The Potential of Interactive Narratives in Reducing Resistance to Persuasion in Health Communication.

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Abstract

Previous studies showed that the use of narratives in educational and health messages can change recipients' attitudes and behaviors. This, and the fact that health organizations tend to use narratives in their communication more often nowadays, would result in the field of health communication profiting from more research into narrative persuasion. The current study argued that, due to user control, agency, increased identification and increased transportation, the addition of interactivity in those narratives would increase this power of narrative persuasion by overcoming resistance to persuasion attempts in health communication. Results show that, compared to traditional narratives, interactive narratives are only more powerful in overcoming resistance to persuasion attempts for individuals with a high need for cognition. In addition, the effect of the text form (non-narrative, traditional narrative, interactive narrative) on individuals' resistance to persuasion is not mediated by motivation or personal threat, nor is it moderated by game experience. However, increases in motivation to read the text do lead to decreases in resistance to persuasion. In addition, individuals' behavioral intentions almost doubled after exposing individuals to any of the text forms, compared to their behavioral intentions before being exposed to any of the text forms. Health organizations might consider changing their narrative communication to interactive narrative communication. This would not affect any resistance to persuasion for people with an average or low need for cognition, however, it might decrease resistance to persuasion for the individuals with a high need for cognition in their target audience.

Keywords: Narrative, Interactive narrative, Resistance to persuasion, Health communication

Introduction

Narratives can be considered part of everyday life. For example, films, series, documentaries, newspapers, magazines, and the radio all make use of a narrative form in their communication. (Appel & Richter, 2010; Green & Brock, 2000; Kinnebrock & Bilanzic, 2006). Especially in the field of health communication, in which statistical evidence once was the most used form to persuade and motivate people to change their behavior, organizations tend to use narratives nowadays more often to persuade and motivate individuals (Green & Jenkins, 2014; Hinyard & Kreuter, 2007). A narrative can be described as a sequence of events experienced by a subject of consciousness. This narrative is autonomous of medium and form (Kinnebrock & Bilanzic, 2006) with regularly an obvious demarcated beginning, middle and ending (Green & Jenkins, 2014). In traditional narrative forms, the recipients do not have any control over the direction of the story plot, the events, the sequencing, and all the characters' actions happening during the storyline. This results in the recipient taking on a passive role in the story world (Green & Jenkins, 2014). However, besides traditional narratives, interactive narratives tend to be used more often as well (Roth & Koenitz, 2016). In these interactive narratives, the recipient can take on an active role in the narrative world (Green & Jenkins, 2014), by allowing the interactor to change the content (Sundar & Limperos, 2013). Thus, these interactive narratives differ from traditional narratives because they allow recipients to have a certain amount of agency and be able to have an impact on different aspects of the narrative, such as character development, the point of view, or even the outcome of the narrative (Roth & Koenitz, 2016).

An advantage of narratives, in general, is that they can be useful in persuading their recipients, which is described as narrative persuasion. To create both enjoyment and persuasiveness, narrative absorption is one of the most important factors of the narrative experience (Green & Jenkins, 2014). This involves people mentally leaving the 'real' world

and experiencing the story world for as long as they are reading the narrative (Bilandzic & Busselle, 2017). This absorption is similar to transportation into a narrative, which can be described as a complete experience in which all mental systems of the recipient focus on the development in the narrative (Green & Brock, 2000). According to different studies, transportation into a narrative can change real-world beliefs and attitudes that recipients hold (Appel & Richter, 2010; Green & Brock 2000; Kinnebrock & Bilandzic, 2006). Besides transportation, the influential effect of narrative persuasion can also be explained by identification. This refers to recipients taking on the character's point of view and adopting this character's feelings (Green & Jenkins, 2014; Moyer-Gusé, 2008). Because the recipient will see the events happening through the eyes of the character, it can broaden their perspective on the topic, which eventually might result in attitude change (Cohen, 2001). In addition, narratives might also lead to greater intentions to change behavior. Kim, Bigman, Leader, Lerman, and Cappella (2012) showed in their study that smokers who read a narrative article were more engaged to the text and, in turn, showed greater intentions to quit smoking than smokers who read a non-narrative article.

Nonetheless, people do not blindly accept all persuasion attempts. Often recipients are motivated to resist such an attempt. This resistance can be explained as recipients turning down a persuasive attempt (Knowles & Linn, 2004), for example, by counter-arguing. Counter-arguing means that recipients will come up with arguments to refute the persuasive message (Green & Jenkins, 2014). The motivation to resist might occur because recipients want to restore their freedom or to keep consistency and sense of control (Wheeler & Hermann, 2007). However, narrative transportation and identification might help reduce this resistance to persuasion. Several studies have shown that recipients transporting into a narrative, or identifying with a character, decrease the likelihood that they will argue against the narrative and the message within because it is harder to access real-world arguments

(Green & Brock, 2000) and because they are not motivated to counter-argue on points made in the story (Banerjee & Greene, 2012b; Green & Brock, 2000; Green & Clark, 2012). Furthermore, the added interactivity in interactive narratives is expected to reduce resistance to persuasion as well. This is because the interactivity provides recipients with user-control, which might lead to less resistance to persuasion due to the perceived freedom for the interactor (Fransen, Verlegh, Kirmani & Smit, 2015; Green & Jenkins, 2014).

Up until now, several studies have been done to interactive narratives, traditional narratives, and narrative persuasion in health communication. However, more research on those three subjects is needed. For example, the question of whether the addition of interactivity in narratives would increase the power of narrative persuasion in health communication remains unanswered in the current scientific literature. Furthermore, Green and Jenkins (2014) suggest that external factors might influence this effectiveness of the text forms in reducing resistance to persuasion. They suggest that increased motivation and increased personal threat might explain why interactive narratives would be more powerful in reducing resistance to persuasion compared to traditional narratives. In contrast to traditional narratives, interactive narratives might be able to fulfill three intrinsic human needs: autonomy, competence, and relatedness, which would lead to an increase in an individual's motivation to read the text (Deci & Ryan, 2000; Roth & Koenitz, 2016), and, in turn, would lead to less resistance to persuasion (Green & Jenkins, 2014). Besides, due to the increased identification with the character, individuals might feel a greater perceived vulnerability (Moyer-Gusé, 2008). This might increase the perceived personal threat and would, in turn, lead to reduced resistance to persuasion as well (Green & Jenkins, 2014). In addition, Green and Jenkins (2014) suggest that individual differences, such as need for cognition and comfort with technology, might affect whether an interactive narrative will be more persuasive than a traditional narrative. For example, Jenkins and Green (2014) found that, for people with a

high need for cognition, interactive narratives would increase identification compared to traditional narratives. This increase in identification for people with a high need for cognition would, in turn, lead to reduced resistance to persuasion (Moyer-Gusé, 2008). Additionally, to use interactive narratives, individuals need to have a certain level of knowledge about how to use digital devices. Individuals who lack this knowledge might find the task of an interactive narrative more complex, which might negatively affect transportation and identification, and thus, in turn, increase resistance to persuasion (Roth & Koenitz, 2016). However, game experience might increase this level of knowledge and skills (Prensky, 2003).

The current study will broaden the existing scientific literature about narrative persuasion by being one of the first studies to include interactive narratives. In addition, previous studies showed that educational and health messages in the form of a narrative might effectively change attitudes and even behaviors (Moyer-Gusé, 2008). This, combined with the fact that health organizations tend to use narratives in their communication more often nowadays, would result in the field of health communication profiting from more research into this domain of narrative persuasion. The current study could provide the field of health communication with even more insights on how to use this narrative persuasion best to change their recipients' behaviors concerning health issues.

All in all, the current study aims to find out whether these theoretical suggestions can be supported by empirical research. More specifically, this study focuses on how motivation, personal threat, need for cognition and game experience might affect the power of (interactive) narratives in reducing resistance to persuasion, which leads to the following research question:

RQ: *To what extent are interactive narratives more powerful in overcoming resistance to persuasion attempts in health communication than traditional narratives, and to what extent do motivation, personal threat, need for cognition and game experience influence this effect?*

Theoretical Framework

Resistance to persuasion

Because of the overload of commercial messages from advertisers and marketers, it can be difficult for health organizations to compete against them since health organizations tend to have relatively smaller budgets. Therefore, it might be difficult for health organizations to reach their audience (Hinyard & Kreuter, 2007). In contrast to those commercial messages from advertisers and marketers, whose main goal is to sell products, the main objective of health organizations is to persuade its target group into healthier behavior (Loos, 2019; Hendriks & Janssen, 2018; Van 't Riet & Ruiter, 2013). However, not all persuasive attempts do easily change attitudes and behavior. Resistance might be aroused because people want to restore their freedom or want to keep a sense of control and consistency with their original attitudes (Wheeler & Hermann, 2007). Therefore, to make persuasion attempts successful, it might be wise to address resistance to those persuasion attempts first, because, by decreasing resistance to persuasive attempts, persuasion will increase (Linn & Knowles, 2004). Several reasons might explain why participants might show resistance to persuasive attempts. For example, the persuasive attempt might invoke a recipient's persuasion knowledge, which could be explained as this individual's knowledge about the techniques used by organizations to persuade recipients with their messages (Campbell & Kirmani, 2000). This, in turn, might lead to psychological reactance, meaning that recipients perceive a threat to freedom in their choices, and therefore, will resist the persuasive attempt by for example counter-arguing (Clee & Wicklund, 1980; Moyer-Gusé, 2008). This reaction could be explained because individuals have a strong need for freedom in their choosing (Clee & Wicklund, 1980). Furthermore, resistance might be caused by the fear of the subject that the persuasive attempt is about, which might lead to selective avoidance (Moyer-Gusé, 2008). Because recipients do not want to be exposed to this threatening

information, they tend to intentionally avoid the persuasive attempt by leaving the situation or ignoring the persuasive message as a resistance strategy (Moyer-Gusé, 2008). However, in contrast to this, recipients might also resist the persuasive attempt due to perceived invulnerability (Moyer-Gusé, 2008). This means that individuals believe that they are invulnerable for the negative consequences of not performing a behavior (Moyer-Gusé, 2008; Goossens, Beyers, Emmen & van Aken, 2002), which also leads them to show resistance to persuasion. Since the current study is one of the first to examine the effect of interactive narratives in reducing resistance to persuasion, it will not focus on one resistance attempt in particular, but it will take a broad view on resistance to persuasion.

Traditional narratives

One way to reduce this resistance to persuasion would be with the help of entertainment-education (Moyer-Gusé, 2008). This could be explained as any form of entertainment in which prosocial messages are incorporated (Moyer-Gusé, 2008). It is speculated that entertainment-education has a larger positive influence on individuals' attitudes and behavior, compared to traditional persuasive messages. This could be explained because entertainment-education comes with a narrative structure (Moyer-Gusé, 2008), the most common manner of interaction between humans (Woodstock, 2002). In narratology, the term narrative can be explained as both the story, which stands for the sequence of events happening to a subject of consciousness and the narrative discourse, which can be explained as the order in which these events are represented (Kinnebrock & Bilandzic, 2006). In those traditional narratives, the content is fixed, indicating that recipients cannot control either the story nor the narrative discourse (Green & Jenkins, 2014). Many social and political organizations tend to inform their audience by the use of this text form already (Woodstock, 2002), including health organizations themselves (Green & Jenkins, 2014; Hinyard & Kreuter, 2007). This could be explained because the use of narratives for informing

individuals could be extremely useful for topics in which personal values and morality are involved (Hinyard & Kreuter, 2007; Howard, 1991), such as health. For example, in a study about alcohol-education messages, statistical evidence showed to be more persuasive when the message was consistent with the participants' values. In contrast, narratives were more persuasive when the message was inconsistent with the participants' values (Slater & Rouner, 1996). Since the main goal of health organizations is to persuade individuals into healthier behavior, it suggests that the target group's current morals and values are inconsistent with the aimed morals and values of the health organizations. This suggests that narratives might be more effective in persuasive attempts of health organizations, than statistical evidence.

Narratives reducing resistance to persuasion

Several resistance attempts can be reduced with the help of those narratives. First, narratives might reduce the likelihood that recipients will counter-argue (Moyer-Gusé, 2008). According to previous studies, resistance can be reduced with the help of identification with the character in a narrative (Green & Jenkins, 2014; Moyer-Gusé, 2008). Identification could best be explained as a process in which the recipients replace self-awareness with a temporarily emotional and cognitive link with a character (Cohen, 2001). It allows recipients to experience social reality from a different perspective than their own (Cohen, 2001). This might result in adopting the identity and objectives from the character, which leads to the recipient simulating the feelings of the character while the story progresses, and so to the recipient understanding why plot events regarding these objectives are happening (Oatley, 1994). When this identification, thereafter, ends or gets interrupted – by making the recipient self-aware again – recipients might have adjusted their attitude to the character's attitude (Oatley, 1994). This can be explained by the fact that people lose their real-world perspective during identification, which makes it harder for recipients to access real-world arguments since they are so absorbed into the narrative (Green & Brock, 2000). This results in the

recipients being less critical towards the message, which, in turn, leads to less counter-arguing, and thus, less resistance to persuasion (Moyer-Gusé, 2008). Another reason why narratives might help reduce counter-arguing is because most narratives are about characters experiencing events. Most individuals find it much harder to argue against another person's 'real' experiences that have happened, instead of hypothetical events explaining things that could happen (Slater & Rouner, 2002). In hypothetical examples, individuals could argue that these situations would never happen. However, arguing against someone else's 'real' experiences is much harder. Therefore, testimonials, for example, might be extremely helpful for reducing resistance to persuasion in health communication. It does not even seem to matter whether the narrative character is fictional or non-fictional (Green, Strange, and Brock, 2003). As long as the experiences are realistic, fictional and non-fictional characters tend to be equally hard to argue against.

A second resistance attempt that narratives and identification might reduce, is selective avoidance (Moyer-Gusé, 2008). This resistance attempt might appear due to inertia, which can be explained as the fact that individuals prefer not to change their current beliefs, attitudes, and behaviors (Knowles & Linn, 2004). They strive to keep their attitude and behavior in balance and will resist persuasion attempts to prevent dissonance, leading to selective avoidance. People might intentionally avoid messages that contrast their current attitudes and beliefs, and thus, stop absorbing the information at any point in the message (Moyer-Gusé, 2008). However, identification may help overcome this selective avoidance. When an individual identifies with a character, this might increase the likelihood of imagining himself performing certain actions that the character performs as well. This could be activities which the recipients would not perform in real life, resulting in the recipient being more open to view dissonant perspectives. Therefore, the recipient might be more tempted to view the complete message instead of avoiding it at any point (Moyer-Gusé, 2008). Furthermore,

selective avoidance might be reduced due to reduced biased processing (Knowles & Linn, 2004). Biased processing could be explained as recipients automatically ignoring a persuasive attempt because the recipients are aware of the fact that a message is trying to persuade them (Knowles & Linn, 2004). However, recipients do not expect a narrative to persuade them. Instead, they are expecting that they will be entertained by the narrative. Therefore, recipients will be exposed to the persuasive message without them knowing that the message was trying to persuade them, which reduces the chance of individuals avoiding the message in the first place. This, in turn, will reduce the likelihood of recipients resisting the persuasion attempt by selective avoidance (Hinyard & Kreuter, 2007; Moyer-Gusé, 2008).

Interactive narratives

Besides traditional narratives, interactive narratives tend to be used more often nowadays as well (Roth & Koenitz, 2016). Many of these interactive narratives are created with the help of digital devices instead of books or papers (Roth & Koenitz, 2016). For example, in 2014 a journalistic non-fictional interactive narrative called 'ReBuilding Haiti' (Abbiateci, 2014) was designed to create awareness about the fact that Haiti is still recovering from the earthquake that happened in 2010. The purpose of the interactive narrative is to show individuals that making the decisions that the characters in the narrative – and thus the people in real life – have to make, are not that easy and that they will not be able to do the right thing for everyone. In this interactive narrative, the recipient has to make choices for different important characters. With this, the recipient influences the outcome of the complete narrative. During the story and in the end, the recipient sees all the consequences of the choices that he made during the narrative experience, which he would not have been able to explore if it were a traditional narrative. Thus, it can be concluded that interactive narratives differ from traditional narratives in a way that recipients of interactive narratives can take an active role in the narrative world. Interactors – as recipients of interactive narratives are called

– are provided with the control to make decisions that will have an influence on the narrative, such as character development, the order of events or even the ending of a narrative (Roth & Koenitz, 2016). In those interactive narratives, interactors are provided with a certain amount of agency (Roth & Koenitz, 2016). This agency can be defined as a combination of *(i)* usability, which can be explained as the perceived ease of the system, *(ii)* effectance, which refers to the perceived meaningful action an interactor can take, and *(iii)* autonomy, which is about the amount of freedom in choices an interactor has (Roth & Koenitz, 2016). By increasing these three factors, the agency in an interactive narrative will increase as well. Due to this increased agency in interactive narratives, interactors might be able to explore and experience the consequences of choices that they might not have been able to experience in their real lives (Green, Brock & Kaufman, 2004), which will make it easier for the recipient to leave the real-world behind and completely immerse into the narrative-world.

