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Master Thesis on the Effectiveness of Using Humour in Social Marketing Campaigns

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Brief summary

Social marketing campaigns are developed to change or promote certain behaviours, resulting in the improvement of society's overall health. Although matters related to sex and sexually transmitted diseases (STDs) are highly suitable for such campaigns, STDs are often accompanied by taboo and stigma, posing barriers for effective marketing. Humour has been shown to be effective in lifting the effects of such taboo and stigma, making it a potentially useful tool in making campaigns more effective in terms of achieving higher levels of intention to talk and test for STDs. Moreover, self-efficacy might enlarge this effect. A survey has been conducted amongst 163 participants to examine the supposed effects of humour and self-efficacy. The subsequent analyses revealed that humour did not significantly improve the effectiveness of the social marketing campaign to promote STD testing. However, although self-efficacy did not moderate the supposed relationship between using humour and intentions, a significant positive direct effect between self-efficacy to test and intentions was identified. In conclusion, simple humour does not boost the effectiveness of campaigns regarding STD related topics, but higher levels of self-efficacy to test can influence these intentions. Future campaigns can take these results into account in tailoring social marketing campaigns to their respective audiences effectively.

Keywords: social marketing, sexually transmitted diseases, taboo, humour in advertising, intention, self-efficacy

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Chapter 1: Introduction

Whilst marketing campaigns are often seen as tools for commercial purposes, like promoting products or services with the intention to sell them, such campaigns can also have social purposes. These so-called social marketing campaigns are developed to change (problematic) behaviour (Evans, 2008), which would benefit the individual and eventually society. A lot of such social marketing campaigns are health-related. Generally, these campaigns intend to “improve health and reduce health inequalities” (National Consumer Council, 2006, p. 2). There have been several successful social marketing campaigns in the past decades, focusing on modifying damaging behaviours, such as drunk driving (Smith, 2006), gambling (Messerlian & Derevensky, 2006), smoking (De Gruchy & Coppel, 2008), using media excessively (Evans, 2008), and having unsafe sex (Friedman et al., 2016).

Although there is a great body of literature on the effectiveness of all sorts of social marketing campaigns, barriers regarding effectiveness are also noticed. Certain cultural and social values can act as barriers when it comes to communication about health-related topics (Peterson & Marín, 1988). When certain topics touch upon aspects and behaviours perceived to be private, it could clash with social and cultural values, resulting in a so-called taboo (Rogers, 1973). In the case a social marketing campaign entails such a topic related to taboo, it can have an impact on the success of the campaign (Power, 1996). Consequently, it could be assumed that social marketing campaigns entailing a taboo are less effective in attaining behavioural change than other social marketing campaigns.

Matters related to sex and disease are topics that are particularly at risk of facing stigma and taboo (Bandura-Lotter, 2014; Sundstrom, 2014), resulting in people being hesitant to seek proper medical assistance when being faced with issues related to these topics (Bandura-Lotter, 2014; Friedman et al., 2016). However, Satterwhite et al. (2013) claim that “most sexually active people will be infected with a sexually transmitted infection at some point in their lives” (p. 187), which makes it a health issue of great importance.

Social marketing campaigns focused on promoting testing for sexually transmitted diseases, hereafter called STDs, might be effective in this regard (Ahrens et al., 2006; Eastman-Mueller et al., 2019) and have actually been shown to increase the number of tests (Gilbert et al., 2019). This increased number of tests can be of great contribution to controlling the spread of STDs. Reducing this spreading through increased testing is of great importance, as uncontrolled spreading of STDs can have serious health consequences on a population level.

Consequences can seem harmless in the short term, especially because STDs can be symptomless (Eastman-Mueller et al., 2019) or solely cause an itch or rash. However, some consequences can become very harmful over time, such as reduced fertility or even infertility (GGD Haaglanden, 2022). Despite these potentially harmful consequences, the number of people that contracted STDs continuously rises (Soa Aids Nederland, 2020a). This might be due to the taboo resting on this topic, making talking about and testing for STDs can thereby be seen as the most important factors in limiting this rapidly rising spread of STDs.

A recent social marketing campaign in the Netherlands tried to break this trend of being silent and not getting tested because of the taboo and stigma. A famous Dutch influencer (Dylan Haegens) was hired to convey the message to have safe sex in a somewhat humorous way. Whilst this was mentioned to be one of the most effective behavioural marketing campaigns ever (Soa Aids Nederland, 2020b), it actually remained unclear if this success was caused by the involvement of an influencer or by the use of humour in the message being conveyed. Although the specific effect of the humorous element could not be deducted from this campaign, Borden and Suggs (2019) state that using humour in social marketing campaigns in general indeed has benefits. For campaigns specifically related to STDs, Friedman et al. (2016) showed that humour is used in several campaigns focussing on preventing STDs and Gilbert et al. (2019) also describe a similar campaign that has included elements of humour in a similar way. However, although both studies acknowledge the presence of humour in campaigns focusing on STD prevention, the specific effect of including humour in such taboo-related campaigns still remains unknown, possibly resulting in unutilised potential for humorous elements in social marketing campaigns. When this impact of humour in taboo-related campaigns is clarified, campaigns can be designed to be more effective, which eventually benefits public health. Despite the fact that earlier research made clear that entailing a taboo in a campaign might influence the effectiveness of the campaign negatively in comparison to other social marketing campaigns (Peterson & Marín, 1988; Power, 1996), as it might offend receivers (Sabri, 2017; Sabri & Obermiller, 2012), entailing taboos into campaigns can also bring opportunities, due to “the attention-getting quality of taboo” (Sabri & Obermiller, p. 869, 2012). As people get overloaded with information and advertisements all day (Anderson & De Palma, 2012), the taboo-relatedness can provide the needed attraction of scarce amount of attention a person has (Sabri, 2017).

Therefore, the current study will try to provide more clarity about the mechanisms behind and the impact of using humour on the effectiveness of a fictional taboo-related social marketing campaign. The effectiveness of the campaign will be evaluated by measuring the

intentions towards testing for and talking about STDs. Since the measurement of actual performed behaviour is extremely time-consuming and subject to many forms of bias, this study will focus on measuring intentions to estimate the actual behaviour, as intentions are determinants for actual behaviour (Ajzen, 1991). As testing for STDs is found to be contributing to STD prevention (Gilbert et al., 2019), measuring the intentions to get tested should reflect the effectiveness of the campaign. Since the campaign entails a taboo-related topic, the intention to talk about STDs should reflect the effectiveness regarding the dissolving of the taboo as a result of the campaign.

Moreover, the belief in one's self to perform certain behaviours might strengthen the relationship of the presence of humour on the intentions to talk about and test for STDs, as high levels of self-efficacy can enlarge the efforts put into a task (Evans-Palmer, 2010) and perceived levels of taboo might be lower for people who score higher on self-efficacy. Thereby, the concept of self-efficacy is discussed and taken into consideration as a possible moderator within this study. Hence, this study is aimed at answering the following question: *What is the impact of using humour in a social marketing campaign on the intention to talk about and test for STDs, and what role does self-efficacy play?*

In the following chapter, an outline of the relevant theories and perspectives on health-related social marketing campaigns and the usage of humour is drawn. Moreover, the concept of self-efficacy and its effects, arising from literature, is discussed. Associated hypotheses are introduced throughout this chapter. Ultimately, a conceptual model is presented. In the third chapter, the methodology of this study is presented. This includes the chosen research method, sample, data resource, measures, and data analysis. Lastly, research ethics are considered in that chapter. The fourth chapter incorporates cleaning and analysing the collected data. In the fifth and thereby last chapter, conclusions are drawn, discussion points are presented, practical implications are reviewed and lastly, limitations and possible future research are discussed.

Chapter 2: Theoretical background

In this chapter, an outline of the relevant theories and perspectives on health-related social marketing campaigns and the usage of humour will be given. Based on this, three hypotheses are formulated after which a conceptual model is presented at the end of this chapter.

§2.1 Social Marketing Campaigns

Marketing is a widely used concept, with the general goal to influence one's behaviour (Rucker, Petty & Briñol, 2015). As already touched upon in the introduction of the thesis, marketing does not only have commercial purposes. An example of a non-commercial marketing discipline is social marketing. The concept of social marketing is increasing in popularity over the past years, leading to an increasing body of literature on these campaigns. Grier and Bryant (2005) define the concept as making use of principles of commercial marketing with the goal “to promote socially beneficial behaviour change” (p. 319). In addition, the authors state that social marketing helps with “the acceptance, rejection, modification, abandonment, or maintenance of particular behaviours” (p.321).

Several studies proved that using marketing for social purposes can be very helpful in achieving behavioural change (Evans, 2008; Grier & Bryant, 2005; Kotler & Lee, 2008). Moreover, Evans et al. (2008) state that using a social marketing campaign is a powerful social-change strategy that may be used in a variety of contexts. Thus, the main goal of social marketing is to achieve behavioural change with the help of specific incentives (Grier & Bryant, 2005). These incentives are embedded with the help of marketing in promotional activities, to attain the desired behavioural change (Grier & Bryant, 2005). Advertising is a widely used form of promotional activity, which is found to have great potential to influence behaviour regarding health (Fennis, 2003). Thereby, this promotional activity in the form of an advertisement will be utilised in this study, to eventually achieve higher intentions towards talking about and testing for STDs. However, to actually be able to realise changes in this behaviour, we have to stake a step back and look at where behaviour derives from.

§2.2 Intention to follow social marketing campaign recommendations

A lot of research has gone into figuring out why people do or do not engage in specific behaviours. According to Triandis (1980) and Sheeran et al. (2005), behaviour derives from intentions, which are instructions given to oneself to perform certain behaviours or to achieve certain goals. A possible explanation for this is given through the Theory of Planned Behaviour by Ajzen (1985; 1991). This theory presumes that intentions are determinants for actually

performing certain behaviours. The general thought here is: the stronger the intention, the more likely it will be that a certain behaviour will be carried out (Ajzen, 1991).

Wang (2009) elaborated on the use of this Theory of Planned Behaviour as “a basis for the variables to be addressed in health campaigns”. Rye, Fisher and Fisher (2001) specifically looked into studies using the Theory of Planned Behaviour to “explain, understand, and predict” (p. 308) multiple behaviours regarding safer sex. They found out that, in general, intentions were found to be predictive for these sex-related behaviours.

For a health-related social marketing campaign to be successful, it is essential that people have the intention to actually perform the promoted behaviour. This makes it indirectly important to look at factors that might influence this. In this study, two specific factors are highlighted. First, a factor regarding characteristics of the conveyed message, namely the usage of humour. Second, a factor concerning characteristics of the receiver of the message, more specifically, the level of self-efficacy.

§2.3 Using humour in campaigns

When looking at the effect that humour could have on social marketing campaigns, one must realise that the concept of humour is complex (Weinberger & Gulas, 2019) and its effects in social marketing campaigns remain indecisive because of this (Friedman et al, 2016; Gilbert et al, 2019). Nevertheless, research repeatedly proved humour to be contributing to the effectiveness of all sorts of marketing campaigns, like in the study of Borden and Suggs (2019). This is also found to be true for different forms of marketing campaigns. Previous studies employing commercial advertisements showed that using humour can positively affect the amount of attention drawn towards the advertisement’s message (Eisend, 2011; Sternthal & Craig, 1973), and that these advertisements are memorised better than non-humorous advertisements. The same has been shown for social marketing campaigns regarding health communication is confirmed by the findings of Blanc and Brigaud (2014). In that same study, it was determined that messages containing humour were thought to be more convincing. To get into more detail regarding the enlarged attention and higher levels of memorability, Evans-Palmer (2010) states that “information based upon experiences is stored in our brains as a structure or schema” (p. 72). When the advertisement frames the information in a humorous way, this might result in an unrelated schema for the brain. The inconsistency of these schemes leads to cognitive interaction with the advertisement and thereby higher memorability, according to Martin (2007). Multiple purposes are also found to be true by Blanc and Brigaud (2014), such as gaining more attention, promoting positive attitude towards a brand or product,

increasing memorability of advertisements and enhancing certain intentions. The latter purpose reflects the purpose of the use of humour in this study, as it aims to enhance the intention to talk about and test for STDs.

Furthermore, Eisend (2011) argued that the usage of humour in advertising enhances attitudes towards an advertisement, and that it distracts from occurring counter-arguments, which in turn reduces negative affect. Such negative affect might be present around topics that entail taboo, increasing the likelihood of humour being useful in reducing this tension and negative affect. Also, whilst negative feelings arising from such a taboo-related topic can be perceived as a threat, humour can lower the level of perceived threat in such a message (Lee, 2010; Monahan, 1994).

Regarding the definition of the concept of humour in advertisements, Sternthal and Craig (1973) state it can be seen as a concept having several dimensions and views. On the one hand, humour can be defined by the presence of it in the stimulus material, by means, an advertisement entailing a funny message in the form of an image or in words. On the other hand, humour can be defined by considering the responses induced by exposure to a certain advertisement. Both will be taken into account in this thesis, by adding humour in the used advertisement and a control question if the respondent thought the advertisement contained a humorous aspect.

§2.4 Taboos in campaigns

A taboo can be defined as a topic which is “not (usually) acceptable to talk about in a given society” (Maraeav et al., 2021, p. 9). In addition, Sabri and Obermiller (2012) describe the concept of taboo as behaviours and expressions that are judged to be prohibited by society and believed to be unmentionable in public. As already touched upon in the introduction of this thesis, the presence of a taboo within a social marketing campaign can damage the campaign’s overall effectiveness (Power, 1996). Matters related to sex and disease are frequently stigmatized (Sundstrom, 2014). This study specifically focuses on a social marketing campaign entailing a sex-related taboo, namely a fictional campaign regarding STDs. Although the pervasiveness of sex-related content in the media, there is a culture of silence surrounding sexual health (Friedman et al., 2016). As Montemurro, Bartasavich and Wintermute (2014) state: “sex is often an uncomfortable or avoided topic”. Also, out of all types of diseases, STDs are one of the diseases most associated with taboo and stigma according to Bandura-Lotter (2014). As a result, people are hesitant to seek proper medical assistance (Bandura-Lotter, 2014; Friedman et al., 2016). Considering the negative health consequences (Eastman-

Mueller et al., 2019; GGD Haaglanden, 2022) and high risk of attracting one when being sexually active (Satterwhite et al., 2013), an effective marketing campaign should be designed in which this effect of stigma and taboo is tackled as sufficient as possible.

According to Rogers (1973), perceived levels of taboo can be reduced when communication regarding the topic is spread. Because of this, an advertisement is developed in this study to spread communication regarding STDs. Going into more detail in regard to the fictional STD prevention campaign used in this study, Friedman et al. (2016) suggest that greater exposure to social marketing campaigns for STD prevention results in greater behavioural change. Having enlarged attention because of the inclosement of humour in combination with the taboo would thus lead to greater exposure, eventually leading to greater behavioural change. As a result of these findings, the following hypothesis has been formulated:

H₁: Using humour in a campaign will have a positive effect on the intention to talk about and test for STDs.

§2.5 The role of self-efficacy

Finally, the possible role self-efficacy plays in the relationship between the presence of humour and intentions towards talking about and testing for STDs will be discussed. The level of self-efficacy is a factor concerning characteristics of the receiver of the message, which might have an impact on the relationship between the presence of humour in the advertisement and the effectiveness of a taboo-related social marketing campaign.

