Gerrig, 1993; Green & Brock, 2000). Identification is the experience in which readers "adopt the perspective of a character and see the narrative event through the character's eyes" (De Graaf et al., 2012, p.804). The viewer loses self-awareness and

takes on the feelings, perspectives and goals of that character (Cohen, 2001). Although this loss of awareness is similar to transportation, there is one key distinction between both concepts: although they both involve becoming absorbed into the narrative world, in identification the viewer does so through the eyes of one particular character (Moyer-Gusé & Nabi, 2010). Transportation does not require this perspective-taking to occur, the viewer may enter the narrative world as an observer, while maintaining his self-awareness and his own perspective (Moyer-Gusé & Nabi, 2010). This conceptual difference is emphasized by empirical evidence that transportation and identification can be independently manipulated. For example, identification, but not transportation, may be influenced by manipulating the valence of information about the main character. Furthermore, transportation, but not identification, may be influenced by alerting viewers to what will happen in the plot, thereby affecting suspense (Tal-Or & Cohen, 2010).

Green and Brock (2000) examined the persuasive impact of narratives by investigating the extent to which the recipient was transported in the narrative. When the recipient is transported in the narrative, he is unaware of the persuasive intent of the message. If the recipient would be aware of the persuasive intent, he would be more inclined to resist the message (Kreuter et al., 2007). This is the core idea of the transportation theory of Green and Brock (2000). They define transportation as “a convergent mental process, a focusing of attention that may occur in response to either fiction or nonfiction” (Green & Brock, 2000, p.703). The concept of transportation on which they build was defined by Gerrig (1993). Gerrig explains in his definition that when the recipient is transported to the narrative world, his own reality is no longer available. Then, when the recipient returns to the reality he is to a smaller or larger extent changed by his journey to the narrative world (Gerrig, 1993). This change may contain a change in attitude.

Identification may also have an impact on narrative persuasion, since it seems to be a predictor for attitude (Beentjes, De Graaf, Hoeken & Sanders, 2009; De Graaf et al., 2012; Slater & Rouner, 2002). This means that identification with a character in the narrative, may lead to a change in the recipients attitudes or beliefs so that they are more in line with those of the character. The concepts of transportation and identification are important mechanisms of the Entertainment Overcoming Resistance Model proposed by Moyer-Gusé (2008).

This theory by Moyer-Gusé (2008) explains the “how and why” of the positive effects of narratives in health communication on persuasion. The “Entertainment

Overcoming Resistance Model” (EORM) can be applied to a large variety of narratives: from short stories to novels and from movies to television shows (Jansen, 2015). See figure 1 for the EORM.

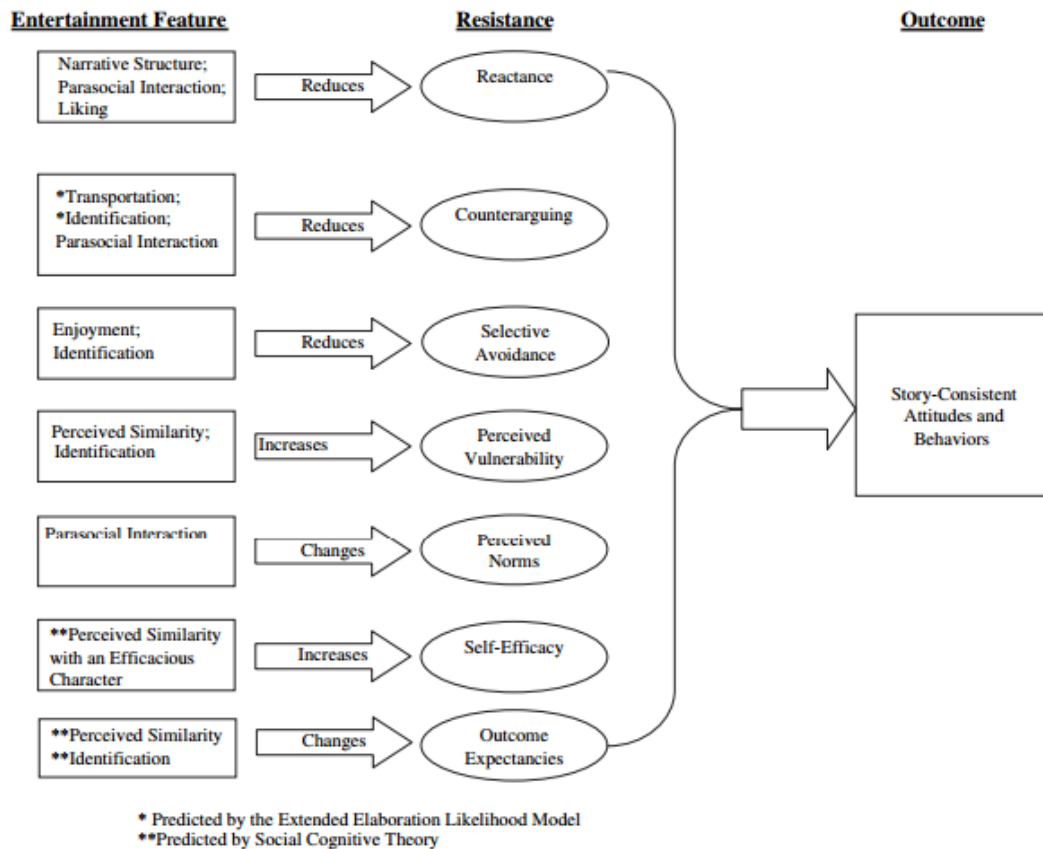


Figure 1: *Entertainment Overcoming Resistance Model* (Moyer-Gusé, 2008, p.415)

In the EORM the main idea is that reduction of the recipient’s perceived threat of the persuasive message is an important determinant of the persuasive effect of the narrative. Moyer-Gusé (2008) distinguishes seven forms of threat in the EORM, namely: reactance (resistance to a perceived threat of the freedom to make own choices and independency), counter arguing (providing arguments against the message), selective avoidance (selectively avoiding certain messages), perceived vulnerability (the feeling to be immune for negative consequences of behaviour), perceived norms (perceiving dangerous behaviour as normal), self-efficacy (confidence in own ability) and outcome expectancies (perception of the consequences of behaviour). The EORM shows the way in which these forms can reduce resistance through narrative and emotional engagement (Moyer-Gusé, 2008).



The amount of resistance is determined by underlying mechanisms which can be summoned by reading a narrative. According to the EORM these mechanisms are: narrative structure, parasocial interaction, liking, transportation, identification, enjoyment and perceived similarity. As Moyer-Gusé and Nabi (2010) state, it is difficult to test the entire model with one entertainment-education program; therefore this study will only focus on identification and transportation.

### **L1 versus L2 in narrative understanding**

An important determinant of the effectiveness of the narrative is the extent to which the message is adapted to characteristics of the recipients (de Graaf, 2014; Kreuter & Wray, 2003; Rimer & Kreuter, 2006). One of the most essential characteristics of the recipient is the language he speaks. The language in which the narrative is presented may have an effect on the understanding of the narrative. Although no research has investigated this yet, it seems plausible that the extent to which a recipient understands the narrative could influence his amount of transportation and identification. It can be speculated that when a recipient does not understand what is being said in a narrative, or if he experiences difficulties to understand the language of the narrative and thereby the content of the narrative, he may be less transported in the narrative world and may identify himself less with the character.

A study by Puntoni, Langhe and Osselaer (2009) showed that bilinguals had a preference for messages in their first language, L1, due to the increase in emotionality. In five experiments they tested marketing slogans on native Dutch speakers and native French speakers. They found that messages in the L1 were perceived as more emotional than messages in their second language, L2. This effect was not uniquely due to lack of comprehension or activation of stereotypes that are associated with the used languages. This suggests that since the emotionality increases in their L1, the emotional involvement (transportation) with the narrative may increase when the narrative is viewed in the recipient's L1, rather than L2.

Surprisingly, no published research has yet investigated the effects of language in narratives in persuasive health communication. Van Den Berg (2015) did however examine the influence of language on narrative persuasion in his Master thesis. Van Den Berg (2015) examined the influence of different language strategies, namely L1 voice-overs, L2 voice-overs, and L2 voice-overs with L1 subtitles on narrative persuasion. To examine this, an experiment with a mixed 2x4 factorial design was conducted, in which

participants watched a narrative-advertisement in one of the four conditions, after which they filled out a questionnaire. The results of his study indicated that the language strategies were equally effective: the use of different language strategies had no significant influence on identification, transportation, enjoyment, narrative understanding or story-consistent beliefs. Van Den Berg (2015) explained these results by the high English (L2 mode) proficiency of the participants. The results also indicated that narrative understanding was a predictor for transportation, the higher the level of narrative understanding, the higher the level of transportation. This suggests that the level of comprehension of the narrative plays an important role in experiencing the narrative. For the current study, these results are interesting since they indicate that comprehension of the narrative is an important factor when studying persuasion in narratives. Since the lack of significant differences in the study of Van Den Berg (2015) may be explained by a high proficiency of the participants, significant differences in persuasion of narratives may be found when the participants are less proficient. Therefore, the research question of this study will be “What is the effect of language in the persuasion of a written health narrative?”. Furthermore, to determine the effect of proficiency, the sub-question will be: “To what extent will the effect of language in the persuasion of a written health narrative differ between speakers who are highly or less proficient in their L2?”.