Interactive narratives reducing resistance to persuasion

This addition of interactivity in a narrative might have great potential in the attempt of reducing resistance to persuasion. One of those potential reasons might be because of the provided user control in interactive narratives. Due to the interactivity provided in interactive narratives, user control will be increased. Because of this, interactive narratives might be able to arouse cognitive reactions that are not evoked by traditional narratives (Green & Jenkins, 2014). This might be used to reduce the likelihood of a consumer resisting persuasion. Fransen et al. (2015) explain in their study, about neutralizing consumer strategies for resisting persuasive attempts in advertising, that when recipients feel like they are free in their choices, they are less likely to resist a persuasive attempt. This can be explained with the help of the psychological reactance theory (Clee & Wicklund, 1980). This theory explains that individuals have an essential need for autonomy, and when individuals feel like their autonomy is threatened, this may lead to the emotional state called reactance. This feeling of

threatened autonomy might result in the recipient reasserting his freedom by resisting the persuasive attempt (Clee & Wicklund, 1980). Therefore, providing the recipient control by the use of interactivity could lead to more autonomy, and with that, less resistance against a persuasive attempt (Fransen et al., 2015).

Another benefit of interactivity in narratives is the possibility of increased identification. As mentioned before, traditional narratives can be powerful in reducing resistance to persuasion because of identification with the character (Green & Jenkins, 2014; Moyer-Gusé, 2008). However, even though traditional narratives can arouse identification, Jenkins and Green (2014) found that this identification with the character will be increased by the use of interactivity in the narrative. For example, the feeling of being responsible for the character's decisions might be enlarged when the recipient has the control to make choices for the character in an interactive format (Green & Jenkins, 2014). For instance, in the interactive narrative 'ReBuiling Haiti' (Abbiateci, 2014), the interactor has to make choices for, amongst others, the head of a large foreign NGO. These choices immediately show their consequences, which might arouse this increased feeling of responsibility for the character's decisions. Because of this, it increases the possibility of the recipient identifying with the character by standing in the other person's shoes, and therefore the chance of reducing resistance to persuasion (Green & Jenkins, 2014).

Similar to identification, transportation is likely to be aroused by traditional narratives (Green & Brock, 2000). However, Green et al. (2004) suggested that this likelihood of a recipient transporting into the narrative might be increased by interactive media. This is because recipients can take on an active role in interactive narratives, rather than their typical passive role as an audience member in traditional narratives. This enables recipients to create and/or control the (sequence of) events in the narrative world, allowing them to emerge (a

virtual representation of) themselves into this narrative world. This will lead to a greater likelihood of recipients mentally leaving the real-world behind and completely transporting into the narrative (Green et al., 2004). This transportation might, in turn, result in the recipients being less inclined to counter-argue (Moyer-Gusé, 2008), which leads to less resistance to the persuasive attempt.

However, transportation and identification could also be decreased by the perceived agency. When an interactive narrative includes too much agency, this could hinder the process of transportation and identification because it might interrupt the narrative. Recipients could get lost in the choices or they could get distracted from the story world (Roth & Koenitz, 2016). Because of this, the agency in interactive narratives should be limited. The current study will, therefore, use a limited amount of agency. Thus, due to (limited) agency and increased transportation and identification in interactive narratives, compared to traditional narratives, it is expected that interactive narratives will reduce more resistance to persuasion than traditional narratives.

In conclusion, the previous literature about user control, identification, and transportation together lead to the first hypothesis:

H1: In health communication, interactive narratives reduce resistance to persuasion more than traditional narratives.

Motivation

A factor that might have an influence on the effect of interactive narratives in reducing resistance to persuasion, is the motivation to read the narrative. The use of interactivity in a narrative might be able to increase the extent to which participants are motivated to read the narrative. This effect could be explained by the Self-Determination Theory (SDT), an all-

encompassing theory that addresses the motivation of individuals' actions (Deci & Ryan, 2000; Roth & Koenitz, 2016). According to this theory, motivation is based on three inherent human needs: autonomy, competence, and relatedness.

Similar as explained by the psychological reactance theory, Roth and Koenitz (2016) explain that individuals have a strong basic need for freedom in their choosing, which makes autonomy essential. In interactive narratives, autonomy could be explained as the range of qualitative options that makes it possible for the interactor to have an impact on the narrative (Roth & Koenitz, 2016). Recipients do not want to be pushed to make a certain choice. They desire the autonomy to choose from a lot of options. As explained by the psychological reactance theory, individuals will be more likely to resist persuasion more when this autonomy is threatened (Clee & Wicklund, 1980; Fransen et al., 2015). In addition, Roth and Koenitz (2016) explain that participants will feel more motivated when this autonomy is granted. Besides, effectance fulfills the need for competence (Roth & Koenitz, 2016). Effectance is described as the meaningful consequences which result from a choice made by the interactor (Roth & Koenitz, 2016). They can be separated into two different varieties; local effectance, which refers to the system immediately reacting to a choice. And global effectance, which refers to the system remembering the choices made by the interactor, but showing the consequences of those choices later on in the narrative (e.g. in the end). Lastly, relatedness is an important need. In a previous study about the intrinsic motivation for children, it showed that the children demonstrated low levels of intrinsic motivation when there was no interaction involved (Ryan & Deci, 2000; Anderson, Manoogian, & Reznick, 1979). Thus, due to their interactive format, interactive narratives tend to have more potential to fulfill the need for relatedness compared to traditional narratives (e.g., by making choices for the character). When these three intrinsic human needs are gratified, individuals are likely to be more motivated to perform an action. According to Green and Jenkins (2014),

individuals who experience greater motivation to read the text are expected to enjoy interactive narratives more than individuals who experience lower motivation to read the text. This enjoyment regularly correlates high with transportation (Green et al., 2004). Thus, when enjoyment increases, transportation increases as well. Because of this, it might effectively reduce counter arguing, and thus, resistance to persuasion (Moyer-Gusé, 2008).

However, when autonomy gets too large, interactors could get lost in the many options of choices. Therefore, autonomy should be limited to create the most pleasurable experience. Besides, when too much effectance is present, and the interactor has all the control in the narrative, this could lead to boredom and decreased curiosity. This could result in decreased enjoyment (Roth & Koenitz, 2016), leading to decreased transportation (Green et al., 2004) and increased resistance to persuasion (Moyer-Gusé, 2008). Nonetheless, when these intrinsic needs are fulfilled and limited, then it is expected that interactive narratives increase motivation, which in turn, would lead to reduced resistance to persuasion. Thus, it is expected that the effect of interactive narratives reducing more resistance to persuasion than traditional narratives is mediated by the motivation to engage with the narrative, which leads to the second hypothesis:

H2: The effect of interactive narratives versus traditional narratives on resistance to persuasion is mediated by the motivation to engage with the narrative: Interactive narratives increase the participants' motivation to engage with the narrative compared to traditional narratives which, in turn, reduces resistance to persuasion.

Personal threat

Another factor that might have an influence on (interactive) narratives reducing resistance to persuasion is personal threat. Due to the fear that individuals perceive for the threatening information in health subjects, selective avoidance is often used by individuals as a resistance strategy for persuasive attempts in health communication (Moyer-Gusé, 2008).

People tend to avoid information that is too personally threatening (Moyer-Gusé, 2008). To overcome this resistance strategy, previous research suggested that the use of narratives might be helpful. Individuals feel less threatened when a health subject addresses someone else instead of themselves (Green & Jenkins, 2014; Kreuter et al., 2007; Moyer-Gusé, 2008). Therefore, presenting this health information in a narrative, which addresses the character instead of the recipient, would be perceived as less threatening by recipients compared to non-narrative texts (Green & Jenkins, 2014; Kreuter et al., 2007; Moyer-Gusé, 2008). In addition, this effect of overcoming selective avoidance could also be explained by the enjoyment that recipients perceive while reading information that is presented as a narrative text (Banerjee & Greene, 2012a). This enjoyment is associated with transportation, instead of the genre of the narrative world, meaning that enjoyment also could be perceived in horror stories (Green et al., 2004) or for personally threatening health subjects. Due to this enjoyment, individuals will process information that they would otherwise avoid because they would find it too threatening (Green et al., 2004). Thus, due to this non-threatening presentation of health information and increased enjoyment in narrative texts, recipients might accept the health information more easily compared to non-narrative texts (Banerjee & Greene, 2012a) because it will help overcome selective avoidance (Moyer-Gusé, 2008).

However, just because selective avoidance will reduce, does not mean that recipients will not resist the persuasive attempt in other ways. For example, individuals might still resist the persuasive attempt of the narrative due to perceived invulnerability. To overcome this resistance attempt, interactivity might be a helpful addition in the narrative. This is because the use of interactivity might increase identification (Jenkins & Green, 2014), which in turn would increase the feeling of perceived vulnerability (Moyer-Gusé, 2008), and thus, personal threat in a narrative. When recipients identify with a character, they will adopt this character's feelings. So when a character is portrayed as vulnerable to the consequences of a certain

behavior, this may increase the recipient's perceived vulnerability as well, and thus reduce resistance to persuasion (Moyer-Gusé, 2008). Thus, for example, when a character is worried to get skin cancer from not using sun block, the recipient of the narrative might also experience this worry due to identification.

Thus, compared to non-narratives, traditional narratives might overcome selective avoidance by reducing personal threats, which will increase the likelihood of individuals reading the complete text. However, due to this non-threatening presentation of the health information in traditional narratives, individuals might still resist the persuasive attempt because of perceived invulnerability. Therefore, interactive narratives might be helpful to increase this personal threat again to overcome perceived invulnerability. This leads to the third hypothesis:

H3: The effect of interactive narratives versus traditional narratives on resistance to persuasion is mediated by the participants' personal threat provoked by the narrative: When participants are exposed to threatening information in health communication, interactive narratives increase the participants' feeling of personal threat which, in turn, decreases resistance to persuasion.

Need for cognition

Green and Jenkins (2014) suggested in their research that individual differences in need for cognition might affect the power of interactive narratives on resistance to persuasion. This can be explained by individuals' preferred level of mental activity (Green et al., 2008). When individuals prefer a lower level of mental activity, they can be considered having a low need for cognition, and when individuals prefer a higher level of mental activity, they can be considered having a high need for cognition (Green & Jenkins, 2014). The expected differences of interactive narratives on resistance to persuasion could be explained by the fact that interactive narratives might have a more complex structure than traditional narratives, and

thus, are expected to satisfy individuals with a higher need for cognition more, compared to individuals with a lower need for cognition. These expectations are based on similar results for the differences in need for cognition on the likelihood to transport into texts or movies. Previous research showed that individuals with a high need for cognition more often transport into narrative texts, while individuals with a low need for cognition more often transport into narrative movies (Green et al., 2008). This is because reading is perceived to be a more complex task than watching a movie. Similar to this, reading interactive narratives is expected to be perceived as more complex than reading traditional narratives. It is, therefore, expected that an individual with a higher need for cognition transports more easily into an interactive narrative, while an individual with a low need for cognition is expected to transport more easily in a traditional narrative (Green & Jenkins, 2014). Furthermore, Jenkins and Green (2014) found that interactive narratives increase identification for individuals with a high need for cognition, compared to traditional narratives. This increase in identification is expected to result in less resistance to persuasion for participants with a high need for cognition (Moyer-Gusé, 2008). And finally, Vorderer, Knobloch, and Schramm (2001) studied the differences in preferences for traditional and interactive movies for individuals' need for cognition. What they found was that an interactive movie was reviewed more negatively than a traditional movie by people with a lower need for cognition, while for individuals with a higher need for cognition the interactive movie was reviewed more positively compared to the traditional movie. For individuals with a high need for cognition, the extra mental effort that they had to use in interactive movie compared to traditional one, was perceived as more enjoyable, while for individuals with a lower need for cognition, this was considered distracting and displeasing. This leads to a reduction in enjoyment for participants with a lower need for cognition. However, for narrative persuasion, a certain level of enjoyment is needed since the processing goal for reading a narrative of most individuals is enjoyment or entertainment

(Hinyard & Kreuter, 2007). Transportation regularly correlates high with enjoyment (Green et al., 2004), which suggests that when enjoyment decreases, transportation decreases as well. This reduction in the level of transportation will lead to a greater likelihood of participants using the resistance strategy counter-arguing, and thus more resistance to persuasion (Banerjee & Greene, 2012b; Green & Brock, 2000; Green & Clark, 2012).

Based on the above-mentioned studies, it is expected that interactive narratives are only more powerful in reducing resistance to persuasion for people with a high need for cognition, leading to the fourth hypothesis:

H4: For participants with a high need for cognition, interactive narratives reduce resistance to persuasion more than traditional narratives. For participants with a low need for cognition, traditional narratives reduce resistance to persuasion more than interactive narratives.

Game Experience

Because interactive narratives tend to be created more often with digital devices (Roth & Koenitz, 2016), it is essential for interactors to have a certain level of knowledge and skills on how to use these digital devices. Recipients' lack of knowledge and skills on how to use these digital devices may affect the experience of the complete narrative. For example, this lack of knowledge could lead to the recipients getting lost in the choices (Roth & Koenitz, 2016), leading to decreased liking and decreased transportation which, in turn, could lead to increased resistance to the narrative's persuasive attempt (Green & Jenkins, 2014). Nevertheless, when individuals regularly tend to play games, their cognitive skills can be increased. For example, regular game players will develop the skills to make choices more rapidly, absorb information from multiple sources, generate tactics to overcome complications and to comprehend complex systems by trial and error (Prensky, 2003). This leads to them understanding and enjoying more complex tasks (Prensky, 2003), like in interactive

narratives. Thus, when game experience is higher, there will be less frustration for the interactor in interactive narratives. Therefore, enjoyment will increase which, in turn, would result in a greater likelihood of recipients transporting into the story world (Hinyard & Kreuter, 2007). However, when game experience is lower, frustration might be aroused by not understanding and enjoying the more complex tasks in interactive narratives compared to traditional narratives because of a lack of knowledge or skills on how to use the digital device. This could lead to a reduction in transportation, and so, an increased likelihood of recipients using the resistance strategy counter-arguing (Banerjee & Greene, 2012b; Green & Brock, 2000; Green & Clark, 2012). Thus, the game experience of an interactor might affect the power of interactive narratives in reducing resistance to persuasion. This leads to the fifth hypothesis:

H5: For more experienced game players, interactive narratives reduce resistance to persuasion more than traditional narratives. For inexperienced game players, traditional narratives reduce resistance to persuasion more than interactive narratives.

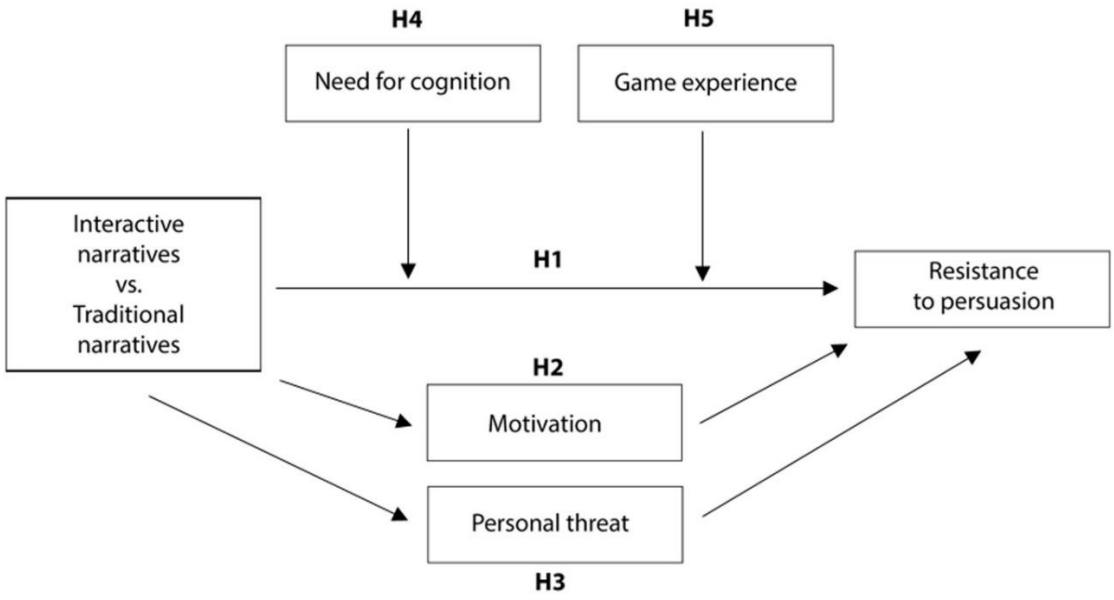


Figure 1. Conceptual Model

Method

Design

An experiment with a between-subjects design was conducted to find an answer to the research question and to test the hypotheses. As an independent variable, the text form was used, consisting out of three levels. Participants were either exposed to a non-narrative text (which functioned as a control condition), a traditional narrative text, or an interactive narrative text. An overview is depicted in Table 1. To see whether several external factors would influence this main effect, motivation and personal threat were added as mediators, and need for cognition and game experience were added as moderators. This experiment is approved by the Ethical Review Board of Tilburg School of Humanities and Digital Sciences.

Table 1

Overview of the experimental conditions in which condition 1) is the non-narrative text, condition 2) is the traditional narrative text and condition 3) is the interactive narrative text.

