The Impact of Age Identity Salience on Vaccination Uptake for Seniors

Vera Glas

532384vg@student.eur.nl

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Supervisor: Prof. Dr. K.I.M. Rohde

Second assessor: xxxx

ERASMUS UNIVERSITY ROTTERDAM

Erasmus School of Economics

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Abstract

The Influenza virus causes an unnecessary high number of death people in the Netherlands every year. Many people in the high-risk group do not take up the Influenza vaccine, although they receive an informational folder about the Influenza- virus and vaccine every year. Seniors above 60 years of age belong to the high-risk group. This study investigated whether seniors are less willing to take up the Influenza vaccine when in the information folder the senior age identity is salient compared to when the senior age identity is not salient. Moreover, it has been tested whether this difference diminish when seniors are self-affirmed before receiving the information folder with the salient senior age identity. Subjects were divided among three conditions: the control condition, in which the subjects receive a neutral information folder, the salient condition without self-affirmation, in which the subjects receive an information folder in which the senior identity is salient, and the salient condition with self-affirmation, in which the subjects receive self-affirmative questions before receiving the salient information folder. Findings indicated that perceived risk for the Influenza virus has a positive influence on the willingness to vaccinate against the Influenza virus (H1). Moreover, the perceived risk and the willingness to vaccinate does not differ between seniors in the control condition and seniors in the salient condition without self-affirmation (H2 and H3). The perceived risk and the willingness to vaccinate does not differ between seniors in the salient condition with self-affirmation and seniors in the salient condition without self-affirmation (H4 and H5). Furthermore, the perceived risk is lower for seniors in the control condition compared to seniors in the salient condition with self-affirmation (H6). Lastly, the willingness to vaccinate does not differ between seniors in the control condition and seniors in the salient condition with self-affirmation (H7).

Table of Contents

1. Introduction

The influenza virus, also known as the flu, is an infectious disease which spreads rapidly throughout human populations. If in a country more than a 'normal' number of people have flu or flu-like symptoms at the same time, we are talking of an epidemic. An Influenza epidemic occurs almost every year between November and April in the Netherlands (RIVM, 2020). In the Netherlands, in the winter of 2018/2019 a total of approximately 400.000 people became ill due to the influenza virus and due to this influenza epidemic, there were 2.900 more deaths than expected during this period (Reukers et al., 2019). This mortality rate is unnecessarily high, because not everyone who is running high risks of complications in the flu is taking the vaccination. People that are running high risks are persons with a vulnerable health, and adults older than 60 year. In this paper, seniors are considered as adults of 60+ years. Seniors are part of the risk-group for the Influenza virus. In the winter of 2018/2019 in the Netherlands, only 51.3 percent of people running high risk of complications were vaccinated, while the vaccine is offered free of charge to everyone in the high-risk group (NOS, 2019).

There are several reasons why people within the high risk-group decide to not uptake the Influenza vaccination. Generally, these reasons are: people think they do not need a vaccine because their bodies are sufficiently resistance to the Influenza virus, fear of side effects for the vaccination, and no knowledge that the vaccine is for free of charge. (Johnson, Nichol and Lipczynski (2008); Schmid, Rauber, Betsch, Lidolt, & Denker (2017); High (2009); Böhmer, Walter, Falkenhorst, Müters, Krause, & Wichmann (2012); Kroneman & Verheij (2003)).

In the Netherlands, people in the high risk-group receive each year an invitation to get the influenza vaccine, accompanied with an information folder about the risks of the influenza virus for people in the high risk-group, and about the Influenza vaccine. In this information folder, the high-risk identities are named explicitly. In other words, it is explicitly named that persons with a vulnerable health, and seniors are running high-risks for the Influenza virus. They are named explicitly to take away the main reason why these people do not uptake the Influenza vaccination: because they think they do not need a vaccine.

While making the identity salient for people in the high-risk group may remove the main reason for not taking up the Influenza vaccine, it could cause for another reason to not take up the Influenza vaccine. A salient risk identity in health messages could threaten an individual's self-image, which could consequently result in a defensive attitude towards the health message (Sherman, Nelson & Steele, 2000; Puntoni, Sweldens and Tavassoli (2011)). In other words, the message that persons with a vulnerable health, and seniors are running high-risks for the Influenza virus, could threaten the individual's self-image, which could result in a defensive

attitude towards the health message, which means, not wanting to take up the Influenza vaccine. Fortunately, Sherman, Nelson and Steele (2000) found that this defensive response could be reduced by making the high-risk identities more confident about themselves.

1.1 Research Question

In this thesis, it will be investigated whether the willingness to receive the Influenza vaccine decreases when the information folder about the Influenza- virus and vaccine does name the senior age identity saliently compared to an information folder about the Influenza-virus that does not mention the senior age identity. Moreover, it will be investigated whether this difference in the willingness to receive the Influenza vaccine decreases when the information folder that does name the senior age identity saliently is accompanied with self-affirmative questions.

1.2 Practical Relevance

The practical relevance of this thesis would be to find a way for the Dutch government to efficiently encourage seniors to vaccinate against the Influenza virus. Consequently, more people will be immunized to the Influenza virus, less people would be infected by the influenza virus, and the mortality rate caused by influenza would decrease. Eventually, these consequences will lead to a healthier country with less health care costs.

Moreover, this study will illustrate the need to carefully consider every element in information folder design, because small visual elements in information folders can have unexpected consequences for the effectiveness of health communications.

1.3 Scientific Relevance

The scientific relevance of this research consists of the fact that the study attempts to fill a gap in the literature. Puntoni, Sweldens and Tavassoli (2011) investigated the impact of gender identity salience in health messages on perceived risk. In this study, there will be a focus on another social identity, namely age. Moreover, previous research has not studied the effect of identity salience on stated preferences. This effect could be different from the effect of identity salience on perceived risks. Moreover, the influence of perceived risk on willingness to take up the Influenza vaccine will be investigated.

2. Theoretical Framework

2.1 Perceived Risk of the Influenza Virus

Immunization is an important component of healthcare services aiming to prevent a pandemic by immunizing people before they become infected. There have been several studies in Europe and the United States that asked seniors to reason why they do not take up the Influenza vaccine. Firstly, 33.8 - 60% of the interrogated seniors stated that they think they do not need a vaccine, because their bodies are sufficiently resistance to the Influenza virus. In other words, their perceived risk of the Influenza virus is low. Secondly, 37.2 - 43% of the interrogated seniors blamed it on the fear for side effects. Moreover, 6 - 38% of the interrogated seniors blamed it on the lack of advice of their doctor (Johnson, Nichol and Lipczynsk, 2008; Schmid, Rauber, Betsch, Lidolt & Denker, 2017; High, 2009; Böhmer, Walter, Falkenhorst, Müters, Krause & Wichmann, 2012; Kroneman & Verheij, 2003). For this paper, the findings of Kroneman and Verheij (2003) are most relevant, since they interrogated seniors in the Netherlands. The most important finding in their study is that 40% of the interrogated seniors think that they do not need the Influenza vaccine, because they estimate the risk of becoming sick due to the Influenza virus low. This low perceived risk is in contrast with the informational folder about the Influenza- virus and vaccine which the Dutch government sends to seniors every year, because they are part of the high-risk group of the Influenza virus.

2.2 Willingness to Take Up the Influenza Vaccine

Sintes et al. (2011) found different factors which enhance the chance for seniors to take up the Influenza vaccine. Namely, being male, being older, living with a partner and visiting a physician frequently. The government cannot easily change these factors, but could do something about the knowledge on the Influenza- virus and vaccine. More knowledge would make seniors aware about the risks of the Influenza virus, which would consequently increase the willingness to take up the Influenza Vaccine (Alici, Sayiner & Unal, 2017; Baeyens, Lang and Michel, 2009; Puntoni, Sweldens, and Tavassoli, 2011). This leads to the first hypothesis:

H1: *The perceived risk of the Influenza virus has a positive influence on the willingness to take up the Influenza vaccine.*

Moreover, more knowledge about the Influenza- virus and vaccine would take away the fear of side effects of the vaccine, and would give knowledge that the vaccine is free of charge for seniors. Previous research showed that giving accurate and complete information about the

Influenza- virus and vaccine is important to make seniors aware that the Influenza vaccine is recommended for them to take up (Alici, Sayiner & Unal, 2017; Baeyens, Lang and Michel, 2009). The Dutch government already sends by mail an information folder to seniors, which contains information about the Influenza- virus and vaccine (appendix A). Moreover, the Dutch government also spreads posters around the country with the invitation to seniors to take up the Influenza vaccine for free (appendix A). A female senior taking up her Influenza vaccination is obviously depicted on this poster. Hence, the Dutch government already offers information about the Influenza virus- and vaccine. However, we may conclude out of several findings that not all seniors take up the Influenza vaccine yet (Kroneman and Verheij, 2003; NOS, 2019).

In the next paragraphs a potential reason for seniors to not take up the Influenza vaccine, despite the offered information will be discussed.

2.3 Social Identity Salience

In the poster and information folder about the Influenza virus- and vaccine, it is clearly stated that seniors are part of the high-risk group, and thus are suggested to take up the Influenza vaccine. Moreover, the poster even depicts an image of a senior taking up her Influenza vaccine. In this way, the senior identity has been made very obvious in the Influenza campaign. For seniors, their senior identity is part of their social identity. Turner and Oakes (1986) describe social identity as the portion of an individual's self-concept which is derived from perceived membership in a relevant social group. People have multiple social identities, for instance their religion, gender, sexual preference, and age. Hence, people have multiple social identities, and which identity is activated, thus most salient, depends on the situation. For example, when seniors receive the information folder about the Influenza virus- and vaccine, their senior identity is mainly activated. When seniors receive an information folder about their gender, their gender identity is mainly activated. The salience of a social identity fluctuates over time.

When a certain identity is salient, people adopt the traits and values of the momentarily salient identity (Turner and Oakes, 1986; LeBoeuf, Shafir and Bayuk, 2009). This behaviour is called identity congruent behaviour. For example, most students have, among others, two identities: socializing and intellectual. LeBoeuf, Shafir and Bayuk (2009) primed students randomly in either the intellectual- or the socializing condition, respectively by asking questions about either world issues of importance to students at that university, or about how men and women feel about campus issues for the socializing condition. Subsequently they asked the subjects about their preferences of consumer items which were either intelligence- or

entertaining items. Participants in the intellectual condition preferred the intelligence items more than participants in the socializing condition.