## **Method**

### **Materials**

To determine the effect of language in the persuasion of a written health narrative on speakers who are less proficient in their L2, a between-subject design was conducted. Four groups participated in the experiment. The first group read the Dutch narrative, the second group read the German narrative and the third group read the English narrative before filling out the questionnaire. The fourth group, or control group, did not read the narrative before filling out the questionnaire, to test whether the narrative had any effects. The languages are chosen because Dutch students probably have a high English proficiency, whereas it is expected that Dutch students have a lower German proficiency. The students had to self-assess their foreign language proficiency. By measuring the effectiveness of English narratives as well as German narratives in comparison to Dutch narratives, it cannot only be determined whether reading a narrative in a foreign language

has an impact, it can also be determined to what extent proficiency in the L2 plays a role in the effectiveness of the narrative.

This experiment has one independent variable; language of the narrative, which has three levels: Dutch, German and English. The materials that were used in this experiment consist of three versions of the same health narrative. The narrative was written in Dutch, German and English. These language modes were randomly assigned to the participants in such a way that every participant read one narrative. To assure reliable translation the Dutch narrative was translated by bilingual speakers of Dutch/German and Dutch/English. Their translations were checked by native speakers who did not see the original narrative.

The narrative was designed to provoke maximum transportation and identification. The protagonist of the narrative was a female student, since research showed that narratives with a female protagonist ensure larger identification effects on both male as female readers than a male protagonist (Dearborn et al., 2006). Since the participants of the study would be students the protagonist was a student with a corresponding lifestyle to ensure more identification. Furthermore, because the narrative had to be long enough that transportation could occur, but not so long as to scare off participants so they might drop out of the study, the length of the narrative was decided to be around 1350 words. The narrative aims to persuade the participants to exercise more often and to eat healthier in order to avoid obesity and/or diabetes. The Dutch narrative was pre-tested to ensure the effectiveness, transportation and identification of the narrative.

### **Pre-test of the narrative**

15 respondents participated in the pre-test. Since one respondent dropped out of the survey his/her results were excluded from the analysis. The majority of the respondents was female (8 females) while 6 males participated. The participants were on average 25,65 years old, ranging from 23 to 28 years old. The majority of the students were university master students (64%), while 14% were university bachelor students and 21% were HBO bachelor students.

### *Effectiveness*

The items that were used to measure the effectiveness of the narrative were “The narrative got me thinking”, “The narrative urged me to live healthier”, “I found the narrative to be believable”, “I found the narrative to be persuasive”, “I found the narrative

to be entertaining” and “I found the narrative to be interesting”. The items were measured on a 7 point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The reliability of the effectiveness comprising these 6 items proved to be good ( $\alpha = .87$ ). The participants valued the effectiveness of the narrative on average with a 4,51 ( $SD = 1.12$ ) on a 7 point Likert scale. Therefore, the effectiveness of the narrative was confirmed in the pre-test. Furthermore, the pre-test measured the level in which respondents identified with the protagonist of the narrative.

### *Identification*

The items which measured the identification of the respondent with the protagonist of the narrative were: “I think I have a good understanding of Laura”, “I tend to understand the reasons why Laura does what she does”, “While reading the story, I could feel the emotions Laura portrayed”, “At key moments in the story, I felt I knew exactly what Laura was going through” and “While reading the story, I imagined that I would do the same as Laura”. The items were measured on a 7 point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The reliability of the identification comprising these 5 items proved to be unsatisfactory ( $\alpha = .64$ ). Therefore, the items were analysed separately. The scores of the items varied from 4.14 ( $SD = 1.46$ ) for the item “While reading the story, I imagined that I would do the same as Laura, and 6.14 ( $SD = .86$ ) for the item “I tend to understand the reasons why Laura does what she does”. Since the results of the items separately were quite high, identification with the protagonist in the narrative was confirmed in the pre-test. In addition, the transportation of the respondent in the narrative was measured in the pre-test.

### *Transportation*

The items which measured the transportation of the respondent in the narrative were: “I was mentally involved in the story while reading it”, “I wanted to learn how the story ended”, “The story affected me emotionally” and “I found myself thinking of ways the story could have turned out differently”. The items were measured on a 7 point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The reliability of the identification comprising these 5 items proved to be unsatisfactory ( $\alpha = .62$ ). Therefore, the items were analysed separately. The scores of the items ranged between 3.21 ( $SD = 1.67$ ) for the item “I found myself thinking of ways the story could have turned out differently” and 4.93 ( $SD = 1.64$ ) for the item “I wanted to learn how the story ended”. Since the results of the separate items were satisfactory, transportation in the narrative

was confirmed in the pre-test. Therefore, the pre-tested narrative can be utilised in the experiment of this study.

## **Subjects**

The experiment was conducted with 136 respondents consisting of Dutch students or recently graduates. The participants were found through own social networks and were randomly assigned to the different versions. Initially, 157 respondents participated in the experiment, unfortunately however, 21 respondents did not finish the survey. Therefore, their data were excluded from the analysis, leaving a total of 136 respondents. In total 34 participants filled out the Dutch version of the questionnaire, 31 participants filled out the German version, 35 participants filled out the English version and the control group consisted out of 36 participants. The majority of the participants were female (62%), while 38% of the participants were male. The participants were on average 24 years old, ranging from 19 to 29 years old. The majority of the participants had an educational level of University master's (45%), while 36 participants had an educational level University bachelor, representing 27% of all participants. Again, 27% of the participants had an educational level of HBO, while only 3 participants stated to have an educational level of MBO, representing 2% of all participants. The participants appeared to be similar across the different versions with regard to age ( $F(3, 135) = .39, p = .755$ ), gender distribution ( $\chi^2(3) = 2.15, p = .543$ ). For the Chi-Square test for the distribution of educational level across the groups, the assumption that no cells have an expected count of less than five is violated, since 4 cells, representing 25% , have an expected count of less than five. Therefore, the Likelihood Ratio is reported. The Likelihood ratio indicates that the participants are similar across the different versions with regard to educational level ( $\chi^2(9) = 8.57, p = .381$ ).

## **Instruments**

The dependent variables of this experiment were transportation, identification, story consistent beliefs and behaviour intention and knowledge. These variables were measured by a questionnaire that the participants had to fill out after reading the narrative. The control group, who did not read the narrative, just filled out the questionnaire which only measured behaviour intention and knowledge. The questionnaire was written in the mother tongue of the participants, to ensure maximum comprehension. The students who read the narrative in German or English had to self-assess their proficiency of the

corresponding language. Since all students were Dutch, they were native speakers of the Dutch language and did not need to assess their Dutch proficiency. The participants self-assessed their language skills by indicating how good their writing, speaking, listening and reading skills in their foreign language were, ranging from 1 (very poor) to 7 (excellent). The reliability of foreign language proficiency comprising these four items proved to be excellent ( $\alpha = .96$ ). Therefore, composite means were calculated for foreign proficiency.

### **Behaviour intention**

Behaviour intention was measured with questions about the following perceptions; attitude, self-efficacy, perceived norm and behaviour intention. The scales to measure these perceptions are based on Hoeken et al., (2009):

- Attitude was measured with a semantic differential with 7-points for the following statements: “When I exercise for at least 20 minutes thrice a week that will be”: bad/good, unpleasant/pleasant, harmful/ beneficial, interesting/boring and unwise/wise. “When I eat vegetables and fruit every day that will be”: bad/good, unpleasant/pleasant, harmful/ beneficial, interesting/boring and unwise/wise.
- Perceived norm was measured with a 7-point Likert scale for the following statements: “Most people who are important to me believe that I should exercise for at least 20 minutes thrice a week”. “Most people who are important to me believe that I should eat vegetables and fruit every day”.
- Self-efficacy was measured with a 7-point Likert scale for the following statements: “If I really want to, I can exercise for at least 20 minutes thrice a week”. “If I really want to, I can eat vegetables and fruit every day”.
- Behaviour intention was measured with a 7-point Likert scale for the following statements: “I will exercise for at least 20 minutes thrice a week”; “I will eat vegetables and fruit every day”. The reliability of behaviour intention comprising all the 16 items above was good ( $\alpha = .85$ ).