Condition	Narrativity	Interactivity
1	No	No
2	Yes	No
3	Yes	Yes

Pretest

To try to ensure that the topic of the present research would arouse a certain level of resistance from the recipients, a pretest was performed. In this pretest, different topics were presented to 18 Dutch participants. The chosen topics were based on real health issues. First, for five health subjects, the participants were asked whether the behavior (e.g., applying sun block, eating red meat, limiting screen time and wearing earplugs) applied to them. For all the statements on which participants indicated that the behavior did not apply to them, participants were asked to answer some questions about their resistance against performing

the behavior. The results of the pretest showed that the highest resistance was shown to the topic "Even when I am in the shadow or when it is a cloudy day, I am going to apply sun block". Almost all participants indicated that they did not perform this behavior. Therefore, their resistance to the statement was measured. However, despite that participants did not perform the behavior already, resistance scores seemed to be relatively low (M = 4.38, SD = 1.40). Yet, since this topic showed the highest resistance in the pretest, and only 1 participant indicated not to perform this behavior, it was used in the main study. The pretest questionnaire, method, and results can be found in Appendices C and D.

Participants

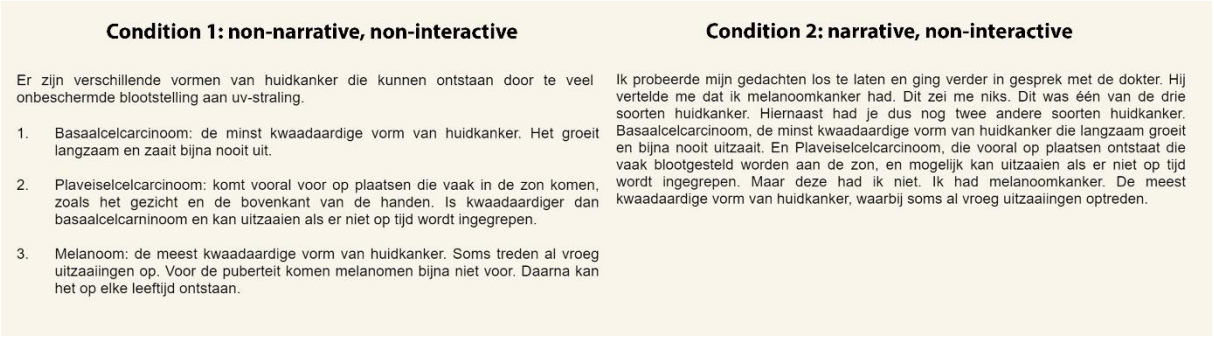
An online survey using Qualtrics was distributed among 145 participants. However, the data of 36 participants had to be deleted since they indicated that they already used sun block in the shadow and on cloudy days, and thus, were no target for the persuasive attempt. The data of 109 participants remained, of which 35 were male, 73 were female and 1 person did not want to reveal. 37 participants were exposed to the non-narrative condition, 36 participants were exposed to the traditional narrative condition, and 36 participants were exposed to the interactive narrative condition. These participants were collected through convenience sampling. A survey in which the experiment was conducted was sent in multiple personal WhatsApp group apps of the researcher and the researcher kindly requested her network on Facebook and LinkedIn to fill in the survey. In addition, participants were collected with the use of the Tilburg School of Humanities and Digital Sciences human subject pool. And last, SurveySwap was used to collect some more participants. The only restriction for participants to take part in the experiment was that they had to speak Dutch since all texts and the survey were written in Dutch. The respondents' age ranged from 18 to 58, and they were on average 24.28 years old (SD = 7.62). The highest education level that most respondents attained was Higher Vocational Education *(38.5%)* or a university's

Master's program *(30.3%).* Other respondents their highest attained education level was a university's Bachelor's program *(15.6%),* Secondary Vocational Education *(6.4%*), a university's Pre-Master's program *(5.5%),* High school *(2.8%),* and a PhD *(0.9%).* The nationality of all participants was Dutch, except for one, who was Flemish.

Materials

The independent variable, text form, was manipulated in three different conditions. In all conditions, the participants had to read a text which was trying to persuade them to apply sun block on cloudy days or in the shadow. In condition 1, participants read a non-narrative text. In this condition, participants had to read a simple informative text which contained information about why they still should apply sun block when they are not directly exposed to the sun. This was presented as statistical evidence and facts with the help of bullet points. In condition 2, participants read a traditional narrative text. In this condition, participants read a blog post that contained the same information as exposed in condition 1. However, in this condition, the information was narrated by Lotte, the subject of consciousness in the narrative. The information was presented in a chronologically ordered sequence of events and the story had an obvious demarcated beginning, middle and ending (Green & Jenkins, 2014). In this condition, the recipients had no control over the sequencing of the narrative. The story was already pre-defined, and there was only one logical manner to read this narrative. Therefore, recipients would have to take on a passive role in the story world (Green & Jenkins, 2014). Lastly, in condition 3 participants read an interactive narrative text. In this condition, people read the same narrative text as in condition 2, however, participants could take on an active role in the narrative in condition 3. Limited agency was present by giving the recipients the freedom to make choices on how the narrative would continue. Each time, they were able to choose between two options, which tried to make sure that the use of the system would not be too complicated. The choices that the interactor had to make during the narrative, determined

the sequencing of the story, and thus, provided the recipients with a certain level of user control (Roth & Koenitz, 2016). However, since all the conditions had to contain the same information, recipients would not be able to influence the outcome of the narrative. Furthermore, a Choose Your Own Adventure (CYOA) structure – which is a simple narrative structure in which the interactor makes choices on how the story will evolve – was chosen to limit effectance, and thus, reduce the possibility of interactors getting lost in their choices. However, local effectance remained; recipients would see the short time result of their choices immediately. Figures 2 and 3 show an example of the differences in the conditions. The complete materials can be found in Appendix B.



Condition 1: non-narrative, non-interactive

Er zijn verschillende vormen van huidkanker die kunnen ontstaan door te veel onbeschermde blootstelling aan uv-straling.

1. Basaalcelcarcinoom: de minst kwaadaardige vorm van huidkanker. Het groeit langzaam en zaait bijna nooit uit.
2. Plaveiselcelcarcinoom: komt vooral voor op plaatsen die vaak in de zon komen, zoals het gezicht en de bovenkant van de handen. Is kwaadaardiger dan basaalcelcarninoom en kan uitzaaien als er niet op tijd wordt ingegrepen.
3. Melanoom: de meest kwaadaardige vorm van huidkanker. Soms treden al vroeg uitzaaiingen op. Voor de puberteit komen melanomen bijna niet voor. Daarna kan het op elke leeftijd ontstaan.

Condition 2: narrative, non-interactive

Ik probeerde mijn gedachten los te laten en ging verder in gesprek met de dokter. Hij vertelde me dat ik melanoomkanker had. Dit zei me niks. Dit was één van de drie soorten huidkanker. Hiernaast had je dus nog twee andere soorten huidkanker. Basaalcelcarcinoom, de minst kwaadaardige vorm van huidkanker die langzaam groeit en bijna nooit uitzaait. En Plaveiselcelcarcinoom, die vooral op plaatsen ontstaat die vaak blootgesteld worden aan de zon, en mogelijk kan uitzaaien als er niet op tijd wordt ingegrepen. Maar deze had ik niet. Ik had melanoomkanker. De meest kwaadaardige vorm van huidkanker, waarbij soms al vroeg uitzaaiingen optreden.

Figure 2. Example fragment showing the differences in condition 1 and 2.

Condition 2: narrative, non-interactive

Ik probeerde mijn gedachten los te laten en ging verder in gesprek met de dokter. Hij vertelde me dat ik melanoomkanker had. Dit zei me niks. Dit was één van de drie soorten huidkanker. Hiernaast had je dus nog twee andere soorten huidkanker. Basaalcelcarcinoom, de minst kwaadaardige vorm van huidkanker die langzaam groeit en bijna nooit uitzaait. En Plaveiselcelcarcinoom, die vooral op plaatsen ontstaat die vaak blootgesteld worden aan de zon, en mogelijk kan uitzaaien als er niet op tijd wordt ingegrepen. Maar deze had ik niet. Ik had melanoomkanker. De meest kwaadaardige vorm van huidkanker, waarbij soms al vroeg uitzaaiingen optreden.

Tien dagen na de operatie en bijna twee maanden na de diagnose huidkanker, kreeg ik de geruststelling dat er geen uitzaaiingen waren. Wat een enorme opluchting. Het had namelijk erger kunnen aflopen. In 2018 overleden er 793 mensen aan een melanoom en 108 mensen aan een plaveiselcelcarcinoom. Hierom zou ik iedereen dan ook adviseren om goed te smeren. Want ook als je je niet in de directe zon bevindt, weet de uv-straling jou wel te vinden. Helaas.

Condition 3: interactive narrative

Ik probeerde mijn gedachten los te laten en ging verder in gesprek met de dokter. Hij vertelde me dat ik melanoomkanker had. Dit zei me niks. Dit was één van de drie soorten huidkanker. Hiernaast had je dus nog twee andere soorten huidkanker. Basaalcelcarcinoom, de minst kwaadaardige vorm van huidkanker die langzaam groeit en bijna nooit uitzaait. En Plaveiselcelcarcinoom, die vooral op plaatsen ontstaat die vaak blootgesteld worden aan de zon, en mogelijk kan uitzaaien als er niet op tijd wordt ingegrepen. Maar deze had ik niet. Ik had melanoomkanker. De meest kwaadaardige vorm van huidkanker, waarbij soms al vroeg uitzaaiingen optreden.

Ik vroeg de dokter hoe dit dan precies ontstond.

Maar ik smeerde toch zo goed wanneer ik in de zon was?! Hierom vroeg ik de dokter hoe het kon dat dit mij overkwam.

Figure 3. Example fragment showing the differences in condition 2 and 3.

Furthermore, the text was presented without a source. This format was chosen because individuals tend to accept information as more trustworthy when a genuine expert is the source (Aronson, Turner, & Carlsmith, 1963). To rule out this confounding condition to have an influence on the results, no professional source was mentioned. Furthermore, the narrative

form was presented as a blogpost told by the main character, since individuals tend to find it much harder to counter-argue against another person's experiences, compared to arguing against hypothetical situations (Slater & Rouner, 2002). In addition, all conditions contained the same image and layout, to make sure that this would not affect the results. Furthermore, the number of words ranged from 436 words in the non-narrative text, to 558 in the traditional narrative text, to 620 words in the interactive narrative (per walkthrough). These numbers of words were based on research by Shen, Sheer, and Li (2015). They found that longer narratives would be more persuasive than shorter narratives. A long narrative was defined as a narrative with 400 words or more. Therefore, all texts were longer than 400 words. Lastly, all texts in all conditions provided the same information, and the traditional narrative text and the interactive narrative text included the same narrative. However, in the interactive form, the interactor was able to choose the order in which the information was presented.

Measures

Resistance to persuasion. The dependent variable in all conditions was the level of resistance to persuasion. To measure resistance to persuasion, an adjusted scale from Fransen, ter Hoeven, and Verlegh (2013) was used. The original scale contained 28 items covering several resistance strategies. However, only the items relevant to the current study were used (e.g., *I think about how the text tries to persuade me*). This resulted in 12 items measuring resistance towards persuasion on a 7-point-Likert scale (*1 = completely disagree, 7 = completely agree*). To check the component's reliability, Cronbach's Alpha was calculated. The construct had a good reliability score *(α =.863)*. The original and adjusted scales can be found in Appendix A.

Motivation. To find out whether the above effect could be explained by the motivation to read the text, an adjusted scale of the Situational Motivational Scale (SIMS) by Guay, Vallerand, and Blanchard (2000) was used. The original scale contained 16 items to

examine why people are engaged in a task. Only six items were relevant to the current research (e.g., *There may be good reasons to read this text, but personally I do not see any*). The participants were asked to not rate their agreements on why they were starting the task of reading the narrative – since they were asked to for the experiment – but why they maintained to do the task of reading the narrative on a 7 point Likert-scale (*1 = corresponds not at all, 7 = corresponds exactly*). To check the component's reliability, Cronbach's Alpha was calculated. The construct had a good reliability score *(α =.844)*. The original and adjusted scales can be found in Appendix A.

Personal threat. Personal threat was assessed with a scale developed by Kalaitzaki, Kateri, and Pattakou-Parasyri (2012) concerning participants' perceptions of the possibility to get Alzheimer's disease. This was adjusted to the participants' perceptions of the possibility to get skin cancer as a consequence of not applying sun block in the shadow or when it is a cloudy day. Three items on a 5 point Likert-scale were used to operationalize respondents' opinions (*1 = Not very likely at all, 5 = Very likely*) on the following questions: 'How likely do you feel to develop skin cancer as a consequence of not applying sun block in the shadow or when it is a cloudy day', 'How concerned are you about developing skin cancer as a consequence of not applying sun block in the shadow or when it is a cloudy day', 'How emotionally stressful do you believe skin cancer as a consequence of not applying sun block in the shadow or when it is a cloudy day would be should you develop it'. To check the component's reliability, Cronbach's Alpha was calculated. The construct had a poor reliability score *(α =.572)*. However, when the item 'How emotionally stressful do you believe skin cancer as a consequence of not applying sun block in the shadow or when it is a cloudy day would be should you develop it' was deleted, the reliability went up, making it an acceptable reliability *(α =.702)*.

Need for cognition. Need for cognition was operationalized by using the need for cognition scale by Cacioppo, Petty, and Kao (1984). This contained 18 items about whether people enjoy cognitive activity. Only six items were used for this current study (e.g., *Thinking is my idea of fun*). Participants had to indicate to what extent they agreed to the statements on a seven-point Likert scale (*1 = completely disagree, 5 = completely agree*). To check the component's reliability, Cronbach's Alpha was calculated. The construct had an acceptable reliability score *(α =.707)*. The original and adjusted scales can be found in Appendix A.

Game experience. Game experience was assessed by how frequent participants played video games. The criteria to which participants could be considered an experienced game player or not were based on the criteria by Green and Bavelier (2003). According to their study, game players could be considered experienced when they played video games one hour a day, at least four times a week, and did this for the last six months (Green & Bavelier, 2003). Based on these criteria, a question was added in which participants had to indicate the average number of hours that they had played video games in a week, in the past six months.

Behavioral Intentions. Previous research suggested that, overall, persuasive attempts on topics in health communication only lead to a small reduction in attitudinal resistance (Loos, 2019). This might be because recipients already have a relatively positive attitude towards healthy behavior, which results in the attitudinal resistance towards the health topic being relatively low (Loos, 2019). Previous research found that attitude regularly tends to be a significant predictor of behavioral intentions (Ajzen, 1991; Dillard & Shen, 2005). However, in reality, we still see that individuals still might not act upon this positive attitude. For example, individuals might have relatively positive attitude towards applying sun block, but still resist the actual behavior for other reasons, such as sun block being inconvenient, it takes too much time and effort, and it is not convenient to carry the large bottles of sun block around (Abroms, Jorgensen, Southwell, Geller, and Emmons, 2003; Orbell & Kyriakaki,

2008; Krekels, 2006; KWF Kankerbestrijding, 2019). Therefore, the current study explored the intended behavior of the recipients before and after exposure to the different text forms to see whether these would increase behavioral intentions and, thus, reduce resistance to perform the aimed behavior. Behavioral intentions were measured with the same scale as used by Loos (2019). Participants had to indicate to what extent they were likely to apply sun block the next time that they would not be directly in the sun. This scale contained three items on a 7-point Likert scale *(1 = very unlikely, 7 = very likely).* 'I intend to apply sun block the next time when I am in the shadow or when it is a cloudy day', 'I expect to apply sun block the next time when I am in the shadow or when it is a cloudy day', 'I will apply sun block the next time when I am in the shadow or when it is a cloudy day'. To find out whether reading the different text forms influenced the participants' behavioral intentions, these questions were asked both before and after reading the stimuli. To check the component's reliability, Cronbach's alpha was calculated for the pre-measure *(α = .958)* as well as the post-measure *(α = .962).* Both constructs had an excellent reliability score. A difference score was computed to see whether these behavioral intentions had changed after reading the text. To try to make sure that participants would answer the pre-measure with honesty, recipients should not know what the study was about before being exposed to the stimuli. Therefore, filler questions were used. The same questions about behavioral intention were asked about reducing personal screen time and eating less red meat. This was done to try to make sure that the pre-measurement did not affect the respondents' evaluation of the message in the post-measurement.

Procedure

Qualtrics was used to create an online survey. Participants received a link to this questionnaire to take part in the experiment. When opening this link, people would be redirected to the starting page of the survey. This contained some prior information about the

experiment (e.g., the topic), as well as an informed consent request which stated that participants and their data would stay anonymous. If participants did not accept, they would immediately be redirected to a new page which would exclude them from the experiment. When participants would accept the informed consent, they would be able to start the experiment. First, three questions asked the participants whether three different behaviors applied to them (e.g. *I apply sun block even when I am in the shade or when it is a cloudy day*). If the participants answered these questions with 'yes', they immediately got redirected to the next question about the next behavior. However, if participants answered that question with 'no', then they got redirected to three follow-up questions about their behavioral intentions for this behavior in the future. Furthermore, when participants indicated that they already used sun block in the shadow and on cloudy days, they got redirected to the end of the survey, were thanked for their participation, and got excluded from the research since they were no part of the target group of the current study. If participants indicated that they did not use sun block in the shadow or on cloudy days, they were asked to read the text (either the non-narrative text, the traditional narrative, or the interactive narrative). A randomizer was used to divide the different conditions. When participants finished reading this text, they were asked again to answer the three questions about their behavioral intentions for using sun block in the shade or when it is a cloudy day. Second, participants were asked to answer the questions relating to the resistance against the persuasive attempt. Third, participants were asked to answer the questions about how personally threatened the text made them feel. Fourth, they had to answer the questions whether they had felt motivated to continue reading the text. Fifth, questions regarding the individual's need for cognition were asked. Sixth, participants had to answer some questions about their game experience. And last, some demographic questions were asked. After filling in all those questions, participants were thanked to fill in the survey and the research purpose was explained. Also, participants were

debriefed that the texts they read were made for research purposes only. If participants wanted to know more about the study, the researcher's email address for their questions was provided. The complete questionnaire can be found in Appendix E.