Puntoni, Sweldens, and Tavassoli (2011) studied if this identity congruent behaviour also applies for health messages. They examined the effect of gender identity on the female subjects' perceived vulnerability to breast cancer. Before asking about the perceived vulnerability to breast cancer, they showed informational folders about breast cancer to the subjects. These informational folders were for the treatment group pink and with an image of a women on it, to make the female gender identity salient. The informational folders for the control group were yellow, and without an image of a woman. Surprisingly, they found that women in the treatment group perceived their vulnerability to breast cancer significantly lower than women in the control group. In other words, showing women an informational folder about breast cancer is less effective when this information folder is feminine compared to gender neutral. We call this unexpected behaviour identity incongruent behaviour. Puntoni, Sweldens, and Tavassoli (2011) explained that this identity incongruent behaviour of these women is because their activated social identity, in this case being woman, has been made weak. The health message caused for a defence mechanism for the receiver, because the health message is a threat for the social identity, and thus the self. This defence mode will be explained more thoroughly in the next paragraph.

2.4 The Defence Mechanism

The defence mechanism is an unconscious psychological process that ignores messages which could be a threat to the mental health. The defence mechanism protects the self-esteem by keeping positive feelings about the self. For example, research found that children often present themselves in an extremely positive way to defend themselves against an underlying sense of imperfection (Cramer, 2000). According to Taylor and Brown (1988), this is to protect the mental health.

Considering health messages, previous research has shown that high-relevance groups are often the least convinced by threatening health information. Puntoni, Sweldens, and Tavassoli (2011) showed that the health message about breast cancer caused for a defence mechanism for the women in the feminine condition, because the women in the feminine condition unconsciously considered the health message as a threat to their social identity. These findings show that defensive responses can be activated by messages that are not threatening in themselves.

Another breast cancer example is the study of Sherman, Nelson and Steele (2000). They found that women who consume large amounts of coffee were less convinced when information was given about the risks for breast cancer by drinking too much coffee than women who consume small amounts of coffee. This example shows that the women with high risks, thus the high-relevance group, are the least convinced by the threatening health information. This identity incongruent behaviour of these women is because their activated social identity, in this case consuming large amounts of coffee, has been made weak. The identity incongruent behaviour is due to the defence mechanism.

It is expected that when the senior age identity is salient in the information folder about the Influenza vaccine- and virus, the perceived risk for the Influenza virus for seniors is lower than when the senior age identity is not salient in the information folder. This effect is caused by the defence mechanism. Moreover, it is expected that when the senior age identity is salient in the information folder about the Influenza vaccine- and virus, the willingness to take up the Influenza vaccine for seniors is lower than when the senior age identity is not salient in the information folder. This effect is also caused by the defence mechanism.

H2: *The perceived risk for the Influenza virus is lower for seniors who receive the information folder in which the senior identity is salient compared to seniors who receive the information folder in which the senior identity is not salient.*

H3: *The willingness to take up the Influenza vaccine is lower for seniors who receive the information folder in which the senior identity is salient compared to seniors who receive the information folder in which the senior identity is not salient.*

2.5 Self-Affirmation

Self-affirmation and fear voicing could reduce the defensive responses (Klein & Harris, 2009; Sherman, Nelson, & Steele, 2000; Puntoni, Sweldens & Tavassoli (2011)). Self-affirmation means giving a boost to the self-esteem, e.g. by asking about benefactions the subject has ever done. Fear voicing means the encouraging of the high-relevance groups to voice their fear of the health risks, e.g. by asking women about their fear for breast cancer. In this paper, there will be a focus on self-affirmation to reduce the defence mechanism.

When spreading a health message, people in the high-relevance group could jump into a defensive mechanism, because the health message could be comprehended as a threat for the social identity, and thus for the self. Therefore, when the Dutch government sends information

folders about the Influenza virus- and vaccine in which the senior identity is salient, seniors could jump into a defensive mechanism, because this information could be comprehended as a threat to their senior identity. Klein and Harris (2009) found that giving a boost to the self-esteem reduces the defensive responses. This gives the desired result considering health messages: subjects in the high-relevance group process the health message more seriously than subjects without the boost to the self-esteem. This boost to the self-esteem is called self-affirmation. Self-affirmation leads to greater acceptance of threatening messages. Giving subjects a boost to their self-esteem could be done by asking about benefactions the subject has ever done.

Reed and Aspinwall (1998) found that women who consume large amounts of coffee were less convinced about the risks for breast cancer through drinking too much coffee than women who consume small amounts of coffee. However, they also found a way to increase the risk perception for breast cancer for women who consume large amounts of coffee. When they first asked self-affirmative questions to the woman, the women who consumed large amounts of coffee were more convinced about the risks for breast cancer by drinking too much coffee than without the self-affirmative questions. Shortly, self-affirmation reduces the defensive responses.

Another study which found that self-affirmation reduces the defensive responses was the study of Sherman, Nelson, and Steele (2000). They showed sexually active participants an educational video about HIV AIDS and consequently asked the participants about their risk perception for HIV AIDS. Sexually active participants estimated their risks for HIV AIDS low, unless they completed a self-affirmation question survey. Participants who completed a self-affirmation survey were less defensive and more accepting of health information.

Puntoni, Sweldens, and Tavassoli (2011) also used the self-affirmation technique in their study about the effect of gender identity salience to the perceived risk of breast cancer. As explained before, they found that showing women an informational folder about breast cancer is less effective when this information folder is feminine compared to gender neutral. The average risk perceptions for these conditions were respectively 3.33 and 4.23 on a seven-point Likert scale. However, when Puntoni, Sweldens, and Tavassoli (2011) first asked self-affirmative questions to the subjects in the feminine condition, e.g. benefactions the subject has ever done, the defence mechanism of these subjects was reduced. This means that the risk perceptions for cancer were significantly higher for subjects in the feminine condition with self-affirmation (Mean = 3.97) compared to subjects in the feminine condition without self-

affirmation (Mean = 3.33). The self-affirmative questions removed the significant difference in risk perceptions between women who saw the gender neutral- and feminine information folders.

When the Dutch government sends information folders about the Influenza virus- and vaccine in which the senior identity is salient, seniors could jump into a defensive mechanism, because this information could be received as a threat to their social identity. It is expected that subjects' perceived risk for the Influenza virus is higher when the subjects are self-affirmed before reading the information folder in which the senior identity is salient. This is because the self-affirmation will remove the defence mechanism. Moreover, it is expected that subjects' willingness to take up the influenza vaccine is higher when the subjects are self-affirmed before reading the information folder in which the senior identity is salient. This is also because the self-affirmation will remove the defence mechanism.

H4: *The perceived risk for the Influenza virus is higher for seniors who are self-affirmed before reading the information folder in which the senior identity is salient (salient senior identity with self-affirmation) compared to seniors who are not self-affirmed before reading the information folder in which the senior identity is salient (salient senior identity without self-affirmation).*

H5: *The willingness to take up the Influenza vaccine is higher for seniors who are self-affirmed before reading the information folder in which the senior identity is salient (salient senior identity with self-affirmation) compared to seniors who are not self-affirmed before reading the information folder in which the senior identity is salient (salient senior identity without self-affirmation).*

Puntoni, Sweldens, and Tavassoli (2011) mention that self-affirmation before making the identity salient eliminates the significant difference in the perceived risk between subjects in the gender neutral- (Mean = 4.23) and feminine condition (Mean = 3.97). Asking seniors self-affirmative questions could cause for a reduction in the defence mechanism, and thus eliminate the significant difference in the willingness to take up the Influenza vaccine between seniors who receive an information folder in which the senior identity is salient and seniors who receive an information folder in which the senior identity is not salient. Therefore, it is expected that there is no significant difference in the perceived risk for the Influenza virus between seniors that receive an information folder in which the senior identity is not salient and self-affirmed seniors that receive an information folder in which the senior identity is salient. Moreover, it is expected that there is no significant difference in the willingness to take up the

influenza vaccine between seniors that receive an information folder in which the senior identity is not salient and self-affirmed seniors that receive an information folder in which the senior identity is salient.

H6: *There is no significant difference in the perceived risk for the Influenza virus between seniors that receive an information folder in which the senior identity is not salient (control) and self-affirmed seniors that receive an information folder in which the senior identity is salient (salient senior identity with self-affirmation).*

H7: *There is no significant difference in the willingness to take up the influenza vaccine between seniors that receive an information folder in which the senior identity is not salient (control) and self-affirmed seniors that receive an information folder in which the senior identity is salient (salient senior identity with self-affirmation).*

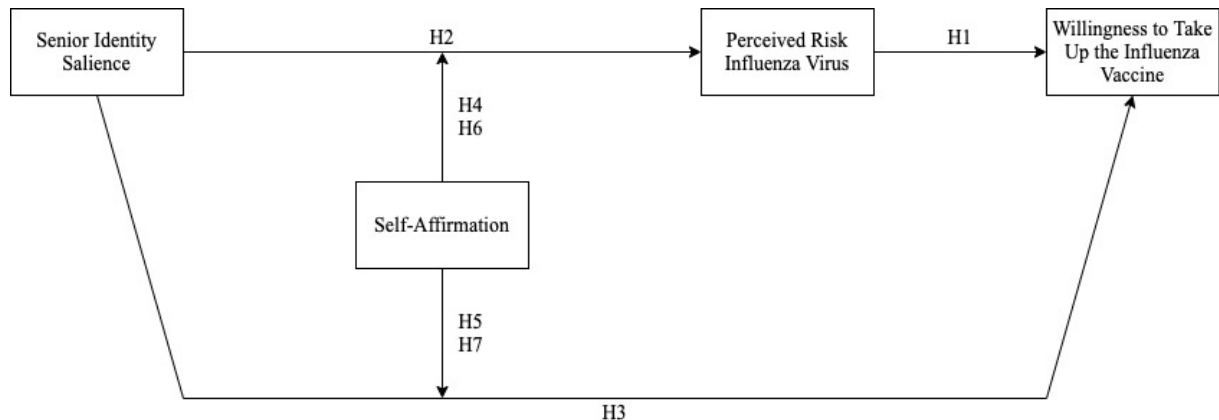The conceptual model of this paper is illustrated in figure 1 accompanied with associated hypotheses.

Figure 1. Conceptual Model.

3. Methodology

3.1 Sample and Research Design

To test the above-mentioned hypotheses, data was obtained through an online survey made in Qualtrics. Since the study is about the taking up of the Influenza vaccine in the Netherlands, the survey was in Dutch and only spread among Dutch citizens. The survey was only for seniors, so for subjects with an age of at least sixty years. The survey was spread in several Dutch Facebook groups for seniors. Moreover, the survey was spread through acquaintances, who spread the survey through other acquaintances, which is called snowball sampling.

Hundred-fifty-six subjects participated in this experiment. The study used a between subject design with three conditions: control, salient, and self-affirmation salient. All participants were equally randomly divided among the three conditions.