As discussed earlier, the Theory of Planned Behaviour (Ajzen, 1985; Ajzen, 1991) proposes that intentions originate partially from perceived behavioural control (Ajzen & Fishbein, 1970). Perceived behavioural control is referred to as “people’s perception of the ease or difficulty of performing the behaviour of interest” (Ajzen, 1991, p. 183). According to Fishbein and Cappella (2006), the construct of perceived behavioural control is related to the construct of self-efficacy, but it is not the same. The concept of self-efficacy, as elaborated by Bandura (2010), refers to an individual’s belief in their ability to execute specific behaviours, which sequentially determines an individual’s behaviour. Bandura (2010) claims that if people do not believe they are able to perform certain behaviours, they will not even try performing it in the first place. This creates the assumption that a certain level of belief in one’s self to do something is necessary to be able to perform that certain behaviour. Regarding safe sex behaviours, several findings suggest that self-efficacy has a positive effect on intentions and

actual behaviours performed. Firstly, findings by Rye, Fisher and Fisher (2011) indicate that self-efficacy can serve as a predictor for safer sex behavioural intentions. Furthermore, van der Pligt and Richard (1994) discovered that self-efficacy plays a crucial role in the context of preventing high-risk sexual behaviour. Lastly, according to Rostosky et al. (2008), self-efficacy regarding sexual risk taking behaviour can be linked to actual performed sexual behaviours.

Besides self-efficacy and thus perceived behavioural control, subjective norms can influence intentions (Fishbein & Ajzen, 1970; Fishbein & Fishbein, 1980; Prati, Mazzoni & Zani, 2014). In the current study, taboos are defined as topics found to be unacceptable to openly talk about in society. As STDs are tabooed a lot (Bandura-Lotter, 2014; Friedman et al., 2016; Sundstrom, 2014), subjective norms concerning STDs are expected to be quite negative. When subjective norms are less negative regarding a certain taboo, perceptions of taboo tend to be lower and subjective norms have less impact (Sabri, 2017). Despite the fact that subjective norms are not measured in this study, when people ought themselves able to talk about STDs, thus score high on the self-efficacy to talk about STDs, this could indicate that their perceived subjective norms are less negative towards STDs. This would eventually mean that when people score higher on self-efficacy to talk about STDs, fewer counter argumentation occurs if exposed to the taboo. This leads to the expectation that the presumed positive effect of the presence of humour on intention is moderated positively by self-efficacy to talk about STDs. In light of these findings, the following hypothesis has been developed:

H₂: The positive effect of the usage of humour on the intention on the intention to talk about and test for STDs is stronger when self-efficacy to talk about STDs is high.

According to Evans-Palmer (2010), beliefs regarding the capability of oneself, thus self-efficacy, can be seen as a determinant for the amount of effort put into a related task. It is thereby assumed that people put more effort into a task, as the level of a related form of self-efficacy is high. The task in this study is to carefully look at the advertisement concerning STD-testing. Combining the finding of the higher amounts of effort due to higher levels of self-efficacy, and the enlarged levels of attention because of the presence of humour, the expectation arose that the supposed positive effect of humour is positively moderated by self-efficacy to test. By embedding humour into the advertisement, and hereby reducing the tension around the topic, the barrier of testing for STDs will hopefully be removed or diminished, and the actual persuasive effect of the message will even be higher for participants with high levels of self-efficacy, as they will put more effort into the exposure to the advertisement. This will ideally

lead to more changes in behaviour through changes in intention (Bandura, 1977). Hence, the following hypothesis:

H₃: The positive effect of the usage of humour on the intention on the intention to talk about and test for STDs is stronger when self-efficacy to test for STDs is high.

§2.6 The conceptual model

All hypotheses together are shown in the form of a conceptual model in the figure below.

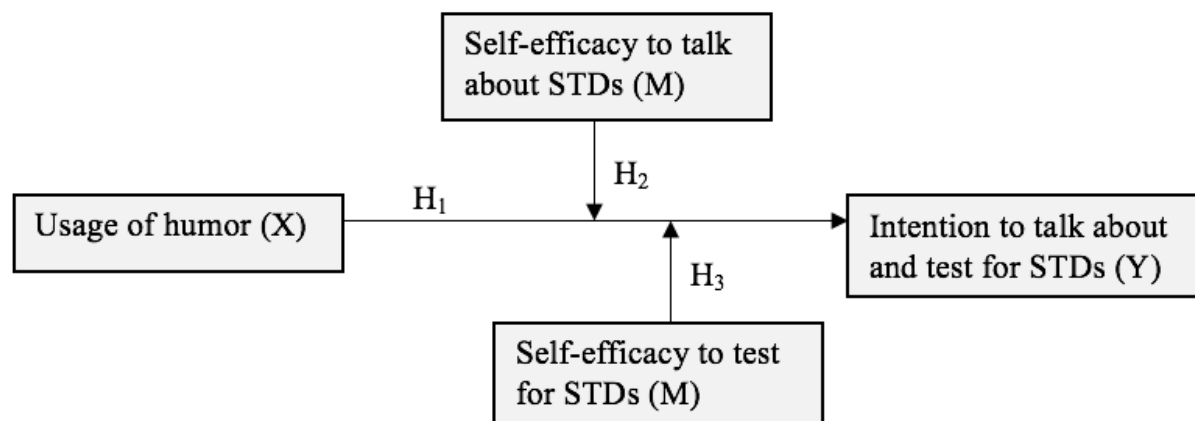


Figure 1 *Conceptual model of the thesis*

Chapter 3: Methodology

In this chapter, the method used will be discussed. Next, the measures will be introduced. Furthermore, the intended and actual sample will be reviewed. Afterwards, the intended data analysis procedure will be considered. Finally, the limitations of the research project and how research ethics will be addressed will be elaborated.

§3.1 Method

To test the three hypotheses an experiment is executed. The experiment is embedded in an online questionnaire, by making use of the data collection platform Qualtrics. The first hypothesis proposes that using humour in the taboo-related campaign will cause stronger intentions towards talking about and testing for STDs. The second and third hypotheses imply that this effect is stronger when levels of self-efficacy are high. Given that causal effects are assumed in the hypotheses of this study, conducting an experiment is a suitable research strategy in this case as it enables researchers to determine such causal effects (Wester, Renckstorf & Scheepers, 2021).

A between-group design was employed with this experiment. This entails that all participants are divided randomly into two groups: an experimental group and a control group (Field & Hole, 2003). According to Field and Hole (2003), a control condition is needed in an experiment, because it “acts as a baseline against which to compare behaviour when a proposed cause is present” (p. 21). The proposed cause here would be the presence of humour within the advertisement, which would lead to differing behaviours, in this case stronger intentions towards following recommended behaviour.

The randomisation of dividing the participants in two equal groups is guaranteed by Qualtrics. This data collection program automatically assigns participants to either the experimental group or the control group. After this randomisation, each participant is exposed to the corresponding condition. These conditions will solely differ regarding the stimulus.

§3.2 Stimulus material

This study investigates the impact of using humour on the effectiveness of a social marketing campaign concerning a taboo-related topic: STD prevention. To examine this impact, as discussed earlier, two advertisements have been created and every participant is exposed to either one of them. Whether or not humour is present in the form of a line of text is the only difference between the conditions of the experiment. Furthermore, the conditions are identical,

to keep the risks of other factors influencing the outcomes of the experiment as low as possible (Field & Hole, 2003).

To ensure generalisability of the results, thus obtaining a high level of external validity, the advertisement had to be comparable to existing campaigns to achieve familiarity for participants. Various social marketing campaigns and a recent commercial campaign have been analysed, to carefully design the stimulus material for the experiment. Over the years, the Dutch government has set up several social marketing campaigns to stimulate safe sex behaviour (Soa Aids Nederland, 2020b). Sonnemans (2018) discusses several examples of those campaigns, which can also be found in the Appendix 1, Image 1. Besides that, a commercial marketing campaign is taken into account, who launched a campaign to promote their STD tests on a large scale (Appendix 1, Image 2a & Image 2b). Generally, these campaigns relating to STDs contained a certain degree of humour, like a funny image or line. These images and lines are not too complex. Regarding humour in advertisements, the fact that the humour used was not too complex in those campaigns is in line with the recommendation of Spielmann (2014) to only use simple humour, to ensure the understanding of all its receivers. Therefore, the humour in the advertisement exposed to the experimental group is kept simple.

Furthermore, as the advertisement should look familiar to the receivers, the sender of the message should thereby be well-known. Two organizations relating to STDs and sex in the Netherlands are Sense and the GGD. The GGD is a municipal health service, performing certain tasks in the field of public health, including towards sexuality and testing for STDs (GGD Gelderland-Zuid, n.d.). Sense is a service for sexual health, where Dutch inhabitants can ask questions and search information on sexuality and STDs anonymously (Sense, n.d.). Their logos are included in the advertisement to enhance familiarity and realism of the advertisements.

§3.2.1 Pre-tests

Two pre-tests have been carried out before the actual survey was distributed. During the first, 12 participants were asked to indicate which line they thought was the funniest and best fitting to add to an STD prevention campaign. In the end, “When you were younger a lice control did not get stressed. Why bother a STD test?/Vroeger vond je de luizencontrole best. Waarom moeilijk doen over een soa-test?” was considered as the funniest line, which was introduced to compare the lice control every participant has dealt with when they were younger, with doing an STD test, to enlighten the perceived taboo of the latter. Regarding the design, the participants were also asked to choose the best fitting picture for the advertisement, which

was a picture of a woman covering her eyes, inspired by the advertisements by Testalize.me inspired by an earlier commercial STD campaign (Appendix 1, Image 2a & Image 2b). After the first pre-test, two advertisements have been created. Both advertisements consisted of the chosen image of the woman covering her eyes, accompanied by the text about testing for STDs (“Why bother a STD test?/Waarom moeilijk doen over een soa-test?”) (see Appendix 1, Image 5). The only difference between the two advertisements is the humorous element was added to the advertisement for the experimental group, (being “When you were younger a lice control did not get you stressed/Vroeger vond je de luizencontrole best”) (see Appendix 1, Image 4). During the second pre-test, 20 participants were shown both advertisements, with the accompanying question whether they thought one of the advertisements contained humorous aspects or not. Out of the 20 participants, all indicated that the experimental stimulus indeed was the funny one, as they rated the advertisement either as “a little bit funny/een beetje grappig” or “funny/grappig”. Furthermore, the translation of the survey from English to Dutch was verified by a bilingual helper, to ensure comparability.

§3.2.2 Manipulation check

To check whether the manipulation had taken place as intended (Hoewe, 2017), all participants were asked to indicate if they thought the advertisement contained humour. Participants could answer the question with four answer options ranging from “1. No, not at all/Nee, totaal niet” to “4. Yes, certainly/Ja, zeker wel”. The experimental group scored significantly higher than the control group, $t(161) = -3.515, p = .001$. The experimental group scored an average of 2.513 ($SD = .740$) and the control group 2.099 ($SD = .889$) Thereby, it can be assumed that the advertisement intended to be more humorous, indeed contained higher levels of humour than the other advertisement.

§3.3 Measures

The survey consisted of four sections. The first section was focused on measuring the participants' levels of self-efficacy regarding talking about and testing for STDs. In the second section, participants were exposed to either one of the stimuli (humorous or non humorous advertisement). After this exposure, the intentions towards talking about and testing for STDs were measured in the third section. In the fourth and thereby last section, the participants were asked to indicate if the advertisement they were exposed to contained humour, if they had been tested for an STD in the last five years, if they are in a relationship, and some demographic

information was requested. An overview of the questions and scales, and the literature on which they were based, can be found in Appendix 2, Table 1.

§3.3.1 Operationalisation of self-efficacy

For the operationalisation of the construct of self-efficacy, the work of Bandura (2006) is consulted. According to his work, items regarding self-efficacy should reflect the construct, which is the extent to which someone considers themselves to be able to perform a certain task. Therefore, Bandura (2006) indicates the question ‘should be phrased in terms of *can do* rather than *will do*’ (p. 308), as *can* reflects one’s perceived capability to do something. For the operationalization of the level of self-efficacy, the pre-existing measurement scale for the level of self-efficacy proposed by Bandura (2006) is utilised. He proposed a question in which a respondent needs to indicate the degree of confidence they had in themselves to perform a certain activity. For this study, participants were asked to indicate the confidence they had towards talking about and testing for STDs, both in three slightly different ways, to ensure scale reliability. The 5-point Likert scale accompanying these items is also based on Bandura’s work (2006) and consists of scores ranging from “‘Cannot do at all/Kan ik helemaal niet” till “‘Highly certain can do/Kan ik helemaal wel”’. The items can be found in Appendix 3, in the first section.

§3.3.2 Operationalisation of intentions

As Bandura (2006) states in his work, ‘*will* is a statement of intention’ (p. 308). The intention of someone can be measured by indicating how willing someone is towards achieving a certain goal (Ajzen, 1991). For the operationalization of the strength of the intention, participants were asked to report the likeliness that they will actually carry out the listed behaviours regarding talking about and testing for STDs. This measurement of intention was based on several studies, like the research of Miller et al. (1998) on sexual behaviour and more specifically, the research of Boudewyns and Paquin (2011) on the intention to test for an STD in the coming year. Thus, the willingness to talk and test is ought to represent the actual intention towards this behaviour.

The scale in the survey is based on a pre-existing scale proposed by Davis and Warshaw (1992) ranging from “‘extremely unlikely” to “‘extremely likely”’, which is previously based on the 7-point behavioural intention scale developed by Fishbein and Ajzen (1980). The scale is adjusted to a 5-point Likert scale, which ensures clarity and unity in the survey, as this is also the format used in the previous measurement of self-efficacy.

The scales developed by Fishbein and Ajzen (1980) are also proposed by Ajzen in later work (2002), with the addition that multiple items should be selected, “to secure reliable, internally consistent measures” (p.4). To ensure the measurement of the intention is reliable, the intent is asked in three slightly different ways. The behaviours and corresponding answer options can be found in Appendix 3, in the third section.

§3.3.3 Control variables

Five variables were measured to be able to check their impact on the results. Firstly, participants were asked if they had been tested for an STD in the last five years. Research by Asante and Doku (2010) regarding sexual behaviour revealed that earlier performed sexual activities make participants score significantly higher on self-efficacy regarding that sexual behaviour, so taking this into account towards STD testing might give valuable insights. Secondly, the participant was asked if they are in a relationship at the moment. Being in a relationship might have a great impact on the intentions and self-efficacy of participants regarding talking about and testing for STDs, because being in a relationship generally prevents you from having multiple and changing bed partners. Third, the gender of the participant was requested. This is because according to Sabri and Obermiller (2010), females generally react more negatively towards taboos in advertisements than men. It is thereby expected that females would experience the taboo topic more negatively, and thereby the intention and self-efficacy are expected to be lower as the taboo remains bigger. Lastly, two other demographics were requested to be able to control for them (age and education level). These questions can be found in the last section of the questionnaire, in Appendix 3.

§3.4 Sample

The focus of this research is on young adults, as this age group is affected most by STDs (Eastman-Mueller et al., 2019). More specifically, this research will mainly focus on young adults between the age of 18 and 25 as several studies found that adults within this age group are most susceptible of contracting STDs (Ahrens et al., 2006; Satterwhite et al., 2013; Volksgezondheid en Zorg, 2019).