Data Analysis

First, to examine which text form was most effective in reducing resistance to persuasion, a one-way ANOVA was performed. Second, a mediation analysis using Hayes' (2017) PROCESS was performed to determine whether the power to reduce resistance to persuasion of the narrative text forms could be explained by motivation or personal threat. Third, two moderation analyses using Hayes' (2017) PROCESS, were performed to examine whether individual differences in need for cognition or game experience would influence the effect of the different text forms on resistance to persuasion. Separate moderation and mediation analyses were performed, instead of one combined moderation and mediation analyses, because the researcher was not interested in the interaction between the moderators and mediators. Instead, the current study focusses on the unique effects of the moderators and mediators on the relationship between text form and resistance to persuasion. Fourth, to examine whether exposing participants to the health information and whether the different text forms effected the behavioral intentions of individuals, a paired-samples t-test and a one-way ANOVA were performed. And last, to see whether the different text forms might cause differences in resistance to persuasion for gender differences, a factorial ANOVA was performed.

Before the statistical tests could be performed, some data had to be recoded first. To start, three items of motivation to read the text (*"There may be good reasons to read this text, but personally I don't see any", "I do read this text, but I am not sure if it is worth it", "I don't know; I don't see what this text brings me"*) needed to be recoded, since these questions were stated negatively, while the other items in the construct were measured positively.

Furthermore, three items of need for cognition had to be recoded *("I would rather do something that requires little thought than something that is sure to challenge my thinking abilities", "I only think as hard as I have to", "I feel relief rather than satisfaction after completing a task that required a lot of mental effort")* as well and for the same reason. After having corrected this data, the data was ready to run the analyses.

Results

Resistance to persuasion

To test the first hypothesis whether, in health communication, interactive narratives reduce resistance to persuasion more than traditional narratives, a one-way ANOVA was performed. Resistance to persuasion was measured with 12 items on a 7-point-scale (e.g. *I think about how the text tries to persuade me*). The mean score on resistance to persuasion, without making a distinction in the different text forms, was 3.46 (*SD* = .98). Respondents with a non-narrative text had a mean score of 3.49 on resistance to persuasion (*SD* = .18). Respondents with a traditional narrative text had a mean score of 3.61 on resistance to persuasion (*SD* = .14) and for respondents who were exposed to an interactive narrative text, the mean score for resistance to persuasion was 3.27 (*SD* = .16). The pattern of means is displayed in Figure 4.

The overall ANOVA was not significant, $F(2, 108) = 1.12$, $p = .330$, $\eta 2 = .02$. This indicates that no text form reduces more resistance to persuasion compared to the others, and thus, does not support the first hypothesis. The results indicate that interactive narratives are not more effective in reducing resistance to persuasion than traditional narratives.

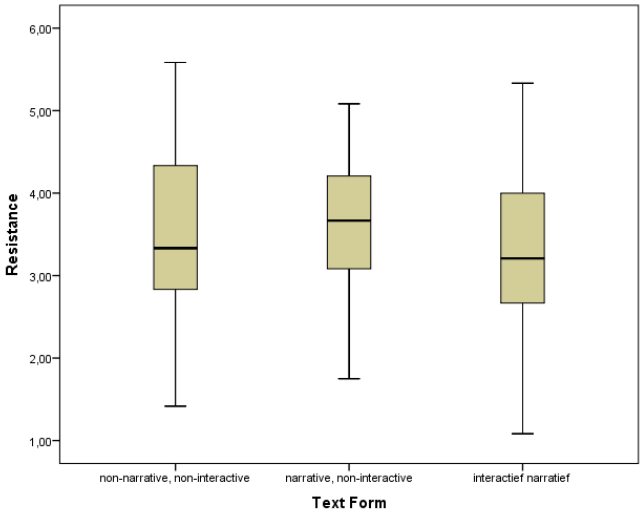


Figure 4. Pattern of means for the different text forms on their mean score in resistance to persuasion.

Motivation and Personal threat

Originally, it was intended to investigate whether the effect of the different text forms on the resistance to persuasion would be mediated by motivation and personal threat. However, this main effect does not appear to be significant. Yet it remains interesting to gain more insight into the relationship between the text form and resistance to persuasion. This is because certain effects of text form on resistance to persuasion may be suppressed by motivation or personal threat. In addition, certain effects of motivation or personal threat might be suppressed by the text forms. For this reason, the direct and indirect effects of the mediators will be further explored. A mediation analysis using PROCESS (Hayes, 2017) was performed. In this analysis, the text form was entered as the predictor to resistance to persuasion (M = 3.46, SD = .98), and motivation (M = 4.56, SD = 1.05) and personal threat (M = 2.97, SD = .81) were entered as mediators. The model is displayed below in figure 5.

Looking at the descriptive statistics there should have been no concerns about the possible floor- or ceiling effects since the means and standard deviations were not extremely low or high. In addition, there should have been no concerns about multicollinearity since the correlation between the different independent variables was not extremely large. The

descriptive statistics and correlations of the mediators and the outcome variable can be found in Table 2.

Before the mediation analysis was performed, assumptions were checked. In conclusion, the assumptions of leverage, Mahalanobis distance, normally distributed errors, independent errors and multicollinearity were all violated. Because of these violations, the analysis was bootstrapped and the results should be interpreted with caution. The assumption checks can be found in Appendix F.

Table 2

Descriptive statistics and correlations of the mediators and outcome variable.

	Mean (SD)	Resistance	Motivation	Personal threat
Resistance	3.46 (.98)	1		
Motivation	4.56 (1.05)	**-.57**	1	
Personal threat	2.97 (.81)	-.24	**.37**	1

Note. Correlations that are significant are **boldfaced.**

A mediation analysis, using model 4 and the multi categorical option for the independent variable text form, was performed. Without taking the mediators into account, the analysis showed that there was no significant total effect for non-narrative texts and traditional narrative texts on resistance to persuasion (b = .15, SE = .13, 95% BCa CI [-.11, .41]), nor was there a significant total effect for traditional narrative texts and interactive narrative texts on resistance to persuasion (b = -.19, SE = .13, 95% BCa CI [-.45, .08]). This indicates that there is no difference in resistance to persuasion for non-narrative texts and traditional narrative texts and that there is no difference in resistance to persuasion for traditional narrative texts and interactive narratives.

This remained the same when the mediators were added to the model. The direct effect was not significant for non-narrative texts and traditional narrative texts on resistance to persuasion (b = .12, SE = .11, p = .288), nor was it significant for traditional narrative texts and interactive narrative texts on resistance to persuasion (b = -.06, SE = .11, p = .571). In addition, the direct effect of personal threat on resistance to persuasion was not significant as well (b = -.04, SE = .10, p = .717), indicating that the level of personal threat does not affect the level of resistance to persuasion. However, there was a negative significant direct effect of motivation to read the text on resistance to persuasion (b = -.52, SE = .08, p < .001), indicating that when motivation to read the text is higher, resistance to persuasion is lower, and vice versa. Furthermore, the indirect effect of motivation for non-narrative texts and traditional narrative texts on resistance to persuasion (b = .03, SE = .06, 95% BCa CI [-.10, .16]), and the indirect effect of motivation for traditional narrative texts and interactive narrative texts on resistance to persuasion (b = -.12, SE = .08, 95% BCa CI [-.28, .04]) were both not significant. Likewise, the indirect effect of personal threat for non-narrative texts and traditional narrative texts on resistance to persuasion (b = .00, SE = .02, 95% BCa CI [-.03, .04]), and the indirect effect of personal threat for traditional narrative texts and interactive narrative texts on resistance to persuasion (b = -.01, SE = .02, 95% BCa CI [-.06, .03]) were not significant as well. This indicates that both motivation to read the text and personal threat do not mediate the link between text form and resistance to persuasion.

Given these results, we can conclude that no effects of the text form on resistance to persuasion are suppressed by motivation or personal threat. This means that the text form to which individuals are exposed do influence individuals' motivation to read the text, nor does it affect individuals' perceived personal threat. Besides, the level of personal threat does not affect the level of resistance to persuasion. Together this leads to the second and third hypotheses not being supported. However, there does seem to be a significant negative direct

effect of motivation to read the text on resistance to persuasion. This suggests that the lower the motivation to read the text gets, the higher the resistance to persuasion gets, and vice versa.

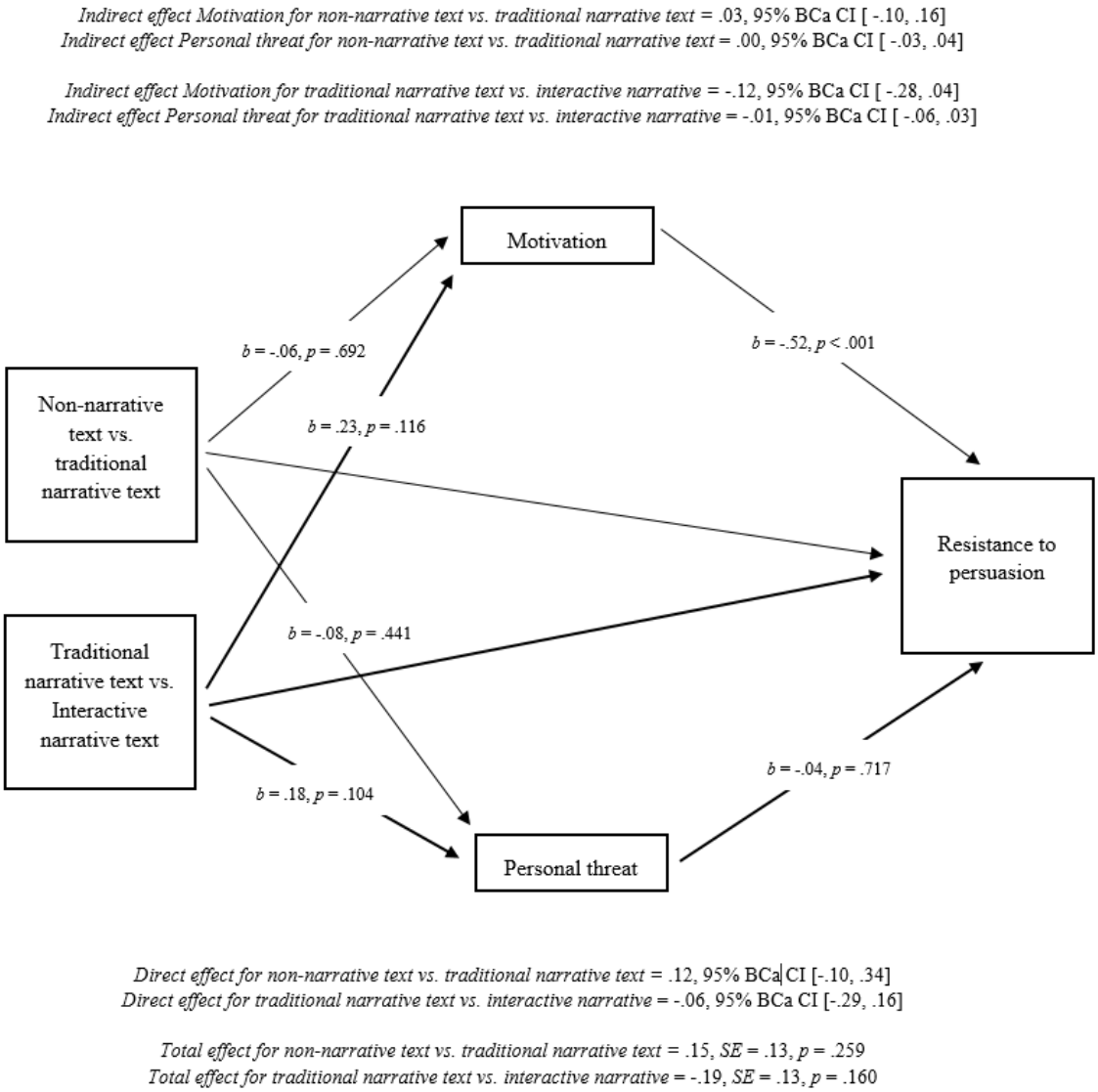


Figure 5. Model with text forms as a predictor of resistance to persuasion, mediated by motivation and personal threat.

Need for cognition and Game experience

Similar to the mediation analysis for motivation and personal threat, it remained interesting to further explore the relationship between the text form and resistance to persuasion for need for cognition and game experience. The direct and indirect effects of

these moderators were further explored to gain more insight because certain effects of text form on resistance to persuasion might have been suppressed by need for cognition and game experience as well.

Two moderation analyses using PROCESS (Hayes, 2017), model 1 and the multi categorical option for the independent variable text form, were performed. Similar to the mediation analysis, the text form was used as the predictor variable and resistance to persuasion (M = 3.46, SD = .98) as the outcome variable. Furthermore, need for cognition (M = 4.49, SD = .91) and game experience (M = 3.35, SD = 5.56) functioned as moderators. Looking at the descriptive statistics there should have been no concerns about the possible floor- or ceiling effects since the means and standard deviations were not extremely low or high. In addition, there should have been no concerns about multicollinearity since the correlation between different independent variables was not extremely large. The descriptive statistics and correlations of the moderators and the outcome variable can be found in Table 2.

Table 2

Descriptive statistics and correlations of the moderators and outcome variable.

	Mean (SD)	Resistance	Need for Cognition	Game Experience
Resistance	3.46 (.98)	1		
Need for Cognition	4.49 (.91)	-.05	1	
Game Experience	3.35 (5.56)	.09	-.02	1

Note. Correlations that are significant are **boldfaced.**

However, before the moderation analysis was performed, assumptions were checked. In conclusion, the assumptions of leverage, Mahalanobis distance, linearity, normally distributed errors and multicollinearity were all violated. Because of these violations, the analysis was

bootstrapped and the results should be interpreted with caution. The assumption checks can be found in Appendix F.

The results show that the moderation analysis did not turn out significant for need for cognition (R^2 = .05, F(5, 103) = 1.12, p = .357). Similar as to the one-way ANOVA, the moderation analyses revealed that there was no significant difference in resistance to persuasion between non-narrative texts and traditional narrative texts (b = .13, SE = .13, p = .339). In addition, the difference in resistance to persuasion between traditional narrative texts and interactive narrative texts was also not significant (b = -.17, SE = .13, p = .216). Likewise, the model showed that different levels in need for cognition did not lead to different levels of resistance to persuasion (b = -.05, SE = .10, p = .625). However, there did seem to be a significant interaction effect. The results show that for non-narrative texts and traditional narrative texts, there was still no significant difference in resistance to persuasion (b = .04, SE = .14, p = .768). However, for traditional narrative texts and interactive narrative texts, there was a marginally significant difference in resistance to persuasion when need for cognition was added to the analyses (b = -.26, SE = .15, p = .099).

Conditional effects explain this result in more detail. By selecting the multi categorical option, PROCESS (Hayes, 2017) automatically divided the level of participants' need for cognition into three groups. These groups were automatically made by PROCESS by summing up or subtracting 1 Standard Deviation from the mean score on need for cognition. Thus, low need for cognition was coded by PROCESS into the mean score on need for cognition minus 1 Standard Deviation, average need for cognition was equal to the mean score, and high need for cognition was coded by PROCESS into the mean score on need for cognition plus 1 Standard Deviation. These conditional effects revealed that when need for cognition was low, there was no significant difference in resistance to persuasion for traditional narrative texts and interactive narrative texts (b = .07, SE = .20, p = .743). In

addition, when need for cognition was average, there was also no significant difference in resistance to persuasion for traditional narrative texts and interactive narrative texts (*b* = -.17, SE = .13, *p* = .216). However, when need for cognition was high, there was a significant negative difference in resistance to persuasion for traditional narrative texts and interactive narratives (*b* = -.40, SE = .18, *p* = .033), indicating that when need for cognition is higher, resistance to persuasion will be lower for interactive narrative texts compared to traditional narrative texts.

Figure 6 depicts these conditional effects of the interaction of the different text forms and need for cognition. Given the results, the fourth hypothesis which states that need for cognition moderates the effect from the different text forms on the level of resistance to persuasion is partially supported. The first part, which states that for participants with a high need for cognition, interactive narratives reduce resistance to persuasion more than traditional narratives, is supported. The second part, which states that for participants with a low need for cognition, traditional narratives reduce resistance to persuasion more than interactive narratives, is not supported. The outcomes of the analyses can be found in Table 3.