According to different calculations in the programme G*power, in order to get significant results given the observed means and standard deviations of the three different treatments, a sample size of 49 per condition is required for a power of 0.8.

3.2 Measurement Instruments

The survey consisted of four parts. In total, there were three different conditions: salient senior identity with self-affirmation, salient senior identity without self-affirmation, and a control condition, which contained a neutral identity without self-affirmation. Subjects were randomly divided across the conditions. See appendix B and C for the detailed survey.

Demographics

The first question of the survey asked if the subject is at least 60 years old. If the subject answered 'no', the survey ended, because this survey was only for seniors. Moreover, the first part of the survey consisted of demographical questions about subjects' gender, age, and highest education level, to test if these demographics have an influence on the willingness to take up the Influenza vaccine and on the perceived risk.

Self-Affirmation

In the second part of the survey, one-third of the subjects were divided into the self-affirmation condition, and two-third of the subjects were divided into the no self-affirmation condition. Participants in the self-affirmation condition answered three questions with either 'yes' or 'no', derived from Reed and Aspinwall (1998) and Puntoni, Sweldens, and Tavassoli

(2011): "Have you ever tried to help a friend even at the expense of your own happiness?", "Have you ever forgiven another person when they have hurt you?", and "Have you ever found ways to help another person who is less fortunate than yourself?". If the subjects answered 'yes' to any of the questions above, they were asked to give a short example of approximately one sentence. In order to avoid drop outs, it was not compulsory to give this example. The questions for the no self-affirmation condition were also derived from Reed and Aspinwall (1998) and Puntoni, Sweldens, and Tavassoli (2011). Subjects in the control condition answered 'correct' or 'incorrect' and gave a short explanation for their choice to the following statements: "I think chocolate is the best flavour ice cream", "I think sewing is a very important skill to have", and "I think it's good to read the newspaper regularly".

Senior Identity Salience

In the third part of the survey, self-affirmed subjects were automatically enrolled into the salient senior condition. Subjects who were not self-affirmed were randomly divided across the salient senior condition and the control condition. So, in total there are three different conditions in this stage of the survey with an equal number of subjects: two treatment conditions, which are: salient senior identity with self-affirmation, and salient senior identity without self-affirmation, and a control condition, which contains a neutral senior identity without self-affirmation.

In this part of the survey, subjects in both treatment- and control condition were shown an information folder about the Influenza- virus and vaccine. The subjects in the treatment- and control condition saw the same folder, with the same information, except for some salient senior identity components for subjects in the treatment conditions. The information folder for both treatment groups depicted an image of a senior getting the Influenza vaccine. Moreover, it stated that the Influenza virus could have disastrous consequences for seniors. These components were present on the information folder to make the senior age identity salient in both treatment groups. The information folder for the control group did not depict an image, to make the control condition as neutral as possible. Moreover, it did not mention explicitly that the Influenza virus could have disastrous consequences for seniors. To test whether participants read the folder carefully, they had to answer three control questions about the folder.

The two folders were custom made for this study, using the existing information folder- and poster of 2019, which the Dutch government used. See appendix D for both information folders.

Perceived risk of the Influenza virus and willingness to take up the Influenza vaccine

In the last part of the survey, the perceived risk of the Influenza virus and the willingness to take up the Influenza vaccine in the coming year had been asked.

For the perceived risk for the Influenza virus, subjects answered three questions on a 5-point Likert scale (Puntoni, Sweldens & Tavassoli, 2011; de Zwart et al., 2009). In the first question, participants had to estimate the chance of getting infected by the Influenza virus coming year if they are not vaccinated. In the second question, participants had to estimate the chance of ending up in the hospital due to the Influenza virus coming year if they are not vaccinated. In the third question, participants had to estimate their risks of getting infected by the Influenza virus compared to the rest of the Dutch population. These three questions were derived from de Zwart et al. (2009).

For the willingness to take up the Influenza vaccine, subjects had to give their willingness to take up the Influenza vaccine for the next flu season on a 5-point Likert scale.

3.3 Data Analysis

To analyse the data, the data was first saved into Microsoft Excel and prepared for STATA. In Microsoft Excel, all subjects that did not finish the survey, or those that were younger than sixty years, were removed from the data set. In this way, the number of subjects was reduced from 198- to 156 subjects. After the data was prepared in Microsoft Excel, the dataset has been uploaded into STATA.

In STATA, some descriptive statistics has been performed, in which means, frequencies, and answers to the folder questions per treatment were obtained. Subsequently, a factor analysis was performed, which could reduce a multiple number of variables into a few factors. In this case, a factor analysis has been conducted for the variables which measure the perceived risk in different ways. Since a survey was conducted in this study, the extraction method Confirmatory Factor Analysis (CFA) has been used, because surveys are a research method where there are many measurement errors. The purpose of CFA is to find constructs. All three conditions for the CFA were met, which are: (1) the substantial correlations are greater than 0.3, (2) The Kaiser-Meyer-Olkin should be at least 0.6, and (3) there are at least 50 observations in an absolute sense and at least 5 per item. Eventually, one factor for perceived risk was the result of the CFA.

After the factor analysis, seven hypotheses were ready to be tested. For hypothesis one, an Ordered Logit Model has been used. For hypotheses 2, 4 and 6, both Ordinary Least Squares

Regression Analysis and Mann-Whitney U have been used. For hypotheses 3, 5 and 7, both Ordered Logit Model and Mann-Whitney U have been used.

All three assumptions for the Mann-Whitney U test (Laerd Statistics, n.d.) were met: (1) the dependent variable is measured at the ordinal- or continuous level, (2) the independent variable consists of two categorical, and independent groups, (3) the observations should be independent. All seven assumptions for the Ordinary Least Squares regression (Laerd Statistics, n.d.) were met: (1) the dependent variable is measured at the continuous level, (2) the independent variable should be measured at the continuous or categorical level, (3) there should be no significant outliers, (4) the observations should be independent, (5) data shows homoskedasticity, (6) The residuals of the regression line are approximately normally distributed, and (7) there is no multicollinearity between the independent variables. All four assumptions for the Ordered Logit Model (Laerd Statistics, n.d.) were met: (1) the dependent variable should be measured at the ordinal level, (2) there should be one or more independent variables that are continuous, ordinal or categorical, (3) there is no multicollinearity between independent variables, and (4) there are proportional odds. According to UCLA: Statistical Consulting Group (n.d.), the proportional odds assumption implies that: "the coefficients that describe the relationship between the lowest versus all higher categories of the dependent variable are the same as those that describe the relationship between the next lowest category and all higher categories."

In order to test whether perceived risk is a mediating variable, several mediation regression analyses have been conducted (Baron & Kenny, 1986). Firstly, impact of the independent variable, treatment, on the dependent variable, willingness, was measured. Then, the impact of the independent variable, treatment, on the mediating variable, perceived risk, was measured. At last, the combined impact of the independent- and the mediating variable on the dependent variable was measured. Only when all the coefficients are significant, there is proof of a mediating effect (Baron & Kenny, 1986).

4. Results

4.1 Descriptive Analysis

Several descriptive statistics are shown in table 1, 2 and figure 2. Hundred fifty-six subjects filled in the survey, 117 females, and 39 males. Subject's ages were not normally distributed, but right skewed: there were relatively more young than old subjects. The education level is normally distributed and left skewed: there were relatively more subjects with a higher education level, which is not representative for the Dutch population. The number of subjects in the three conditions were approximately equally. Differences are caused by omitted subjects due to an unfinished survey or being too young.

Table 1. Descriptive Statistics.

Demographic Variable	Frequency	Percentage	Cumulative
Gender			
Male	39	25.00	25.00
Female	117	75.00	100.00
Total	156	100.00	
Age			
60 – 65 year	64	41.03	41.03
66 – 70 year	47	30.13	71.15
71 – 75 year	29	18.59	89.74
76 – 80 year	14	8.97	98.72
81 – 85 year	2	1.28	100.00
Total	156	100.00	
Dutch Education Level			
Elementary Education (BO)	2	1.28	1.28
Secondary Education (VO)	22	14.10	15.38
Secondary Vocational Education (MBO)	45	28.85	44.23
Higher Professional Education (HBO)	62	39.74	83.97
Bachelor's- / Master's Degree (WO)	25	16.03	100.00
Total	156	100.00	
Treatment			
Control	49	31.41	31.41
Salient without self-affirmation	57	36.54	67.95
Salient with self-affirmation	50	32.05	100.00
Total	156	100.00	

Table 2. Frequencies Demographics per Treatment.

Demographics	Control	Salient	Self-Affirmative Salient	Total
Gender				
Female	37	40	40	117
Male	12	17	10	39
Total	49	57	50	156
Age				
60 – 65 year	18	24	22	64
66 – 70 year	19	17	11	47
71 – 75 year	7	12	10	29
76 – 80 year	4	4	6	14
81 – 85 year	1	0	1	2
Total	49	57	50	156
Education Level				
Primary school	0	1	1	2
Secondary Education	11	6	5	22
Secondary Vocational Education	10	17	18	45
Higher Professional Education	20	25	17	62
Bachelor's- / Master's Degree	8	8	9	25
Total	49	57	50	156
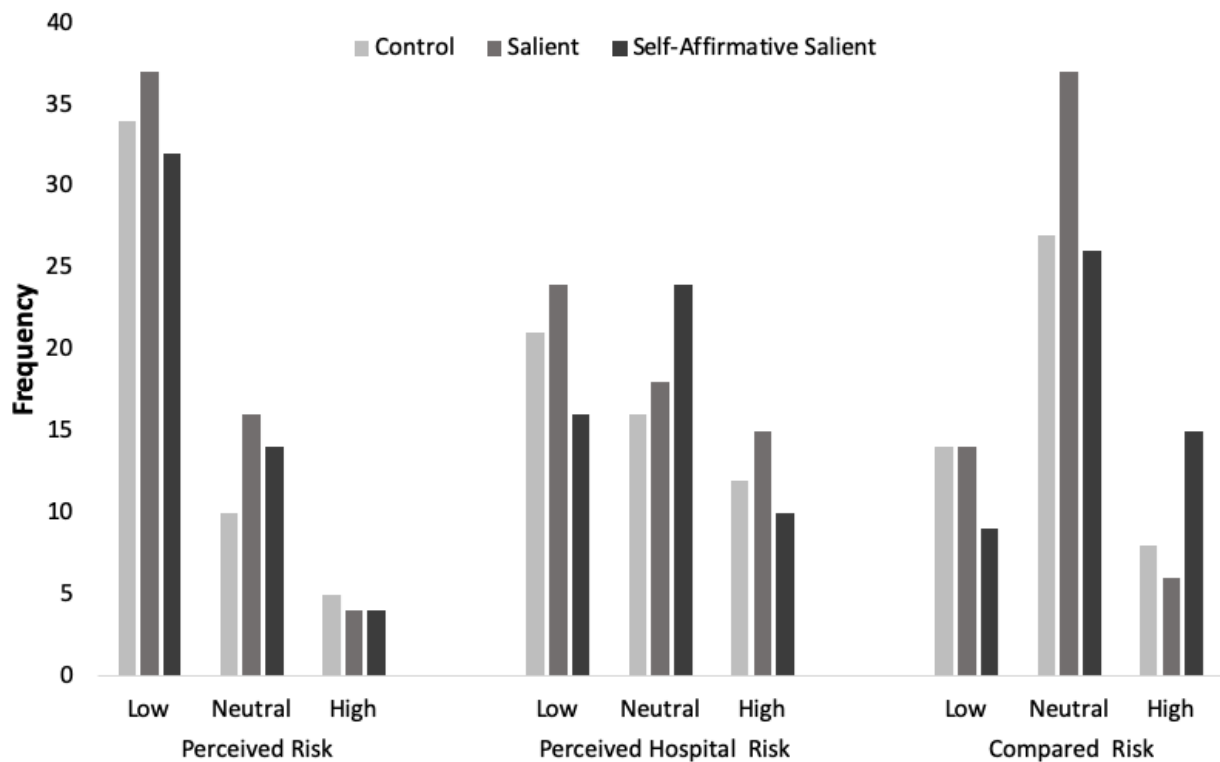
Figure 2. Frequencies in Answers about Perceived Risk per Treatment.