The method for establishing this sample is based on the method of convenience sampling, to reach as many people as possible to participate in the study for the limited time and the absence of financial resources (Emerson, 2015). The questionnaire has been distributed online, via Whatsapp, Facebook, Instagram, e-mail and other social platforms. Additionally,

participants were asked to further disseminate the questionnaire in their network, to obtain more participants, which is called a snowball sample (Emerson, 2015).

In total, 237 responses have been recorded between the 13th and 18th of May 2022. Overall, out of all the responses, 224 surveys were filled in completely. As the main focus of this study is on people between the ages of 18 to 25 years old, participants above the age of 25 were deleted from the sample, leaving 163 usable responses for further analysis. Most of the respondents were between 22 and 24 years old. The majority of the participants were female (76.1%). Moreover, the vast majority of the sample was highly educated (90.8%), which means they attended or are currently attending a university of applied science or university.

§3.5 Data analysis procedure

The analyses for this study are performed with the help of the statistical software platform IBM SPSS Statistics (26th version). After collecting, the data is exported from Qualtrics, and imported into SPSS. The dataset is cleaned and both incomplete or invalid participant data is excluded from the study. Subsequently, the construct reliability and validity are tested with confirmatory factor analyses as described in the following paragraph. Additionally, reliability checks are performed to ensure the usability of the constructs to further analyse the data.

In the following chapter, the hypotheses are tested. As this study uses a randomised experimental set-up, the experimental and control group will likely be comparable with regards to demographics. This assumption was tested with an independent sample T-test and Chi Squared tests to identify possible group differences for age, gender, relationship status, education level, and recent STD-testing. Next, the constructs were described with the help of the means, standard deviation and correlation matrix. To test the first hypothesis, regarding the effect of presence of humour on the intentions towards talking about and testing for STDs, ANOVA-tests are conducted. To test the second and third hypothesis, regarding the moderating effect of self-efficacy on the intentions to talk about and test for STDs, a linear regression analysis is executed.

§3.6 Construct reliability and validity

To ensure a research project's validity and reliability, certain measures can be taken. Concerning validity, which involves measuring what the measurement instrument is intended to measure (Field & Hole, 2003), this study based the measurements of the constructs on pre-existing instruments measuring similar ideas. Each construct consisted of three items. To establish the validity and reliability of the constructs, the items were analysed.

Table 2*Internal consistency and convergent validity*

Construct	Original # items	Cronbach's alpha	# of items deleted	Percentage explained variance
Self-efficacy to talk	3	.886	0	81.51%
Self-efficacy to test	3	.912	0	85.16%
Intention to talk & test	6	.891	0	65.98%

§3.6.1 Discriminant validity

In order to check the discriminant validity of the constructs, a confirmatory factor analysis was conducted. Since correlations are expected between the factors here, the rotation is oblique (Field, 2013). In this study, each of the four constructs (self-efficacy to talk about STDs, self-efficacy to test for STDs, intention to talk about STDs and intention to test for STDs) consisted of three items. Thus, twelve items were added into the factor analysis in total. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity are utilised to indicate the suitability of the data (IBM, 2021). The KMO measure equalled .85, which was greater than the minimum of .50, and Bartlett's test of sphericity was significant ($p = .000$) (Appendix 4, Table 3), which indicates that the factor analysis is useful.

The output of the confirmatory factor analysis can be found in Appendix 4, Table 4. The factor analysis showed that three factors had eigenvalues above 1, namely Factor 1 (eigenvalue = 5.368), Factor 2 (eigenvalue = 2.338) and Factor 3 (eigenvalue = 1.611). The six items intended to measure intention (intention to talk about STDs and intention to test for STDs) all load high on the first factor. The items intended to measure self-efficacy to talk about STDs all load on the second factor and the items intended to measure self-efficacy to test for STDs all load on the third factor. Overall, all items solely load on one factor and each item measures the corresponding construct as intended to, so there is discriminant validity. There were no cross-loadings and the communalities of all items were above the requisite .20, thus no items had to be deleted.

§3.6.2 Convergent validity

As the first confirmatory factor analysis made clear that there are three factors, the next step was to check the convergent validity. The items of each corresponding construct are put into separate factor analyses to assess the correspondence with the uni-dimensional structure of each construct.

First, the three items belonging to the construct of self-efficacy to talk about STDs were put into a confirmatory factor analysis. The KMO measure of this factor analysis was high enough ($KMO = .746$) and Bartlett's test was significant ($p = .000$) (Appendix 4, Table 5). Therefore, it can be concluded that the factor analysis was useful (IBM, 2021). The output of this factor analysis can be found in Appendix 4 Table 6. As expected, there was only one factor with an eigenvalue above 1 (eigenvalue = 2.45). The total explained variance of this factor was 81.51%, which greatly exceeds the minimum of 50% of explained variance (Hair et al., 2018). Every item in this factor analysis was higher than the required .20 on communalities and all items had high factor loadings. Regarding these outcomes, it can be concluded that the items correspond with the unidimensional construct of self-efficacy to talk about STDs.

Secondly, the three items belonging to the construct of self-efficacy to test for STDs were used to run a confirmatory factor analysis. The KMO measure of this factor analysis exceeded the required .50 ($KMO = .751$) and Bartlett's test was significant ($p = .000$) (Appendix 4, Table 7). As a result, it could be assumed that the factor analysis was useful (IBM, 2021). The output of this factor analysis can be found in Appendix 4, Table 8. The expectation was that there would only be one factor with an eigenvalue above 1. This was actually the case here (eigenvalue = 2.56). The total explained variance of this factor was 85.16%, which is higher than the required 50% of explained variance (Hair et al., 2018). Moreover, all items in this factor analysis had communalities above the required .20 and each item had high factor loadings. Regarding these outcomes, it can be concluded that the items correspond with the unidimensional construct of self-efficacy to test for STDs.

Lastly, six items corresponding to the construct of intention to talk about and test for STDs were used to run the last confirmatory factor analysis. The factor analysis was expected to be useful (IBM, 2021), as the KMO measure of this factor analysis above the required .50 ($KMO = .842$) and Bartlett's test was proved to be significant ($p = .000$) (Appendix 4, Table 9). The output of this factor analysis can be found in Appendix 4, Table 10. As expected, only one factor had an eigenvalue above 1 (eigenvalue = 3.96). The total explained variance of this factor was 65.98%, which exceeds the minimum of 50% explained variance (Hair et al., 2018). All items used in this factor analysis exceeded the required .20 on communalities and all items had factor loadings that were high. Regarding these outcomes, it can be concluded that the items correspond with the unidimensional construct of the intention to talk about and test for STDs.

§3.6.3 Reliability validity

Regarding the reliability, multiple requirements had to be checked to ensure the outcomes of the study to be reliable. Firstly, it has to be guaranteed that the measurements have been performed under the same conditions (Field & Hole, 2003). All participants have been exposed to the exact same format, except for the manipulated stimuli. Thus, regarding the contents of the questionnaire, the same conditions can be ensured. Certain external influences might not be identical across participants as they were asked to complete the questionnaire in their own personal environment, but it is not likely that these slight differences will have substantial effects on study outcomes.

Secondly, the reliability of the constructs is checked using Cronbach's alpha tests for internal consistency. Generally, a Cronbach's alpha below .70 is considered to be unacceptable according to Hair et al (2018). The items measuring the self-efficacy to talk about STDs was good ($\alpha = .886$), the items measuring the self-efficacy to test for STDs was also good ($\alpha = .912$), and the items measuring the intention to talk about and test for STDs was also good ($\alpha = .891$). The reliability analyses also showed that the Cronbach's alpha would decrease if either one of the items is deleted, so neither item is deleted. Regarding these outcomes, it can be concluded that the Cronbach's alpha of all measured constructs was well above this value of .70, indicating that internal consistency between items within all constructs is high enough to be deemed sufficient.

§3.7 Limitations and ethics

There are some limitations regarding the sample. Although convenience and snowball sampling are methods that can generate a large number of participants within a short time frame, it can lead to uncertainty concerning multiple things. First, the amount of nonresponse remains unclear. Since the topic of the questionnaire is taboo-related, it is expected that a lot of people refrain from participating because of the taboo surrounding the topic. By using convenience and snowball sampling, there is no control over getting insights in how many people withhold from participating as a result of the taboo. Second, this way of sampling likely introduces some selection bias as the sample is drawn from the relatives of the researchers and their network. Lastly, the results of the study might be influenced by this form of sampling, because of other "unexpected or uncontrolled factors" arising from convenience and snowball sampling (Emerson, 2015, p. 166).

Continuing on the taboo-relatedness, the fact that this study entails a taboo-related topic, more specifically a sex-related topic, requires adequate handling of issues related to

research ethics. Firstly, it is important that participants are above 18 years old. To ensure people below 18 years old would not participate in this study, the age requirement has been mentioned explicitly in the introduction of the survey. Furthermore, there was a required question to fill in the age, which made it possible to filter out these cases, which in the end was unnecessary because no minor had filled in the survey. Secondly, answering questions on sex-related topics might be considered as invasive by research participants. Several measures were taken to minimise this. First, the questionnaire contained no more questions than needed for appropriate measurements. Moreover, it was explained to participants that participation was completely voluntary and that they could discontinue participation at any given moment without any consequences.

Chapter 4: Results

In this chapter, the results are presented. First, the experimental group is compared to the control group and their descriptive statistics are discussed. Then, the effect of humour on intentions is tested. Thereafter, the role of self-efficacy is investigated. Lastly, some additional analyses are touched upon.

§4.1 Comparability of the groups

As discussed in the previous chapter, 163 responses were included in the study analyses. Before actually performing analyses, the comparability of the groups had to be checked. The experimental group and control group have been compared with each other regarding the demographic variables age, gender and education level. Although Qualtrics automatically divides participants into either the experimental or control group, this division does not ensure comparability of the groups.

Firstly, the comparability of the groups regarding age is checked (Appendix 4, Table 11). The average age of the experimental group was 23.05 ($SD = 1.46$) and the average age of the control group was 23.09 ($SD = 1.17$). According to the performed T-test, $t(162) = .18$, $p = .856$, the ages of the groups did not differ significantly. Thereby, it could be stated that the experimental and control group are comparable regarding the age of the respondent. Secondly, the comparability of the groups is checked with regard to the gender of the respondent (Appendix 4, Table 12). The experimental group contained 16 males and 66 females and the control group contained 23 males and 58 females. The Chi-Squared test, $\chi^2(1, N = 163) = 1.77$, $p = .184$) showed that the differences between the groups are not significant and consequently it could be assumed that the groups are comparable with respect to the gender of the respondent. Lastly, the comparability of the groups is examined concerning the level of education (Appendix 4, Table 13). The differences between those groups are not significant, according to the Chi-Squared test, $\chi^2(1, N = 163) = 4.52$, $p = .340$. Regarding the demographic information, it can be concluded that the experimental group and control group hardly differ from each other and can thereby be seen as comparable. This is an important requirement for drawing useful conclusions (Hair et al., 2018).

Furthermore, the experimental and control group have been compared regarding their answers for control questions. At first, the participants were asked if they had been tested for an STD over the last 5 years (Appendix 4, Table 14). In the experimental group, 40 participants have been tested for a STD in the last five years, and 40 participants have not. In the control group, 41 participants have been tested for a STD in the last five years, and 39 participants

have not. According to the Chi-Squared test, $\chi^2 (1, N = 160) = .03, p = .874$, the differences between the groups are not significant, which means that the groups are similar. Second, the participants were asked if they are in a relationship at the moment (Appendix 4, Table 15). The Chi-Squared test revealed that the groups significantly differ from each other, $\chi^2 (1, N = 160) = 9.10, p = .003$. Consequently, it is important to investigate its impact, to control its effect on the results.

§4.2 Descriptive statistics

The earlier performed factor analyses and reliability checks showed that the items indeed reflected the constructs correctly. Therefore, the items of the corresponding constructs are computed to reflect a certain score on the construct. After computing these items into three new variables (self-efficacy to talk, self-efficacy to test, intention to talk & test), a correlation matrix has been constructed to investigate the correlations between the constructs, which can be found below (Table 16).

Table 16
Correlation matrix and descriptive statistics

	1	2	3	4	5	6	7	8	9	10
1. Intention										
2. Self-efficacy talk	.340**									
3. Self-efficacy test	.320**	.473**								
4. STD-tested	-.413**	-.322**	-.346**							
5. Relationship	.223**	.189*	.049	-.026						
6. Age	-.068	.004	.033	-.070	-.123					
7. Gender	.250**	.040	.015	-.124	-.137	-.124				
8. Education level	.138	.078	.195*	-.034	.129	.055	.094			
9. Manipulation	-.014	-.029	.004	.013	-.238*	-.014	.104	-.110		
10. Manipulationcheck	.013	.051	.027	-.093	-.170*	.008	.046	-.129	.267**	
Mean	20.17	12.67	12.95			23.07				
SD	5.84	2.92	2.92			1.32				

Note: N = 163; ** p < .01; * p < .05

From the correlation matrix, it can be concluded that there are significant correlations between the first three constructs, being the intention to talk and test, self-efficacy to talk about STDs and self-efficacy to test for STDs. Whether this is a problem, regarding multicollinearity, can be checked with the Variance Inflation Factor (VIF). This factor has to be below 10. In this case, the VIF is 1.288, so lower than the maximum of 10. The correlation is also moderate, so this would not cause a problem for multicollinearity.

Going into more detail regarding the intention to talk and test, there are multiple correlations with other variables. Positive linear correlations are present between the intention to talk and test, and the two forms of self-efficacy, namely self-efficacy to talk ($r = .340$) and self-efficacy to test ($r = .320$). In other words, when levels of self-efficacy are higher, the intention to talk and test is also higher. Moreover, there was a moderate positive correlation between the intention to test and talk, and gender ($r = .250$). This indicates that the intention to talk and test is higher for women than men. Lastly, there is a moderate positive correlation between the intention to test and talk and relationship status ($r = .223$), which indicates that participants who are not in a relationship currently, score higher on intention to talk about and test for STDs. As a result of these analyses, the latter two variables are taken into account when testing the hypotheses, to be able to control for these effects on intention.

Regarding recent STD testing, the correlation matrix shows that recent testing correlates with several variables. There were moderately weak negative correlations between the recent testing and self-efficacy to talk ($r = -.322$), between recent testing and the self-efficacy to test ($r = -.346$), and between the recent testing and intention to talk and test ($r = -.413$). In the last section of this chapter, additional analyses are conducted to further investigate and interpret these correlations. Moreover, this variable is taken into account when testing the hypotheses, to be able to control for its impact on intention and self-efficacy.

Furthermore, there was a weak negative correlation between the self-efficacy to test and education level ($r = -.195$), which makes it important to include its impact in further analyses. Also there is a weak negative correlation between the manipulation and relationship status ($r = -.238$), which was already pointed out as there were more participants in a relationship in the group than in the group. As there are correlations between the intention and relationship status, and between self-efficacy to talk about STDs and relationship status, it is necessary to include this variable as a covariate. Lastly, the manipulation correlates with the manipulation check, meaning that participants exposed to the humorous advertisement did indeed experience the advertisement to contain a higher degree of humour.

§4.3 Effect of humour on intentions

To analyse the effect of humour on the intention to talk about and test for STDs, a one-way ANOVA is performed. Prior to performing such an ANOVA, assumptions regarding the independency of the observations, homogeneity of variance, and a normally distributed dependent variable have to be met (Hair et al., 2018). These will all be discussed below.