### **Identification**

Identification was measured with five items which are based upon Cohen (2001) which are measured with a 7-point Likert scale. The items to measure identification with the main character, Laura, are: “I think I have a good understanding of Laura”; “I tend to understand the reasons why Laura does what she does”; “While reading the story, I could

feel the emotions Laura portrayed”; “At key moments in the show, I felt I knew exactly what Laura was going through” and “While reading the story, I imagined that I would do the same as Laura”. The reliability of identification comprising these five items was good ( $\alpha = .80$ ).

### **Transportation**

Transportation was measured with four items concerning the engagement of the reader when reading the narrative, which are measured with a 7-point Likert scale. The items which are used to measure transportation are: “I was mentally involved in the story while reading it”; “I wanted to learn how the story ended”; “The story affected me emotionally” and “I found myself thinking of ways the story could have turned out differently”. The reliability of transportation comprising these four items was good ( $\alpha = .77$ ).

### **Story consistent beliefs**

Story consistent beliefs were measured with four items concerning beliefs which are expressed in the narrative. These items are measured with a 7-point Likert scale. The items which are used to measure story consistent beliefs are: “Eating two portions of fruit and 250 gram vegetables each day can, in combination with a lot of exercise, help to lose weight”, “Eating two portions of fruit and 250 gram of vegetables each day, in combination with exercising three times a week for at least 20 minutes, contributes to a healthy lifestyle”, “It is important to have a healthy lifestyle” and “Enjoying your student-life does not mean you cannot have a healthy lifestyle”. The reliability of story consistent beliefs was not acceptable ( $\alpha = .60$ ), therefore the items were analysed separately.

### **Knowledge**

Knowledge was measured with five true/false statements concerning overweight, diabetes and a healthy lifestyle. The knowledge of the participants was measured by the percentage of questions they answered correctly. To be able to measure whether knowledge of the participants who read the narrative improved in comparison to the control group, the statements will concern knowledge that is discussed in the narrative. The statements that measure knowledge are “Diabetes type 2 is congenital” (false), “Diabetes can worsen eyesight” (true), “Diabetes type 2 does not always have to be treated with insulin” (true), “The prescribed quantity of fruit and vegetables per day is 2

pieces of fruit and 150 gram vegetables” (false) and “The advised amount of sports is thrice per week for at least 20 minutes” (true).

## **Procedure**

The participants were approached via Social Medium Facebook. Via an anonymous link participants could enter the online questionnaire. The participants were randomly assigned to one of the four conditions: the Dutch language narrative, the English language narrative, the German language narrative and the control group. The participants first received an instruction which explained that their participation was voluntarily and anonymous. Then, the participants read the health narrative. Afterwards they filled out the questionnaire. After completing the questionnaire the participants were thanked for their cooperation. The experiment took about 10 to 15 minutes to complete.

## **Results**

### **Language effects**

The research question of this study was “What is the effect of language in the persuasion of a written health narrative?”. Therefore, the language effects on the dependent variables; transportation, identification, story consistent beliefs, behaviour intention and knowledge, were analysed. The one way analysis of variance with as factor language (Dutch/German/English) for transportation showed no significant effect of language on transportation ( $F(2, 97) = 2.12, p = .125$ ). In contrast, the one way analysis of variance with as factor language (Dutch/German/English) for identification had a significant effect ( $F(2, 97) = 6.19, p = .003$ ). The participants that read the English narrative ( $M = 5.60, SD = .81$ ) or the Dutch narrative ( $M = 5.31, SD = .96$ ) could identify themselves significantly more with the protagonist than the participants who read the German narrative. However, the difference between participants who read the Dutch or German narratives was only significant on a marginal level ( $p = .074$ ). In addition, there was no difference between participants who read the English or Dutch narratives.

Furthermore, since the story consistent beliefs items could not be combined into one variable, the items were analysed separately. Thus, the one way analysis of variance with as factor language (Dutch/German/English) showed no significant effects for the items “Eating two portions of fruit and 250 gram vegetables each day can, in combination with a lot of exercise, help to lose weight” ( $F(2, 97) = 1.98, p = .144$ ), “Eating two portions of fruit and 250 gram of vegetables each day, in combination with exercising



three times a week for at least 20 minutes, contributes to a healthy lifestyle” ( $F(2, 97) = 1.04, p = .358$ ) and “Enjoying your student-life does not mean you cannot have a healthy lifestyle” ( $F(2, 97) = 2.47, p = .090$ ). Since for the one way analysis of variance with as factor language (Dutch/German/English) for the item “It is important to have a healthy lifestyle” the Levene’s test was significant ( $p < .001$ ), the Brown-Forsythe’s F-statistic is reported, showing a significant effect ( $F(2, 71.31) = 6.90, p = .002$ ). The participants who read the English narrative ( $M = 6.77, SD = .43$ ) had a stronger story consistent belief for the item “It is important to have a healthy lifestyle” than the participants who read the Dutch ( $M = 6.32, SD = .73$ ) or German ( $M = 6.13, SD = .92$ ) narrative. There were no significant differences between participants who read the Dutch or German narrative.

The one way analysis of variance with as factor language (Dutch/German/English/control) for behaviour intention showed no significant effect ( $F(3, 132) = 1.11, p = .348$ ). However, the analysis with as factor language (Dutch/German/English/control) for knowledge did show a significant effect ( $F(3, 132) = 8.70, p < .001$ ). Participants who read the Dutch narrative ( $M = .89, SD = .13$ ) had significant more knowledge than participants who read the German narrative ( $M = .75, SD = .20$ ) or the control group ( $M = .72, SD = .19$ ). There was no difference between the participants who read the Dutch or English narrative ( $M = .86, SD = .15$ ). In addition, participants who read the English narrative had significant more knowledge on overweight, diabetes and a healthy lifestyle than the participants who read the German narrative or the control group. Finally, there was no significant difference between the participants who read the German narrative or the control group.

Table 1: Language effects on dependent variables: transportation, identification, Story Consistent Beliefs (SCB) and Behaviour intention are measured on a 7-point scale (1 = low, 7 = high). Knowledge is measured with the percentage of correct answers (.0 = 0% of the answers correct, 1.0 = 100% of the answers correct)

	Dutch ( <i>n</i> = 34)		German ( <i>n</i> = 31)		English ( <i>n</i> = 35)		Control ( <i>n</i> = 36)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Transportation	4.23	1.10	3.61	1.27	4.09	1.39		
Identification	5.31	.98	4.79	1.04	5.60*	.82		
SCB item 1	5.97	1.00	5.45	1.15	5.91	1.27		
SCB item 2	6.12	.88	5.87	.99	6.20	.99		
SCB item 3	6.32	.73	6.13	.92	6.77*	.43		

SCB item 4	6.21	1.12	5.94	1.26	6.54	.95		
Behaviour intention	5.57	.89	5.87	.68	5.81	.87	5.87	.63
Knowledge	.89**	.13	.75	.20	.86**	.15	.72	.19

\* =  $p < .05$

\*\* =  $p < .001$

### Variable effects on behaviour intention

Transportation and identification are mechanisms through which narratives reduce resistance against the message, and thereby influence beliefs and behaviour intention (Duizer et al., 2012; De Graaf, Hoeken, Sanders & Beentjes, 2012). To test whether behaviour intention in current study is affected by the dependent variables transportation and identification, the effects of these variables on behaviour intention were analysed. Furthermore, the direct effect of language on the participants' behaviour intention was analysed.

To assess the influence of transportation on behaviour intention, the participants were divided into two groups: participants who were transported into the story and participants who were not transported into the story. Based on the median (= 4.0) of the scores of the participants, it was decided that participants with a score of 4.25 or higher were transported into the story, whereas participants with a lower score were not. To measure the effect transportation has on behaviour intention, a one way analysis of variance with as factor transportation (No transportation/ Transportation) for behaviour intention was executed. The analysis showed no significant effects of transportation in the health narrative on behaviour intention ( $F(1, 98) = 2.54, p = .114$ ).

Furthermore, the effect of identification on behaviour intention was also analysed. To assess the influence of identification on behaviour intention, the participants were divided into two groups: participants who identified themselves with the protagonist and participants who did not identify themselves with the protagonist. Based on the median (= 5.4) of the scores of the participants, it was decided that participants with a score of 5.4 or higher could identify themselves with the protagonist, whereas participants with lower scores could not. The one way analysis of variance with as factor identification (No identification/ Identification) for behaviour intention showed no significant effects of identification with the protagonist of the health narrative on behaviour intention ( $F(1, 98) = 2.80, p = .097$ ).

Finally, the analysis of variance with as factor language (Dutch/ German/ English) and transportation and identification as covariates for behaviour intention showed no significant effects ( $F(2, 95) = 2.09, p = .219$ ). The effect of the covariates transportation ( $F(1, 95) = 2.44, p = .122$ ) and identification ( $F(1, 95) = .625, p = .431$ ) proved to be non-significant.