Note. Perceived Risk and Perceived Hospital Risk are transformed to a 3-point Likert Scale for clarity.

4.2 Hypotheses Testing

H1: *The perceived risk of the Influenza virus has a positive influence on the willingness to take up the Influenza vaccine.*

In order to test hypothesis 1, an Ordered Logit Model has been conducted (table 3). The likelihood ratio shows that the model as a whole is statistically significant at a level of $\alpha = 0.05$ [χ^2 (12, $N = 156$) = 71.81, $p = .000$]. As expected, perceived risk has a significant positive influence on the willingness to take up the Influenza vaccine ($p = .000$). When looking at the margins in table 4, it becomes clear that the perceived risk factor has a positive influence on the willingness to take up the Influenza vaccine. These findings are in line with hypothesis 1.

H2: *The perceived risk for the Influenza virus is lower for seniors who receive the information folder in which the senior identity is salient compared to seniors who receive the information folder in which the senior identity is not salient.*

Variable statistics for each treatment could be found in table 5 and figure 3. Differently than expected, the average perceived risk for the salient group ($M = 2.737, SD = .136$) is higher than for the control group ($M = 2.653, SD = .147$). However, according to a Mann-Whitney U test, the difference in medians was not statistically significant ($z = -.336, p = 0.737$). Also, differently than expected, the average perceived hospital risk for the salient group ($M = 2.158, SD = .119$) is higher than for the control group ($M = 2.000, SD = .154$). However, according to a Mann-Whitney U test, the difference in medians was not statistically significant ($z = -1.156, p = 0.248$). As expected, the average compared risk for the salient group ($M = 1.60, SD = .077$) is lower than for the control group ($M = 1.878, SD = .095$). However, according to a Mann-Whitney U test, the difference in medians was not statistically significant ($z = .080, p = .936$). Differently than expected, the average factor of perceived risk for the salient group is higher than for the control group. However, according to a Mann-Whitney U test, the difference in medians was not statistically significant ($z = -.841, p = .400$).

When running an Ordinary Least Squares Regression Analysis with the factor of perceived risk as the dependent variable (table 6), being in the salient condition compared to the control condition, has a positive influence on the perceived risk ($\beta = .122$). However, this is not statistically significant ($p = .431$).

Above mentioned are not in line with hypothesis 2.

Table 3. Ordered Logistic Regression with Control Condition as Base Category (H1, H3 & H7).

Willingness[a]	Coëfficiënt	SE[b]	z	P > |z|	[95% Confidence Interval]	
Factor Perceived Risk	**1.815****	.262	6.94	**0.000**	1.302	2.328
Treatment[c]						
Salient	-.272	.380	-0.72	0.474	-1.017	.473
Self-Affirmative Salient	-.233	.396	-0.59	0.556	-1.010	.544
Gender[d]						
Male	.010	.372	0.03	0.978	-.719	.739
Age[e]						
66 – 70 year	-.053	.384	-0.14	0.891	-.805	.700
71 – 75 year	**.865****	.431	2.01	**0.045**	.021	1.709
76 – 80 year	.307	.597	0.51	0.607	-.863	1.476
81 – 85 year	.278	1.357	0.20	0.838	-2.382	2.937
Education Level[f]						
Secondary Education	.745	1.241	0.60	0.548	-1.686	3.177
Secondary Vocational Education	.294	1.193	0.25	0.805	-2.045	2.633
Higher Professional Education	.856	1.185	0.72	0.470	-1.467	3.179
Bachelor's- / Master's Degree	1.832	1.262	1.45	0.147	-.642	4.306
Observations	156					
LR χ^2 (12)	71.81					
P > χ^2	.000					
Pseudo R^2	.154					
Log likelihood	-196.71					

Note. [a] Dependent variable. [b] SE = standard error. [c] The control condition as base category. [d] Female as base category. [e] 60 – 65 year as base category. [f] Elementary education as base category. ** significant at a significance level of $\alpha = 0.05$. * significant at a significance level of $\alpha = 0.10$.

Table 4. Margins of Factor Perceived Risk on Willingness

Factor Perceived Risk

Willingness[a]	dy/dx	SE[b]	z	P > |z|	[95% Confidence Interval]	
1	**-.255****	.032	-8.06	**0.000**	-.317	-.193
2	**-.056****	.014	-3.87	**0.000**	-.084	-.027
3	-.008	.005	-1.63	0.102	-.018	.002
4	**.056****	.017	3.29	**0.001**	.023	.090
5	**.262****	.027	9.78	**0.000**	.210	.315

Note. [a]Willingness is given on a 5-point Likert scale. [b]SE = standard error. ** significant at a significance level of $\alpha = 0.05$. * significant at a significance level of $\alpha = 0.10$.

Table 5. Variable Statistics for each Treatment.

	Treatment					
	Control		Salient		Self-Affirmative Salient	
Variable[b] (N = 156)	*M*[a]	*SD*[a]	*M*	*SD*	*M*	*SD*
Willingness	*3.245*	*.229*	*3.140*	*.222*	*3.400*	*.206*
Perceived Risk	*2.653*	*.147*	*2.737*	*.136*	*2.76*	*.130*
Perceived Hospital Risk	*2.000*	*.154*	*2.158*	*.119*	*2.200*	*.137*
Compared Risk	*1.878*	*.095*	*1.860*	*.077*	*2.12*	*.097*

Note. [a] M = mean, SD = standard deviation. [b] All variables, except for "compared risk" are measured on a 5-point Likert scale, 1 – "very low" 5 – "very high". "Compared risk" is measured on a 3-point Likert scale, 1 – "lower" 3 – "higher". [c] Filtered variables include only subjects that answered the first folder control question correctly.
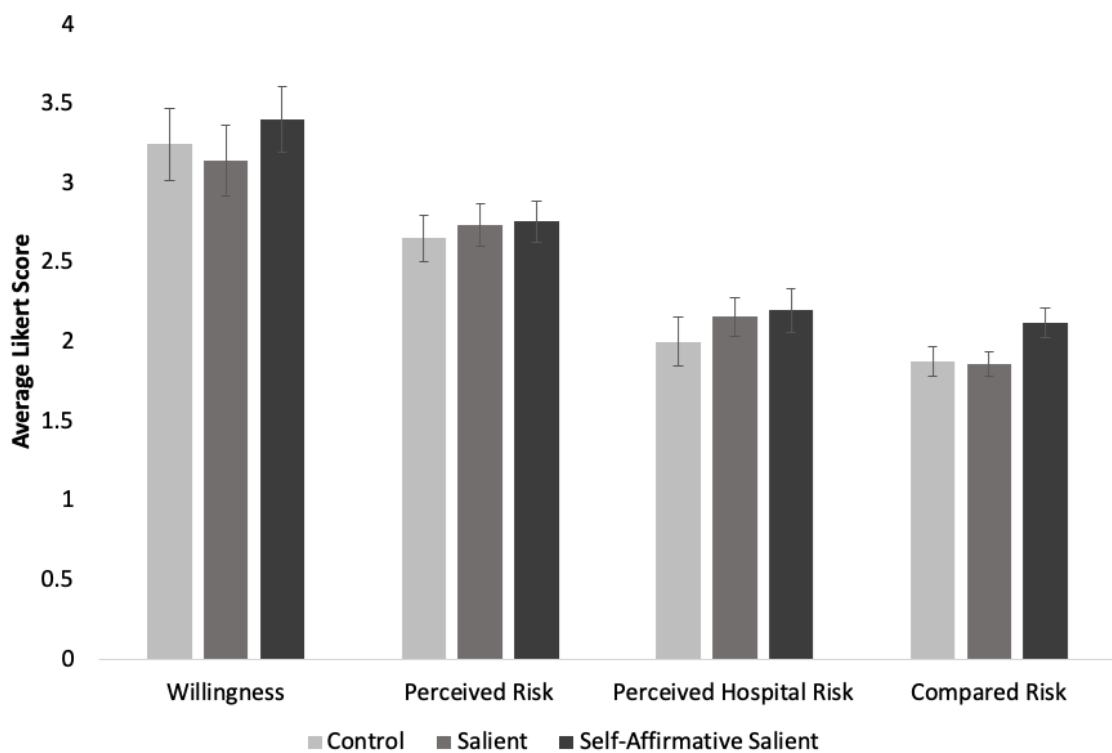
Figure 3. Average Likert Score for Perceived Risk and Willingness per Treatment

Note. Perceived Risk and Perceived Hospital Risk are at a 5-point Likert scale. Compared Risk is at a 5-point Likert scale. Error bars denote one standard error around the mean.

Table 6. Ordinary Least Squares Regression with Control Condition as Base Category (H2 & H6).