Firstly, in relation to the independency of the observations, all participants were assigned to either the experimental or the control group. Since this assignment was conducted randomly by Qualtrics, it can be assumed that all participants filled in the survey independently from each other. This assumption is thereby met.

Secondly, the homogeneity of variance assumption was tested with the help of the Levene's test. This test showed no statistically significant difference between variances of the experimental and control group ($F(1, 161) = 1.025$ $p = .313$) (see Table 17), meaning the assumption of homogenous variance is met.

Table 17

Homogeneity of variance assumption

	Levene Statistic	df1	df2	p
Intention to talk and test	-.268	1	161	.313

Thirdly, the dependent variable had to be normally distributed to meet the assumption of normality. Since the sample sizes of each group transcend the needed minimum of 25, it can be assumed that the dependent variable is normally distributed. This data distribution can also be reflected with skewness and kurtosis values (Hair et al., 2018). The skewness score was found to be -.268 (SE = .190) (see Table 18), which is close to zero, so it indicates that the distribution was close to symmetrical. The kurtosis score was found to be -.561 (SE = .378) (see Table 18), indicating that the distribution was close to a normal distribution. Since both scores are between -1 and +1, the distribution can be considered normal (Hair et al., 2018).

Table 18

Normality assumption

	Intention to talk and test
Skewness	-.268
Std. Error Skewness	.190
Kurtosis	-.561
Std. Error Kurtosis	.378

As all three assumptions are met, the ANOVA is validated and can be performed. The one-way ANOVA revealed that the group exposed to the humorous element showed a slightly lower intention to test/talk ($M = 20.09$; $SD = 5.92$) compared to the control group ($M = 20.25$;

$SD = 5.80$) (Appendix 4, Table 19). Though, this effect was not significant, $F(1, 161) = .031$, $p = .861$) (Appendix 4, Table 20).

Several control variables, apart from the manipulation and its check, were shown to be correlated to intention to talk and test earlier in this section. Moreover, to ensure a minimal effect of confounding and ensure an accurate prediction of the effect, it is important that all control variables will be taken into account to remove the bias of these variables (Field, 2013). Consequently, the initial one-way ANOVA is extended to include all control variables (age, gender, education level, relationship status, and recent STD-testing), because they might predict the dependent variable.

This subsequent ANCOVA, with correction for previous STD testing, relationship status, gender, age and education level, still showed no significant effects of humour, $F(1, 161) = .715$, $p = .400$ (Appendix 4, Table 21). This outcome is not in line with the expectation that the presence of humour leads to higher intentions. Therefore, the first hypothesis is rejected.

§4.4 The role of self-efficacy

The second and third hypotheses are concerned with the role of self-efficacy regarding the relationship of the presence of humour on intentions towards talking and testing for STDs. It was expected that higher levels of self-efficacy to talk about and test for STDs have a positive effect on the relationship between presence of humour and forthcoming intentions to talk about and test for STDs. So, the higher the level of any of the two forms of self-efficacy, the stronger the effect of the presence of humour on the intention to talk about and test for STDs. As the proposed positive relationship between the presence of humour and intention to talk about and test for STDs was found to be statistically non-significant, the results of this subsequent analysis, that build on this primary effect, have to be interpreted with caution.

To test the two hypotheses about the positive moderating role of self-efficacy, a regression analysis has been performed. As there are two moderators in this study, using the PROCESS function of SPSS is not useful, as it is not possible to add both moderators in one analysis. Therefore, a linear regression analysis is performed, as this analysis enables the researcher to analyse multiple moderators in one model, by employing interaction terms (Field, 2013). But prior to performing the analysis, the two proposed moderating variables regarding self-efficacy had to be transformed with grand mean centring (Field, 2013), because they are continuous variables, and centring them results in easier and more meaningful interpretation (Williams, 2021). Self-efficacy to talk and self-efficacy to test are transformed in such a manner

that the mean score of the corresponding variable is subtracted from each score (Field, 2013), to create the centred variables. These adjusted mean-centred variables are used in the upcoming analyses and are used when creating the interaction term. Regarding the creation interaction term, both variables will be multiplied with the independent variable concerning the manipulation, thus the presence of humour (Field, 2013).

Three models are included in this analysis, to be able to analyse the influences of including several variables. The first model involves all control variables. The second model additionally involves the main effects of the presence of humour, self-efficacy to talk and self-efficacy to test. Lastly, in the third model, the interaction terms are taken into account, to be able to analyse the possible moderating role of self-efficacy on the intention to talk and test. Putting the models side by side makes it possible to analyse the proposed moderating influence on the results (see Appendix 4, Table 22).

Considering the first model, the percentage of explained variance of the dependent variable by the other variables is 25.1 percent (adjusted $R^2 = .251$). This means that about a quarter of variance in the dependent variable can be explained by the added control variables. More specifically, recent STD testing ($b = -.744$, $se = .136$, $p = .000$) relationship status ($b = .449$, $se = .139$, $p = .002$), gender ($b = .498$, $se = .163$, $p = .003$) were found to be significant predictors for the intention to talk and test. Regarding these findings, it can be concluded that a great portion of the variance can be explained by the control variables, which emphasises the importance of taking them into account when analysing the relationships in this study.

Regarding the second model, which includes the main effects of the presence of humour, self-efficacy to talk and self-efficacy to test on the dependent variable, the percentage of the explained variance is 29.2 percent (adjusted $R^2 = .292$). Based on this finding, it can be concluded that the presence of humour and two forms of self-efficacy account for an additional 4 percent of the variance in the dependent variable, which is not that much. The main effect of the presence of humour ($b = .032$, $se = .136$, $p = .811$) was found to be not significant, which is in line with the findings concerning the first hypothesis. Moreover, the main effects of self-efficacy to talk ($b = .156$, $se = .080$), and self-efficacy to test ($b = .032$, $se = .080$) on the intention to talk about and test for STDs are close to significant (respectively, $p = .053$; $p = .061$). Regarding the control variables, not much changed in this model, as earlier significant predictors kept significant and the others remained statistically non-significant.

The third and thereby last model also takes into account the two interaction terms (SE talk*Manipulation and SEtest*Manipulation). This model actually tests the second and third hypotheses, proposing the positive moderating role of self-efficacy in the relationship between

the presence of humour on the intention to talk and test. The percentage of explained variance has been decreased after adding the interaction terms in the third model (adjusted $R^2 = .290$) compared to the second model (adjusted $R^2 = .292$). Regarding this finding, it can be assumed that adding the interaction effects does not explain anything extra in the dependent variable, which makes the interaction terms poor predictors for the intention to talk and test. Moreover, both interaction terms are found to be statistically non-significant (SEtalk*Manipulation: $b = .142$, $se = .156$, $p = .362$; SEtalk*Manipulation: $b = .142$, $se = .156$, $p = .362$). Regarding the control variables, adding the interaction terms did not influence the significance levels of these variables, which also applies to the variable regarding the presence of humour. However, the inclusion of the interaction variable has led to changes regarding the forms of self-efficacy. Self-efficacy to talk and test were both close to being significant predictors for intention in the second model. In this model, self-efficacy to talk about STDs is not even close to being a significant predictor for intentions ($b = .075$, $se = .119$, $p = .532$), while self-efficacy to test is found to be a significant predictor for intentions ($b = .252$, $se = .120$, $p = .037$).

As discussed at the beginning of this paragraph, the relationship between the presence of humour and the intention to talk and test was found to be statistically non-significant. Although the second and third hypotheses are built on the existence of this primary effect, this effect does not need to be significant to be able to perform a moderation analysis. Nonetheless, this analysis showed that higher levels of self-efficacy to talk or test do not significantly influence the relationship between the presence of humour and the intention to talk or test for STDs in any way. In light of these findings, both hypotheses considering the positive moderating role of the two forms of self-efficacy are rejected.

§4.5 Additional analyses

The correlation matrix at the beginning of this chapter showed several correlations between recent STD testing and other variables. To gather more information regarding these correlations, an additional independent T-test has been conducted on the intention between people's history in STD testing. The participants who had been tested ($M = 22.59$, $SD = 4.92$) compared to the participants who had not been tested ($M = 17.75$, $SD = 5.80$) demonstrated significantly higher levels of intention to talk about and test for STDs in the upcoming year ($t(158) = -5.705$, $p = .000$ (Appendix 4, Table 23). This indicates that history with testing relates to higher intention to talk and test in the future.

Two more independent T-tests have been performed between both self-efficacy variables and people's history in STD testing, to get more insights regarding these correlations. Participants who had been tested in the last five years scored higher on self-efficacy to talk about STDs ($M = 13.60$, $SD = 1.86$) and self-efficacy to test for STDs ($M = 13.95$, $SD = 2.05$) than those who indicated they had not been tested (respectively, $M = 11.77$, $SD = 3.37$; $M = 11.96$, $SD = 3.26$). This difference was significant for the self-efficacy to talk, $t(158) = -4.275$, $p = .000$, as well as for the self-efficacy to test, $t(158) = -4.628$, $p = .000$ (Appendix 4, Table 24). This indicates that when someone got tested for a STD in the last five years, the scores on self-efficacy regarding STDs tend to be higher.

The effect of gender on the intention to talk and test for STDs was also reviewed, as the correlation matrix showed a significant correlation. The independent T-test revealed that participants who identify as female scored higher on intention to talk and test ($M = 20.98$, $SD = 5.34$) than participants who identify as male ($M = 17.56$, $SD = 6.63$). This difference was found to be significant, $t(161) = -3.282$, $p = .001$ (Appendix 4, Table 25), indicating that females tend to have higher intentions towards talking about STDs and testing for STDs.

These additional findings will be discussed and interpreted in the context of this study, compared to the existing literature in the last chapter.

Chapter 5: Conclusions

§5.1 Conclusion

This study aimed to identify the effectiveness of using humour in a social marketing campaign, taking the role self-efficacy into account, with the following research question: *What is the impact of using humour in a social marketing campaign on the intention to talk about and test for STDs, and what role does self-efficacy play?* The first hypothesis originating from this research question expressed an expectation that the presence of humour would have a positive effect on the intentions to talk about and test for STDs. Although differences were found between the experimental (humour) and control group (no humour) on these intentions, the presence of humour was found to have no significant effect on the intentions to talk about and test for STDs.

Furthermore, two additional hypotheses were developed in regard to the role of self-efficacy. It was predicted that self-efficacy to talk about STDs and self-efficacy to test for STDs would both positively moderate the positive relationship between the presence of humour and intentions to talk and test. However, as discussed above, this assumed positive relationship on which self-efficacy could have a moderating effect was found to be statistically non-significant. Nonetheless, a regression analysis was performed to explore the potential role of self-efficacy. This analysis revealed non-significant results, meaning that self-efficacy to talk and test do not moderate the relationship between presence of humour and intentions to talk and test. This indicates that higher levels of either self-efficacy to talk and as self-efficacy to test do not necessarily enlarge the relationship between the presence of humour on intention to talk and test.

Despite these findings, the regression analysis revealed a direct effect between the self-efficacy to test and the intention to talk and test, separate from the presence of humour. Thereby, it can be concluded that this form of self-efficacy has an individual direct effect on the intention to talk about and test for STDs. As this effect is significant and positive, it can be assumed that higher levels of self-efficacy to test lead to higher levels of intention to talk and test. In other words, if an individual deems oneself able to test for STDs, their intention to actually talk about and test for an STD is shown to be higher as well.

Furthermore, recent STD testing was shown to be a valid predictor for the level of intention to talk about and test for STDs, and the level of self-efficacy to talk about and test for STDs. Additional analyses revealed that recent STD testing correlates with higher levels of intention and self-efficacy, meaning that individuals who previously tested for an STD are

more likely to feel able to perform such an activity again and that their intentions to do so are higher. Additionally, relationship status was also found to be a valid predictor for low levels of intention to talk about and test for STDs. This leads to the assumption that people who are currently single are more likely to have a positive intention towards talking about and testing for STDs. Lastly, gender was found to be a predictor for the intention to talk and test. In this study, females showed higher levels of intention towards talking about and testing for STDs.

Table 26

Summary of results

Hypothesis	Description	Result
1	Using humour in a campaign will have a positive effect on the intention to talk about and test for STDs.	Not supported
2	The positive effect of the usage of humour on the intention on the intention to talk about and test for STDs is stronger when self-efficacy to talk about STDs is high.	Not supported
3	The positive effect of the usage of humour on the intention on the intention to talk about and test for STDs is stronger when self-efficacy to test for STDs is high.	Not supported

§5.2 Discussion

This study is not the first to show inconclusive results for the use of humour in the context of social marketing campaigns concerning topics that are related to taboo and stigma. In fact, several earlier studies did show similar indecisive results of the inclusion of humorous elements in social marketing campaigns (Friedman et al, 2016; Gilbert et al, 2019). Weinberger and Gulas (2019) mainly attribute this to the high complexity of the concept of humour and the subsequent difficulty of including the right elements of it in social marketing campaigns.

Although some studies show similar conflicting results and address the complexity of humour, several other studies were actually able to identify positive effects of humour, contradicting the results of this study. Positive effects were found in relation to attention drawn (Eisen, 2011; Sternthal & Craig, 1973), persuasiveness, and memorability (Blanc and Brigaud, 2014), which all should lead to higher levels of effectiveness. Humour was shown to eventually distract people from occurring counter-arguments, which in turn reduces negative affect (Eisend, 2011). Moreover, Blanc and Brigaud (2014) state that the presence of humour makes people enhance positive attitudes towards health advertisements, rather than a critical view regarding the ideas of the message. This would mean that people exposed to humorous content would be more distracted by the humour, and thus would have fewer cognitive capacity left to

counteract the taboo-related content of the advertisement. When relating these findings to this study, it is highly likely that the single humorous element introduced in this study's advertisement was not sufficient to distract people from the high levels of stigma that STDs are currently still facing (Bandura-Lotter, 2014; Friedman et al., 2016; Sundstrom, 2014). Consequently, people will not be distracted from counter-arguments and taboo-relatedness of the content of the advertisement, leading to these negative affects to still influence the intention to talk and test for STDs despite the presence of humour.

This line of thought is in contrast with the findings from Borden and Suggs (2019), and Zhang (1996) who state that, for humour to be effective, the needs for cognitions need to be low. As a result of those findings, Spielman (2014) recommended to solely use simple humour, to avoid complexity and to enhance understanding of the message (Cline & Kellaris, 1999). This recommendation was taken into account in the design of this experiment, leading to the inclusion of just a single element of humour in the form of a sentence. However, overcoming the stigma and taboo related to STDs, and its possible negative impact on the success of the campaign as described by Power (1996), likely required higher levels of cognition to be effective.

Additionally, Weinberger and Gulas (1992) emphasise that an advertisements' impact can be boosted by carefully bearing in mind the goals to be achieved, as well as the audience, context, and style of humour. Although several pre-tests showed that participants did indeed perceive the advertisement with the humorous element as more funny, it is likely that the humorous element in this experiment was not fitting or sufficient in relation to the target audience and goal, leading to diminished effectiveness of the used humour in this fictional campaign. A subsequent campaign can learn from this by building on these results and include this study's existing element shown to be perceived as funny in the pre-test, supplemented with one or more other humorous elements resulting in a higher level of cognition that is able to overcome stigma and taboo.