Table 2: Variable effects on Behaviour intention, measured on a 7-point scale (1 = low, 7 = high)

	Behaviour intention	
	M	SD
Transportation		
<i>No transportation (n = 54)</i>	5.63	.79
<i>Transportation (n = 46)</i>	5.89	.85
Identification		
<i>No identification (n = 48)</i>	5.61	.77
<i>Identification (n = 52)</i>	5.88	.86
Language		
<i>Dutch (n = 34)</i>	5.57	.89
<i>German (n = 31)</i>	5.87	.68
<i>English (n = 35)</i>	5.81	.87

\* =  $p < .05$

\*\* =  $p < .001$

### Foreign proficiency effects

The aim of this study was to investigate the effect of language in the persuasion of a written health narrative. To focus on differences in proficiency the sub-question: “To what extent will the effect of language in the persuasion of a written health narrative differ between speakers who are highly or less proficient in their L2?” was formulated. It was predicted that Dutch students would have a higher proficiency in English than in German, since most Bachelor’s and Master’s programs are taught, at least to a certain level, in English. To prove that Dutch students are indeed more proficient in English than in German, their self-assessed proficiency was analysed. Participants had to self-assess their foreign language proficiency on a 7-point Likert scale (1 = low, 7 = high). A one way analysis of variance with as factor language (German/English) for foreign proficiency showed a significant effect of language ( $F(1, 64) = 76.2, p = <.001$ ).

Participants self-assessed their English proficiency higher ( $M = 5.67$ ,  $SD = 1.00$ ) than their German proficiency ( $M = 3.28$ ,  $SD = 1.19$ ).

To assess the influence of the foreign language proficiency of the participants on the dependent variables, the foreign proficiency results were divided into two groups: highly proficient and less proficient. Based on the median ( $=3.25$ ) of the results of the participants who self-assessed their German language proficiency, it was decided that participants with a score of 3 or higher were considered highly proficient in their second language, German, while participants with a lower score were considered less proficient in German. Based on the median ( $=5.75$ ) of the results of the participants who self-assessed their English language proficiency, it was decided that participants with a score of 5,75 or higher were considered highly proficient in their second language, English, while participants with a lower score were considered less proficient in English. A two-way analysis of variance with as factors foreign language proficiency (high/ low) and version of the narrative (German/ English) on transportation showed no significant main effects of foreign language proficiency ( $F(1, 62) = .04$ ,  $p = .853$ ) or version of the narrative ( $F(1, 62) = 2.06$ ,  $p = .156$ ). Furthermore, the interaction effect also proved to be non-significant ( $F(1, 62) = .001$ ,  $p = .981$ ). The analysis with as factors foreign language proficiency (high/low) and version of the narrative (German/English) on identification showed a significant main effect of version of the narrative ( $F(1, 62) = 11.40$ ,  $p = .001$ ), in that participants identified themselves more with the protagonist when they read the English version of the narrative ( $M = 5.60$ ,  $SD = .82$ ) than when they read the German version of the narrative ( $M = 4.79$ ,  $SD = 1.04$ ). No significant main effect of language proficiency ( $F(1, 62) = .003$ ,  $p = .958$ ) was found. The interaction effect also proved to be non-significant ( $F(1, 62) = 1.12$ ,  $p = .294$ ). Furthermore, the analysis with as factor foreign language proficiency (high/low) and version of the narrative (German/English) on behaviour intention showed no significant main effects of foreign language proficiency ( $F(1, 62) = .57$ ,  $p = .454$ ) or version of the narrative ( $F(1, 62) = .203$ ,  $p = .653$ ). The interaction effect also proved to be non-significant ( $F(1, 62) = 2.49$ ,  $p = .120$ ). In addition, the analysis with as factor foreign language proficiency (high/low) and version of the narrative (German/English) on knowledge showed a significant main effect of version of the narrative ( $F(1, 62) = 5.89$ ,  $p = .018$ ), in that participants who read the English narrative had more knowledge ( $M = .86$ ,  $SD = .15$ ) than participants who read the German narrative ( $M = .75$ ,  $SD = .20$ ). The main effect of foreign language proficiency

proved to be non-significant ( $F(1, 62) = .21, p = .651$ ), the interaction effect also proved to be non-significant ( $F(1, 62) = .05, p = .822$ ).

Since the story consistent beliefs items could not be combined into one variable, the items were analysed separately. Thus, the two way analysis of variance with as factors foreign language proficiency (high/low) and version of the narrative (German/English) for the item “Eating two portions of fruit and 250 gram of vegetables each day, in combination with exercising three times a week for at least 20 minutes, helps to lose weight” showed no significant main effects of foreign language proficiency ( $F(1, 62) = 1.75, p = .190$ ) and version of the narrative ( $F(1, 62) = 1.95, p = .168$ ). The interaction effect also proved to be non-significant ( $F(1, 62) = 2.58, p = .114$ ). The analysis with as factors foreign language proficiency (high/low) and version of the narrative (German/English) for the item “Eating two portions of fruit and 250 gram vegetables each day can, in combination with a lot of exercise, help to lose weight” showed no significant main effects of foreign language proficiency ( $F(1, 62) = .54, p = .465$ ) and version of the narrative ( $F(1, 62) = 1.57, p = .215$ ). The interaction effect also proved to be non-significant ( $F(1, 62) = .54, p = .465$ ). The analysis with as factors foreign language proficiency (high/low) and version of the narrative (German/English) for the item “It is important to have a healthy lifestyle” showed a significant main effect of version of the narrative ( $F(1, 62) = 13.43, p = .001$ ). This means that participants who read the English version of the narrative had a stronger story consistent belief ( $M = 6.77, SD = .43$ ) than participants who read the German version of the narrative ( $M = 6.13, SD = .92$ ). However, the main effect of language proficiency proved to be non-significant ( $F(1, 62) = 2.83, p = .097$ ). The interaction effect also proved to be non-significant ( $F(1, 62) = .52, p = .474$ ). Finally, the analysis with as factors foreign language proficiency (high/low) and version of the narrative (German/English) for the item “Enjoying your student-life does not mean you cannot have a healthy lifestyle” showed a significant main effect of version ( $F(1, 62) = 5.18, p = .026$ ), in that this story consistent belief was stronger for participants who read the English narrative ( $M = 6.54, SD = .95$ ) than for participants who read the German narrative ( $M = 5.94, SD = 1.26$ ). The main effect of foreign language proficiency turned out to be non-significant ( $F(1, 62) = 1.60, p = .210$ ), as did the interaction effect ( $F(1, 62) = .13, p = .715$ ).

Table 3: Proficiency effects on dependent variables: transportation, identification, Story Consistent Beliefs (SCB) and Behaviour intention are measured on a 7-point scale (1 = low, 7 = high). Knowledge is measured with the percentage of correct answers (.0 = 0% of the answers correct, 1.0 = 100% of the answers correct)

	Low proficiency ( <i>n</i> = 29)		High proficiency ( <i>n</i> = 37)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Transportation				
<i>German</i>	3.64	1.41	3.59	1.18
<i>English</i>	4.12	1.14	4.06	1.58
Identification				
<i>German</i>	4.92	1.31	4.67	.78
<i>English</i>	5.47*	.80	5.70*	.83
SCB1				
<i>German</i>	5.93	.73	5.06	1.30
<i>English</i>	5.87	1.19	5.95	1.36
SCB2				
<i>German</i>	6.07	.829	5.71	1.10
<i>English</i>	6.20	1.01	6.20	1.01
SCB3				
<i>German</i>	6.36	.84	5.94	.97
<i>English</i>	6.87*	.35	6.70*	.47
SCB4				
<i>German</i>	6.07	1.27	5.82	1.29
<i>English</i>	6.80*	.56	6.35*	1.14
Behaviour intention				
<i>German</i>	6.12	.49	5.66	.76
<i>English</i>	5.72	1.11	5.88	.67
Knowledge				
<i>German</i>	.74	.23	.75	.18
<i>English</i>	.84*	.17	.87*	.13

\* =  $p < .05$

\*\* =  $p < .001$

## Discussion

The aim of this study was to determine the effect of language on identification, transportation, story consistent beliefs, behaviour intention and knowledge in a written health narrative, with a special focus on the role of foreign language proficiency of the participants.

The main question in the study was: “What is the effect of language in the persuasion of a written health narrative?”. The languages in which the participants read the narrative proved to have an influence on identification and knowledge. The participants that read the English and the Dutch narrative could identify themselves more with the protagonist than the participants that read the German narrative, while there was no difference between participants who read the English or Dutch narrative. Furthermore, in comparison with the control group, knowledge about health behaviour and diabetes increased when participants read the English or Dutch narrative, but knowledge did not increase when the participants read the German narrative. However, the language of the narrative had no significant effects on transportation, behaviour intention and most of the story consistent beliefs. These varying results show that the language in which the participants read the narrative does have some effects on the outcomes of the narrative. Languages in which the participant is highly proficient, and thus in which the participant has the highest comprehension, can increase identification with the protagonist of the story and knowledge. This contradicts Van Den Berg (2015), who found that narrative understanding is a predictor of transportation, not identification. However, in current study, transportation, behaviour intention and most of the story consistent beliefs were not affected by language mode.