Factor Perceived Risk[a]	Coëfficiënt	SE.[b]	t	P>t	[95% Confidence Interval]	
Treatment[c]						
Salient	.122	.154	0.79	0.431	-.183	.427
Self-Affirmative Salient	.212	.160	1.32	0.189	-.105	.528
Gender[d]						
Male	-.153	.153	-1.00	0.318	-.455	.149
Age						
66 – 70 year	.042	.152	0.28	0.780	-.258	.343
71 – 75 year	.009	.179	0.05	0.958	-.344	.362
76 – 80 year	**.506****	.233	2.18	**0.031**	.047	.966
81 – 85 year	.408	.569	0.72	0.475	-.716	1.532
Education level[f]						
Secondary Education	-.439	.581	-0.75	0.452	-1.588	.710
Secondary Vocational Education	-.656	.563	-1.16	0.246	-1.769	.457
Higher Professional Education	-.493	.563	-0.88	0.383	-1.605	.620
Bachelor's- / Master's Degree	-.858	.580	-1.48	0.141	-2.005	.289
Constant	.445	.571	0.78	0.437	-.684	1.574
Observations	156					
F (10, 145)	1.39					
R^2	.088					
Adjusted R^2	.025					
Root MSE	.774					

Note. [a] Dependent variable. [b] SE = standard error. [c] The control condition as base category. [d] Female as base category. [e] 60 – 65 year as base category. [f] Elementary education as base category. ** significant at a significance level of $\alpha = 0.05$. * significant at a significance level of $\alpha = 0.10$.

H3: The willingness to take up the Influenza vaccine is lower for seniors who receive the information folder in which the senior identity is salient compared to seniors who receive the information folder in which the senior identity is not salient.

As expected, the average willingness to take up the Influenza vaccine for the salient group (*M = 3.140, SD = .222*) is lower than for the control group (*M = 3.245, SD = .229*). However, according to a Mann-Whitney U test, the difference in medians was not statistically significant (*z* = .226, *p* = 0.821).

The Ordered Logit Model which has been conducted for hypothesis 1 (table 3) is also useful for hypothesis 3. It shows that subjects in the salient condition, compared to the control condition, have a lower willingness to vaccinate. However, this difference is not significant (*p = .474*).

Above mentioned findings give us reasons to not accept hypothesis 3.

H4: *The perceived risk for the Influenza virus is higher for seniors who are self-affirmed before reading the information folder in which the senior identity is salient (salient senior identity with self-affirmation) compared to seniors who are not self-affirmed before reading the information folder in which the senior identity is salient (salient senior identity without self-affirmation).*

As expected, the average perceived risk for the self-affirmed salient group (*M = 2.76, SD = .130*) is higher than for the salient group (*M = 2.737, SD = .136*). However, according to a Mann-Whitney U test, the difference in medians was not statistically significant (*z = -.216, p = 0.829*). As expected, the average perceived hospital risk for the self-affirmed salient group (*M = 2.2, SD = .137*) is higher than for the salient group (*M = 2.158, SD = .119*). However, according to a Mann-Whitney U test, the difference in medians was not statistically significant (*z = -.122, p = 0.903*). As expected, the average compared risk for the self-affirmed salient group (*M = 2.120, SD = 0.097*) is higher than for the salient group (*M = 1.860, SD = .077*). According to a Mann-Whitney U test, the difference in medians was statistically significant at a level of $\alpha = 0.05$ (*z = -2.074, p = 0.038*). As expected, the average factor of perceived risk for the self-affirmed salient group is higher than for the salient group. However, according to a Mann-Whitney U test, the difference in medians was not statistically significant (*z = -.707, p = .480*).

When running an Ordinary Least Squares Regression Analysis with the factor of perceived risk as the dependent variable (table 7), being in the self-affirmed salient condition compared to the salient condition has a positive influence on the perceived risk (*β = .090*). However, this is not statistically significant (*p = .557*).

Above mentioned findings are not in line with hypothesis 4. However, the compared risk is significantly higher for seniors in the salient condition with self-affirmation compared to seniors in the salient condition without self-affirmation, which is in line with hypothesis 4.

Table 7. Ordinary Least Squares Regression with Salient Condition as Base Category (H4).

Factor Perceived Risk[a]	Coëfficiënt	SE.[b]	t	P>t	[95% Confidence Interval]	
Treatment[c]						
Control	-.122	.154	-0.79	0.431	-.427	.183
Self-Affirmative Salient	.090	.153	0.59	0.557	-.212	.392
Gender[d]						
Male	-.153	.153	-1.00	0.318	-.455	.149
Age						
66 – 70 year	.043	.152	0.28	0.780	-.258	.343
71 – 75 year	.009	.179	0.05	0.958	-.344	.362
76 – 80 year	**.506****	.233	2.18	**0.031**	.047	.966
81 – 85 year	.408	.569	0.72	0.475	-.7165	1.532
Education level[f]						
Secondary Education	-.439	.581	-0.75	0.452	-1.588	.710
Secondary Vocational Education	-.656	.563	-1.16	0.246	-1.769	.457
Higher Professional Education	-.493	.563	-0.88	0.383	-1.605	.620
Bachelor's- / Master's Degree	-.858	.580	-1.48	0.141	-2.005	.289
Constant	.567	.560	1.01	0.313	-.539	1.673
Observations	156					
F (10, 145)	1.36					
R²	.094					
Adjusted R²	.025					
Root MSE	.774					

Note. [a] Dependent variable. [b] SE = standard error. [c] The salient condition as base category. [d] Female as base category. [e] 60 – 65 year as base category. [f] Elementary education as base category. ** significant at a significance level of $\alpha = 0.05$. * significant at a significance level of $\alpha = 0.10$.

H5: *The willingness to take up the Influenza vaccine is higher for seniors who are self-affirmed before reading the information folder in which the senior identity is salient (salient senior identity with self-affirmation) compared to seniors who are not self-affirmed before reading the information folder in which the senior identity is salient (salient senior identity without self-affirmation).*

As expected, the average willingness to take up the influenza vaccine for the self-affirmed salient group (*M = 3.40, SD =.206*) is higher than for the salient group (*M = 3.140, SD = .222*). However, according to a Mann-Whitney U test, the difference in medians was not statistically significant (*z = -.523, p = 0.601*).

In order to test hypothesis 5, an Ordered Logit Model has been conducted (table 8). The likelihood ratio shows that the model as a whole is statistically significant at a level of $\alpha = 0.05$ [$\chi^2(12, N = 156) = 71.81, p = .000$]. It shows that subjects in the self-affirmed salient condition,

compared to the salient condition, have a higher willingness. However, this difference was not significant ($p = .918$).

Above mentioned findings are not in line with hypothesis 5.

Table 8. Ordered Logistic Regression with Salient Condition as Base Category (H5).

Willingness[a]	Coëfficiënt	SE[b]	z	P > |z|	[95% Confidence Interval]	
Factor Perceived Risk	**1.815****	.262	6.94	**0.000**	1.302	2.328
Treatment[c]						
Control	.272	.380	0.72	0.474	-.473	1.017
Self-Affirmative Salient	.039	.379	0.10	0.918	-.704	.782
Gender[d]						
Male	.010	.372	0.03	0.978	-.719	.739
Age[e]						
66 – 70 year	-.053	.384	-0.14	0.891	-.805	.700
71 – 75 year	**.865****	.431	2.01	**0.045**	.021	1.709
76 – 80 year	.307	.597	0.51	0.607	-.863	1.476
81 – 85 year	.278	1.357	0.20	0.838	-2.382	2.937
Education Level[f]						
Secondary Education	.745	1.241	0.60	0.548	-1.686	3.177
Secondary Vocational Education	.294	1.193	0.25	0.805	-2.045	2.633
Higher Professional Education	.856	1.185	0.72	0.470	-1.467	3.179
Bachelor's- / Master's Degree	1.832	1.262	1.45	0.147	-.642	4.306
Observations	156					
LR χ^2 (12)	71.81					
P > χ^2	.000					
Pseudo R^2	.154					
Log likelihood	-196.71					

Note. [a] Dependent variable. [b] SE = standard error. [c] The salient condition as base category. [d] Female as base category. [e] 60 – 65 year as base category. [f] Elementary education as base category. ** significant at a significance level of $\alpha = 0.05$. * significant at a significance level of $\alpha = 0.10$.

H6: *There is no significant difference in the perceived risk for the Influenza virus between seniors that receive an information folder in which the senior identity is not salient (control) and self-affirmed seniors that receive an information folder in which the senior identity is salient (salient senior identity with self-affirmation).*

The average perceived risk is for the control group ($M = 2.653, SD = .147$) lower than for the self-affirmed salient group ($M = 2.760, SD = .130$). As expected, according to a Mann-Whitney U test, the difference in medians was not statistically significant ($z = -.514, p = 0.607$). The average perceived hospital risk is for the control group ($M = 2.000, SD = .154$) lower than

for the self-affirmed salient group ($M = 2.200$, $SD = .137$). As expected, according to a Mann-Whitney U test, the difference in medians was not statistically significant ($z = -1.221$, $p = 0.222$). The average compared risk is for the control group ($M = 1.878$, $SD = .095$) lower than for the self-affirmed salient group ($M = 2.120$, $SD = .097$). Differently than expected, according to a Mann-Whitney U test, the difference in medians was statistically significant at a level of $\alpha = 0.10$ ($z = -1.760$, $p = 0.078$). The average factor of perceived risk for the self-affirmed salient group is higher than for the control group. As expected, according to a Mann-Whitney U test, the difference in medians was not statistically significant ($z = -1.440$, $p = .150$).

When running a regression analysis with the factor of perceived risk as the dependent variable (table 6), being in the self-affirmed salient condition compared to the control condition has a positive influence on the perceived risk ($\beta = .212$). As expected, this difference was not statistically significant ($p = .189$).

Above mentioned findings are in line with hypothesis 6.

H7: *There is no significant difference in the willingness to take up the influenza vaccine between seniors that receive an information folder in which the senior identity is not salient (control) and self-affirmed seniors that receive an information folder in which the senior identity is salient (salient senior identity with self-affirmation).*

The average willingness to take up the Influenza vaccine is for the control group ($M = 3.245$, $SD = .229$) lower than for the self-affirmed salient group ($M = 3.400$, $SD = .206$). As expected, according to a Mann-Whitney U test, the difference in medians was not statistically significant ($z = -.307$, $p = 0.759$).

The Ordered Logit Model which has been conducted for hypothesis 1 is also useful for hypothesis 7 (table 3). It shows that subjects in the self-affirmed salient condition, compared to the control condition, have a lower willingness to take up the Influenza vaccine. However, as expected, this difference is not statistically significant ($p = .556$).

Above mentioned findings are in line with hypothesis 7.