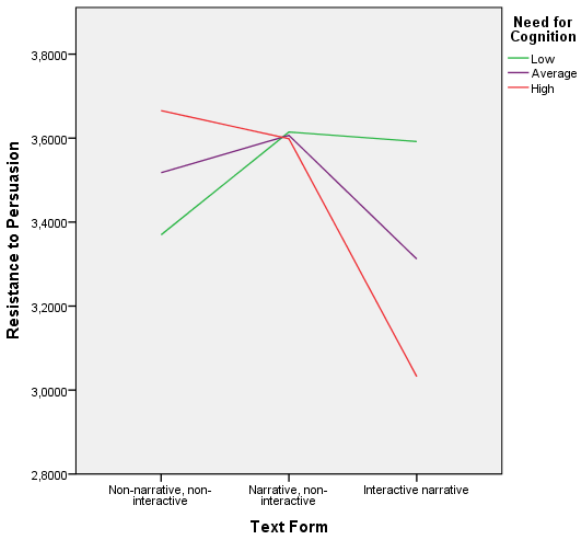


Figure 5. Simple slopes of the equations of the regression of resistance to persuasion on the different text forms for need for cognition.

Table 3

Linear model of predictors of resistance to persuasion with Need for Cognition as moderator.

	b [95% CI]	SE	*t*	*p*
Constant	3.48 [3.29, 3.67]	.09	36.92	< **.001**
NN vs. TN	.13 [-.33, .15]	.13	.96	.339
TN vs. IN	-.17 [-.43, .10]	.13	-1.24	.216
Need for Cognition	-.05 [-0.26, 0.16]	.10	-.49	.625
NN vs. TN *				
Need for Cognition	.04 [-.24, .33]	.14	.30	.758
TN vs. IN *				
Need for Cognition	-.26 [-.56, .05]	.15	-1.67	*.099*

Notes. Predictors that are significant are **boldfaced.** Marginally significant predictors are in *italics.* NN = non-narrative text, TN = traditional narrative text, IN = interactive narrative text

In addition, the results show that the moderation analyses did not turn out significant for game experience (R^2 = .07, F(5, 103) = 1.22, p = .304). Similar to the one-way ANOVA, the model showed that there was no significant difference in resistance to persuasion between non-narrative texts and traditional narrative texts (b = .15, SE = .13, p = .254). In addition, the difference in resistance to persuasion between traditional narrative texts and interactive narrative texts was also not significant (b = -.19, SE = .13, p = .159). Likewise, the model showed that different levels in game experience do not lead to different levels of resistance to persuasion (b = .02, SE = .02, p = .234). Furthermore, the model showed that there was also no significant interaction effect for the text forms and game experience. The results show that for non-narrative texts and traditional narrative texts, there was still no significant difference in resistance to persuasion (b = -.01, SE = .03, p = .705) when game experience was added to the analysis. In addition, for traditional narrative texts and interactive narrative texts, there

was also no significant difference when game experience was added to the analysis (*b* = -.03, *SE* = .02, *p* = .240).

Therefore, the fifth hypothesis, which states that game experience moderates the effect from the different text forms on the level of resistance to persuasion, is not supported. The outcomes of the analyses can be found in Table 4.

Table 4

Linear model of predictors of resistance to persuasion with Game Experience as moderator.

	b [95% CI]	SE	*t*	*p*
Constant	3.46 [3.27, 3.64]	.09	37.11	**< .001**
NN vs. TN	.15 [-.11, .41]	.13	1.15	.254
TN vs. IN	-.19 [-.45, .07]	.13	-1.42	.159
Game Experience	.02 [-.01, .05]	.01	1.24	.218
NN vs. TN * Game Experience	-.03 [-.01, .06]	.02	1.20	.234
TN vs. IN * Game Experience	-.03 [-.07, .02]	.02	-1.18	.240

Notes. Predictors that are significant are **boldfaced.** NN = non-narrative text, TN = traditional narrative text, IN = interactive narrative text

Explorative analysis: Behavioral intentions and gender differences

To create more insight into whether people would intend to change their behavior, behavioral intentions were measured as well. To test whether the texts on average do change behavioral intentions, a paired samples t-test was performed. On average, behavioral intentions before reading the text (*M* = 2.35, *SD* = 1.28) were lower than behavioral intentions after reading the text (*M* = 4.09, *SD* = 1.61). This difference was significant (*Mdif* = -1.75, *t*(108) = -12.66, *p* < .001). The difference represents a large-sized effect *d* = 1.20.

However, to investigate whether there was a difference for the different text forms, a One-Way ANOVA was performed. To measure the change in behavioral intention before and

after reading the text forms, a difference score between the intended behavior before reading the text and the intended behavior after reading the text was computed. Behavioral intention was measured with 3 items on a 7-point-scale (e.g. *I intent to apply sun block the next time when I'm not directly exposed to the sun*). The mean score of the difference in behavioral intention was 1.75 (*SD* = 1.44). On average, respondents with a non-narrative text had a mean difference score of 1.51 (*SD* = 1.41). The mean difference score of respondents with a traditional narrative text was 2.06 (*SD* = 1.45) and for respondents who were exposed to an interactive narrative text, the mean difference score was 1.69 (*SD* = 1.45). The pattern of means is displayed in Figure 6.

The overall ANOVA was not significant, $F(2, 108) = 1.35$, $p = .264$, $\eta 2 = .03$. This indicates that no text forms changes behavioral intentions significantly more than the others.

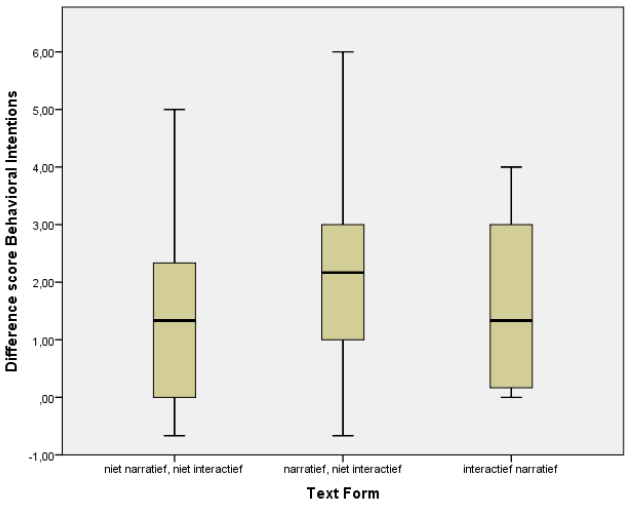


Figure 6. Pattern of means for the different text forms on their mean difference score for behavioral intentions.

Furthermore, gender differences in the results were explored. Since there was only one participant who indicated that he or she did not want to reveal it's gender, this category was deleted. Therefore, the following results were tested for male versus female. To test whether text form and gender differences influence resistance to persuasion a factorial ANOVA was performed. Similar as to the above results, the ANOVA showed again that there was no

significant main effect for text form, $F(2, 102) = .14$, $p = .869$, $\eta 2 = .00$. However, there was a significant main effect for gender, $F(2, 102) = 3.87$, $p = .024$, $\eta 2 = .07$. The ANOVA showed that males ($M = 3.83$, $SD = .94$) showed more resistance to persuasion than females did ($M = 3.28$, $SD = .96$). Finally, there was no significant interaction effect, $F(2, 102) = 1.44$, $p = .243$, $\eta 2 = .03$, indicating that both males and females do not show a significant difference in resistance to persuasion for the different text forms.

Discussion

The current study investigated to what extent interactive narratives are more powerful in overcoming resistance to persuasion attempts in health communication than traditional narratives. Furthermore, it explored whether this effect was influenced by the motivation to read the text, personal threat, need for cognition and game experience.

Resistance to persuasion

It was expected that interactive narratives would be more powerful in overcoming resistance to persuasion attempts in health communication compared to traditional narratives. However, the results do not support this expectation, thus the first hypothesis cannot be accepted. No text form reduces more resistance to persuasion than the others. This could be explained by the low resistance to persuasion scores on average. There might have been a possibility that, for all conditions, participants were not aware of the fact that the text was trying to persuade them. Instead, participants might have expected to be entertained or informed by the text forms, resulting in not ignoring the message in the first place which would have reduced the recipients' resistance to persuasion in all conditions (Hinyard & Kreuter, 2007; Moyer-Gusé, 2008), and thus, resulted in no difference for the text forms. An explanation for this unawareness might be, for example, that there was no organizational source mentioned in the materials. However, this decision was made intentionally to rule out that the source might have influenced the results (Aronson et al., 1963). Future research could

explore whether there would be different results when the text forms would be accompanied by a source or a forewarning of the persuasive attempt. Another explanation for these low resistance scores might have been the subject of the texts in the current study. Previous literature suggested that, for topics in which the current morals and values of the target audience are not consistent with the aimed morals and values of the organization, it could be extremely helpful to use narratives to persuade individuals (Hinyard & Kreuter, 2007; Howard, 1991). However, the health subject chosen for the current study might not have been threatening enough to stir up strong morals and values. The pretest already showed low resistance scores on all the presented health topics (e.g. applying sun block, reducing screen time, using earplugs). In addition, previous literature suggested that attitudinal resistance might be relatively low for health subjects because individuals already might have a relatively positive attitude towards health behavior (Loos, 2019). Therefore, it would be interesting to further explore whether the current findings are generalizable for health subjects in which people might have stronger morals and values, such as Euthanasia. Or for other topic domains than health communication in which individuals might have stronger attitudinal opinions, such as, subjects in political or religious context (Hinyard & Kreuter, 2007; Howard, 1991).

Furthermore, another explanation for the lack of a difference in resistance to persuasion for the different text forms might have been that identification and transportation were not increased for interactive narratives compared to traditional narratives. Even though the current study tried to facilitate identification and transportation by making sure that all texts were longer than 400 words, which would make the texts more persuasive (Shen et al., 2015), it was no guarantee that identification and transportation indeed would be aroused or increased. This also leads to the first limitation of the study: not taking transportation and identification into account in the measures of the present study. According to previous studies, transportation and identification might be increased by interactive narratives which, in turn,

would increase the likelihood of reducing resistance to persuasion (Appel & Richter, 2010; Green & Brock 2000; Kinnebrock & Bilandzic, 2006; Green & Jenkins, 2014; Moyer-Gusé, 2008; Cohen, 2001). However, the literature also suggests that the user control and interactivity in interactive narratives could hinder the process of transportation and identification. Too much agency could interrupt this process and could distract recipients from the narrative instead (Roth & Koenitz, 2016). These factors might have been important mediators of the present research. It might be an explanation of why the current results show that there is no difference in resistance to persuasion caused by the different text forms. More research is needed to find out whether interactive narratives do increase identification and transportation compared to traditional narratives.

Motivation and personal threat

Despite the lack of a main effect for text form on resistance to persuasion, the moderation and mediation analyses were still performed to try to reveal suppressed effects. The second hypothesis which states that motivation mediates the relationship between text form and resistance to persuasion, cannot be accepted as well. The different text forms do not affect the motivation to read the text. These results are not in line with the expectations based on the Self-Determination Theory (Deci & Ryan, 2000; Roth & Koenitz). This lack of effect might be explained by the possibility that effectance was not present enough. The choices that interactors could make might have had too little meaningful consequences since the interactor only had control over the order of the narrative, and not over the content. However, this choice was made based on the fact that confounding variables needed to be ruled out between the three different conditions, and all conditions needed to contain the same information. Unfortunately, this might have left the interactors with too little autonomy and effectance, which would, according to the Self-Determination Theory, result in a lower motivation to read the text compared to when autonomy and effectance would have been present in a greater

extent (Deci & Ryan, 2000; Roth & Koenitz, 2016). This would explain why there is no difference in motivation to read the text for the different text forms. However, the motivation to read the text does affect resistance to persuasion. When motivation to read the text increases, resistance to persuasion decreases, and vice versa. Unfortunately, the present study only focused on whether the different text forms would increase motivation to read the text, which was not the case. Therefore, future research is needed to find out which factors do increase individuals' motivation to read the text, to provide the field of health communication with more insights on how to decrease individuals' resistance to persuasion.

Furthermore, the third hypothesis, which states that personal threat mediates the relationship between text form and resistance to persuasion, cannot be accepted as well. The different text forms do not affect the recipients' perceived personal threat, nor does personal threat affect the recipients' resistance to persuasion. An explanation for the fact that there was no difference in personal threat for the non-narrative text and the traditional narrative text, might have been that all participants were asked to read the text for the sake of the experiment. It might have been possible that this already reduced the selective avoidance in the non-narrative condition. Participants did not intentionally avoid the persuasive attempt by ignoring the persuasive message, because they were asked to read the message to participate in the study. In addition, an explanation for the fact that there was no difference in personal threat for the traditional narrative and the interactive narrative, might be the possibility that identification and perceived vulnerability were not increased by the materials of the current study. Those two factors were not measured, thus whether they would have been increased remains unclear for the current study. As a result, participants might have read about a threatening situation which was not about themselves but someone else in both the traditional narrative and the interactive narrative. Resulting in the participants experiencing less threatening text-presentation (Green & Jenkins, 2014; Kreuter et al., 2007; Moyer-Gusé,

2008). Participants would, therefore, not have felt any difference in personal threat aroused by the different text forms.

Need for cognition and game experience

Additionally, the fourth hypothesis which states that need for cognition moderates the effect from the different text forms on the level of resistance to persuasion can be partially accepted. The first part, which states that for participants with a high need for cognition, interactive narratives reduce resistance to persuasion more than traditional narratives, can be accepted. The second part, which states that for participants with a low need for cognition, traditional narratives reduce resistance to persuasion more than interactive narratives, cannot be accepted. The results show that interactive narrative texts lead to lower levels of resistance to persuasion compared to traditional narrative texts, but only when the need for cognition of the participant is high. These findings might be explained by the differences in identification. Jenkins and Green (2014) found that, compared to traditional narratives, interactive narratives would increase identification for people with a high need for cognition. For individuals with a low need for cognition, there was no difference in the level of identification for the different narrative forms (Jenkins & Green, 2014). This increased identification would explain why interactive narratives would only reduce resistance for participants with a high need for cognition, and why there were no differences in resistance to persuasion for people with a low need for cognition.

In addition, the fifth and last hypothesis, which states that game experience moderates the effect of the text form on resistance to persuasion, cannot be accepted. Different levels of game experience do not lead to different levels of resistance to persuasion. This might be explained because the narrative used in the current study was not complex enough. Increased knowledge and skills for the device were not necessarily needed since the interaction in de narrative was quite simple; participants only had to choose between two options, and click the

button for the choice that they wanted to make. Another explanation would be the sample used in the current study. The respondents' age was on average 24.28 years old. This age group is quite comfortable with technology compared to older people (Czaja & Sharit, 1998) which might have influenced the results. The results might be different for other target groups. Therefore, future research could examine the potential of interactive narratives in narrative persuasion between different age groups, taking game experience into account.

Exploratory analyses: Behavioral intentions and Gender differences

Previous research suggested that individuals do not respond defensively to health messages because they already have a relatively positive attitude towards healthy behavior (Loos, 2019). Therefore, it is argued that the topic of the current study would not arouse a lot of attitudinal resistance. Yet, previous studies show that the actual behavior that these attitudes are about is not performed (Orbell & Kyriakaki, 2008; Krekels, 2006; KWF Kankerbestrijding, 2019). Therefore, next to resistance to persuasion, the current study also examined behavioral intentions to check for resistance against the intention to perform the healthy behavior. The results revealed that there was no difference between the different text forms in their effect on behavioral intentions. These results are in contrast with the findings of Kim et al. (2012), who found that narratives led to more positively changed behavioral intentions compared to non-narrative texts. However, despite the lack of difference between the text forms, results show that behavioral intentions were almost doubled after reading any of the text forms. These findings are in line with the results of Greene and Brinn (2003), who also found that there was no difference in behavioral intentions for non-narrative texts and narrative texts, but there was a difference in behavioral intentions after the exposition to the health information for all texts, compared to before the exposition. This study used a similar health subject as the current study, namely tanning bed use. An explanation would, therefore, be that the subject of tanning might have influenced the results. This indicates that it does not

matter which text form about tanning risks is presented to individuals. As long as recipients are exposed to the information, behavioral intentions will increase.

Furthermore, the current study involved remarkably more female than male participants, which might have influenced the results. Therefore, an exploratory analysis was performed to find out whether there were differences in the results between male and female participants. According to Hendriks and Janssen (2018), women might be less defensive to threatening information compared to men. This could also explain the low resistance scores of the current study since more women than men participated. Furthermore, Moyer-Gusé and Nabi (2010) have found, in their study about overcoming resistance to safe sex persuasion attempts in television programs that narrative programs decreased males' safe sex intentions, while for females, narrative programs increased safe sex intentions compared to non-narratives. In addition, Abroms et al. (2003) found that, on average, females seemed to encourage the use of sun block and tend to use it more in their daily lives, while males seem to be more in conflict with the use of sun block and tend to use it more after being sunburned. Based on these contrasts, it was expected that the current study might have been biased because a great number of participants was female. The analysis revealed that there were no differences in results for the different text forms for both males and females. However, in line with the findings of Hendriks and Janssen (2018), female participants showed less resistance to persuasion in general than male participants did. Therefore, future research could further explore gender differences in persuasion attempts with the help of (interactive) narratives.

Theoretical implications

The current study contributes to the existing literature about narrative persuasion. Many of the previous studies showed that participants who were exposed to a narrative showed less resistance to persuasion or increased behavioral intentions than participants who were exposed to a non-narrative text (Kim et al., 2012; Moyer-Gusé & Nabi, 2010). However,

in contrast to this previous literature, the current study did not find any differences in resistance to persuasion or behavioral intentions between non-narrative and narrative texts. This could mean that the different circumstances might influence the effects of the different text forms, and narratives might not be more powerful in reducing resistance to persuasion attempts compared to non-narrative texts in all circumstances. When circumstances change, the power of overcoming resistance to persuasion might change as well. For example, for subjects in which recipients do not hold strong morals and values, like in tanning messages, increased effects of narratives in reducing resistance to persuasion might be absent.