Since identification did have significant differences across the different language modes, but behaviour intention and story consistent beliefs did not, this contradicts the notion that identification is a determinant for recipients’ attitudes or beliefs (De Graaf et al., 2012; Slater & Rouner, 2002). Only the story consistent belief “It is important to have a healthy lifestyle” was stronger for participants who read the English narrative than for participants who read the Dutch or German narrative. There were no differences between the Dutch and German language mode. The lack of significant effects of language for story consistent beliefs is in line with the finding of Beentjes et al. (2009) and Van Den Berg (2015). They found that watching a narrative, irrespective of language conditions, did not lead to differences in story consistent beliefs. A possible explanation could be that

the story consistent beliefs, such as “Eating two portions of fruit and 250 gram of vegetables each day, in combination with exercising three times a week for at least 20 minutes, contributes to a healthy lifestyle” were already present within the participants. Therefore, for these story consistent beliefs, a ceiling effect might have occurred.

Since the EORM (Moyer-Gusé, 2008) suggests that identification and transportation will have an effect on behaviour intention, these effects were tested. The analyses showed no significant proof for effects on identification and transportation on behaviour intention. Finally, the language of the narrative also proved to have no significant effect on behaviour intention, nor did the covariates transportation and identification. This means that the behaviour intention of the participant was not affected by the language of the narrative, the transportation into the story or the identification with the protagonist, thereby contradicting the EORM (Moyer-Gusé, 2008). A possible explanation might be that behaviour intention, which varied between 5.57 and 5.87 on a scale of 1 to 7 across all languages, was already quite high. Therefore, a ceiling effect might have occurred. However, since this is not entirely clear, further research into this matter is necessary. Knowledge however, was affected by the language of the narrative, in that the knowledge about overweight and diabetes of the participants increased when they read the Dutch or English narrative, compared to participants who the German narrative or no narrative at all. Therefore, the findings of this study suggest that an increase in knowledge does not automatically lead to increased behaviour intention, which is in line with the findings of Duizer et al. (2014).

To focus on the effects of foreign language proficiency, a sub-question was added to the main research question: “To what extent will the effect of language in the persuasion of a written health narrative differ between speakers who are highly or less proficient in their L2?”. The difference in foreign language proficiency in this study was successfully manipulated, since the participants reported a higher proficiency in English than in German. This is in line with findings of Education First, who rank English proficiency of seventy countries on a yearly basis. The Netherlands is currently ranked second on that list (Education First, 2016). The level of foreign language proficiency proved to have no significant effects on identification or transportation. However, the language of the narrative did have a significant effect on identification; participants who read the English narrative did identify themselves more with the protagonist, although there was no interaction effect of language proficiency and version. Furthermore, the effects of language proficiency on behaviour intention, knowledge and the story



consistent beliefs were non-significant. The version of the narrative however did have an effect on two of the items. The story consistent beliefs that “it is important to have a healthy lifestyle” and “Enjoying your student-life does not mean you cannot have a healthy lifestyle” were stronger for participants who read the English version of the narrative than participants who read the German version of the narrative. It can thus be concluded that proficiency has no direct effects on identification, transportation, story consistent beliefs, behaviour intention or knowledge. This lack of effects of proficiency might be explained by Dufour and Kroll (1995) who state that the higher the level of language proficiency, the faster the ability to receive and process information. However, since the narrative was written, and there was no time limit, participants could take their time to process the information, thereby possibly diminishing the effects of proficiency. Further research is needed to investigate this possibility more deeply.

### **Conclusion and suggestions for further research**

Current research proved that language does have some effects on a written health narrative. The language of the narrative influences both identification with the protagonist in the story and gained knowledge through the narrative. No direct effects of language on transportation, most of the story consistent beliefs and behaviour intention were found. Whereas Van Den Berg (2015) mostly found language effects on transportation, current research found more identification effects. This difference might be explained by the different media in which the narrative was presented, since in the study of Van Den Berg (2015) short videos were used, and in the current research written narratives were presented. It might be possible that respondents are more easily transported into an audio-visual medium. Corston and Colman (1997) state that videos are often more exciting and create more involvement than for example a written narrative. Furthermore, the protagonists of the narrative of Van Den Berg (2015) were anthropomorphised animals, whilst in current research the protagonist was a student. Therefore identification with the protagonist in current research might be easier than with the protagonist in the narratives used in the study of Van Den Berg (2015). Since identification and transportation are both important concepts of the EORM (Moyer-Gusé, 2008) it is important that when developing a health narrative, it is known how to maximise transportation and identification of the recipients. Therefore, future research might focus on the differences of audio-visual narratives and written narratives on transportation, and the type of protagonist on identification. Furthermore, although there

were no direct effects of proficiency on the dependent variables, the language in which the narrative was presented did have effects on identification, knowledge and two of the story consistent beliefs. These effects can, in this study, not be explained by the difference of proficiency, therefore further research is necessary to examine further what may cause these effects. Finally, the subject of the narrative, being overweight as a student, may be recognisable for students, but is not a large problem amongst this population group. Volksgezondheidszorg.info (2016) is a product of the RIVM of the Dutch government, which provides open data and independent and scientifically based information. They state that highly educated young people are the least overweight in the Netherlands. The fact that being overweight is not a large issue among students, might explain the high scores for behaviour intention and story consistent beliefs, which may lead to ceiling effects. Therefore, future research should look into relevant problems for the target group beforehand and adapt the narrative accordingly.

### **Limitations**

Firstly, participants of the study were students who may not represent a whole society. This means that the results of this study can only be generalised to a certain extent. Therefore, future research may focus on a different, more varied, target group. Furthermore, the participants could answer the questionnaire online, as well on a mobile device as on a laptop. This choice was made for the convenience of the participants, so they could answer the questionnaire when and where they wanted. Therefore, a second limitation was that the environment in which the questionnaire was filled out, may have differed between participants, and thus may have had effects on their results. It seems plausible that for example participants who read the narrative and answered the questions in a crowded bus on their mobile device, were more distracted and therefore less transported into the narrative than for example someone who filled out the questionnaire on their laptop, while being home alone. In future research this may be prevented by standardizing the environment of the experiment for the participant. Thirdly, one limitation was that participants did not have a time limit while reading the narrative. Therefore, the effects of language proficiency might be diminished since participants could take more time to process the information. However, a time limit may put slow readers at a disadvantage. Therefore, it is advised to measure the processing time of the narratives in the various language modes in future research, to be able to control for this effect.

## **Contribution to theory and practical implications**

Narratives have been subject to extensive research; while Green and Brock (2000), De Graaf et al. (2012), Cohen (2001), Moyer-Gusé (2008) and Moyer-Gusé and Nabi (2010) for example looked into the underlying mechanisms of narratives, Morgan et al. (2009) and Murphy et al. (2010) proved the power of narratives. Furthermore, Vaughan et al. (2000), Duizer et al. (2014) and Jansen (2015) covered the effective use of narratives in health campaigns. The current study adds to this extensive body of research, in that language may also be a mechanism that influences narratives. So far, this research proved that at least identification is influenced by the language of the narrative, and proficiency in a language increases the knowledge gained from the language. Further research might discover other effects of language on written health narratives. Although further research is needed, these results already implicate that language is a factor that should be taken into account when developing a written health narrative for a certain audience. When developing a written health narrative, it is important to adapt to the native language of the recipient, or at least a second language in which they are highly proficient, since these language modes overall generated the highest results.

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## Appendices

### Appendix 1: Dutch narrative

Ik kijk in de spiegel. Ik zucht en schud mijn hoofd, draai een slag en kijk vervolgens met ingehouden buik naar het zij-aanzicht van mijn lichaam. Wederom slaak ik een zucht. Toen ik een jaar geleden begon met studeren hoefde ik mijn buik niet in te houden, zodat hij plat was toch? Ben ik dan echt zoveel aangekomen de laatste tijd? Ik wist wel dat ik niet meer zo slank was als voordat ik begon met studeren, maar toen ik net mijn broek die ik vorig jaar op vakantie heb gekocht wilde aantrekken, kwam ik erachter dat de broek niet meer paste. Ik schrik wakker uit mijn overpeinzingen door het getril van mijn telefoon. Een appje van Lotte: “Hee Laura! Mijn college is klaar, ik kom nu je kant op!”. Fijn, Lotte weet me altijd wel weer op te vrolijken.