Mediation of Perceived Risk

In order to test whether there is a mediation effect for the variable perceived risk, three different regressions should be conducted (Baron and Kenny, 1986). Firstly, the effect of the independent variable 'treatment' on the dependent variable 'willingness' should be tested. Secondly, the effect of the independent variable 'treatment' on the mediating variable 'perceived risk' should be tested. Thirdly, the combined effect of the independent variable

'treatment' and the mediating variable 'perceived risk' should be tested on the dependent variable 'willingness'. According to the Ordered Logistic Regression (table 3), there is no total effect. In other words, there is no difference among the treatment groups in the willingness to take up the Influenza vaccine. Moreover, according to the Ordinary Least Squares Regression Analysis (table 6), there is no difference among the treatments in the perceived risk for the Influenza virus. Because there is no total effect, it would be unusable to test whether there is a mediating effect for perceived risk on the total effect.

4.3 Demographical Effects

The Ordered Logit Model (table 3) shows that being aged between 71 and 75 year, compared to being aged between 60 and 65 year, has a statistically significant positive influence on the willingness to take up the Influenza vaccine at a level of $\alpha = 0.05$ ($p = 0.045$). Moreover, the Ordered Logit Model shows that achieving a bachelor's- or master's degree, compared to only elementary school, has a positive influence on the willingness to take up the Influenza vaccine. However, this is not statistically significant ($p = 0.147$).

The Ordinary Least Squares Regression Analysis (table 6) shows that being aged between 76 and 80 year, compared to being aged between 60 and 65 year, has a statistically significant positive influence on the perceived risk of the Influenza virus at a level of $\alpha = 0.05$ ($\beta = .506$, $p = 0.031$). Moreover, the Ordinary Least Squares Regression Analysis shows that achieving a bachelor's- or master's degree, compared to only elementary school, does not have a statistically significant negative influence on the perceived risk of the Influenza virus ($\beta = -.858$, $p = 0.141$).

There has been no significant influence found of the gender demographic on the perceived risk of the Influenza virus, nor on the willingness to vaccinate against the Influenza virus.

Moreover, because the information folder with the salient senior identity depicts a woman receiving the Influenza vaccine, all hypotheses have also been tested with only female subjects, to see whether this gives significant results. However, there were no new significant differences between the treatments in perceived risk and willingness.

5. Conclusion

5.1 Discussion

This paper sought a way to increase the number of seniors that take up the Influenza vaccine. To find a method which could be used by policymakers, a quantitative research has been done with the aid of an online survey in the Netherlands, to find answers to the research question:

"Will the senior's willingness to receive the Influenza vaccine decrease when the information folder about the Influenza- virus and vaccine does name the senior age identity saliently compared to an information folder about the Influenza- virus that does not mention the senior age identity. Moreover, will this difference in the willingness to receive the Influenza vaccine decrease when the information folder that does name the senior age identity saliently is accompanied with self-affirmative questions."

The perceived risk of the Influenza virus has a significant positive influence on the willingness to take up the Influenza vaccine (H1). In other words, if policymakers want to increase the number of people taking up the Influenza vaccine, a solution could be to increase the perceived risk.

Differently than expected, the perceived risk and the willingness to vaccinate for the Influenza virus is not significantly lower for seniors who receive the information folder in which the senior identity is salient compared to seniors who receive the information folder in which the senior identity is not salient (H2 and H3). However, in the study of Puntoni, Sweldens, and Tavassoli (2011), the perceived risk for breast cancer was higher for women who received an information folder in which the feminine identity was salient compared to women who received a gender-neutral information folder. There could be different explanations why there was no significant difference in this study. For example, it could be that the senior identity in the Influenza information folder was not salient enough. Another explanation could be that the subjects did not jump into the defence mode, because being senior did not feel as their social identity, or because jumping in the defence mode may not happen at all ages.

The perceived risk for the Influenza virus is not significantly higher for seniors who are self-affirmed before reading the information folder in which the senior identity is salient compared to seniors who are not self-affirmed before reading the information folder in which the senior identity is salient (H4). However, when taking the compared risk solely, there has been found a significant difference in the perceived risk between seniors in the salient condition

without self-affirmation and seniors in the salient condition with self-affirmation. Namely, the perceived risk of seniors in the salient condition with self-affirmation is significantly higher than the perceived risk of seniors in the salient condition without self-affirmation, which is in line with hypothesis 4. This finding means that self-affirmation could be a helpful method for increasing the perceived risk for the Influenza virus, when an information folder is used wherein the senior age identity is salient.

Differently than expected, the willingness to take up the Influenza vaccine is not significantly higher for seniors who are self-affirmed before reading the information folder in which the senior identity is salient compared to seniors who are not self-affirmed before reading the information folder in which the senior identity is salient (H5). A plausible reason for hypothesis 4 and 5 to not be significant could be that the self-affirmation did not work well enough. Moreover, all hypotheses, including hypotheses 5 have also been tested with only subjects that answered the first control question about the information folder correctly. In none of the hypotheses did the treatment effect become significant because of this filter. This shows that the insignificant effects were not due to subjects that did not read the information folder good enough.

As expected, there have not been found significant differences in the perceived risk for the Influenza virus between seniors that received an information folder in which the senior identity is not salient and self-affirmed seniors that received an information folder in which the senior identity is salient (H6). When taking the compared risk solely, the perceived risk was higher for seniors in the salient condition with self-affirmation than for seniors in the control condition. Moreover, the factor of perceived risk was also higher for seniors in the salient condition with self-affirmation than for seniors in the control condition. Although this difference was not statistically significant ($p = .15$), it could be possible that the effect becomes significant with more subjects. Findings of hypothesis 6 could be interesting and desirable for Dutch policy makers, since they aim to increase the number of people in the high-risk group to vaccinate against the Influenza virus (Blokhuis, 2019). The significant difference shows that self-affirmation could increase the perceived risk, which is desirable since perceived risk has a significant positive influence on the willingness to vaccinate against the Influenza virus.

As expected, there is no significant difference found in the willingness to take up the influenza vaccine between seniors in the control condition and seniors in the salient condition with self-affirmation (H7). Hypothesis 6 and 7 show that self-affirmation does not bring undesirable, rather desirable, effects in the perceived risk and the willingness to vaccinate for

the Influenza virus, because subjects' perceived risk and willingness does not decrease. Hypothesis 6 even shows that self-affirmation could bring desirable effects.

All hypotheses have also been tested with another factor for perceived risk. This factor has been made after the variables perceived risk and perceived hospital risk were transformed to a 3-point Likert scale. This has been done because the variable compared risk is also on a 3-point Likert scale, and gives in contrast to perceived risk and perceived hospital risk some significant results. This new factor did not give different significant results than the factor which has been used without transforming the Likert scale.

An age effect which has been found is that being older (71 – 75 year) compared to younger (60 – 65 year) increases the willingness to take up the Influenza vaccine. However, this effect disappears when being in another age category than 71 – 75 year. Another age effect which has been found is that being older (76 – 80 year) compared to younger (60 – 65 year) increases the perceived risk for the Influenza virus. However, this effect disappears when being in another age category than 76 – 80 year. A plausible explanation for the disappearance of the effect in the age category 81 – 85 year is that this age category only consists of two subjects.

5.2 Limitations and Future Research

This study has several limitations. Firstly, due to the lockdown in the Netherlands for SARS-CoV-2, there was no possibility to acquire subjects offline, for example at retirement homes. For this reason, the survey was spread online. Although the survey was spread among both males and females of all age- and education categories, the proportions were not evenly distributed. For example, 75% of the subjects were female. The achieved education level was left skewed, which means that relatively more subjects with a higher education level participated. If the survey would also have been distributed offline, these unevenly proportions within the demographics could have been reduced to a more representative distribution for the Dutch population. A suggestion for future research would be to obtain subjects in a more representative distribution for the Dutch population among the different demographics. This could increase the external validity (Baron & Kenny, 1986).

Secondly, although the sample size was large enough for the Mann-Whitney U tests according to the G*power calculations, a larger sample size would have given the possibility to filter for subjects that answered the control questions about the folder correctly, while remaining a sample size which is large enough to find significant results. Therefore, a recommendation for future research would be to get a larger sample size, in order to find possibly more significant results.

Thirdly, there is a possibility that subjects answered questions about the perceived risk and willingness differently due to SARS-CoV-2, which was very relevant during the deduction of the online survey of this study. While the survey was administered, SARS-CoV-2 was a hot topic on the news, which consequently caused for risk awareness among people for SARS-CoV-2. This risk awareness could have had an impact on the risk awareness for the Influenza virus. For example, it could have increased the perceived risk for the Influenza virus, because people got more afraid of viruses. On the other hand, it could have decreased the perceived risk for the Influenza virus, because people could have perceived the Influenza virus as "harmless" compared to SARS-CoV-2.

Sherman, Nelson and Steele (2000) showed that when a social identity has been made weak through a health message, people within this social identity are less likely to process this health message. Moreover, Puntoni, Sweldens, and Tavassoli (2011) showed that people within this threatened social identity are more likely to process this health message when they are self-affirmed before reading the health message. In this study, 50 percent of the subjects that saw the information folder in which the senior age identity was salient firstly had to answer self-affirmative questions and were obligated to explain their given answers. In this way, subjects were primed into the self-affirmative salient condition. Although the self-affirmation questions in this study consisted of the same questions as in the study of Puntoni, Sweldens, and Tavassoli (2011), there are possibilities that they were not as effective due to the fact that the subjects in this study had the possibility to not explain their given answers. This has been chosen to avoid drop outs. A suggestion for future research would be to obligate subjects to explain their given answers to the self-affirmative questions, to improve the effectiveness of the self-affirmation questions. Another suggestion for future research would be to test if there are also other methods to self-affirm the subjects. For example, it would be convenient for policy makers if they could self-affirm seniors in the information folder or advertisement about the Influenza virus and vaccine itself, instead of with questions beforehand.

Despite the fact that the willingness to vaccinate against the Influenza virus was lower for subjects in the control condition than for subjects in the salient condition, this difference was not statistically significant. A plausible reason for the insignificant result could be that the senior identity in the Influenza information folder was not salient enough. For this reason, a recommendation for future research would be to make an information folder in which the senior age identity is even more saliently. This could be done by depicting an image in which the senior age identity is more salient, and by explaining more obviously that seniors are part of the high-risk group.

A final recommendation for future research would be to study if the effects found are also applicable for other high-risk groups of the Influenza virus than seniors, and for vaccines for other viruses than the Influenza virus. For example, it could be tested if the willingness to vaccinate against SARS-CoV-2 increases when high-risk people are self-affirmed before they receive an information folder about SARS-CoV-2 and its vaccine. As soon as there is a vaccine for SARS-CoV-2, policy makers could use this knowledge to their advantage.