Furthermore, the current study is one of the first studies to further explore resistance to narrative persuasion for interactive narratives, providing the scientific literature with more insights about interactive narratives and narrative persuasion. Green and Jenkins (2014) suggested in their study that need for cognition might affect whether an interactive narrative will reduce more resistance to persuasion compared to a traditional narrative. They argued that recipients' need for cognition might influence the effectiveness of the text forms on resistance to persuasion. The current study reveals that this theoretical suggestion is supported. For individuals with a high need for cognition, interactive narratives reduce resistance to persuasion more than traditional narratives. In addition, for individuals with a low need for cognition, there was no difference in resistance to persuasion for the different text forms.

Practical implications

Even though the current study might have limitations, it does still lead to important practical implications. The results still provide the field of health communication with insights about how to use narratives to persuade their recipients best to change their behaviors concerning health issues. First, health organizations might consider changing their narrative communication to interactive narrative communication. According to the results of the present

study, this would lead to a reduction in resistance to persuasion for people with a high need for cognition. Furthermore, it would not (negatively) affect resistance to persuasion for people with average or low need for cognition, since it does not matter to which text form they are exposed. Thus, with the approach of an interactive narrative, these organizations might at least decrease resistance to persuasion for a segmentation of their audience. Second, the current research reveals that behavioral intentions almost doubled for individuals after being exposed to the health information for all text forms. Taking previous research into account, this means that for the tanning subject, organizations should try to make sure that individuals are regularly exposed to the important health information, regardless of which text form is used. And third, the current research shows that higher motivation to read the text leads to lower resistance to persuasion. Thus, for health organizations to reduce resistance to persuasion, they should increase individuals' motivation to read the text. However, the current research was not able to answer the question of how to increase this motivation. Therefore, future research is needed.

Conclusion

The current study aimed to explore the potential of interactive narratives in overcoming resistance to persuasion attempts in health communication. The results of the experiment show that there is only a small target group for whom interactive narratives might reduce more resistance to persuasion in health communication compared to traditional narratives. However, the current study only examined a hand full of individual differences, and a health subject that aroused relatively low scores of resistance. With more future research on whether there might be different results in other topic domains, more threatening health subjects, different interactive narrative structures (e.g. no CYOA), or other individual differences, interactive narratives might still turn out to have great potential in reducing resistance to persuasion.

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Appendix A: Scales

1. Resistance Scale

Table 1

Original resistance scale (Fransen, ter Hoeven, Verlegh, 2013)

1. I think about how the ad tries to persuade me.	1	2	3	4	5	6	7
2. I remind myself of the fact that the ad tries to sell me something	1	2	3	4	5	6	7
3. I think about the techniques that are used in de ad to influence me	1	2	3	4	5	6	7
4. I think about the intentions of the brand that created the ad.	1	2	3	4	5	6	7
5. I think of arguments that challenge the ad	1	2	3	4	5	6	7
6. I look for flaws in the ad	1	2	3	4	5	6	7
7. I think of the ways I disagree with what is presented in the ad	1	2	3	4	5	6	7
8. I think about the arguments I have for my opinion about the advertised product	1	2	3	4	5	6	7
9. I think about facts that support my own opinion about the advertised product	1	2	3	4	5	6	7
10. I don't look at the ad.	1	2	3	4	5	6	7
11. I ignore the ad.	1	2	3	4	5	6	7
12. I avoid the ad.	1	2	3	4	5	6	7
13. I pay more attention to information that supports my own opinion about the ad.	1	2	3	4	5	6	7
14. I put less value on information that is not in congruence with my own opinion about the ad.	1	2	3	4	5	6	7
15. I have negative thoughts about the brand that produces or sells the advertised product.	1	2	3	4	5	6	7
16. I think unfavorably about the brand that made the ad.	1	2	3	4	5	6	7
17. I think about people who do not like the ad.	1	2	3	4	5	6	7
18. I think about other people who also do not want to be influenced by this ad.	1	2	3	4	5	6	7
19. I think about how exaggerated the ad is.	1	2	3	4	5	6	7
20. I think about how misleading the ad is.	1	2	3	4	5	6	7
21. I think about how manipulative the ad is	1	2	3	4	5	6	7
22. I remind myself that I am certain about my opinion regarding the advertised product.	1	2	3	4	5	6	7
23. I think of the fact that what I think is usually right.	1	2	3	4	5	6	7
24. I think about how strongly committed I am to my own opinions.	1	2	3	4	5	6	7
25. I think about things that are unrelated to the ad.	1	2	3	4	5	6	7
26. I distract myself from the ad.	1	2	3	4	5	6	7
27. I concentrate on other things to distract myself from the ad.							

Table 2

Resistance scale by Fransen, ter Hoeven, Verlegh (2013), adjusted for the current study.

1. I think about how the text tries to persuade me.	1	2	3	4	5	6	7
2. I think about the techniques that are used in the text to influence me.	1	2	3	4	5	6	7
3. I think about the intentions of the person that created the tekst.	1	2	3	4	5	6	7
4. I think about arguments that challenge the text.	1	2	3	4	5	6	7
5. I think of the ways I disagree with what is presented in the text.	1	2	3	4	5	6	7
6. I ignore the text.	1	2	3	4	5	6	7
7. I avoid the text.	1	2	3	4	5	6	7
8. I think about people who would also not like the text.	1	2	3	4	5	6	7
9. I think about how exaggerated the text is.	1	2	3	4	5	6	7
10. I think about how misleading the text is.	1	2	3	4	5	6	7
11. I think about how manipulative the text is.	1	2	3	4	5	6	7
12. I think about things that are unrelated to the text.	1	2	3	4	5	6	7

2. Situational Motivational Scale

Directions: Read each item carefully. Using the scale below, please circle the number that best describes the reason why you are currently engaged in this activity. Answer each item according to the following scale: 1: corresponds not all; 2: corresponds a very little; 3: corresponds a little; 4:corresponds moderately; 5: corresponds enough; 6: corresponds a lot; 7: corresponds exactly.

Table 3

Situational Motivational Scale (Guay, Vallerand, and Blanchard, 2000)

Why are you currently engaged in this activity?							
1. Because I think that this activity is interesting	1	2	3	4	5	6	7
2. Because I am doing it for my own good	1	2	3	4	5	6	7
3. Because I am supposed to do it *	1	2	3	4	5	6	7
4. There may be good reasons to do this activity, but personally I don't see any *	1	2	3	4	5	6	7
5. Because I think that this activity is pleasant	1	2	3	4	5	6	7
6. Because I think that this activity is good for me	1	2	3	4	5	6	7
7. Because it is something that I have to do *	1	2	3	4	5	6	7
8. I do this activity but I am not sure if it is worth it *	1	2	3	4	5	6	7
9. Because this activity is fun	1	2	3	4	5	6	7
10. By personal decision	1	2	3	4	5	6	7
11. Because I don't have any choice *	1	2	3	4	5	6	7
12. I don't know; I don't see what this activity brings me *	1	2	3	4	5	6	7
13. Because I feel good when doing this activity	1	2	3	4	5	6	7
14. Because I believe that this activity is important for me	1	2	3	4	5	6	7
15. Because I feel that I have to do it *	1	2	3	4	5	6	7
16. I do this activity, but I am not sure it is a good thing to pursue it *	1	2	3	4	5	6	7

Note. * Reversed scoring is used on this item.

Table 4

Situational Motivational Scale (Guay, Vallerand, and Blanchard, 2000) adjusted for the current study

Why are you currently engaged in this activity?							
1. Because I think that this text is interesting.	1	2	3	4	5	6	7
2. There may be good reasons to read this text, but personally I don't see any.*	1	2	3	4	5	6	7
3. Because I think that this text is pleasant.	1	2	3	4	5	6	7
4. I do read this text, but I am not sure if it is worth it.*	1	2	3	4	5	6	7
5. I don't know; I don't see what this text brings me.*	1	2	3	4	5	6	7
6. Because I believe that this text is important for me	1	2	3	4	5	6	7

Note. * Reversed scoring is used on this item.

3. Need for Cognition Scale

Table 5

18-item Need for Cognition Scale (Cacioppo, Petty and Kao, 1984)

Item Number	Item Wording
1.	I would prefer complex to simple problems.
2.	I like to have the responsibility of handling a situation that requires a lot of thinking.
3.	Thinking is not my idea of fun. *
4.	I would rather do something that requires little thought than something that is sure to challenge my thinking abilities. *
5.	I try to anticipate and avoid situations where there is likely chance I will have to think in depth about something. *
6.	I find satisfaction in deliberating hard and for long hours.
7.	I only think as hard as I have to. *
8.	I prefer to think about small, daily projects to long-term ones. *
9.	I like tasks that require little thought once I've learned them. *
10.	The idea of relying on thought to make my way to the top appeals to me.
11.	I really enjoy the task that involves coming up with new solutions to problems.
12.	Learning new ways to think doesn't excite me very much.*
13.	I prefer my life to be filled with puzzles that I must solve.
14.	To notion of thinking abstractly is appealing to me.
15.	I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
16.	I feel relief rather than satisfaction after completing a task that required a lot of mental effort. *
17.	It's enough for me that something gets to job done; I don't care how or why it works. *
18.	I usually end up deliberating about issues even when they do not affect me personally.

Note. * Reversed scoring is used on this item.

Table 6

Need for Cognition Scale (Cacioppo, Petty and Kao, 1984) adjusted for the current study

Item Number	Item Wording
1.	Thinking is my idea of fun.
2.	I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.*
3.	I only think as hard as I have to*
4.	I really enjoy the task that involves coming up with new solutions to problems.
5.	I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
6.	I feel relief rather than satisfaction after completing a task that required a lot of mental effort.*

Note. * Reversed scoring is used on this item.

Appendix B: Materials

Condition 1: non-narrative text

"In de schaduw hoef je niet te smeren"

Het aantal mensen met huidkanker neemt schrikbarend toe. Elk jaar krijgen ongeveer 70.000 Nederlanders de diagnose huidkanker. In 2018 overleden er 793 mensen aan een melanoom en 108 mensen aan een plaveiselcelcarcinoom. In de meeste gevallen is huidkanker het gevolg van te veel blootstelling aan uv-straling.

Uv-straling is dus de grootste boosdoener, in tegenstelling tot wat veel mensen denken. Hier kom je niet alleen mee in aanraking wanneer je direct wordt blootgesteld aan de zon. Het is daarom belangrijk om op het volgende te letten:

- Ook in de schaduw kun je verbranden. De schadelijke uv-straling wordt gereflecteerd door onder andere zand, zee, sneeuw en water. Schadelijke uv-straling kan ook door glas gaan. Daardoor kan je huid nog steeds schade oplopen als je in de schaduw zit.
- Ook onder een parasol kun je verbranden. De kans is groot dat je onder een parasol veel indirecte straling meepakt (de aarde weerkaatst een deel van de stralen in een andere richting). Daarnaast zijn de meeste parasols niet gemaakt van uv-werend materiaal. Op die manier pak je ook nog een deel van de directe zonnestralen mee. Dus zelfs als je lekker uit de zon denkt te zitten, moet je toch goed smeren.
- Wanneer het koel weer is, kom je nog steeds in aanraking met uv-straling. Hierom is het verstandig om ook dan zonnebrandcrème smeren.

Ook wanneer je niet direct blootgesteld wordt aan de zon, kun je dus verbranden. Echter, dit is pas het korte-termijn-gevolg van te weinig zonnebrandcrème smeren. Op de lange termijn kan dit leiden tot huidkanker. Verbranden vergroot namelijk het risico op huidkanker.

- Wanneer je verbrandt, gaan er veel cellen dood. Hierdoor ga je vervellen.
- Elke keer als je verbrandt, beschadigt je DNA onherstelbaar.
- Hoe vaker je verbrandt, hoe groter het risico op huidkanker.

Er zijn verschillende vormen van huidkanker die kunnen ontstaan door te veel onbeschermde blootstelling aan uv-straling.

1. Basaalcelcarcinoom: de minst kwaadaardige vorm van huidkanker. Het groeit langzaam en zaait bijna nooit uit.
2. Plaveiselcelcarcinoom: komt vooral voor op plaatsen die vaak in de zon komen, zoals het gezicht en de bovenkant van de handen. Is kwaadaardiger dan basaalcelcarninoom en kan uitzaaien als er niet op tijd wordt ingegrepen.
3. Melanoom: de meest kwaadaardige vorm van huidkanker. Soms treden al vroeg uitzaaiingen op. Voor de puberteit komen melanomen bijna niet voor. Daarna kan het op elke leeftijd ontstaan.

Om deze lange-termijn-gevolgen te voorkomen, is het raadzaam om bewust bezig te zijn met het smeren van zonnebrandcrème. Dus óók wanneer je je in de schaduw bevindt.

- EINDE -

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Condition 2: traditional narrative text

"In de schaduw hoef je niet te smeren"

Ik ben in mijn leven nooit verbrand en werd altijd snel bruin. Ik hield ook wel van zonnen hoor. En als ik op zonnige dagen uren op de tennisbaan stond, werd mijn huid ook continu blootgesteld aan de uv-straling. Ik was me er toen niet van bewust dat ik ook dan moest smeren - de baan lag toch in de schaduw. Later pas begreep ik dit. Ik had een vlekje op mijn enkel, dus ging langs de dokter. Hij vertelde me dat het vlekje niet zomaar een moedervlek was. Ik was nog maar 21 jaar en kreeg de diagnose huidkanker.

De huisarts schrok niet van de moedervlek. Hij vertelde me dat het aantal mensen met huidkanker flink toeneemt. Elk jaar krijgen ongeveer 70.000 Nederlanders de diagnose huidkanker. De meeste hiervan werden, net als bij mij, veroorzaakt door te veel onbeschermde blootstelling aan uv-straling. Ik was dus niet alleen.

Ik schrok hiervan. Ik dacht dat ik het goed deed. Wanneer ik mezelf blootstelde aan de zon smeerde ik me altijd goed in. Ik hoorde de dokter me vertellen dat het waarschijnlijk fout is gegaan wanneer ik niet in de directe zon was. De schadelijke uv-straling wordt namelijk gereflecteerd door zand, zee, sneeuw en water en kan daarnaast zelfs door glas gaan, vertelde hij. Meteen gaf ik mezelf de schuld. Ik was lui en dacht dat de zon me in de schaduw toch niks kon doen. Onder de parasol zou de zon me toch niet bereiken en zou ik veilig zijn voor de uv-straling. Maar ik wist niet dat de meeste parasols niet uv-werend zijn, of dat de uv-straling via de aarde alsnog weerkaatst kan worden in andere richtingen. Dus smeerde ik niet vaak genoeg in de schaduw. Daarnaast smeerde ik al helemaal nooit wanneer het koel was. Ik voelde het gevaar gewoon niet. Af en toe verbrandde ik wel eens een keer. Maar hier dacht ik niet goed over na. "Dat trekt wel weer weg" of "ach ja, morgen is het bruin", dacht ik dan. Maar dat al die keren verbranden mijn DNA onherstelbaar zouden beschadigen en zich zouden opstapelen tot huidkanker, had ik niet verwacht. Het zou mij tenslotte toch niet overkomen. Oh, wat had ik het mis!

Ik probeerde mijn gedachten los te laten en ging verder in gesprek met de dokter. Hij vertelde me dat ik melanoomkanker had. Dit zei me niks. Dit was één van de drie soorten huidkanker. Hiernaast had je dus nog twee andere soorten huidkanker. Basaalcelcarcinoom, de minst kwaadaardige vorm van huidkanker die langzaam groeit en bijna nooit uitzaait. En Plaveiselcelcarcinoom, die vooral op plaatsen ontstaat die vaak blootgesteld worden aan de zon, en mogelijk kan uitzaaien als er niet op tijd wordt ingegrepen. Maar deze had ik niet. Ik had melanoomkanker. De meest kwaadaardige vorm van huidkanker, waarbij soms al vroeg uitzaaiingen optreden.

Tien dagen na de operatie en bijna twee maanden na de diagnose huidkanker, kreeg ik de geruststelling dat er geen uitzaaiingen waren. Wat een enorme opluchting. Het had namelijk erger kunnen aflopen. In 2018 overleden er 793 mensen aan een melanoom en 108 mensen aan een plaveiselcelcarcinoom. Hierom zou ik iedereen dan ook adviseren om goed te smeren. Want ook als je je niet in de directe zon bevindt, weet de uv-straling jou wel te vinden. Helaas.

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Condition 3: interactive narrative (One of the possible walkthroughs).

"In de schaduw hoef je niet te smeren"

Ik ben in mijn leven nooit verbrand en werd altijd snel bruin. Ik hield ook wel van zonnen hoor. En als ik op zonnige dagen uren op de tennisbaan stond, werd mijn huid continu blootgesteld aan de uv-straling. Ik was me er toen niet van bewust dat ik ook dan moest smeren - de baan lag toch in de schaduw. Later pas begreep ik dit. Ik vond een gek vlekje op mijn linker enkel. Mijn moedervlek jeukte en leek gegroeid. Dit vond ik verdacht en ik werd bezorgd.

Dus ik ging langs de dokter.