Als ik de deur open doe voor Lotte is ze nog buiten adem van het fietsen. Hoewel Lotte haar genen mee heeft en zonder te sporten al een prachtig figuur heeft, is haar conditie niet top. We lopen samen naar mijn kamer, en zodra Lotte binnenkomt ziet ze de broek uit Spanje nog op mijn bed liggen, “wat een leuke broek! Doe je die straks aan?”. Met een zucht vertel ik haar dat ik er net achter kwam dat ik de knoop van de broek niet meer dicht krijg. “Zonde” zegt Lotte. Ineens komt er een idee bij me op: “wat vind je van het idee om samen te gaan sporten? Dan kan ik aan mijn lijn werken en jij aan je conditie. En het is nog gezellig ook!”. Lotte kijkt me aan en zegt: “Dat is helemaal nog niet zo’n gek idee, Laura! Ik wil al een tijdje gaan sporten, maar in mijn eentje ga ik eigenlijk nooit”. We praten nog even verder over het idee en maken meteen een plan.

Langzaam word ik wakker van het gepiep van mijn wekker. Ik bedenk me even of ik zal snoozen, ik heb een hekel aan vroeg opstaan. Maar ik heb met mezelf afgesproken om vanochtend nog voor mijn college te gaan sporten. Ik druk de wekker zonder te snoozen uit en kijk op mijn telefoon. Ik zie dat ik een appje heb gekregen van Lotte: “Sorry Laura, ik word net wakker met ontzettende hoofdpijn en blijf nog even liggen. Dus ik ga helaas niet mee sporten vandaag”. Wat doe ik nu? Zal ik alleen gaan sporten of is dit een mooi excuus om me nog even lekker om te draaien in mijn warme bedje? Lotte heeft wel eens eerder afgezegd, maar dat heeft me tot nu toe nog nooit tegen gehouden om in m’n eentje te gaan. Ik baal er stiekem wel van dat Lotte juist vandaag afzegt, omdat we vandaag voor de verandering wilden gaan zwemmen. Lotte weet dat ik onzeker ben over mijn lichaam en dat het dan nog moeilijker voor me is om alleen te gaan. Maar ga ik me

daardoor laten tegenhouden? We zijn inmiddels 2 maanden bezig en ik ben al ruim 5 kilo afgevallen. Soms moet ik mezelf echt naar de sportschool slepen als Lotte afzegt, omdat het idee van sporten me op dat moment tegenstaat. Maar het sporten geeft me naderhand altijd een goed gevoel over mezelf. Als Lotte en ik samen gaan, motiveren we elkaar goed waardoor het makkelijker is om te gaan sporten. Ik heb nog even te gaan voor ik op mijn streefgewicht zit, en met op bed blijven liggen bereik ik dat gewicht niet. Ik besluit om toch te gaan zwemmen. Mijn ogen voelen nog zwaar, maar een kopje dampende koffie zal me zo wel helpen om wakker te worden, zodat ik op tijd bij het zwembad ben.

Als ik in de collegebank zit, heb ik een tevreden gevoel. Niet alleen ben ik vanochtend vroeg opgestaan om in mijn eentje te gaan zwemmen, ik heb net ook een compliment gekregen van Anne, mijn studiegenootje. Ik zag haar toen ik de collegezaal inliep, ze kwam meteen naar me toe: “Laura, wat zie je er goed uit zeg! Ben je afgevallen?” Dat complimentje kwam precies op het juiste moment. Ik vond het heel moeilijk om in mijn eentje te gaan zwemmen. Toen ik in mijn bikini in de kleedkamer stond, durfde ik bijna niet het zwembad in te lopen. Toen ik me uiteindelijk erover heen had gezet, voelde ik me pas op mijn gemak op het moment dat ik tot m’n schouders in het water zat. Gelukkig spoelde dat gevoel toen ik ging zwemmen langzaam van me af. “Bedankt!” zeg ik tegen Anne, en ik vertel haar dat ik inderdaad hard aan het werken ben om af te vallen.

We zijn iets te vroeg voor het college, dus Anne en ik praten nog even verder over overgewicht en afvallen. Anne vertelt mij dat overgewicht ook echt gevaarlijk kan zijn: “Mijn broer is vijf jaar ouder dan ik en heeft de aanleg om dik te worden en een voorliefde voor eten. Hij kwam steeds meer aan totdat het uit de hand liep. Hij werd van alles moe en was heel snel kortademig. Daardoor zijn we erachter gekomen dat hij diabetes type 2 heeft ontwikkeld door zijn overgewicht. Het heeft ons allemaal thuis flink wakker geschud. Wist je dat je van diabetes hart- en vaatproblemen en gewrichtsproblemen kunt krijgen en er zelfs slechter door kunt gaan zien?” “Ik dacht altijd dat diabetes aangeboren was, dat het erfelijk is en je het dus alleen kunt krijgen als iemand in je familie het heeft?” denk ik hardop. “Nee hoor” antwoordt Anne “diabetes 2 kun je ontwikkelen door overgewicht. Dit type diabetes hoeft ook niet altijd behandeld te worden met insuline, je kan het dan zelf onder controle houden door verstandig te eten, te sporten en natuurlijk door af te vallen.” Ik denk hier nog even over na en ben blij dat ik aan mijn gewicht ben gaan werken voordat het te laat was, zoals bij de broer van Anne. Op dat moment begint de docent met zijn college.



Inmiddels is het 3 maanden geleden dat ik meer ben gaan sporten en ben gaan afvallen. Vandaag wordt het spannend, want ik heb een date met Tim. Ik heb al een tijdje een oogje op Tim, maar had hem nog niet durven vragen wat te gaan drinken. Totdat ik het er vorige week weer een keer met Lotte over had. “Zeg Laura, als het jou lukt om 7 kilo af te vallen binnen 3 maanden, dan lukt het je toch zeker ook om Tim mee uit te vragen? Jullie draaien sowieso al een tijdje om elkaar heen, dus ik weet zeker dat hij ja zegt.” In eerste instantie wilde ik me niet laten overhalen, maar toen Lotte ’s avonds weer naar huis ging, had ik inmiddels wel al een appje naar Tim gestuurd met de vraag of hij het leuk vond een keer wat af te spreken. Gelukkig had ik binnen 2 minuten een reactie van hem gekregen waarin hij voorstelde te gaan poolen. In het begin was ik ontzettend zenuwachtig, maar nu het afspraakje over een uur begint begin ik er ook zin in te krijgen. Ik sta voor de spiegel en bedenk wat ik aan zal gaan doen. Al denkend bestudeer ik mijn spiegelbeeld en ik kan het niet helpen om te glimlachen. Yes, mijn buik is weer plat! Ineens denk ik terug aan hoe ik 3 maanden geleden voor de spiegel stond, en ik voel me ontzettend trots. Het was niet altijd makkelijk, maar ik ben blij dat het me gelukt is! Ik heb een goede balans gevonden tussen het gezonde leven en het studentenleven. Ik drink nog wel bier of wijn op feestjes, en eet dan wat snacks, maar verder drink ik alleen water en eet ik keurig 2 porties fruit en 250 gram groente per dag. Ik loop naar de kast om mijn kleren uit te zoeken, als mijn oog valt op de broek die ik vorig jaar op vakantie heb gekocht. Als ik hem aandoe kan ik wel een gat in de lucht springen: hij past weer.

## Appendix 2: German narrative

Ich schaue in den Spiegel. Ich seufze und schüttele meinen Kopf, drehe mich ein Stück und schaue mit eingezogenem Bauch auf die Seitenansicht meines Körpers. Nochmals gebe ich einen Seufzer von mir. Als ich vor einem Jahr mit dem Studieren anfang, musste ich meinen Bauch noch nicht einziehen damit er flach war, oder? Hab ich wirklich so viel zugenommen in letzter Zeit? Ich wusste schon, dass ich nicht mehr so schlank bin wie vor dem Studium, aber als ich meine Hose, die ich letztes Jahr im Urlaub gekauft habe, anziehen wollte, habe ich gemerkt, dass sie mir nicht mehr passt. Das Klingeln meines Handys schreckt mich aus meinen Gedanken. Eine Nachricht von Lotte: „Hey Laura! Mein Unterricht ist vorbei, ich komm bei dir vorbei!“. Schön, Lotte weiß immer wie sie mich aufheitern kann.

Als ich die Tür aufmache ist Lotte noch außer Atem vom Fahrrad fahren. Obwohl Lotte gute Gene und auch ohne Sport eine tolle Figur hat, ist ihre Kondition nicht die beste. Wir laufen zusammen zu meinem Zimmer und Lotte sieht sofort die Hose aus Spanien auf meinem Bett liegen. „Was für eine schöne Hose! Ziehst du die gleich an?“. Mit einem Seufzer erzähle ich ihr, dass ich gerade gemerkt habe, dass ich den Knopf nicht mehr zukriege. „Schade“ sagt Lotte. Dann kommt mir auf einmal eine Idee: „Was hältst du davon, zusammen Sport zu machen? Dann arbeite ich an meiner Figur und du an deiner Kondition. Und Spaß macht es auch!“. Lotte schaut mich an und sagt: „Das ist gar keine schlechte Idee, Laura! Ich wollte schon eine Zeit lang anfangen Sport zu machen, aber alleine gehe ich eigentlich nie“. Wir quatschen noch kurz über diese Idee und schmieden direkt einen Plan.