Moreover, additional explanations for the absence of an effect after the exposure to a humorous advertisement can be found in the article by Grier and Bryant (2005). Firstly, they discuss the fact that measuring the outcomes directly after showing participants the humorous element just once can be too soon for actual behaviour change to occur. This is in line with the findings by Friedman et al. (2016) who emphasised the importance of repeated exposure to attain actual significant effects of behavioural change regarding STD testing. Moreover, Grier and Bryant (2005) point out that not too much can be expected "from a limited intervention "dose"" (p.333). This also corresponds to the statements earlier, that the simple humour did

not take it far enough to provoke actual distraction from the taboo, which would ideally lead to differences in intention.

Aside from the absence of effects related to the effect of humour on intention to talk and test, self-efficacy to test for STDs appeared to have a direct effect on the intentions. This finding is in line with multiple findings in literature, as self-efficacy is found to be a predicting variable for the intention in several general research designs (De Vries, Dijkstra & Kuhlman, 1988; Godin & Kok, 1996; Van der Pligt & Richard, 1994), as well as specifically regarding health-related behaviours (Sheeran, 2016). This finding highlights the importance for future studies and campaigns to measure and take current levels of self-efficacy of their target population into account, as this directly influences intentions of their target population. Subsequently, the content of a marketing campaign and to what extent the advertisement should contain elements of humour should be determined on the basis of this.

Finally, the additional analyses also provided some valuable insights, which can be compared with existing literature. First, the results concerning the control question of recent STD testing. The control question of recent STD testing was based on an earlier research by Asante and Doku (2010) on condom use. They found out that when students used a condom recently, they significantly scored higher on levels of self-efficacy to use condoms. These findings correspond with the findings in this study, that recent STD testing is found to be a valuable predictor for higher levels of intention to talk and test. Second, females were found to score higher on the intentions to talk about and test for STDs. This contradicts the initial prediction of the effect of gender on intention and self-efficacy, since the findings of Sabri and Obermiller (2010) showed that females tend to react more negatively towards the taboo topic of sex. Consequently, it was expected that females' intentions and self-efficacy towards talking about and testing for STDs would be lower than men's. A possible reason for the higher levels of intention and self-efficacy can lay in the fact that STDs can be way more harmful for women than for men (CDC, 2011). However, the knowledge of participants about this has not been requested, thus valid conclusions cannot be drawn from this finding.

§5.3 Practical implications

Although this study was not able to identify significant effects for the inclusion of humour in a social marketing campaign relating to STD testing, there are still several implications arising from this study. Most importantly, this study gave some insights into the complexity of using humour in social marketing campaigns. It shows that adding simple humour does not necessarily attain more intention to test and talk. This indicates that humour should be added

carefully, it is important that the advertisements and the humour embedded in it are tested extensively. Borden and Suggs (2019) emphasise the importance of sorting out why and how humour is embedded in a campaign, to be sure the outcomes are as expected. When designing a social marketing campaign, a marketing manager should be critical of the arguments behind and the contents of the advertisements, and be sure that receivers perceive the advertisement as intended. These managers should find a balance regarding the amount of humour used, so that the advertisement actually distracts enough from counter argumentation to occur, yet it is not distracting from the actual meaning and thereby aim of the advertisement.

Moreover, and in line with the previous point, designers of future campaigns on this topic should start by identifying and understanding the root cause of stigma and taboo surrounding the topic of STDs in their local context. Only then will they be able to design advertisements of which both the goals and humorous elements truly align with their target audience, possibly resulting in the occurrence of the beneficial effects of humour as shown by previous studies.

Furthermore, this study revealed that higher levels of self-efficacy to test for STDs correspond to higher levels of intention. This points out the importance of involving levels of self-efficacy in campaigns. In this regard, when a campaign aims for actual change in intentions, it could be effective to focus on the receiver's belief in oneself to actually perform the promoted behaviour, and to try to increase this perceived level of capability. Generally speaking about campaigns for STD prevention, the designers of the campaign can address what capabilities it takes to participate in STD prevention, and point out how easy it can be. This would ideally lead to an increase of the levels of self-efficacy, which, in turn, would lead to an increase in the intention to participate in the behaviours promoted in the STD-related campaign.

§5.4 Limitations and future research

This study has several limitations. First, related to the advertisement itself. Although the advertisement was intended to be designed to reflect actual campaigns and their effects as closely as possible, the comparison of this study to real-life campaigns is doubtful. The circumstances in which the participant was exposed to the advertisement, differed greatly from the real life situation in which a person would bump into a similar campaign. Also, it is likely that a person will encounter the advertisement on several occasions in real-life, which could positively influence the effectiveness of the advertisement. Nonetheless, the manipulation check showed that the advertisement was indeed able to introduce a humorous element that

was perceived as humorous, indicating that this study succeeded in developing a somewhat humorous stimulus, but it did not lead to the suspected effects.

Moreover, the generalizability of the outcomes of this study to other health campaigns is doubtful. Although this study succeeded in demonstrating that simple humour cannot vanquish the negative power of the taboo, it does not mean this is the case for all campaigns focused on health-related issues. Using (simple) humour in social marketing campaigns might not be shown to be effective in this study, but several other studies found positive effects of embedding humour in their campaigns. This contrast probably mostly reflects the complex nature of humour. Nonetheless, this study was able to generate several practical implications that can be easily transferred to social marketing campaigns in general, such as the importance of tailoring humour in campaigns to a specific target audience in a sufficient way, and focussing on self-efficacy.

Furthermore, this study did not take differences between generations regarding the effect of the presence of humour on intentions, and the possible moderating effect of self-efficacy on intentions, into consideration. Van der Pligt and Richard (1994) state that adolescents are at the beginning of “their sexual career” (p.191), which could make it harder to “raise the issue of protective action” (p. 191). Although these authors aim at increasing condom use when speaking of protective action, this barrier of being in the initial phase of your ‘sexual career’ could also contribute to the conservation of the taboo by adolescents, which indicates that the levels of intentions and self-efficacy might be lower for adolescents. Although such effects might have occurred, since the focus of this study was on a very specific group of adolescents aged between 18 and 25 years old, the influence of those effects might be mitigated. Future research could further investigate differences between generations, to find out if this barrier actually exists, and if being at the beginning of your ‘sexual career’ has an impact on the levels of self-efficacy and intentions.

Lastly, regarding the taboo-relatedness, culture could also explain absence of an effect in this study. Several studies show that culture can have a significant impact on the way people behave when topics relating to sex occur (Montemurro, Bartasavich & Wintermute, 2015; Schalet, 2011). Montemurro, Bartasavich and Wintermute (2015) specifically state that culture influences attitudes regarding sex, which in turn significantly influences whether topics regarding sex are discussed, which also entails STDs. However, this study tried to correct for such effects to some extent by controlling for several demographics whilst studying the relationship of humour on intention to talk/test. The impact of several other demographic characteristics can be taken into account and investigated in detail in future research.

Reference list

- Ahrens, K., Kent, C., Montoya, J., Rotblatt, H., McCright, J., Kerndt, P., & Klausner, J. (2006). Healthy penis: San Francisco's social marketing campaign to increase syphilis testing among gay and bisexual men. *PLoS Medicine*, 3, 2199- 2203. DOI: 10.1371/journal.pmed.0030474
- Ajzen, I. (1985). From Intentions to Actions: A Theory of Planned Behavior. In: Kuhl J., Beckmann J. (eds) *Action Control. SSSP Springer Series in Social Psychology*. Springer, Berlin, Heidelberg. DOI: 10.1007/978-3-642-69746-3_2
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. DOI: 10.1016/0749-5978(91)90020-T
- Ajzen, I. (2002). Constructing a TPB questionnaire: Conceptual and methodological considerations.
- Ajzen, I., & Fishbein, M. (1970). The prediction of behavior from attitudinal and normative variables. *Journal of Experimental Social Psychology*, 6(4), 466-487. DOI: 10.1016/022-1031(70)90057-0
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Asante, K., & Doku, P. (2010). Cultural adaptation of the condom use self efficacy scale (CUSES) in Ghana. *BMC public health*, 10(1), 1-7. DOI: 10.1186/1471-2458-10-227
- Bandura, A. (2006). Guide for constructing self-efficacy scales. *Self-efficacy beliefs of adolescents*, 5(1), 307-337.
- Bandura, A. (2010). Self-efficacy. *The Corsini encyclopaedia of psychology*, 1-3. DOI: 10.1002/9780470479216.corpsy0836
- Bandura-Lotter, G. (2014). Sexually transmitted diseases: The impact of stigma and taboo on current medical care. *Der Urologe. Ausg. A*, 53(4), 548-556. DOI: 10.1007/s00120-013-3356-5
- Barendrechts Dagblad (2019). *Nieuw: anoniem huis testen op soa's*. Retrieved on May 6th 2022 from <https://barendrechtsdagblad.nl/algemeen/nieuw-anoniem-thuis-testen-op-soas>
- Blanc, N., & Brigaud, E. (2014). Humor in Print Health Advertisements: Enhanced Attention, Privileged Recognition, and Persuasiveness of Preventive Messages. *Health Communication*, 29(7), 669-677. DOI: 10.1080/10410236.2013.769832
- Borden, D., & Suggs, L. (2019). Strategically leveraging humor in social marketing

- campaigns. *Social Marketing Quarterly*, 25(3), 193-208. DOI: 10.1177/1524500419854068
- Boudewyns, V., & Paquin, R. (2011). Intentions and beliefs about getting tested for STDs: Implications for communication interventions. *Health Communication*, 26(8), 701-711. DOI: 10.1080/10410236.2011.563353
- CDC (2011). 10 Ways STDs Impact Women Differently from Men. Retrieved on May 27th 2022 from <https://www.cdc.gov/std/health-disparities/stds-women-042011.pdf>
- Davis, F., & Warshaw, P. (1992). What do intention scales measure? *The Journal of General Psychology*, 119(4), 391-407. DOI: 10.1080/00221309.1992.9921181
- De Gruchy, J., & Coppel, D. (2008). 'Listening to reason': A social marketing stop-smoking campaign in Nottingham. *Social Marketing Quarterly*, 14(1), 5-17. DOI: 10.1080/15245000801910624
- De Vries, H., Dijkstra, M., & Kuhlman, P. (1988). Self-efficacy: the third factor besides attitude and subjective norm as a predictor of behavioural intentions. *Health education research*, 3(3), 273-282. DOI: 10.1093/her/3.3.273
- Eastman-Mueller, H., Habel, M., Oswalt, S., & Liddon, N. (2019). Get yourself tested (GYT) campaign: investigating campaign awareness and behaviors among high school and college students. *Health Education & Behavior*, 46(1), 63-71. DOI: 10.1177/1090198118788617
- Eisend, M. (2011). How humor in advertising works: A meta-analytic test of alternative models. *Marketing Letters*, 22(2), 115-132. DOI: 10.1007/s11002-010-9116-z
- Ellis J. (2013). Statistiek voor de psychologie, deel 5: factoranalyse en itemanalyse. Den Haag: Boom Lemma.
- Emerson, R. (2015). Convenience sampling, random sampling, and snowball sampling: How does sampling affect the validity of research?. *Journal of Visual Impairment & Blindness*, 109(2), 164-168.
- Evans, W. (2008). Social marketing campaigns and children's media use. *The Future of Children*, 18(1), 181-203.
- Evans-Palmer, T. (2010). The potency of humor and instructional self-efficacy on art teacher stress. *Studies in Art Education*, 52(1), 69-83. DOI: 10.1080/00393541.2010.11518824
- Fennis, B. (2003). Advertising, consumer behaviour and health: exploring possibilities for health promotion. *Journal of Medical Marketing*, 3(4), 316-32. DOI: 10.1057/palgrave.jmm.5040133

- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). SAGE Publications.
- Field, A., & Hole, G. (2003). *How to design and report experiments*. London UK: Sage.
- Fishbein, M., & Ajzen, I. (1980). Predicting and understanding consumer behavior: Attitude-behavior correspondence. *Understanding attitudes and predicting social behavior*, 148-172
- Friedman, A., Kachur, R., Noar, S., & McFarlane, M. (2016). Health communication and Social Marketing Campaigns for Sexually Transmitted Disease Prevention and Control. *Sexually Transmitted Diseases*, 43(1), 83-101. DOI: 10.2307/48512786
- Gilbert, M., Salway, T., Haag, D., Kwag, M., Edward, J., Bondyra, M., Cox, J., Hart, T., Grace, D., Grennan, T, Ogilvie, G., & Shoveller, J. (2019). Assessing the impact of a social marketing campaign on program outcomes for users of an internet-based testing service for sexually transmitted and blood-borne infections: observational study. *Journal of Medical Internet Research*, 21(1), 1-7. DOI: 10.2196/11291
- GGD Gelderland-Zuid (n.d.) Soa-test. Retrieved on April 16th 2022 from <https://ggdgelderlandzuid.nl/seksuelegezondheid/soa-zorg/soa-test/>
- GGD Haaglanden (2022). *Symptomen en gevolgen van geslachtsziekten. Wat is een soa?* Retrieved on February 13th 2022 from <https://www.ggdhaaglanden.nl/onderwerp/wat-is-een-soa/>
- Goldberg, M., Fishbein, M., & Middlestadt, S. (Eds.). (2018). *Social marketing: Theoretical and practical perspectives*. Psychology Press.
- Godin, G., & Kok, G. (1996). The theory of planned behavior: a review of its applications to health-related behaviors. *American journal of health promotion*, 11(2), 87-98. DOI: 10.4278/0890-1171-11.2.87
- Grier, S., & Bryant, C. (2005). Social Marketing in Public Health. *Annu. Rev. Public Health*, 26, 319-339. DOI: 10.1146/annurev.publhealth.26/021304.144610
- Hair, J., Black, W., Babin, B & Anderson, R (2018), *Multivariate Data Analysis* (8th edition), Cengage Learning.
- Hoewe, J. (2017). Manipulation Check. In J. Matthes, C.S. Davis & R.F. Potter (Eds.), *The International Encyclopedia of Communication Research Methods* (pp.1-5). WileyBlackwell.
- IBM (2021). *KMO and Bartlett's test*. Retrieved on May 22th 2022 from <https://www.ibm.com/docs/en/spss-statistics/27.0.0?topic=detection-kmo-bartletts-test>
- Kotler, P., & Lee, N. (2008). *Social marketing: Influencing behaviors for good*. Sage.