Ik besloot om langs de dokter te gaan. Hij vertelde me dat het vlekje op mijn enkel niet zomaar een moedervlek was. Ik was nog maar 21 jaar en kreeg de diagnose huidkanker. De huisarts schrok niet van de moedervlek. Hij vertelde me dat het aantal mensen met huidkanker flink toeneemt. Elk jaar krijgen ongeveer 70.000 Nederlanders de diagnose huidkanker. De meeste hiervan werden, net als bij mij, veroorzaakt door te veel onbeschermde blootstelling aan uv-straling. Ik was dus niet alleen.

Ik? Huidkanker? Ik vroeg de dokter wat mijn diagnose precies inhield.

Hij vertelde me dat ik melanoomkanker had. Dit zei me niks. Dit was één van de drie soorten huidkanker. Hiernaast had je dus nog twee andere soorten huidkanker. Basaalcelcarcinoom, de minst kwaadaardige vorm van huidkanker die langzaam groeit en bijna nooit uitzaait. En Plaveiselcelcarcinoom, die vooral op plaatsen ontstaat die vaak blootgesteld worden aan de zon, en mogelijk kan uitzaaien als er niet op tijd wordt ingegrepen. Maar deze had ik niet. Ik had melanoomkanker. De meest kwaadaardige vorm van huidkanker, waarbij soms al vroeg uitzaaiingen optreden.

Ik vroeg de dokter hoe dit dan precies ontstond.

De arts legde uit dat al die keren verbranden zich kon opstapelen tot huidkanker. Mijn DNA zou bij elke verbranding onherstelbaar beschadigt zijn. Af en toe verbrandde ik wel eens. Maar hier dacht ik niet goed over na. "Dat trekt wel weer weg" of "ach ja, morgen is het bruin", dacht ik dan. Dit was ook zo op korte termijn. Maar de lange-termijngevolgen liepen anders.

Maar ik smeerde toch zo goed wanneer ik in de zon was?! Hierom vroeg ik de dokter hoe het kon dat dit mij overkwam.

Ik hoorde de dokter me vertellen dat het waarschijnlijk fout is gegaan wanneer ik niet in de directe zon was. De schadelijke uv-straling wordt namelijk gereflecteerd door zand, zee, sneeuw en water en kan daarnaast zelfs door glas gaan, vertelde hij. Meteen gaf ik mezelf de schuld. Ik was lui en dacht dat de zon me in de schaduw toch niks kon doen. Onder de parasol zou de zon me toch niet bereiken en zou ik veilig zijn voor de uv-straling. Maar ik wist niet dat de meeste parasols niet uv-werend zijn, of dat de uv-straling via de aarde alsnog weerkaatst kan worden in andere richtingen. Dus smeerde ik niet vaak genoeg in de schaduw. Daarnaast smeerde ik al helemaal nooit wanneer het koel was. Ik voelde het gevaar gewoon niet. Het zou mij tenslotte toch niet overkomen.

Zeven weken later werd ik geopereerd, en tien dagen na de operatie kreeg ik de geruststelling dat er geen uitzaaiingen waren. Wat een enorme opluchting. Het had namelijk erger kunnen aflopen. In 2018 overleden er 793 mensen aan een melanoom en 108 mensen aan een plaveiselcelcarcinoom. Hierom zou ik iedereen dan ook adviseren om goed te smeren. Want ook als je je niet in de directe zon bevindt, weet de uv-straling jou wel te vinden. Helaas.

- EINDE-

https://preview.uxpin.com/19ae51cbc2bdade499ae5dfed535eaa883f07566#/pages/117989114/simulate/no-panels?mode=i

Appendix C: Questionnaire Pre-test

Start of Block: Information Letter en Consent

Q0

Welkom en bedankt voor je tijd!

Je zal deelnemen aan een pre-test voor een masterscriptie van een student Bedrijfscommunicatie en Digitale Media aan de universiteit van Tilburg. Het doel van deze pre-test is om erachter te komen hoe mensen denken over verschillende gezondheidsonderwerpen. Alle informatie die je nodig hebt om deel te nemen aan de enquête zal worden verstrekt op deze pagina. Je wordt verzocht om deze informatie zorgvuldig door te lezen. Indien je nog vragen hebt na het lezen van deze informatie, is er de mogelijkheid om contact op te nemen met de onderzoeker via het volgende e-mail adres:

Zo meteen zullen er een aantal stellingen voorgelegd worden. Aan jou het verzoek om aan te geven in hoe verre je het eens bent met deze stellingen. Er zijn geen goede en geen foute antwoorden. Voel je dus vrij om deze vragen geheel naar eigen mening in te vullen. Er zal vertrouwelijk met je antwoorden omgegaan worden en deze zullen niet voor andere doeleinden gebruikt worden. De enquête zal ongeveer 5 minuutjes duren en de deelname is vrijwillig. Je bent vrij om op elk gewenst moment te stoppen, zonder dat je hierin benadeeld wordt. Als je je terugtrekt uit het onderzoek, zullen alle gegevens worden vernietigd. Besluit je om deel te nemen, dan worden de anonieme gegevens tien jaar bewaard. Na deze periode zullen ook al deze gegevens worden vernietigd. De studie is geheel anoniem en de enige persoonlijke informatie die gevraagd zal worden zijn je leeftijd, geslacht, nationaliteit en opleidingsniveau. Het deelnemen aan deze studie draagt geen fysieke of psychologische risico's met zich mee.

Wanneer je klikt op 'ik ga akkoord', ga je akkoord met de volgende informatie:
Ik heb de voorwaarden gelezen en heb de mogelijkheid gehad om vragen te stellen. Mijn deelname aan de studie is geheel vrijwillig. Ik ben minimaal 18 jaar of ouder. Mijn deelname aan de studie is geheel anoniem en de data die in deze studie verworven wordt zal veilig bewaard worden voor een periode van 10 jaar. Ik kan er op elk gewenst moment voor kiezen om de enquête te stoppen zonder enige consequenties. Bij deze neem ik vrijwillig deel aan deze studie.

- ○ Ik ga akkoord (1)
- ○ Ik ga niet akkoord (2)

End of Block: Information Letter en Consent

Start of Block: Demografische vragen

Q1 Wat is je leeftijd?

_____

Q2 Wat is je geslacht?

- Man (1)
- Vrouw (2)
- Anders (3)

Q3 Wat is je nationaliteit?

- Nederlands (1)
- Anders, namelijk: (2) _____

Q4 Wat is je huidige opleidingsniveau? (Je hoeft deze studie nog niet afgerond te hebben).

- Middelbare School (1)
- MBO (2)
- HBO (3)
- WO Bachelor (4)
- WO Master (5)
- PhD (6)
- Anders (7)

End of Block: Demografische vragen

Start of Block: Vragen over gedrag

Q5 Nu volgen er een aantal vragen die betrekking hebben op jouw gedrag. Je wordt verzocht om hierbij een eerlijk antwoord te geven over je eigen gedrag. Er is geen antwoord goed of fout.

Q6 Is het volgende gedrag op jou van toepassing?**Als ik buiten in de zon ben, smeer ik minimaal om de 2 uur opnieuw zonnebrandcrème.**

- ○ Ja (1)
- ○ Nee (2)

Q7 Is het volgende gedrag op jou van toepassing?**Bij schaduw of bewolking smeer ik toch zonnebrandcrème.**

- ○ Ja (1)
- ○ Nee (2)

Q8 Is het volgende gedrag op jou van toepassing?**Ik eet minder dan 4x per week rood vlees.**

- ○ Ja (1)
- ○ Nee (2)

Q9 Is het volgende gedrag op jou van toepassing?**Ik gebruik mijn smartphone of tablet minder dan 2,5 uur per dag.**

- ○ Ja (2)
- ○ Nee (3)

Q10 Is het volgende gedrag op jou van toepassing?**Op festivals/feesten/concerten gebruik ik oordopjes bij harde muziek.**

- ○ Ja (1)
- ○ Nee (2)

End of Block: Vragen over gedrag

Start of Block: Survey vragen

Q11 Nu zullen er een aantal statements volgen. Je wordt hierbij verzocht om eerlijk antwoord te geven. Er is geen antwoord goed of fout.

Q6 Wat vind je van het volgende statement: **Ik ga minimaal om de 2 uur opnieuw zonnebrandcrème smeren wanneer ik buiten in de zon ben.**

	Helemaal niet mee eens (1)	Oneens (2)	Deels oneens (3)	Niet eens of oneens (4)	Deels eens (5)	Eens (6)	Helemaal mee eens (7)
Ik betwijfel of ik dit ga doen (1)	○	○	○	○	○	○	○
Ik weerleg dat ik dit ga doen (2)	○	○	○	○	○	○	○
Ik betwist dat ik dit ga doen (3)	○	○	○	○	○	○	○
Ik bestrijd dat ik dit ga doen (4)	○	○	○	○	○	○	○
Ik denk aan dingen die hier geen verband mee houden (5)	○	○	○	○	○	○	○
Ik denk positief hierover (6)	○	○	○	○	○	○	○
Ik negeer dit (7)	○	○	○	○	○	○	○
Ik denk hier kritisch over na (8)	○	○	○	○	○	○	○
Ik weiger om mijn mening te veranderen na het lezen hiervan (9)	○	○	○	○	○	○	○

Q18 Wat vind je van het volgende statement: **Ik ga bij schaduw of bewolking toch zonnebrandcrème smeren.**

	Helemaal niet mee eens (1)	Oneens (2)	Deels oneens (3)	Niet eens of oneens (4)	Deels eens (5)	Eens (6)	Helemaal mee eens (7)
Ik betwijfel of ik dit ga doen (1)	○	○	○	○	○	○	○
Ik weerleg dat ik dit ga doen (2)	○	○	○	○	○	○	○
Ik betwist dat ik dit ga doen (3)	○	○	○	○	○	○	○
Ik bestrijd dat ik dit ga doen (4)	○	○	○	○	○	○	○
Ik denk aan dingen die hier geen verband mee houden (5)	○	○	○	○	○	○	○
Ik denk positief hierover (6)	○	○	○	○	○	○	○
Ik negeer dit (7)	○	○	○	○	○	○	○
Ik denk hier kritisch over na (8)	○	○	○	○	○	○	○
Ik weiger om mijn mening te veranderen na het lezen hiervan (9)	○	○	○	○	○	○	○

Q19 Wat vind je van het volgende statement: **Ik ga minder dan 4x per week rood vlees eten.**

	Helemaal niet mee eens (1)	Oneens (2)	Deels oneens (3)	Niet eens of oneens (4)	Deels eens (5)	Eens (6)	Helemaal mee eens (7)
Ik betwijfel of ik dit ga doen (1)	○	○	○	○	○	○	○
Ik weerleg dat ik dit ga doen (2)	○	○	○	○	○	○	○
Ik betwist dat ik dit ga doen (3)	○	○	○	○	○	○	○
Ik bestrijd dat ik dit ga doen (4)	○	○	○	○	○	○	○
Ik denk aan dingen die hier geen verband mee houden (5)	○	○	○	○	○	○	○
Ik denk positief hierover (6)	○	○	○	○	○	○	○
Ik negeer dit (7)	○	○	○	○	○	○	○
Ik denk hier kritisch over na (8)	○	○	○	○	○	○	○
Ik weiger om mijn mening te veranderen na het lezen hiervan (9)	○	○	○	○	○	○	○

Q20 Wat vind je van het volgende statement: **Ik ga mijn schermtijd op mijn smartphone of tablet minderen tot maximaal 2,5 uur per dag.**

	Helemaal niet mee eens (1)	Oneens (2)	Deels oneens (3)	Niet eens of oneens (4)	Deels eens (5)	Eens (6)	Helemaal mee eens (7)
Ik betwijfel of ik dit ga doen (1)	○	○	○	○	○	○	○
Ik weerleg dat ik dit ga doen (2)	○	○	○	○	○	○	○
Ik betwist dat ik dit ga doen (3)	○	○	○	○	○	○	○
Ik bestrijd dat ik dit ga doen (4)	○	○	○	○	○	○	○
Ik denk aan dingen die hier geen verband mee houden (5)	○	○	○	○	○	○	○
Ik denk positief hierover (6)	○	○	○	○	○	○	○
Ik negeer dit (7)	○	○	○	○	○	○	○
Ik denk hier kritisch over na (8)	○	○	○	○	○	○	○
Ik weiger om mijn mening te veranderen na het lezen hiervan (9)	○	○	○	○	○	○	○

Q21 Wat vind je van het volgende statement: **Op festivals/feesten/concerten ga ik oordopjes gebruiken bij harde muziek.**

	Helemaal niet mee eens (1)	Oneens (2)	Deels oneens (3)	Niet eens of oneens (4)	Deels eens (5)	Eens (6)	Helemaal mee eens (7)
Ik betwijfel of ik dit ga doen (1)	○	○	○	○	○	○	○
Ik weerleg dat ik dit ga doen (2)	○	○	○	○	○	○	○
Ik betwist dat ik dit ga doen (3)	○	○	○	○	○	○	○
Ik bestrijd dat ik dit ga doen (4)	○	○	○	○	○	○	○
Ik denk aan dingen die hier geen verband mee houden (5)	○	○	○	○	○	○	○
Ik denk positief hierover (6)	○	○	○	○	○	○	○
Ik negeer dit (7)	○	○	○	○	○	○	○
Ik denk hier kritisch over na (8)	○	○	○	○	○	○	○
Ik weiger om mijn mening te veranderen na het lezen hiervan (9)	○	○	○	○	○	○	○

End of Block: Survey vragen

Appendix D: Method and Results pretest

To ensure that the topic of the present research would arouse a certain level of resistance from the recipients, a pretest was performed. In this pretest, different topics were presented to 18 Dutch participants, of which 9 were male and 9 were female, with an average age of 22.72 years old (*SD* = 1.71). The chosen topics were based on real health issues. First, for five topics, the participants were asked whether a certain behavior (e.g., applying sun block, eating red meat, limiting screen time and wearing earplugs) applied to them. For all the statements on which participants indicated that the behavior did not apply to them, participants were asked to answer some questions about their resistance against performing the behavior.

The first two topics were about applying sun block. This topic was lent from a study by Orbell and Kyriakaki (2008) and was chosen because in general it can be said that individuals apply sun block too little, too late and with an SPF which is not high enough (Krekels, 2006). Also, according to KWF Kankerbestrijding (2019), most people are not well protected because they do not apply enough sun block or do not repeat it often enough. Therefore, it is expected that this topic is counter attitudinal to respondents, which in turn would motivate resistance to the topic (Wheeler & Hermann, 2007). The two statements about this first topic were stated as “I am going to apply sun block at least every two hours” and “Even when I am in the shadow or when it is a cloudy day, I am going to apply sun block” to make the behavior more specific. The third topic was about eating red meat. According to Het Voedingscentrum (2019), it would not be healthy to eat red meat more often than four times a week. Therefore, the third topic was “I am going to eat red meat less than four times a week”. The fourth topic concerned screen time on smartphones and tablets. Research showed that health issues might occur when people use their digital devices more than 2,5 hours per day (Bouma, 2019). Thus, this led to the fourth topic “I am going to use my smartphone or tablet

less than 2,5 hours per day". Last, hearing damage caused by loud music on festivals and concerts is an increasingly common problem nowadays. Therefore, it is advised to use earplugs to prevent this (den Braber, 2019). This led to the last topic "At festivals/parties/concerts with loud music, I am going to use earplugs".

To measure resistance towards the health subjects in this pretest, cognitive resistance was measured on the same scale as used by Van Reijmersdal et al. (2016). Cognitive resistance was assessed with four items on a 7-point-Likert scale (*1 = completely disagree, 7 = completely agree*). Participants had to indicate to what extent they agreed to the following statements: "While reading, I contested the information", "While reading, I refuted the information", "While reading, I doubted the information" and "While reading I countered the information". Furthermore, the following five items of a scale by Fransen, ter Hoeven, and Verlegh (2013) were used to measure resistance: "I have thought about things that are not related to this information", "I think positively about this information", "I ignore this information", "I have thought critically about this information", "I refuse to change my opinion after reading this information". However, the items by Van Reijmersdal et al. (2016) were deleted since participants indicated that it was not clear for them how to answer those items. Furthermore, the item "I have thought about things that are not related to this information" was deleted, because by deleting this item, the reliability of the scale went up.

For the first statement "I am going to apply sun block at least every two hours" Cronbach's alpha had a poor reliability (α =.569). The second statement "Even when I am in the shadow or when it is a cloudy day, I am going to apply sun block" had an acceptable reliability as well (α =.745). The third statement "I am going to eat red meat less than four times a week" was deleted from the pretest, since only two participants indicated that they did not perform this behavior. The fourth statement "I am going to use my smartphone or tablet less than 2,5 hours per day" had an acceptable reliability as well (α =.778). And last, the fifth

statement “At festivals/parties/concerts with loud music, I am going to use earplugs” had an excellent reliability (α =.830).

Results of the pretest show that on average, resistance towards “I am going to apply sun block at least every two hours” was (*M* = 3.51, *SD* = 1.20). Second, for “Even when I am in the shadow or when it is a cloudy day, I am going to apply sun block” this was (*M* = 4.38, *SD* = 1.40). Third, for “I am going to use my smartphone or tablet less than 2,5 hours per day” this was (*M* = 3.72, *SD* = 1.48). And last, for “At festivals/parties/concerts with loud music, I am going to use earplugs” this was (*M* = 3.50, *SD* = 1.14). These results show that on average, resistance towards all health subjects is relatively low. However, the highest resistance was shown for the topic “Even when I am in the shadow or when it is a cloudy day, I am going to apply sun block” (*M* = 4.38, *SD* = 1.40). In addition, only two participants indicated that that they already performed this behavior. Therefore, this topic was used in the main study.