Langsam werde ich vom Piepen meines Weckers wach. Ich überlege mir kurz, noch einmal auf Schlummern zu drücken, ich hasse es früh aufzustehen. Aber ich habe mir vorgenommen, heute Morgen noch vorm Unterricht Sport zu treiben. Ich schalte den Wecker aus und schaue auf mein Handy. Ich sehe dass ich eine Nachricht von Lotte bekommen habe: „Sorry Laura, ich bin grade mit furchtbaren Kopfschmerzen aufgewacht und bleibe noch ein bisschen liegen. Ich komme heute also nicht mit zum Sport.“. Was mache ich jetzt? Mache ich alleine Sport oder ist das eine nette Ausrede um mich noch einmal im warmen Bett umzudrehen? Lotte hatte mir schon vorher mal abgesagt, aber das hat mich bis jetzt nicht davon abgehalten alleine zu gehen. Ich finde es schon nervig, dass Lotte gerade heute absagt, weil wir abwechslungsshalber heute schwimmen gehen

wollten. Lotte weiß, dass ich wegen meines Körpers unsicher bin und es deshalb schwerer für mich ist, alleine zu gehen. Aber lasse ich mich davon zurückhalten? Wir sind mittlerweile seit zwei Monaten dabei und ich habe schon ungefähr fünf Kilo abgenommen. Manchmal muss ich mich echt zum Sport schleppen wenn Lotte absagt, weil mir die Vorstellung dann gar nicht gefällt. Aber im Nachhinein gibt es mir immer ein gutes Gefühl. Wenn Lotte und ich zusammen gehen motivieren wir uns gegenseitig, wodurch es einfacher ist Sport zu treiben. Ich habe noch etwas vor mir bevor ich mein Wunschgewicht erreicht habe, und mit Auf-dem-Bett-liegen werde ich das nicht erreichen. Ich beschließe doch schwimmen zu gehen. Meine Augen fühlen sich noch schwer an, aber ein heißer Kaffee wird mir schon helfen wach zu werden, damit ich pünktlich im Schwimmbad bin.

Als ich im Unterricht sitze habe ich ein zufriedenes Gefühl. Nicht nur bin ich heute Morgen früh aufgestanden um alleine schwimmen zu gehen, ich habe auch grade ein Kompliment von meiner Kommilitonin Anne bekommen. Ich habe sie gesehen als ich in den Hörsaal gelaufen bin und sie kam direkt auf mich zu: „Laura, du siehst ja super aus! Hast du abgenommen?“. Dieses Kompliment kam genau zum richtigen Zeitpunkt. Ich fand es sehr schwer, alleine schwimmen zu gehen. Als ich in meinem Bikini in der Umkleide stand, traute ich mich kaum ins Schwimmbad zu gehen. Als ich mich endlich dazu durchgerungen hatte, fühlte ich mich erst wieder wohl, als ich bis zu den Schultern im Wasser war. Zum Glück verflog dieses Gefühl schnell. „Danke!“ sagte ich zu Anne und erzählte ihr, dass ich tatsächlich hart daran arbeitete abzunehmen.

Wir sind etwas zu früh für den Unterricht, deshalb sprechen Anne und ich noch kurz weiter über Übergewicht und abnehmen. Anne erzählt mir, dass Übergewicht auch gefährlich sein kann: „Mein Bruder ist fünf Jahre älter als ich, hat die Veranlagung dick zu werden und eine Vorliebe fürs Essen. Er hat immer mehr zugenommen bis es aus dem Runder gelaufen ist. Er wurde immer müde und schnell kurzatmig. Dadurch sind wir dahinter gekommen dass er Diabetes Typ 2 durch sein Übergewicht entwickelt hat. Das hat uns zuhause alle wachgerüttelt. Wusstest du, dass man durch Diabetes Herz- und Gefäßerkrankungen und Gewichtsprobleme bekommen kann, und dadurch sogar Sehkraft verlieren kann?“. „Ich habe immer gedacht, dass Diabetes angeboren ist, dass es erblich ist und man es deshalb nur kriegen kann, wenn es jemand in der Familie hat?“, denke ich laut. „Nein nein“ antwortet Anne, „Diabetes 2 kann man durch Übergewicht entwickeln. Dieser Typ Diabetes muss auch nicht immer mit Insulin behandelt werden, man kann es

selber unter Kontrolle bringen durch eine gute Ernährung, Sport und natürlich durchs Abnehmen.“ Ich denke noch kurz darüber nach und bin froh, dass ich an meinem Gewicht arbeite bevor es zu spät ist, so wie bei dem Bruder von Anne. In dem Moment geht der Unterricht los.

Mittlerweile ist es drei Monate her, seit ich angefangen habe Sport zu treiben und abzunehmen. Heute wird es spannend, weil ich ein Date mit Tim habe. Ich habe schon eine Zeit lang ein Auge auf ihn geworfen, aber hatte mich nie getraut ihn zu fragen, ob wir was zusammen trinken gehen. Bis ich letzte Woche wieder mit Lotte darüber geredet habe. „Sag mal Laura, wenn du es schon schaffst in drei Monaten sieben Kilo zu verlieren, dann schaffst du es doch auch Tim zu fragen? Ihr Beiden dreht euch sowieso schon eine Zeit lang umeinander, deshalb bin ich mir sicher, dass er ja sagt.“ Erst wollte ich mich nicht überreden lassen, aber als Lotte abends wieder nach Hause ging, hatte ich doch schon eine Nachricht an Tim geschickt um zu fragen ob er Lust hat sich mit mir zu treffen. Glücklicherweise hatte ich innerhalb von zwei Minuten eine Antwort von ihm, in der er vorschlug zusammen Pool zu spielen. Am Anfang war ich sehr nervös, aber jetzt da unser Treffen in einer Stunde beginnt, fange ich an mich auch zu freuen. Ich stehe vor dem Spiegel und überlege mir was ich anziehen soll. Ich beobachte mein Spiegelbild und muss grinsen. Yes, mein Bauch ist wieder flach! Sofort denke ich daran zurück wie ich vor drei Monaten vor dem Spiegel stand und bin unglaublich stolz. Es war nicht immer einfach, aber ich bin froh, dass ich es geschafft habe. Ich habe eine gute Balance zwischen einem gesunden Leben und dem Studentenleben gefunden. Ich trinke schon noch Bier oder Wein auf Partys und esse dann ein paar Snacks, aber ansonsten trinke ich nur Wasser und esse zwei gute Portionen Obst und 250g Gemüse pro Tag. Ich laufe zum Schrank um meine Klamotten auszusuchen und mein Blick fällt auf die Hose die ich letztes Jahr im Urlaub gekauft habe. Als ich sie anziehe, könnte ich in die Luft springen, sie passt wieder.

### **Appendix 3: English narrative**

I'm looking in the mirror. I sigh and shake my head. I turn sideways and with my tummy tucked in, I look at the profile of my body. Again, I sigh. When I started at university a year ago, I didn't have to hold my tummy in to make it flat, right? Have I really gained that much weight recently? I know I haven't been as slim as I used to be before I started studying, but just now I tried on a pair of trousers I bought on holiday last year, and it turns out they don't fit anymore. I'm jolted from my thoughts by the buzzing of my phone. A text message from Lotte: " Hey Laura! My lecture's finished, I'm headed your way!" Great, Lotte always knows how to cheer me up.

When I open the door for her, Lotte is still out of breath from cycling. Although Lotte has great genes and doesn't need to exercise to maintain a great figure, she's got no stamina. We walk up to my room and as soon as Lotte enters, she spots the trousers from Spain on my bed. "these trousers are so nice! Are you going to wear them?" . Sighing, I tell her that I just found out they don't fit anymore. " Pity" Lotte says. Suddenly, an idea pops into my head. "how about we go exercising together? That way, I can work on my weight and you can get into shape. And it's also fun!" Lotte looks at me and says: " That's actually not a bad idea Laura! I've been wanting to go for a while, but I never go on my own. We continue talking about it and come up with a plan.

Slowly I'm woken up by the beeping of my alarm. I consider snoozing; I hate getting up early. But I promised myself I would go to the gym before class. I switch off the alarm and look on my phone. I notice I've got a text message from Lotte: " I'm sorry Laura, I've just woken up with a terrible headache, so I'm going to stay in bed a little longer. I won't join you at the gym today." What to do now? Shall I go on my own or is this the perfect excuse to stay in bed a little longer? Lotte has cancelled before, but that's never stopped me from going on my own. To be honest, I'm bummed Lotte has cancelled today of all days, because we were supposed to go swimming. Lotte knows I'm insecure about my body, which makes it harder for me to go alone. But is this going to stop me? We've been exercising for 2 months now and I've lost a good 5 kilos. Sometimes I literally have to drag myself to the gym when Lotte cancels, because in that moment, the idea of exercising isn't very alluring. Though exercising does make me feel good about myself. Whenever Lotte and I go together, we motivate each other, which makes it easier to go

and exercise. I'm almost at my target weight and staying in bed isn't going to help me. I decide to go swimming after all. My eyes still feel heavy, but a cup of steaming coffee will help me wake up, and help me be on time at the swimming pool.