- Lee, M. (2010). The Effects of Self-Efficacy Statements in Humorous Anti Alcohol Abuse Messages Targeting College Students: Who Is In Charge?, *Health Communication*, 25(8), 638-646. DOI: 10.1080/10410236.2010.521908
- Maraev, V., Breitholtz, E., Howes, C., Larsson, S., & Cooper, R. (2021). Something Old, Something New, Something Borrowed, Something Taboo: Interaction and Creativity in Humour. *Frontiers in Psychology*, 12, 1-12. DOI: 10.3389/fpsyg.2021.654615
- Martin, R. (2007). *The psychology of humor: An integrative approach*. Burlington, MA: Elsevier Academic Press.
- Miller, B., Norton, M., Fan, X., & Christopherson, C. (1998). Pubertal Development, Parental Communication, and Sexual Values in Relation to Adolescent Sexual Behaviors. *The Journal of Early Adolescence*, 18(1), 27-52. DOI: 10.1177/0272431698018001002
- Ministerie van VWS [@MinVWS] (2021). *Advertisement vaccination campaign* [Tweet], retrieved on May 5th from <https://twitter.com/minvws/status/1400044546474627073>
- Monahan, J. (1994). Thinking positively: Using positive affect when designing messages. In E. Maibach & R. Parrott (Eds.), *Designing health messages* (pp. 81–98). Thousand Oaks, CA: Sage.
- Montemurro, B., Bartasavich, J., & Wintermute, L. (2015). Let's (not) talk about sex: The gender of sexual discourse. *Sexuality & Culture*, 19(1), 139-156. DOI: 10.1007/s12119-014-9250-5
- National Consumer Council (2006). *It's our health! Realising the potential of effective social marketing*. National Consumer Council, London.
- Patient Empowerment (2018). *Diagnostiek op afstand: testalize.me*. Retrieved on May 5th 2022 from <https://patientempowerment.nl/testalize-me-diagnostiek-op-afstand/>
- Peterson, J., & Marín, G. (1988). Issues in the prevention of AIDS among Black and Hispanic men. *American Psychologist*, 43, 871–877.
- Power, G. (1996). Evaluating Health Knowledge: An Alternative Approach. *Journal of Health Communication*, 1(3), 285-300. DOI: 10.1080/108107396128068
- Prati, G., Mazzoni, D., & Zani, B. (2014). Perceived behavioural control, subjective norms, attitudes and intention to use condom: A longitudinal cross-lagged design. *Psychology & health*, 29(10), 1119-1136. DOI: 10.1080/08870446.2014.913043
- Rijksoverheid (2018). *De Nationale Cybersecurity agenda (NCSA)*. Retrieved on May 5th 2022 from <https://magazines.rijksoverheid.nl/ezk/nederlanddigitaal/2018/01/nationale-cybersecurity-agenda>
- RIVM (2021). *Soa cijfers en rapportages*. Retrieved on February 25th 2022 from <http://>

- www.rivm.nl/Soa-seksueel-overdraagbare-aandoening/cijfers-en-rapportages-soa
- Rogers, E. (1973). *Communication strategies for family planning*. New York, NY: Free Press.
- Rostosky, S., Dekhtyar, O., Cupp, P. & Anderman, E. (2008). Sexual Self-Concept and Sexual Self-Efficacy in Adolescents: A Possible Clue to Promoting Sexual Health? *Journal of Sex Research*, 45(3), 277-286. DOI: 10.1080/00224490802204480
- Rucker, D., Petty, R., & Briñol, P. (2015). Social psychological foundations of social marketing. In D. W. Stewart (Ed.), *The handbook of persuasion and social marketing: Historical and social foundations; Conceptual, theoretical, and strategic dimensions; Applications and uses* (pp. 27–59). Praeger/ABC-CLIO.
- Rye, B., Fisher, W., & Fisher, J. (2001). The Theory of Planned Behavior and Safer Sex Behaviors of Gay Men. *AIDS and Behavior*, 5(4), 307-318. DOI: 10.1023/A:1013130721960
- Sabri, O. (2012). Taboo advertising: can humor help to attract attention and enhance recall?. *Journal of Marketing Theory and Practice*, 20(4), 407-422. DOI: 10.2753.MTP1069-6679200404
- Sabri, O. (2017). Does viral communication context increase the harmfulness of controversial taboo advertising? *Journal of Business Ethics*, 141(2), 235–247. DOI: 10.1007/s10551-015-2751-9
- Sabri, O., & Obermiller, C. (2012). Consumer perception of taboo in ads. *Journal of business research*, 65(6), 869-873. DOI: 10.1016/j.jbusres.2011.01.009
- Satterwhite, C., Torrone, E., Meites, E., Dunne, E., Mahajan, R., Ocfemia, M., Su, J., Xu, F., & Weinstock, H. (2013). Sexually transmitted infections among US women and men: Prevalence and incidence estimates, 2008. *Sexually Transmitted Diseases*, 40, 187-193. DOI: 10.1097/OLQ.0b013e318286bb53
- Schalet, A. (2011). *Not under my roof*. University of Chicago Press. DOI: 10.7208/9780226736204
- Sense (n.d.). SOA-TEST. Retrieved on April 28th 2022 from <https://sense.info/nl/soas/soa-test>
- Sheeran, P., Maki, A., Montanaro, E., Avishai-Yitshak, A., Bryan, A., Klein, W., Miles, E., & Rothman, A. (2016). The impact of changing attitudes, norms, and self-efficacy on health-related intentions and behavior: A meta-analysis. *Health Psychology*, 35(11), 1178–1188. DOI: 10.1037/hea0000387
- Sheeran, P., Milne, S., Webb, T., & Gollwitzer, P. (2005). *Implementation intentions and*

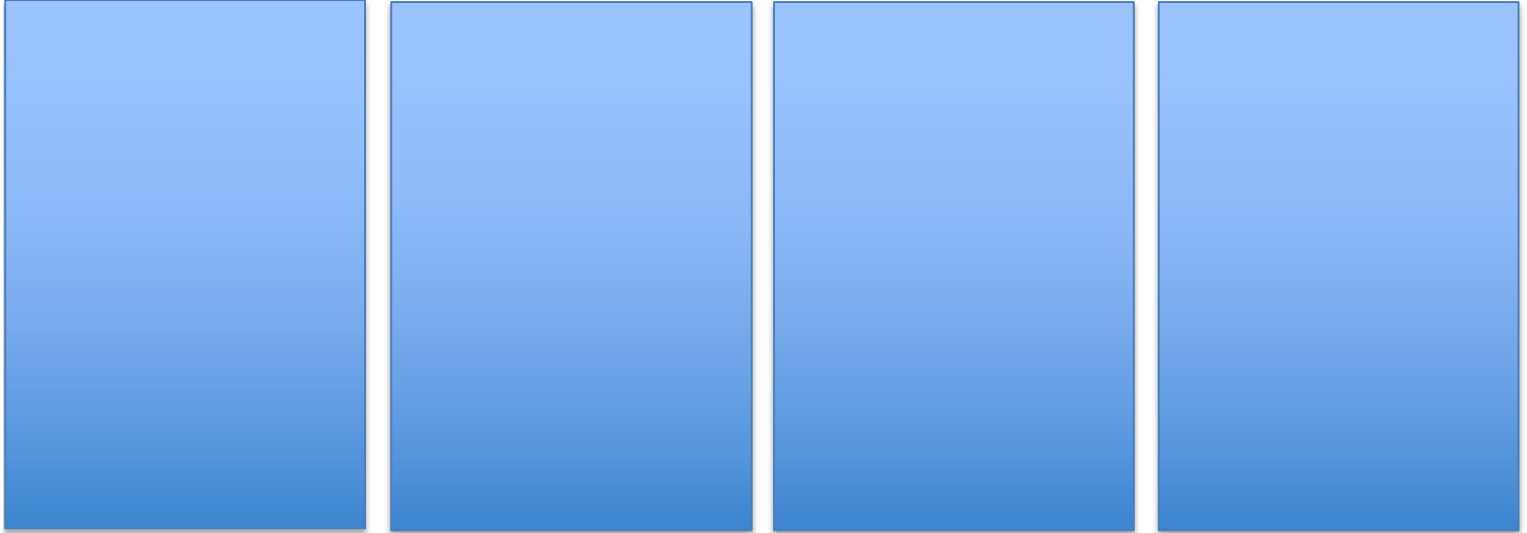
- health behavior*. M. Conner & P. Norman (Eds.). *Predicting health behaviour: Research and practice with social cognition models*, 2th edition (pp. 276-323). Buckingham, UK: Open University Press.
- Smith, W. (2006). Social marketing: an overview of approach and effects. *Injury prevention*, 12(1), 38-43. DOI: 10.1136/ip.2006.012864
- Soa Aids Nederland (2020a). *Aantal soa-diagnoses neemt toe*. (2020) Retrieved on February 23th 2022 from <http://www.soaids.nl/nl/professionals/nieuws-en-standpunten/nieuwsbericht/aantal-soa-diagnoses-neemt-toe>
- Soa Aids Nederland (2020b). Corona en veilig vrijen vragen dezelfde campagne. Retrieved on February 25th 2022 from <http://www.soaids.nl/nl/professionals/nieuws-en-standpunten/nieuwsbericht/corona-veilig-vrijen-vragen-dezelfde-campagne>
- Sonnemans, A. (2018, February 2). Waar zijn die gezellige ‘vrij veilig’-posters gebleven? *VICE*. Retrieved on May 3th 2022 from <https://www.vice.com/nl/article/a347n5/waar-zijn-die-gezellige-vrij-veilig-posters-gebleven>
- Spielmann, N. (2014). How funny was that? Uncovering humor mechanisms. *European Journal of Marketing*, 48, 1892–1910. DOI: 10.1108/EJM-07-2012-0393
- Sternthal, B., & Craig, S. (1973). Humor in Advertising. *Journal of Marketing*, 37(4), 12-18. DOI: 10.1177/002224297303700403
- Sundstrom, B. (2014). Breaking women’s health taboos: Integrating diffusion of innovations theory with social marketing. *Social Marketing Quarterly*, 20(2), 87-102. DOI: 10.1177/1524500414525774
- Triandis, H. (1980). Values, attitudes, and interpersonal behavior. In H. Howe and M. Page (eds.). *Nebraska Symposium on Motivation*, 27, 195-259. Lincoln, NB: University of Nebraska Press.
- Volksgezondheid en zorg (2019). *Huidige situatie soa consulten naar leeftijd en geslacht*. Retrieved on February 6th 2022 from <https://www.volksgezondheidenzorg.info/onderwerp/soa/cijfers-context/huidige-situatie#node-soa-consulten-naar-leeftijd-en-geslacht>
- Van der Pligt, J., & Richard, R. (1994). Changing adolescents' sexual behaviour: perceived risk, self-efficacy and anticipated regret. *Patient Education and Counseling*, 23(3), 187-196. DOI: 10.1016/0738-3991(94)90034-5
- Wang, X., (2009). Integrating the Theory of Planned Behavior and Attitude Functions: Implications for Health Campaign Design. *Health Communication*, 24(5), 426-434. DOI: 10.1080/10410230903023477
- Weinberger, M., & Gulas, C. (1992). The impact of humor in advertising: A review.

- Journal of advertising*, 21(4), 35-59. DOI: 10.1080/00913367.1992.10673384
- Weinberger, M., & Gulas, C. (2019). You must be joking: an introduction to the special issue on the use of humour in advertising. *International Journal of Advertising*, 38(7), 909-910. DOI: 10.1080/02650487.2019.1652526
- Wester, F., Renckstorf, K., & Scheepers, P. (2012). *Onderzoekstypen in de communicatiewetenschap* (3e editie). Houten: Bohn Stafleu Van Loghum.
- Williams, R. (2021). Interpreting Interaction Effects; Interaction Effects and Centering. Retrieved on June 30, 2022 from <https://www3.nd.edu/~rwilliam/stats2/l53.pdf>
- Zhang, Y. (1996). The effect of humor in advertising: An individual-difference perspective. *Psychology & Marketing*, 13, 531-545. DOI: 10.1002/(SICI)1520-6793(199609)13:6<531::AID-MAR1>3.0.CO;2-9

Appendix 1 Creation of the stimulus material

Image 1

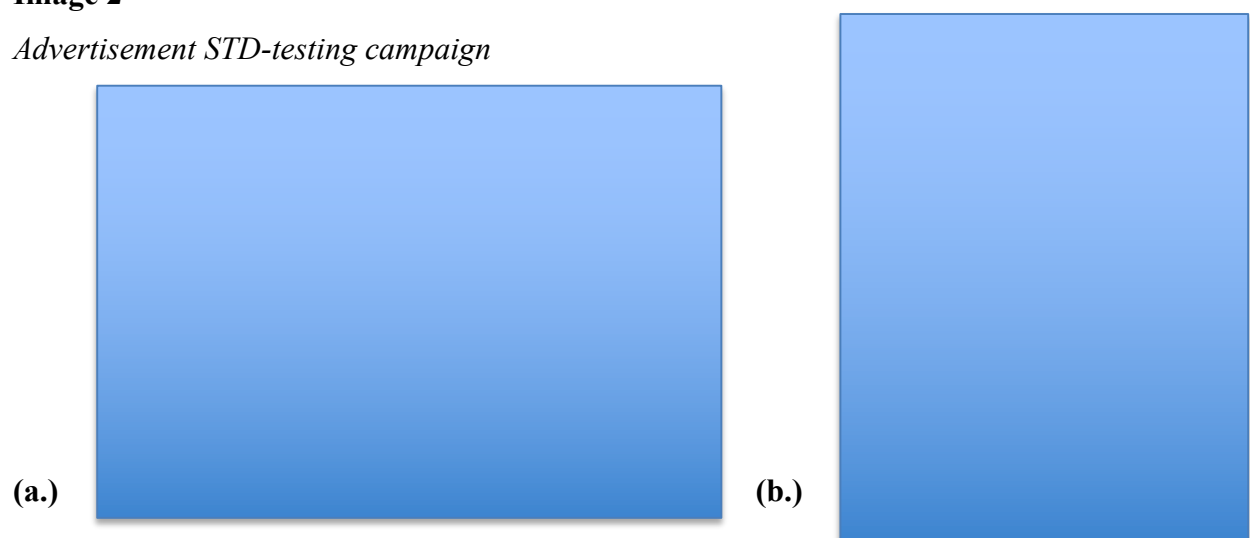
Social marketing campaigns in the Netherlands over the years



Note: From the article by Sonnemans, 2018, Waar zijn die gezellige ‘vrij veilig’-posters gebleven?, *VICE*, retrieved on May 3th 2022 from <https://www.vice.com/nl/article/a347n5/waar-zijn-die-gezellige-vrij-veilig-posters-gebleven>

Image 2

Advertisement STD-testing campaign

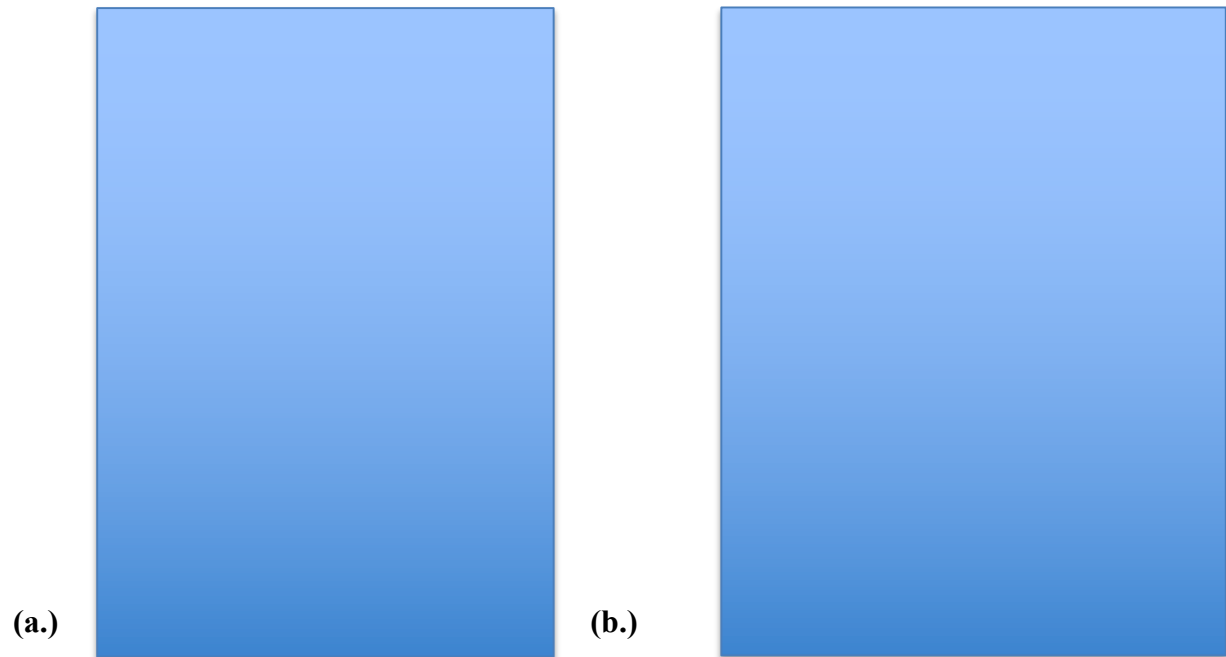


Note: Advertisements from Testalize.me. (a.) From an article by Patient Empowerment, 2018, Diagnostiek op afstand: testalize.me, retrieved on May 5th 2022 from <https://patientempowerment.nl/testalize-me-diagnostiek-op-afstand/> (b.) From the article in