5.3 Implications

5.3.1 Theoretical

The findings of this paper contribute in several ways to existing literature. Previous literature assumed that the perceived risk is a predictor for the willingness to do something with the health message (Sherman, Nelson & Steele, 2000; Puntoni, Sweldens and Tavassoli, 2011). A significant association between perceived risk and willingness has been found in this study.

Moreover, in contrast to previous studies that used gender as a social identity, this study used age as a social identity (Sherman, Nelson & Steele, 2000; Puntoni, Sweldens and Tavassoli, 2011). Although it has not been found that seniors jump into a defence mode when their social identity is threatened, it has been found that seniors have the same perceived risk and willingness when in the health message the senior identity is salient compared to when in the health message the senior identity is not salient. In other words, the defence mechanism does not occur in this study. A possible explanation for this could be that jumping in the defence mechanism does not happen at all ages.

5.3.2 Practical

Although not all hypotheses are accepted, there are still interesting findings for policy makers that want to increase the number of seniors to be vaccinated.

Firstly, since hypothesis one is accepted, we could state that a higher perceived risk for the Influenza virus has a significant positive influence on the willingness to get vaccinated against the Influenza virus. With this knowledge, if policy makers want to increase the number of seniors that are taking up the Influenza vaccine, policy makers should raise the risk awareness about the Influenza virus for seniors. This could be done by sending more information folders and more advertisements about the Influenza virus.

Moreover, there are no significant differences in willingness and perceived risk between the control- and salient treatments, while there are some significant differences in perceived risk between the control- and self-affirmed salient treatments. With this knowledge, a

31

suggestion for policy makers would be that all information folders and advertisements about the Influenza virus and vaccine should make the senior identity salient, and beforehand the seniors should be self-affirmed. The latter should be done to obtain perceived risk for the Influenza virus and willingness to vaccinate against the Influenza virus as high as possible. A way to self-affirm the receivers of the information folder could be as in this study: attaching a survey with self-affirmative questions.

6. References

Alici, D. E., Sayiner, A., & Unal, S. (2017). Barriers to adult immunization and solutions: Personalized approaches. *Human vaccines & immunotherapeutics*, *13*(1), 213-215.

Baeyens, J. P., Lang, P. O., & Michel, J. P. (2009). Willingness to vaccinate and to be vaccinated in adults. *Aging clinical and experimental research*, *21*(3), 244-249.

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

Benjamin, D. J., Choi, J. J., & Strickland, A. J. (2010). Social identity and preferences. *American Economic Review*, *100*(4), 1913-28.

Betsch, C., & Sachse, K. (2013). Debunking vaccination myths: Strong risk negations can increase perceived vaccination risks. *Health Psychology, 32*(2), 146–155.

Blokhuis (2019). Blokhuis: Vaccinatiegraad griep stijgt. Retrieved June 22, 2020, from https://www.rijksoverheid.nl/actueel/nieuws/2019/10/03/blokhuis-vaccinatiegraad griep-stijgt#:~:text=Voor%20het%20eerst%20in%20tien,percentage%20nog%20op%2049%2C9.

Böhmer, M. M., Walter, D., Falkenhorst, G., Müters, S., Krause, G., & Wichmann, O. (2012). Barriers to pandemic influenza vaccination and uptake of seasonal influenza vaccine in the post-pandemic season in Germany. *BMC public health*, *12*(1), 938.

Cramer, P. (2000). Defense mechanisms in psychology today: Further processes for adaptation. *American Psychologist*, *55*(6), 637.

De Zwart, O., Veldhuijzen, I. K., Elam, G., Aro, A. R., Abraham, T., Bishop, G. D., ... & Brug, J. (2009). Perceived threat, risk perception, and efficacy beliefs related to SARS and other (emerging) infectious diseases: results of an international survey. *International journal of behavioral medicine*, *16*(1), 30-40.

Feiten en cijfers, RIVM. (2020, March 4). Retrieved March 10, 2020, from https://www.rivm.nl/griep-griepprik/feiten-en-cijfers

High, K. P. (2009). Overcoming barriers to adult immunization. *The Journal of the American Osteopathic Association*, *109*(6_suppl_2), S25-S28.

Johnson, D. R., Nichol, K. L., & Lipczynski, K. (2008). Barriers to adult immunization. *The American journal of medicine*, *121*(7), S28-S35.

Klein, William M.P. and Peter R. Harris (2009), "Self-Affirmation Enhances Attentional Bias

Toward Threatening Components of a Persuasive Message," *Psychological Science*, 20 (12), 1463–67.

Kroneman, M.W., Verheij, R. (2003). De griepprik in Nederland: motivatie voor deelname en distributiekanalen, *NIVEL*.

Laerd Statistics. (n.d.). Assumptions of the Mann-Whitney U test. Retrieved May 20, 2020, from https://statistics.laerd.com/statistical-guides/mann-whitney-u-test assumptions.php

Laerd Statistics. (n.d.). Linear regression analysis using Stata. Retrieved June 2, 2020, from https://statistics.laerd.com/stata-tutorials/linear-regression-using-stata.php

Laerd Statistics. (n.d.). Ordinal Regression using SPSS Statistics. Retrieved June 2, 2020, from https://statistics.laerd.com/spss-tutorials/ordinal-regression-using-spss-statistics.php

LeBoeuf, R. A., Shafir, E., & Bayuk, J. B. (2010). The conflicting choices of alternating selves. *Organizational behavior and human decision processes*, *111*(1), 48-61.

NOS (2019, October 3). Aantal mensen dat griepprik haalt stijgt licht. Retrieved March 20, 2020, from https://nos.nl/artikel/2304560-aantal-mensen-dat-griepprik-haalt-stijgt-licht.html

Puntoni, S., Sweldens, S., & Tavassoli, N.T. (2011). Gender identity salience and perceived vulnerability to breast cancer. *Journal of Marketing Research, 48*, 413-424.

Reed, M. B., & Aspinwall, L. G. (1998). Self-affirmation reduces biased processing of health risk information. *Motivation and Emotion*, *22*(2), 99-132.

Reukers, D. F. M., van Asten, L., Brandsema, P. S., Dijkstra, F., Donker, G. A., van Gageldonk Lafeber, A. B., ... & Meijer, A. (2019). Annual report Surveillance of influenza and other respiratory infections in the Netherlands: winter 2018/2019.

Schmid, P., Rauber, D., Betsch, C., Lidolt, G., & Denker, M. L. (2017). Barriers of influenza vaccination intention and behavior–a systematic review of influenza vaccine hesitancy, 2005–2016. *PloS one*, *12*(1).

Sherman, D. A. K., Nelson, L. D., & Steele, C. M. (2000). Do Messages about Health Risks Threaten the Self? Increasing the Acceptance of Threatening Health Messages Via Self-Affirmation. Personality and Social Psychology Bulletin, 26(9), 1046–1058.

Sintes, X., Nebot, M., Izquierdo, C., Ruiz, L., Dominguez, A., Bayas, J. M., ... & Working Group for the Study of Prevention of CAP in the Elderly. (2011). Factors associated with pneumococcal and influenza vaccination in hospitalized people aged$\geqslant$ 65 years. *Epidemiology & Infection*, *139*(5), 666-673.

Tajfel & Turner (1979) - Social Identity Theory

Taylor, Shelley E. and Jonathan D. Brown (1988), "Illusion and Well-Being: A Social Psychological Perspective on Mental- Health," *Psychological Bulletin*, 103 (March), 193–210.

Turner, J. C., & Oakes, P. J. (1986). The significance of the social identity concept for social psychology with reference to individualism, interactionism and social influence. *British Journal of Social Psychology*, *25*(3), 237-252.

UCLA: Statistical Consulting Group (n.d.). Ordered Logistic Regression | STATA Data Analysis Examples. Retrieved June 25, 2020, from https://stats.idre.ucla.edu/stata/dae/ordered-logistic-regression/

7. Appendices

Appendix A – Invitation, Information Folder and Poster Influenza Virus 2018/2019

Uitnodiging griepprik

Naam patiënt
Adres patiënt
PC en woonplaats patiënt
Datum,
Geachte heer/mevrouw,

Met deze brief nodig ik u uit voor de jaarlijkse griepprik. De griepprik krijgt u gratis.
U kunt op deze datum en tijd de griepprik komen halen:

Datum: ....
Tijd: ....
Plaats: ....

Let op:
• Neem deze brief mee naar de afspraak.
• U krijgt de griepprik in uw bovenarm. Draag daarom kleren waarbij u gemakkelijk uw bovenarm bloot kunt maken.

Kunt u niet op deze datum?
Bel de praktijkassistente om een nieuwe afspraak te maken.

Wat doet de griepprik?
De griepprik is de beste bescherming tegen griep. De griepprik zorgt ervoor dat uw lichaam afweerstoffen tegen griepvirussen maakt. Twee weken na de griepprik heeft u genoeg afweerstoffen.

Wanneer neemt u contact op met de praktijk?
• Als u koorts heeft op de dag dat u de prik krijgt.
• Als eerder gebleken is dat u allergisch bent voor het eiwit van kippeneieren of voor antibiotica (neomycine of gentamicine). Dit komt weinig voor.

Zijn er bijwerkingen?
• Uw arm kan na de griepprik een dag pijn doen. De prikplek kan rood en dik zijn.
• U kunt zich na de griepprik een paar dagen minder goed voelen. Dit is geen griep. Uw lichaam bouwt juist weerstand op tegen griep.

Wilt u meer weten?
• Lees de informatie op de achterkant van deze uitnodiging.
• www.rivm.nl/griepprik
• www.thuisarts.nl/griep
Of neem contact op met de huisartsenpraktijk.
Uw huisarts

Griepprik 2019

Griep kan ernstige gevolgen hebben. Vooral bij mensen met bepaalde medische aandoeningen en bij mensen van 60 jaar en ouder. De griepprik is de beste manier om u tegen griep te beschermen. Ook als u zich nu gezond voelt.

Griep en de mogelijke gevolgen

Griep is erger dan verkoudheid

Griep is heel besmettelijk

Jaarlijks krijgt 1 op 10 mensen griep

Elk jaar sterven 2.700 mensen door griep

Door griep kunt u **long-ontsteking** of hart-problemen krijgen.

Als u een **ziekte** heeft (bv. diabetes), kan deze erger worden.

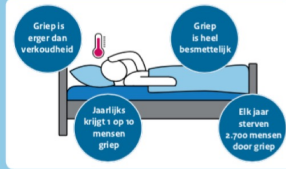Uw **gezondheid** kan ook na de griep minder goed blijven.

De griepprik beschermt

✔ De griepprik is de **beste bescherming** tegen de ernstige gevolgen van griep.

✔ U krijgt **geen griep** van de griepprik.

✔ U beschermt met de griepprik ook **anderen**.