Later when I'm in class, I feel satisfied. Not only did I get up early to go swimming on my own, I also received a compliment from a fellow student. I saw her when I entered the lecture hall. She approached me immediately: "Laura, you're looking good! Have you lost weight?" The timing of that compliment was perfect. Going swimming on my own had been difficult. Standing in the dressing room in my bikini, I almost lost my nerve to go through with it. After I'd finally pushed myself to go, I didn't stop feeling uncomfortable until I was up to my shoulders in the water. Luckily that feeling was washed away when I started swimming. "Thanks" I tell Anne. And I tell her that I've indeed been exercising to lose weight.

We're a little early for the lecture, so Anne and I continue our conversation about obesity and losing weight. Anne tells me that being overweight can be really dangerous. "My brother is five years older than me and he has a predisposition to obesity. He loves food. He kept gaining weight until it got out of control. He was easily exhausted and short of breath. We found out he had developed Type 2 diabetes because of his obesity. That shook us up quite a bit. Did you know that diabetes can cause arthritis and cardiovascular disease? Even your eyesight can deteriorate." "I always thought that diabetes was hereditary and you can only get it if it runs in your family." I think aloud. "Oh no" Anne answers "you can get type 2 diabetes due to being overweight. This type doesn't necessarily have to be treated with insulin though. You can control it by eating healthy food, exercising and of course losing weight." I mull it over and decide that I'm glad I've started working on my weight before it's too late, unlike Anne's brother. Then, the lecturer starts the lecture.

It's been 3 months since I've started exercising more and since I've started losing weight. Today is going to be an exciting day, because I've got a date with Tim. I've had a crush on him for a while, but I never had the courage to ask him out for a drink. Until I talked to Lotte about it last week. "Hey Laura, if you can lose 7 kilos in 3 months, surely, you'll be able to ask Tim out? You've been dancing around each other for a while now, so I'm sure he'll say yes." At first, I didn't want to be persuaded, but when Lotte went home that

evening, I'd already sent Tim a text message to ask him out. Luckily, he responded within 2 minutes and suggested we go play some pool. Initially, I was nervous, but now, an hour before our date, I'm actually looking forward to it. Standing in front of the mirror, I think about what I'm going to wear. Thinking, I thoroughly study my reflection and I can't help but smile. Yes, my tummy is flat again! I think back to the way I felt when i stood in front of the mirror three months ago and I'm extremely proud. It hasn't been easy, but I'm glad i've succeeded! I've found a good balance between having a student life and a healthy lifestyle. I still drink beer or wine at parties, and i still eat snacks, but other than that, I only drink water. Also, I eat 2 portions of fruit and 250 grams of vegetables a day. I walk to my wardrobe to find an outfit to wear, when I spot the jeans i bought on holiday last year. I could jump for joy when I try them on; they fit yet  
again.

## Appendix 4: questionnaire

- **Introduction:**

Beste participant, Van harte bedankt voor het meewerken aan deze vragenlijst voor mijn masterscriptie. De resultaten zullen anoniem verwerkt worden en deelname is geheel vrijwillig: dit betekent dat je ten alle tijden kunt stoppen. Het experiment duurt in totaal ongeveer 10 minuten, afhankelijk van je leessnelheid. Verder ben ik benieuwd naar jouw mening, foute antwoorden zijn dus niet mogelijk. Zo meteen krijg je een verhaal over studente Laura te lezen. Na het verhaal volgen een aantal vragen. Als je vragen en/of opmerkingen hebt, kun je altijd contact met me opnemen via onderstaand e-mail adres.

Met vriendelijke groet,

Jeanette Caenen, [j.caenen@student.ru.nl](mailto:j.caenen@student.ru.nl)

- **Background Questions**

Wat is je geslacht?

- Man (1)
- Vrouw (2)

Wat is je leeftijd?

Wat is je hoogst genoten opleiding?

- MBO (1)
- HBO (2)
- WO bachelor (3)
- WO master (4)

- *Eventually: German/English proficiency*

Mijn Duitse/Engelse leesvaardigheid is: (1 = slecht, 7 = uitstekend)

Mijn Duitse/ Engelse schrijfvaardigheid is: (1 = slecht, 7 = uitstekend)

Mijn Duitse/ Engelse luistervaardigheid is: (1 = slecht, 7 = uitstekend)

Mijn Duitse/ Engelse spreekvaardigheid is: (1 = slecht, 7 = uitstekend)

- **Identification**

Ik denk dat ik Laura goed begrijp (1= oneens, 7 = eens)



Ik kan de redenen waarom Laura iets doet begrijpen (1= oneens, 7 = eens)

Terwijl ik het verhaal las, kon ik de emoties die Laura uitstraalde ook voelen (1= oneens, 7 = eens)

Op belangrijke momenten in het verhaal, had ik het gevoel dat ik precies wist wat Laura voelde (1= oneens, 7 = eens)

Toen ik het verhaal las, stelde ik me voor dat ik hetzelfde zou doen als Laura (1= oneens, 7 = eens)

- **Transportation**

Ik voelde me mentaal betrokken bij het verhaal toen ik het verhaal las (1= oneens, 7 = eens)

Ik wilde weten hoe het verhaal zou eindigen (1= oneens, 7 = eens)

Het verhaal heeft me emotioneel beïnvloed (1= oneens, 7 = eens)

Ik dacht over manieren na waardoor het verhaal anders zou kunnen hebben uitgepakt (1= oneens, 7 = eens)

- **Story Consistent Beliefs**

Het eten van 2 porties fruit en 250 gram groente per dag kan in combinatie met veel sporten helpen bij het afvallen (1= oneens, 7 = eens)

Het is belangrijk om een gezonde levensstijl te hebben (1= oneens, 7 = eens)

Genieten van je studentenleven hoeft niet te betekenen dat je geen gezonde levensstijl kan hebben (1= oneens, 7 = eens)

Het eten van 2 porties fruit en 250 gram groente per dag in combinatie met drie keer per week minimaal 20 minuten sporten draagt bij aan een gezonde levensstijl (1= oneens, 7 = eens)

- **Behaviour intention:**

Als ik minstens drie keer per week 20 minuten sport is dat:

(1 = slecht, 7 = goed)

(1 = onplezierig, 7 = plezierig)

(1 = schadelijk, 7 = voordelig)

(1 = saai, 7 = vermakelijk)

(1 = onverstandig, 7 = verstandig)

Als ik elke dag voldoende groente en fruit eet is dat:

(1 = slecht, 7 = goed)

(1 = onplezierig, 7 = plezierig)

(1 = schadelijk, 7 = voordelig)

(1 = saai, 7 = vermakelijk)

(1 = onverstandig, 7 = verstandig)

De meeste mensen die belangrijk voor me zijn vinden dat ik drie keer per week minimaal 20 minuten moet sporten (1= oneens, 7 = eens)

De meeste mensen die belangrijk voor me zijn vinden dat ik elke dag voldoende groente en fruit moet eten (1 = oneens, 7 = eens)

Als ik echt wil, kan ik drie keer per week minimaal 20 minuten sporten (1 = oneens, 7 = eens)

Als ik echt wil, kan ik elke dag voldoende groente en fruit eten (1 = oneens, 7 = eens)

Ik ben van plan drie keer per week minimaal 20 minuten te sporten (1 = oneens, 7 = eens)

Ik ben van plan elke dag voldoende groente en fruit te eten (1 = oneens, 7 = eens)

- **Knowledge:**

Diabetes type 2 is altijd aangeboren

- Waar (1)
- Onwaar (2)

Van diabetes kan je gezichtsvermogen achteruit gaan

- Waar (1)
- Onwaar (2)

Diabetes type 2 hoeft niet altijd behandeld te worden met insuline

- Waar (1)
- Onwaar (2)

De voorgeschreven hoeveelheid groente en fruit per dag is 2 stuks fruit en 150 gram groente

- Waar (1)
- Onwaar (2)

De aangeraden hoeveelheid sporten per week is drie keer minimaal 20 minuten

- Waar (1)
- Onwaar (2)

- **End of the questionnaire**

Dit is het einde van de vragenlijst. Door op de volgende knop te drukken wordt de vragenlijst verstuurd. Nogmaals van harte bedankt voor het meewerken aan deze vragenlijst voor mijn scriptie. Dankzij jou ben ik weer een stap dichterbij mijn afstuderen. Als je nog vragen of opmerkingen hebt, kun je me altijd mailen via [j.caenen@student.ru.nl](mailto:j.caenen@student.ru.nl).

Met vriendelijke groet,  
Jeanette Caenen