Barendrechts Dagblad, 2019, Nieuw: anoniem huis testen op soa's, retrieved on May 6th 2022 from <https://barendrechtsdagblad.nl/algemeen/nieuw-anoniem-thuis-testen-op-soas>

Image 3

Other campaigns by the Dutch government



Note: Social marketing campaigns by the Dutch government. (a.) Rijksoverheid, 2018, De Nationale Cybersecurity agenda (NCSA), retrieved on May 5th 2022 from <https://magazines.rijksoverheid.nl/ezk/nederlanddigitaal/2018/01/nationale-cybersecurity-agenda>. (b.) Ministerie van VWS [@MinVWS], 2021, *Advertisement vaccination campaign* [Tweet], retrieved on May 5th from <https://twitter.com/minvws/status/1400044546474627073>

Image 4

Advertisement experimental group

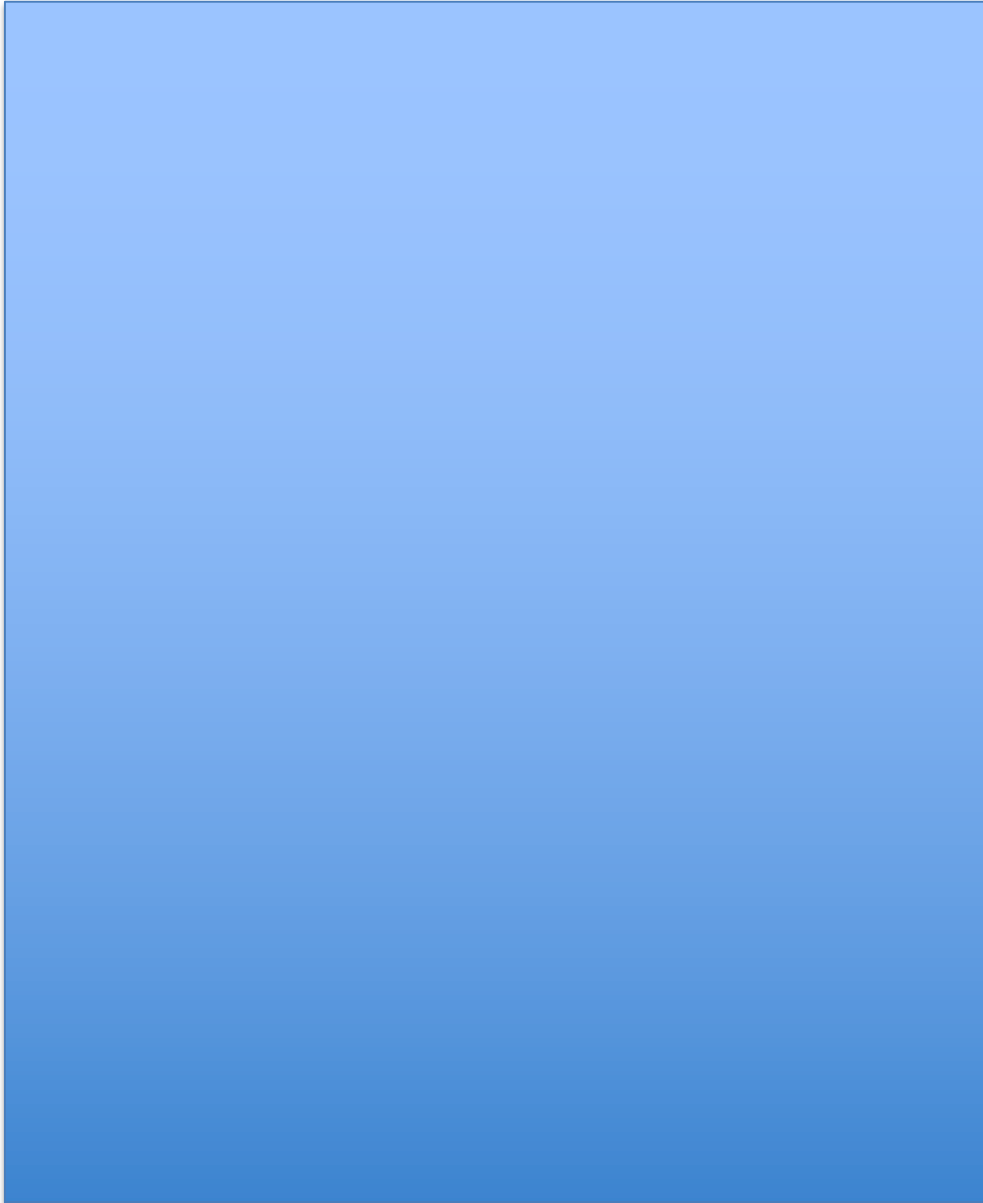
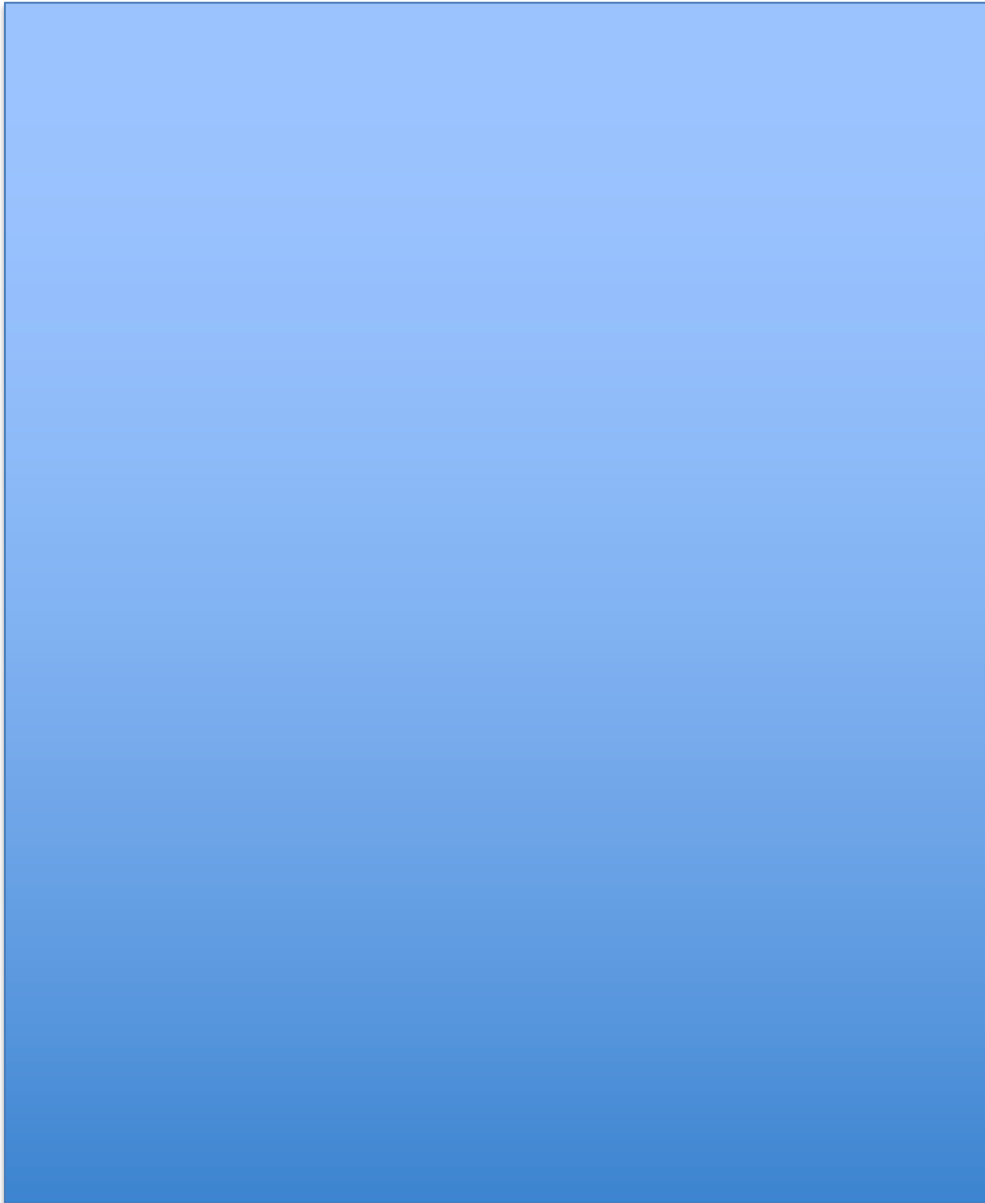


Image 5

Advertisement control group



Appendix 2 Variables and scales

Block	Variable	Authors	Original work	Actual questions
1	Self-efficacy towards talking	Bandura (2006)	<p>The attached form lists different activities. In the column Confidence, rate how confident you are that you can do them as of now. Rate your degree of confidence by recording a number from 0 to 100 using the scale given below:</p> <ul style="list-style-type: none"> - Cannot do at all - Moderately certain can do - Highly certain can do 	<p>Below you will find different activities listed. Rate how confident you are that you can do these activities as if now. Rate your degree of confidence by using the scale given below.</p> <ul style="list-style-type: none"> - Cannot do at all - Probably cannot - Neutral - Probably can - Highly certain can do
	Self-efficacy towards testing	Bandura (2006)	<p>The attached form lists different activities. In the column Confidence, rate how confident you are that you can do them as of now. Rate your degree of confidence by recording a number from 0 to 100 using the scale given below:</p> <ul style="list-style-type: none"> - Cannot do at all - Moderately certain can do - Highly certain can do 	<p>Below you will find different activities listed. Rate how confident you are that you can do these activities as if now. Rate your degree of confidence by using the scale given below.</p> <ul style="list-style-type: none"> - Cannot do at all - Probably cannot - Neutral - Probably can - Highly certain can do
2	Intention to talk	<p>Fishbein & Ajzen (1980)</p> <p>Davis & Warshaw (1992)</p> <p>Miller et al. (1998)</p> <p>Bandura (2006)</p>	<p>7-point Likert scale ranging from:</p> <ul style="list-style-type: none"> - Extremely unlikely - Extremely likely <p>7-point Likert scale ranging from:</p> <ul style="list-style-type: none"> - Extremely unlikely - Extremely likely <p>How likely is it that you will... in the next year?</p> <p>'will is a statement of intention' (p.308).</p>	<p>Indicate how likely it is that will you carry out the following things in the next year:</p> <ul style="list-style-type: none"> - Extremely unlikely - Unlikely - Maybe - Likely - Extremely likely

	Intention to test	<p>Fishbein & Ajzen (1980)</p> <p>Davis & Warshaw (1992)</p> <p>Miller et al. (1998)</p> <p>Boudewyns & Paquin (2011)</p> <p>Bandura (2006)</p>	<p>7-point Likert scale ranging from: - Extremely unlikely - Extremely likely</p> <p>7-point Likert scale ranging from: - Extremely unlikely - Extremely likely</p> <p>How likely is it that you will... in the next year?</p> <p>How likely is it that you will get tested for STDs in the next 12 months? - Extremely unlikely - Extremely likely</p> <p>'will is a statement of intention' (p.308).</p>	<p>Indicate how likely it is that will you carry out the following things in the next year: - Extremely unlikely - Unlikely - Maybe - Likely - Extremely likely</p>
3	Presence of humour	-	-	<p>Did the advertisement shown to you contain humour?</p> <p>5 point Likert scale 1-5</p>
4	<p>Recent STD test</p> <p>Relationship status</p> <p>Age</p> <p>Gender</p> <p>Education level</p>	<p>Asante & Doku (2010)</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p>	<p>Asked whether participants used a condom at their last sexual encounter.</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p>	<p>Did you get tested for a STD (for example at the GGD, GP or with a self-test)?</p> <p>Are you in a romantic relationship at the moment?</p> <p>What is your age?</p> <p>What is your gender?</p> <p>What is your highest level of education?</p>

Appendix 3 Questionnaire

[English]

Dear participant,

Thank you for participating in this study. The study focuses on people's behaviour regarding sexually transmitted disease (STDs). Participation in this study is possible from 18 years old. Filling in the questionnaire will only take 5 minutes and is completely voluntary. You can stop participating at any given time.

All answers will be processed and stored confidentially and anonymously, all according to the guidelines of Radboud University Nijmegen.

- I agree
- I do not agree, thus will not continue participating in the study

[Nederlands]

Beste deelnemer,

Bedankt voor jouw deelname aan dit onderzoek. Het onderzoek gaat het gedrag van mensen met betrekking tot seksueel overdraagbare aandoeningen (SOA's). Deelname aan dit onderzoek is mogelijk vanaf 18 jaar.

Het invullen van de vragenlijst zal slechts 5 minuten in beslag nemen en is geheel vrijwillig. Je kunt op elk moment de deelname stopzetten.

Alle antwoorden zullen vertrouwelijk en anoniem worden verwerkt en bewaard, allemaal volgens de richtlijnen van de Radboud Universiteit Nijmegen.

- Ik stem hiermee in
- Ik stem hier niet mee in, waarmee ik de participatie aan dit onderzoek nu beëindig

Section 1: Self-Efficacy

[English]

Below you will find different activities listed. Rate how confident you are that you **can do** these activities as if now. Rate your degree of confidence by using the scale given below.

Can you...

	Cannot do at all	Probably cannot	Neutral	Probably can	Highly certain can do
... talk about STDs.					
... test for a sexually transmitted disease.					
... start a conversation about sexually transmitted diseases with others.					
... go by the GGD/general practitioner to get tested for an STD.					
... converse about STDs with others.					
... do a STD-test.					

[Nederlands]

Hieronder vind je een opsomming van verschillende activiteiten. Geef aan hoeveel vertrouwen jij hebt dat jij deze activiteiten uit zou **kunnen** voeren op dit moment. Beoordeel dit vertrouwen met behulp van onderstaande schaal.