Appendix E: Questionnaire Main Study

Start of Block: Intro

Q0

Welkom en bedankt voor je tijd!

Je zal deelnemen aan een onderzoek voor een masterscriptie van een student Bedrijfscommunicatie en Digitale Media aan de universiteit van Tilburg. Het doel van dit onderzoek is om individuele reacties op bepaalde informatie in gezondheidscommunicatie te onderzoeken. Het specifieke doel zal nader worden toegelicht in de debriefing aan het einde van de enquête. Indien je nog vragen hebt, dan kun je contact opnemen met de hoofdonderzoeker.

Allereerst zullen er zo meteen een aantal vragen volgen die betrekking hebben op jouw gedrag. Hierna word je verzocht om een tekst te lezen. Deze wordt gevolgd door enkele vragen die betrekking hebben op (het lezen van) de tekst. De duur van de survey kan per persoon verschillen, het is hierom niet gek als sommige respondenten eerder klaar zijn. Laat je hierdoor niet haasten en neem rustig te tijd voor de survey. Deze zal maximaal 15 minuutjes duren. Vragen kunnen niet goed of fout beantwoord worden, je wordt hierom verzocht om de vragen naar eigen mening in te vullen. De enquête werkt het beste wanneer je deze invult op je desktop.

In het volgende consent word je gevraagd om de volgende verklaringen te bevestigen en ermee in te stemmen:

Ik heb de verstrekte informatie gelezen en begrijp deze en heb de gelegenheid gehad om vragen te stellen. Ik ben minstens 18 jaar oud. Ik begrijp dat mijn deelname aan dit onderzoek vrijwillig is en dat ik mezelf op elk moment kan terugtrekken zonder enige consequenties. Ik ga ermee akkoord dat de onderzoeksgegevens voor een periode van tien jaar worden bewaard en dat de gegevens die ik heb verstrekt anoniem worden verwerkt. Ik ga vrijwillig akkoord om deel te nemen aan dit onderzoek.

Door je te klikken op ‘ik ga akkoord’, geef je aan dat je akkoord gaat met de bovengenoemde verklaring.

- ○ Ik ga akkoord (1)
- ○ Ik ga niet akkoord (2)

Skip To: End of Survey If Q1 = Ik ga niet akkoord

End of Block: Intro

Start of Block: Behavioral intentions pre-measurement

Q1 Is het volgende gedrag op jou van toepassing? **Ik gebruik mijn smartphone en/of tablet minder dan 2,5 uur per dag.**

- ○ Ja (1)
- ○ Nee (2)

Skip To: Q25 If Q18 = Ja

Q2 **In hoeverre ben jij het eens met de volgende stellingen:**

	Helemaal oneens (1)	Oneens (2)	Deels oneens (3)	Niet oneens of eens (4)	Deels eens (5)	Eens (6)	Helemaal eens (7)
Ik ben van plan om mijn smartphone en/of tablet minder dan 2,5 uur per dag te gebruiken. (1)	○	○	○	○	○	○	○
Ik verwacht mijn smartphone en/of tablet minder dan 2,5 uur per dag te gebruiken. (2)	○	○	○	○	○	○	○
Ik ga mijn smartphone en/of tablet minder dan 2,5 uur per dag gebruiken. (3)	○	○	○	○	○	○	○

Q3 Is het volgende gedrag op jou van toepassing? **Ik eet minder dan 4x per week rood vlees.**

- ○ Ja (1)
- ○ Nee (2)

Skip To: Q24 If Q25 = Ja

Q4 **In hoeverre ben jij het eens met de volgende stellingen:**

	Helemaal oneens (1)	Oneens (2)	Deels oneens (3)	Niet oneens of eens (4)	Deels eens (5)	Eens (6)	Helemaal eens (7)
Ik ben van plan om minder dan 4x per week rood vlees te eten. (1)	○	○	○	○	○	○	○
Ik verwacht dat ik minder dan 4x per week rood vlees ga eten. (2)	○	○	○	○	○	○	○
Ik ga minder dan 4x per week rood vlees eten. (3)	○	○	○	○	○	○	○

Q5 Is het volgende gedrag op jou van toepassing? **Bij schaduw of bewolking smeer ik toch zonnebrandcrème.**

- ○ Ja (1)
- ○ Nee (2)

Skip To: Q35 If Q24 = Ja

Display This Question:
If Q24 = Nee

Q6 **In hoeverre ben jij het eens met de volgende stellingen:**

	Helemaal oneens (1)	Oneens (2)	Deels oneens (3)	Niet oneens of eens (4)	Deels eens (5)	Eens (6)	Helemaal eens (7)
Ik ben van plan om de volgende keer zonnebrandcrème te smeren bij schaduw of bewolking. (1)	○	○	○	○	○	○	○
Ik verwacht de volgende keer zonnebrandcrème te smeren bij schaduw of bewolking. (2)	○	○	○	○	○	○	○
Ik ga de volgende keer zonnebrandcrème smeren bij schaduw of bewolking. (3)	○	○	○	○	○	○	○

Display This Question:

If Q24 = Ja

Q7 Dit was het einde van de survey. Wanneer je geïnteresseerd bent in het doel van de studie, kun je hier je email adres achter laten. De debriefing zal later opgestuurd worden. Je wordt verzocht om nog één keer op het pijltje te drukken om de resultaten op te slaan.

Skip To: End of Survey If Condition: Dit was het einde van de su... Is Displayed. Skip To: End of Survey.

End of Block: Behavioral intentions pre-measurement

Start of Block: Condities

Q8 Je wordt nu verzocht om een tekst te lezen. Klik hier om de tekst te lezen. Een nieuw tabblad zal openen met de tekst. Wanneer je de tekst volledig gelezen hebt, word je verzocht om terug te keren naar dit tabblad met de survey, zodat je verder kan gaan met het invullen van de enquête. Om verder te gaan met de enquête, klik je weer op het pijltje.

Start of Block: Behavioral intentions post-measurement

Q9 Nu zullen er een aantal vragen volgen die betrekking hebben op de tekst. Je wordt opnieuw verzocht om hierbij een eerlijk antwoord te geven. Er is geen enkel antwoord goed of fout.

Q10 **In hoeverre ben jij het <u>nu</u> eens met het volgende stellingen:**

	Helemaal oneens (1)	Oneens (2)	Deels oneens (3)	Niet oneens of eens (4)	Deels eens (5)	Eens (6)	Helemaal eens (7)
Ik ben van plan om de volgende keer zonnebrandcrème te smeren bij schaduw of bewolking. (1)	○	○	○	○	○	○	○
Ik verwacht de volgende keer zonnebrandcrème te smeren bij schaduw of bewolking. (2)	○	○	○	○	○	○	○
Ik ga de volgende keer zonnebrandcrème smeren bij schaduw of bewolking. (3)	○	○	○	○	○	○	○

End of Block: Behavioral intentions post-measurement

Start of Block: Resistance

Q11 In hoeverre ben jij het eens met het de volgende stellingen: ***Tijdens het lezen van de tekst, ...***

	Helemaal oneens (1)	Oneens (2)	Deels oneens (3)	Niet oneens of eens (4)	Deels eens (5)	Eens (6)	Helemaal eens (7)
dacht ik aan de manier waarop de tekst me probeerde te overtuigen. (1)	○	○	○	○	○	○	○
dacht ik na over de technieken die in de tekst worden gebruikt om me te beïnvloeden. (2)	○	○	○	○	○	○	○
dacht ik aan de intenties van de schrijver van de tekst. (3)	○	○	○	○	○	○	○
dacht ik aan argumenten die de tekst tegenspreken. (4)	○	○	○	○	○	○	○
dacht ik aan de manieren waarop ik het oneens ben met wat er gepresenteerd werd in de tekst. (5)	○	○	○	○	○	○	○
negeerde ik de tekst. (6)	○	○	○	○	○	○	○
vermeed ik de tekst. (7)	○	○	○	○	○	○	○
dacht ik aan mensen die deze tekst niet leuk zullen vinden. (8)	○	○	○	○	○	○	○

dacht ik na over hoe overdreven de tekst is. (9)	○	○	○	○	○	○	○
dacht ik na over hoe misleidend de tekst is. (10)	○	○	○	○	○	○	○
dacht ik na over hoe manipulatief de tekst is. (11)	○	○	○	○	○	○	○
dacht ik aan dingen die niet gerelateerd zijn aan de tekst. (12)	○	○	○	○	○	○	○

End of Block: Resistance

Start of Block: Personal threat

Q12 **In hoeverre ben je het eens met de volgende stellingen:**

Q13 Hoe waarschijnlijk denk je dat het is dat je op enig moment in je leven huidkanker ontwikkelt?

- Zeer onwaarschijnlijk (1)
- Onwaarschijnlijk (2)
- Neutraal (3)
- Waarschijnlijk (4)
- Zeer waarschijnlijk (5)

Q14 Hoe bezorgd ben je over het ontwikkelen van huidkanker op enig moment in jouw leven?

- Helemaal niet bezorgd (1)
- Niet bezorgd (2)
- Neutraal (3)
- Bezorgd (4)
- Heel erg bezorgd (5)

Q15 Hoe stressvol denk je dat je het hebben van huidkanker vindt, mocht je dit ooit ontwikkelen?

- Helemaal niet stressvol (1)
- Niet stressvol (2)
- Neutraal (3)
- Stressvol (4)
- Zeer stressvol (5)

End of Block: Personal threat

Start of Block: Motivation

Q16 **Als deel van dit onderzoek werd er aan je gevraagd om de tekst te lezen. Echter, wat motiveerde je (verder) om door te gaan met het lezen van de tekst?**

	Helemaal oneens	Oneens	Deels oneens	Niet eens of oneens	Deels eens	Eens	Helemaal eens
Ik vond het interessant om deze tekst te lezen	○	○	○	○	○	○	○
Er kunnen goede redenen zijn om deze tekst te lezen, maar persoonlijk zie ik er geen	○	○	○	○	○	○	○
Ik vond het prettig om deze tekst te lezen	○	○	○	○	○	○	○
Ik las de tekst, maar ik weet niet zeker of het het waard was	○	○	○	○	○	○	○
Ik weet het niet; ik zie niet wat het lezen van deze tekst me oplevert	○	○	○	○	○	○	○
Ik geloof dat het lezen van deze tekst belangrijk voor me is	○	○	○	○	○	○	○

End of Block: Motivation – Start of Block: Need for cognition

Q10 In hoeverre ben je het eens h**et de volgende stellingen:**

	Helemaal oneens	Oneens	Deels oneens	Niet eens of oneens	Deels eens	Eens	Helemaal eens
Nadenken is mijn idee van plezier hebben	○	○	○	○	○	○	○
Ik doe liever iets dat weinig denkwerk vereist, dan iets dat zeker mijn denkvermogen zal uitdagen	○	○	○	○	○	○	○
Ik denk alleen maar zo hard na als dat nodig is	○	○	○	○	○	○	○
Ik geniet echt van de taak om nieuwe oplossingen voor problemen te bedenken	○	○	○	○	○	○	○
Ik geef de voorkeur aan een taak die intellectueel, moeilijk en belangrijk is over een taak die enigszins belangrijk is maar niet veel aandacht vereist	○	○	○	○	○	○	○
Ik voel opluchting in plaats van voldoening na het voltooien van een taak die veel mentale inspanning vereiste	○	○	○	○	○	○	○

End of Block: Need for cognition

Start of Block: Game Experience

Q11 **Wat is het gemiddelde aantal uren dat je <u>per week</u> videogames hebt gespeeld in de afgelopen 6 maanden? (Je hoeft hier alleen een afgerond cijfer in te vullen. Voer hier dus geen letters in).**

_____

End of Block: Game Experience

Start of Block: Demografische vragen

Q16 **Tot slot volgen er nog een aantal demografische vragen.**

Q2 Wat is je leeftijd? (In cijfers, bijvoorbeeld: 22)

_____

Q3 Wat is je geslacht?

- ○ Man (1)
- ○ Vrouw (2)
- ○ Anders (3)

Q4 Wat is je nationaliteit?

- ○ Nederlands (1)
- ○ Anders (2) _____

Q5 Wat is je opleidingsniveau? (Indien je nog studeert, mag je het opleidingsniveau van je huidige studie invullen).

- ○ Middelbare school (1)
- ○ MBO (2)
- ○ HBO (3)
- ○ WO Bachelor (4)
- ○ WO Premaster (5)
- ○ WO Master (6)
- ○ PhD (7)
- ○ Anders (8)

End of Block: Demografische vragen

Start of Block: Debriefing

Display This Question:
If Q24 = Nee

Q36: Debriefing

Bedankt voor het invullen van de enquête. Je wordt verzocht om na deze pagina nog één keer op het pijltje te klikken om je antwoorden op te slaan.

Je deelname aan dit onderzoek wordt zeer op prijs gesteld. Het algemene doel van deze studie was om te testen of narrativiteit en interactiviteit weerstand tegen beïnvloeding verminderen in gezondheidscommunicatie. Dit werd getest door deelnemers bloot te stellen aan verschillende tekst presentaties. In dit onderzoek ben je dus blootgesteld aan een van de volgende tekst presentaties 1) een niet-verhalende niet-interactieve tekst, 2) een verhalende niet-interactieve tekst of 3) een interactieve verhalende tekst. Alle teksten gaven verder dezelfde informatie.

De teksten zijn fictief en zijn uitsluitend geschreven voor studiedoeleinden. Hierom dienen

deze niet als de waarheid te worden geïnterpreteerd. De resultaten van dit onderzoek zullen het veld van gezondheidscommunicatie meer inzicht bieden in de effectiviteit van verschillende soorten tekstpresentaties op het verminderen van weerstand tegen beïnvloeding tot gezonder gedrag.

Alle verzamelde gegevens in deze enquête zijn anoniem en vertrouwelijk. Er is geen manier waarop de gegevens terugleiden naar je identiteit. Bovendien heeft de onderzoeker geen interesse in de antwoorden van individuen; alleen algemene patronen worden bekeken, die verschijnen wanneer de gegevens worden samengevoegd.

Na het lezen van deze debriefing ben je volledig op de hoogte van de reden achter dit experiment. Je bent nog steeds vrij om je, om welke reden dan ook en zonder kosten, terug te trekken. Als je besluit dit te doen, worden je gegevens vernietigd. Gelieve dit kenbaar te maken door contact op te nemen met de hoofdonderzoeker.

Nogmaals bedankt voor je deelname aan dit onderzoek. Je wordt vriendelijk verzocht om de informatie uit deze debriefing niet te delen met potentiële deelnemers. Dit om de garantie te hebben dat alle toekomstige deelnemers zich niet bewust zijn van het ware doel van het experiment. Als je nog vragen hebt over het onderzoek, neem dan gerust contact op met de hoofdonderzoeker.

Je wordt verzocht om nog één keer op het pijltje te klikken om je antwoorden op te slaan.

Met vriendelijke groet,
Marit Habets

End of Block: Debriefing

Appendix F: Assumption checks moderation and mediation analyses

Motivation and personal threat

Cook's distance can be considered acceptable since the largest distance was .40. Besides this, in seven cases the leverage was bigger than the average centered leverage. In addition, no cases had a standardized residual > 2. Therefore, we can assume that there are no problems with standardized residuals. Furthermore, in twenty cases, the Mahalanobis distance was considerably large. Besides this, the assumption of linearity was met. The scatterplots were randomly divided and did not result in a curve. Furthermore, the residuals are negatively skewed and positively leptokurtic (*z-score skewness* = -.20, *z-score kurtosis* = -3.01) and do deviate significantly from normal. Therefore, the assumption of normally distributed errors cannot be considered acceptable. In addition, the assumption of homoscedasticity can be considered acceptable since the scatter plot looks like a random array of dots. Furthermore, the assumption of independent errors is not met (*Durban-Watson* = .10). Last, the assumption of multicollinearity cannot be accepted. The variance inflation factor is larger than 1 in all cases (*average VIF* = 1.43, *average tolerance* = .72).

Need for cognition and game experience

Cook's distance can be considered acceptable since the largest distance was .80. Besides this, in 8 cases the leverage was bigger than the average centered leverage. In addition, 4 cases had a standardized residual > 2 of which 0 cases had a standardized residual of > 3. Therefore, we can assume that there are no problems with standardized residuals. Furthermore, in sixteen cases the Mehalanobis distance was considerably large. Besides this, the assumption of linearity cannot be considered met. The scatterplot for cognition was not randomly divided and did result in a curve. Furthermore, the residuals are negatively skewed and positively leptokurtic (*z-score skewness* = -1.61, *z-score kurtosis* = 6.96) and do deviate

significantly from normal. Therefore, the assumption of normally distributed errors cannot be considered acceptable. In addition, the assumption of homoscedasticity can be considered acceptable since the scatter plot looks like a random array of dots. Furthermore, the assumption of independent errors is met (*Durban-Watson* = 2.14). Last, the assumption of multicollinearity is not accepted. The variance inflation factor is equal to or larger than 1 in all cases (*average VIF* = 1.01, *average tolerance* = .99).