40% Door de griepprik heeft u ongeveer 40% **minder kans** op griep.

Als u toch griep krijgt, wordt u vaak **minder ernstig** ziek.

De griepprik helpt u zo **gezond** en **actief** mogelijk te blijven.

Elk jaar een nieuwe griepprik

Er zijn **verschillende soorten** griepvirussen.

Deze griepvirussen **veranderen** steeds.

Daarom wordt elk jaar een **nieuwe griepprik** gemaakt.

Soms verandert het virus of overheerst een ander virus. De griepprik werkt dan minder goed, maar **beschermt nog steeds**.

Information is available in English at:
Bu bilgiyi Türkçe olarak şu internet sitesinde okuyabilirsiniz:
يمكنكم قراءة هذه المعلومات باللغة العربية على الموقع
www.rivm.nl/griepprik

Meer informatie:
www.rivm.nl/griepprik
www.thuisarts.nl/griep

Rijksinstituut voor Volksgezondheid en Milieu
Ministerie van Volksgezondheid, Welzijn en Sport

nhg
Nederlands Huisartsen Genootschap

Rijksinstituut voor Volksgezondheid
en Milieu
*Ministerie van Volksgezondheid,
Welzijn en Sport*

Griepprik 2019

Heeft u diabetes, een hart-, long- of nierziekte of een verminderde weerstand?
Of bent u ouder dan 60 jaar? Griep kan dan voor u ernstige gevolgen hebben.

De griepprik is de beste bescherming tegen griep.
Uw (huis)arts nodigt u uit voor de gratis griepprik.

www.rivm.nl/griepprik

Appendix B – Survey in Dutch

Part 1 – Introduction & Demographics

Beste heer, mevrouw,

Ik wil u hartelijk danken voor uw deelname aan dit onderzoek. Door deel te nemen aan deze survey helpt u mij mijn scriptie af te ronden voor de master 'Behavioural Economics'.

Het onderzoek zal maximaal 7 minuten duren. Om het succes van dit onderzoek te waarborgen wordt u vriendelijk verzocht de vragen en bijgevoegde informatie aandachtig te bestuderen. Met uw gegevens zal zorgvuldig worden omgegaan en de resultaten worden geheel anoniem verwerkt.

Mocht u vragen of opmerkingen hebben, neem dan contact met mij op via onderstaand mailadres:
532384vg@student.eur.nl

Nogmaals hartelijk dank voor uw deelname aan dit onderzoek.

Met vriendelijke groet,

Vera Glas

Bent u 60 jaar of ouder?

o Ja
o Nee (*if 'no' survey ends*)

Wat is uw geslacht?

o Man
o Vrouw

Tot welke leeftijdscategorie behoort u?

o 60 – 65 jaar
o 66 – 70 jaar
o 71 – 75 jaar
o 75 – 80 jaar
o 80 – 85 jaar
o 85 jaar of ouder

Wat is uw hoogst genoten opleiding?

o Basisonderwijs
o Voortgezet onderwijs
o Middelbaar beroepsonderwijs
o Hoger beroepsonderwijs
o Wetenschappelijk onderwijs

o Ander, namelijk …	

Part 2 – Self-Affirmation	
Self-Affirmation	**Control**
In dit onderdeel van het onderzoek wordt u een aantal vragen gesteld over goede daden die u heeft verricht. Indien uw antwoord op een vraag 'ja' is, zou u dan in één zin een voorbeeld kunnen noemen? Zoals eerder is vermeld worden alle resultaten anoniem verwerkt.	*In dit onderdeel van het onderzoek wordt u naar een aantal meningen gevraagd. Zou u daarnaast in één zin uw mening willen onderbouwen waarom u 'waar' of 'niet waar' heeft geantwoord? Zoals eerder is vermeld worden alle resultaten anoniem verwerkt.*
Heeft u ooit ten koste van uw eigen geluk iemand geholpen? o Ja, namelijk… o Nee	Ik vind chocolade de lekkerste smaak ijs o Waar, want… o Niet waar, want…
Heeft u ooit iemand die u pijn heeft gedaan vergeven? o Ja, namelijk… o Nee	Ik denk dat naaien een belangrijke vaardigheid is om te bezitten o Waar, want… o Niet waar, want…
Heeft u ooit manieren gevonden om iemand te helpen die minder gelukkig is dan uzelf? o Ja, namelijk… o Nee	Ik denk dat het goed is om regelmatig de krant te lezen o Waar, want… o Niet waar, want…

Part 3 – Senior Identity Salience in Information Folder	
In dit deel van het onderzoek krijgt u een informatiefolder te zien over de griepprik. Het is belangrijk dat u deze folder aandachtig doorneemt. Er zullen namelijk vragen over gesteld worden.	
Salient Senior Identity	**Control**

Control question

Hoeveel procent minder kans heeft u op de griep door de griepprik?

- o 20%
- o 40%
- o 60%

Van de griepprik kunt u niet ziek worden

- o Waar
- o Niet waar

Part 4 - Perceived risk of the Influenza virus and willingness to take up the Influenza vaccine

Hoe groot schat u de kans in dat u tijdens griepseizoen 2020/2021 de griep krijgt indien u zich niet laat inenten voor de griep?

- o Heel klein
- o Klein
- o Neutraal
- o Groot
- o Heel Groot

Hoe groot schat u de kans in dat u tijdens griepseizoen 2020/2021 door de griep in het ziekenhuis komt te liggen indien u zich niet laat inenten voor de griep?

- o Heel klein
- o Klein
- o Neutraal

o Groot
o Heel Groot

Vul in: Ik loop vergeleken met de rest van de Nederlandse bevolking ... risico's voor de griep.

o Minder
o Even veel
o Meer

Wat is uw bereidheid om de griepprik te nemen voor het griepseizoen 2020/2021?

o Heel klein
o Klein
o Neutraal
o Groot
o Heel Groot

Part 5 – End Survey

Nogmaals hartelijk dank voor uw deelname aan dit onderzoek. Mocht u nog vragen of opmerkingen hebben, neem dan contact met mij op via 532384vg@student.eur.nl

Appendix C – Survey in English

Part 1 – Introduction & Demographics

Dear sir, Madam,

I would like to thank you for your participation in this study. By participating in this survey, you help me to complete my thesis for the master "Behavioural Economics".

The examination will take up to 7 minutes. To ensure the success of this study, please read the questions and attached information carefully. Your data will be handled with care and the results will be processed completely anonymously.

If you have any questions or comments, please contact me at the address below:
532384vg@student.eur.nl

Thank you again for participating in this study.

Sincerely,

Vera Glas

Are you at least 60 years old?

o   Yes
o   No (*if 'no' survey ends*)

What is your gender?

o   Male
o   Female

Which age category do you belong to?

o   60 – 65 years
o   66 – 70 years
o   71 – 75 years
o   75 – 80 years
o   80 – 85 years
o   85 years or older

What is your highest education level?

o   Primary education
o   Secondary Education
o   Secondary Vocational Education
o   Higher Professional Education
o   Bachelor's- / Master's Degree
o   Different, namely …

Part 2 – Self-Affirmation	
Self-Affirmation	**Control**
In this part of the survey, you will be asked a number of questions about good deeds you have done. If your answer to a question is "yes", could you give an example in one sentence? As mentioned earlier, all results are processed anonymously. Have you ever tried to help a friend even at the expense of your own happiness? ○ Yes, namely… ○ No Have you ever forgiven another person when they have hurt you? ○ Yes, namely… ○ No Have you ever found ways to help another person who is less fortunate than yourself? ○ Yes, namely… ○ No	*In this part of the study you will be asked for a number of opinions. Would you also like to explain in one sentence why you answered "true" or "false"? As mentioned earlier, all results are processed anonymously.* I think chocolate is the best flavour ice cream ○ True, because… ○ False, because… I think sewing is an important skill to own ○ True, because… ○ False, because… I think it is good to read the newspaper regularly ○ True, because… ○ False, because…
Part 3 – Senior Identity Salience in Information Folder	
In this part of the survey you will see an information folder about the Influenza- virus and vaccination. It is important that you read this folder carefully. Namely, questions will be asked about it.	
Salient Senior Identity	**Control**

Control question

How many percent decreases the chance of getting the Influenza virus after taking up the Influenza vaccine?

o   20%
o   40%
o   60%

You can not get sick because of the Influenza vaccine

o   Waar
o   Niet waar

Part 4 - Perceived risk of the Influenza virus and willingness to take up the Influenza vaccine

How do you estimate the chance that you will get the Influenza virus during the 2020/2021 flu season if you do not get vaccinated for the Influenza virus?

o   Very small
o   Small
o   Neutral
o   Large
o   Very large

How do you estimate the chance that you will be hospitalized during the 2020/2021 flu season if you do not get vaccinated for the Influenza virus?

o   Very small
o   Small

o Neutral
o Large
o Very large

Fill in: Compared to the Dutch population I have … risks for the Influenza virus.

o Less
o As much
o More

What is your willingness to take up the Influenza vaccine for the 2020/2021 flu season?

o Very small
o Small
o Neutral
o Large
o Very large

Part 5 – End Survey
Thank you again for participating in this study. If you have any questions or comments, please contact me at 532384vg@student.eur.nl

Griepprik 2020

De griep kan ernstige gevolgen hebben bij mensen van **60 jaar en ouder**. De griepprik is de beste bescherming tegen de griep. Bij uw (huis)arts kunt u een gratis griepprik ophalen.

Griep en de mogelijke gevolgen

Griep is erger dan verkoudheid

Griep is heel besmettelijk

Jaarlijks krijgt 1 op 10 mensen griep

Elk jaar sterven 2.700 mensen door griep

Door griep kunt u **long-ontsteking** of hart-problemen krijgen.

Als u een **ziekte** heeft (bv. diabetes), kan deze erger worden.

Uw **gezondheid** kan ook na de griep minder goed blijven.

De griepprik beschermt

✔ De griepprik is de **beste bescherming** tegen de ernstige gevolgen van griep.

✔ U krijgt **geen griep** van de griepprik.

✔ U beschermt met de griepprik ook **anderen**.

40% Door de griepprik heeft u ongeveer 40% **minder kans** op griep.

Als u toch griep krijgt, wordt u vaak **minder ernstig** ziek.

De griepprik helpt u zo **gezond** en **actief** mogelijk te blijven.

Elk jaar een nieuwe griepprik

Er zijn **verschillende soorten** griepvirussen.

Deze griepvirussen **veranderen** steeds.

Daarom wordt elk jaar een **nieuwe griepprik** gemaakt.

Soms verandert het virus of overheerst een ander virus. De griepprik werkt dan minder goed, maar **beschermt nog steeds**.

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