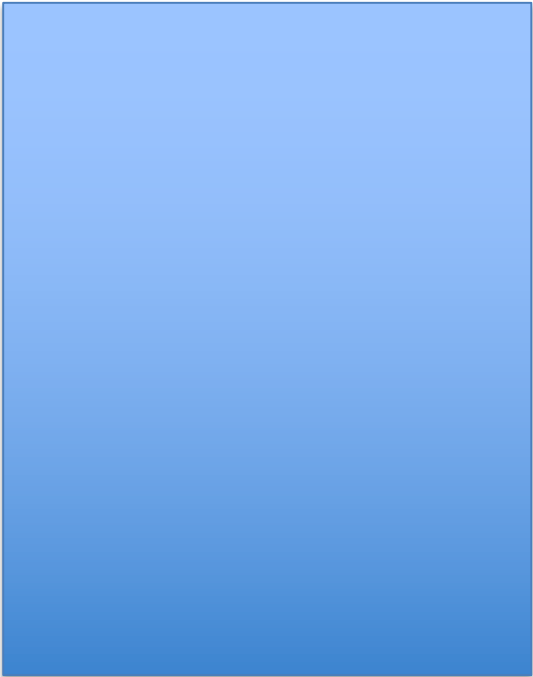
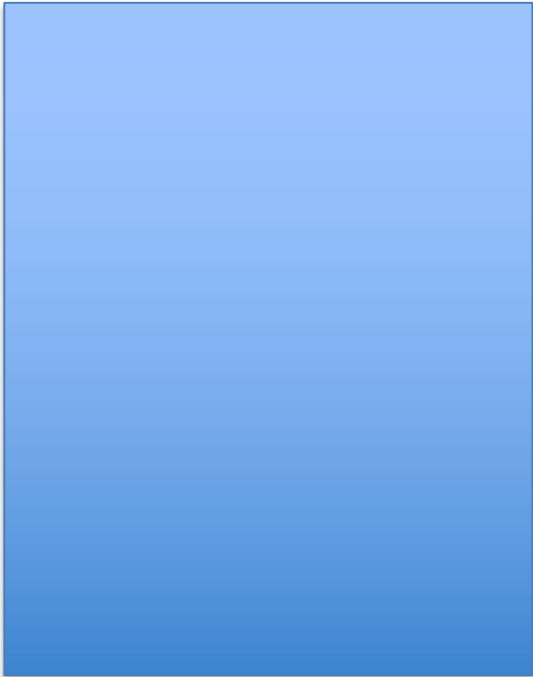
Kan jij...

	Kan ik helemaal niet	Kan ik waarschijnlijk niet	Neutraal	Kan ik een beetje	Kan ik helemaal wel
... praten over soa's.					
... je testen voor een seksueel overdraagbare aandoening.					
... een gesprek beginnen met anderen over seksueel overdraagbare aandoeningen.					
... langs de GGD/huisarts gaan voor een soa-test.					
... over soa's converseren met anderen.					
... een soa-test doen.					

- Split participant group into 2 equal groups -

Section 2: Exposure to advertisement

**** Participants are exposed to either one of the two advertisements below****

Experimental group	Control group
<p>EN: Look carefully at the advertisement below: NL: Bekijk de advertentie hieronder aandachtig:</p> 	<p>EN: Look carefully at the advertisement below: NL: Bekijk de advertentie hieronder aandachtig:</p> 

Section 3: Intentions

[English]

Indicate how likely it is that you will carry out the following things in the next year:

	Extremely unlikely	Unlikely	Maybe	Likely	Extremely likely
Talk about STDs with friends or others.					
Testing for a STD when suspecting one.					
Starting a conversation about STDs with others.					
Go by the general practitioner/GGD for a STD-test.					
Talk about sexually transmitted diseases.					
Get tested (preventively) for a STD.					

[Nederlands]

Geef aan hoe waarschijnlijk het is dat jij volgende dingen zult doen in het komende jaar:

	Extreem onwaarschijnlijk	Onwaarschijnlijk	Misschien	Waarschijnlijk	Extreem waarschijnlijk
Met vrienden of anderen te converseren over soa's.					
Mij te testen bij verdenking van een soa.					
Een gesprek over soa's te starten met anderen.					
Langs de huisarts/GGD te gaan voor een soa-test.					
Te praten over seksueel overdraagbare aandoeningen.					
Me (preventief) te laten testen voor een soa.					

Section 4: Control questions and demographics

[English]

Think back at the advertisement you just saw. Did the advertisement shown to you contain an aspect of humour (a ‘funny’ text, line, image, quote, etc.)?

- No, not at all
- No, not really
- Yes, a little bit
- Yes, for sure

Did you get tested for a STD (for example at the GGD, GP or with a self-test)?

*(The answer, like the rest of the answers, will be processed **anonymously**)*

- Yes
- No
- I don’t want to say that

Are you in a romantic relationship at the moment?

*(The answer, like the rest of the answers, will be processed **anonymously**)*

- Yes
- No
- I don’t want to say that

What is your age?

Please, only enter a number.

What is your gender?

- Male
- Female
- Other

What is your highest level of education? (differs from Dutch school system, so only for the comparison ...)

If you are still studying, please fill in your current education level

- Elementary School
- Secondary Education
- Secondary vocational education (MBO)
- Higher vocational education (HBO)
- Scientific education (WO)

[Nederlands]

Denk even terug aan de advertentie die jij het gezien. Bevatte de aan jou getoonde advertentie een humor aspect (een ‘grappige’ tekst, zin, afbeelding, quote, etc.)?

- Nee, totaal niet
- Nee, niet echt
- Ja, een beetje
- Ja, zeker wel

Heb jij je de afgelopen 5 jaar getest op een soa (bijvoorbeeld bij de GGD, huisarts of met een zelf-test)?

*(Het antwoord, net als de rest van de antwoorden, wordt **anoniem** verwerkt)*

- Ja
- Nee
- Dat wil ik niet zeggen

Heb jij momenteel een vaste relatie?

*(Het antwoord, net als de rest van de antwoorden, wordt **anoniem** verwerkt)*

- Ja
- Nee
- Dat wil ik niet zeggen

Wat is je leeftijd?

Graag enkel een getal invullen.

Wat is je geslacht?

- Man

- Vrouw
- Anders

Wat is je hoogst genoten opleiding?

Indien je nog studeert, graag je huidige opleidingsniveau invullen

- Basisschool
- Voortgezet onderwijs
- Middelbaar beroepsonderwijs (MBO)
- Hoger beroepsonderwijs (HBO)
- Wetenschappelijk onderwijs (WO)

Section 5: End of survey

[English]

Thank you very much for filling in my survey!

You were part of an experiment wherein participants were exposed to an advertisement regarding STD prevention. Half of the participants got exposed to an advertisement containing a humour aspect, and the other half got a general advertisement without the humour aspect.

Do you have any questions about the contents of the survey or are you interested in the outcomes? You can send an email to rosa.endeman@ru.nl.

[Nederlands]

Heel erg bedankt voor het invullen van mijn vragenlijst!

Jij hebt zojuist meegedaan aan een experiment waarin de respondenten blootgesteld werden aan een advertentie voor soa-preventie. De helft van de respondenten zijn blootgesteld aan een advertentie die een humoristisch aspect bevatte, en de andere helft heeft een algemene advertentie gezien zonder humoristisch aspect.

Heb je nog vragen over de inhoud van de vragenlijst of ben je benieuwd naar de uitkomsten? Stuur dan een mailtje naar rosa.endeman@ru.nl.

Appendix 4 Outcomes analyses

Table 3

KMO Measure and Bartlett's Test all items

Kaiser-Meyer-Olkin measure of sampling adequacy		.848
Bartlett's Test of Sphericity	Approx. Chi-square	1373.397
	df	66
	Sig.	.000

Table 4

Factor analysis pattern matrix: all items

	Communalities	Loading Factor 1	Loading Factor 2	Loading Factor 3
Can you talk about STDs?	.783	-.015	.850	.128
Can you test yourself for a sexually transmitted diseases?	.812	-.012	.112	.872
Can you start a conversation about sexually transmitted diseases?	.763	.044	.810	.162
Can you go by your GP or the GGD for a STD test?	.852	.029	.079	.894
Can you hold a conversation on STDs with others?	.795	.050	.804	.214
Can you do a STD test?	.848	.020	.143	.872
Intention to talk with friends or others about STDs	.797	.755	.386	-.109
Intention to test for an STD when suspecting one	.660	.723	-.288	.282
Intention to go by the GP/GGD to get myself tested for a STD	.778	.874	-.243	.109
Intention to start a conversation about STDs with others	.778	.781	.311	-.077
Intention to talk about STDs	.802	.778	.368	-.157
Intention to get tested (preventively) for a STD	.648	.808	-.081	.042
Eigenvalue		5.053	2.601	1.512

Note: Oblique rotation

Table 5

KMO Measure and Bartlett's Test: Self-efficacy to talk about STDs

Kaiser-Meyer-Olkin measure of sampling adequacy		.746
Bartlett's Test of Sphericity	Approx. Chi-square	268.372
	df	3
	Sig.	.000

Table 6*Factor analysis pattern matrix: Self-efficacy to talk about STDs*

	Communalities	Loading Factor 1
Can you talk about STDs?	.800	.895
Can you start a conversation about sexually transmitted diseases?	.823	.907
Can you hold a conversation on STDs with others?	.822	.907
Eigenvalue		2.445

Note: Orthogonal rotation**Table 7***KMO Measure and Bartlett's Test: Self-efficacy to test for STDs*

Kaiser-Meyer-Olkin measure of sampling adequacy		.751
Bartlett's Test of Sphericity	Approx. Chi-square	336.620
	df	3
	Sig.	.000

Table 8*Factor analysis pattern matrix: Self-efficacy to test for STDs*

	Communalities	Loading Factor
Can you test yourself for a sexually transmitted diseases?	.824	.908
Can you go by your GP or the GGD for a STD test?	.876	.936
Can you do a STD test?	.855	.924
Eigenvalue		2.555

Note: Orthogonal rotation**Table 9***KMO Measure and Bartlett's Test: Intention to talk /test about STDs*

Kaiser-Meyer-Olkin measure of sampling adequacy		.842
Bartlett's Test of Sphericity	Approx. Chi-square	634.009
	df	15
	Sig.	.000

Table 10*Factor analysis pattern matrix: Intention*

	Communalities	Loading Factor
Intention to talk with friends or others about STDs	.727	.853
Intention to test for an STD when suspecting one	.484	.696
Intention to go by the GP/GGD to get myself tested for a STD	.656	.810
Intention to start a conversation about STDs with others	.745	.863
Intention to talk about STDs	.733	.856
Intention to get tested (preventively) for a STD	.614	.784
Eigenvalue		3.959

Note: Orthogonal rotation**Table 11***Crosstable comparison analysis age*

		Experimental group	Control group	
Age	20	5	2	7
	21	11	6	17
	22	9	14	23
	23	19	28	47
	24	26	23	49
	25	12	8	20
		82	81	163

Note: $t(162) = .18, p = .856$ **Table 12***Crosstable comparison analysis gender*

		Experimental group	Control group	
Gender	Male	16	23	39
	Female	66	58	124
		82	81	163

Note: $\chi^2(1, N = 163) = 1.77, p = .184$

Table 13*Crosstable comparison analysis education level*

		Experimental group	Control group	
Level of education	Basisschool	1	0	1
	Voortgezet onderwijs	3	0	3
	Middelbaar beroepsonderwijs (MBO)	5	6	11
	Hoger beroepsonderwijs (HBO)	28	25	53
	Wetenschappelijk onderwijs (WO)	45	50	95
		82	81	163

Note: $\chi^2 (1, N = 163) = 4.52, p = .340$

Table 14*Crosstable comparison analysis STD-test in the last five years*

		Experimental group	Control group	
Tested for a STD in the last 5 years?	Yes	40	41	81
	No	40	39	79
	Don't want to say	2	1	3
		82	81	163

Note: $\chi^2 (1, N = 160) = .03, p = .874$

Table 15*Crosstable comparison analysis relationship-status*

		Experimental group	Control group	
Are you in a relationship?	Yes	53	34	87
	No	27	46	73
	Don't want to say	2	1	3
		82	81	163

Note: $\chi^2 (1, N = 160) = 9.10, p = .003$

Table 19*Descriptive statistics Intention to talk and test and presence of humour*

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower bound	Upper bound		
Control group	81	20.25	5.80	.645	18.96	21.53	6.00	30.00
Experimental group	82	20.09	5.92	.653	18.79	21.39	6.00	30.00
Total	163	20.17	5.84	.458	19.26	21.07	6.00	30.00

Table 20*Outcomes One-way ANOVA*

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	1.063	1	1.063	.031	.861
Within Groups	5531.46	161	34.357		
Total	5532.53	162			

Table 21*ANCOVA: Manipulation on Intention*

	Type III Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Corrected Model	2933.740	43	68.227	3.087	.000	.534
Intercept	286.340	1	286.340	12.955	.000	.100
Manipulation	15.800	1	15.800	.715	.400	.006
Recent STD test	390.581	1	390.581	17.672	.000	.132
Relationship status	42.835	1	42.835	1.938	.167	.016
Age	28.378	1	28.378	1.284	.260	.011
Gender	31.935	1	31.935	1.445	.232	.012
Education level	117.140	4	29.285	1.325	.265	.044

Note: controlled for Recent STD test, Relationship status, Age, Gender and Education level

Table 22*Results moderation analysis*

	Model 1 Control variables				Model 2 With main effects				Model 3 With interaction effects			
	B	SE	T	Sig.	B	SE	T	Sig.	B	SE	T	Sig.
(Constant)	3.207	1.379	2.326	.021	3.087	1.348	2.290	.023	3.378	1.375	2.456	.015
Recent STD test	-.744	.136	-5.472	.000	-.552	.144	-3.844	.000	-.562	.144	-3.894	.000
Relationship	.449	.139	3.222	.002	.399	.141	2.827	.005	.391	.142	2.751	.007
Age	-.030	.052	-.577	.565	-.027	.051	-.525	.601	-.038	.052	-.728	.468
Gender	.498	.163	3.047	.003	.493	.160	3.081	.002	.483	.160	3.013	.003
Education level	.097	.090	1.070	.286	.055	.090	.615	.539	.058	.090	.645	.520
Manipulation					.032	.136	.239	.811	.031	.136	.225	.823
SE talk					.156	.080	1.954	.053	.075	.119	.627	.532
SE test					.151	.080	1.890	.061	.252	.120	2.109	.037
SEtalk*Manip.									.142	.156	.913	.362
SEtest*Manip.									-.179	.157	-1.136	.258
R ² (Adjusted R ²)	.274 (.251)				.328 (.292)				.334 (.290)			

Note: Dependent Variable: Intention to talk about and test for STDs.

Table 23*Additional analysis, recent STD testing and Intention to talk and test*

		Intention to talk and test		
		N	Mean	SE
Tested for a STD in the last 5 years?	Yes	81	22.59	4.92
	No	79	17.75	5.80

Note: $t(158) = -5.705, p = .000$ **Table 24***Additional analysis, recent STD testing and Self-efficacy*

		Self-efficacy to talk			Self-efficacy to test		
		N	Mean	SE	N	Mean	SE
Tested for a STD in the last 5 years?	Yes	81	13.60	1.86	81	13.95	2.05
	No	79	11.77	3.37	79	11.96	3.26

Note: Self-efficacy to talk, $t(158) = -4.275, p = .000$; Self-efficacy to test, $t(158) = -4.628, p = .000$ **Table 25***Additional analysis, gender on Intention to talk and test*

		Intention to talk and test		
		N	Mean	SE
Gender	Male	81	17.56	6.64
	Female	79	20.98	5.34

Note: $t(161) = -3.282, p = .001$