

HPV vaccination for males



An explorative qualitative research about the normative arguments and attitudes of parents and young adults on the HPV vaccine for males.

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This MSc thesis research has been conducted by Jacintha Merts,
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Preface

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Dear reader,

This thesis is written as part of my graduation for the master specialisation Health and Society at the University of Wageningen. In September 2019 I spent a month looking for a topic to catch my interest. Fortunately, in October, the topic of HPV vaccination for males came up as part of a PhD dissertation on vaccination for the sake of others. Extensive literature research was alternated with meetings with my supervisor and people involved with the PhD dissertation. Personally, I enjoyed being involved in a bigger project than just my research.

The process of writing a thesis has taught me among other things, to get words on paper, to develop a routine and to keep my motivation near, by visualizing the end result. More importantly, I attended focus groups and I got to see how a moderator leads a focus group without giving away too much and by stimulating participants to debate with each other. It was interesting to be a part of different discussions. After that, the coding of the transcriptions of the focus groups started. During this period, I learned a lot about creating code schemes, deductively and inductively coding and eventually writing results and analysing them.

It goes without saying that I could not have conducted this research all by myself. Therefore, I would like to thank all the people who were involved and who helped me. To start with my supervisor Bob Mulder. Thank you for your trust, understanding, support, constructive feedback and thank you for moderating the focus groups and helping me find direction when I needed it. Secondly, I want to thank the PhD candidate Steven Kraaijeveld and his supervisor Marcel Verweij for trusting me with this part of the project and for being involved with decision making. I would also like to thank the participants of the focus groups for their participation and for sharing their interesting insights. Finally, a thank you to my friends and family for their never ending support, kind words, coffee and lunch breaks, wisdom and endless motivation spreading.

I hope you enjoy reading this thesis!

Jacintha Merts

Abstract

Background. The human papillomavirus [HPV] is a sexually transmitted virus and is worldwide a common cause for cervical cancer. Since 2009, the HPV vaccine for female young adults has been included in the national immunisation programme. This is called direct vaccination, because the recipient is being protected. From 2021, male young adults will also be offered to take the HPV vaccine. This is called indirect vaccination, because they would get vaccinated against HPV mostly to protect their sexual partner. The decision for males whether to get the HPV vaccine or not, depends on several factors such as altruism. The aim of this research is to identify the normative arguments and attitudes of parents and young adults towards the HPV vaccine for male young adults.

Methodology. Three focus groups took place, one of which was with seven rural parents, one with nine urban parents and one focus group was online with six young adults. The participants discussed among other things about altruism, vaccination, HPV, the HPV vaccine and communication. An explorative literature research led to information on HPV, vaccine hesitancy and altruism. This information was used for creating a topic list as the basis for the focus groups discussions.

Results. Among the young adults, a clear link could be seen between altruistic behaviour and the willingness to get vaccinated for the sake of others. In all three focus groups there was a need for knowledge on the risk of getting infected with HPV, the risk of spreading HPV, its impact, as well as the effectiveness of the vaccine and its potential short-term and long-term negative side effects. Current attitudes towards the HPV vaccine for males differ per individual, but attitudes depend on various factors like experiences with vaccination, culture, autonomy and altruism. Self-protection is initially the most important reason to get vaccinated against HPV. However, people are more willing to get vaccinated in order to protect someone else if their need for information is fulfilled.

Discussion. This research shows that improvements on transparent, understandable and accessible information about the HPV vaccine for males and females and improved communication may stimulate uptake. Therefore, practical recommendations for this research include the improvement of information and communication on HPV and the vaccine, the information must be made suitable for males and females and the information must be neutral, transparent, accessible and understandable. Recommendations for further research include a different variation in the composition of the focus groups. Also, after the HPV vaccination for males has been added to the national immunisation programme, data on the effectiveness of the vaccine and the prevalence and incidence of HPV must be collected. A discussed limitation is that an online focus group has an advantage with regard to giving participants the time to respond adequately, but the lack of social interaction might influence the rapidness and sharpness of a discussion. Compared to the literature, not all aspects of the literature on vaccine hesitancy turned out to be relevant for HPV vaccine hesitancy.

Conclusion. More information is needed in order to make an appropriate decision on getting male and female young adults vaccinated against HPV. The need for knowledge can be fulfilled with transparent, understandable, accessible information.

Key words. HPV, HPV vaccination, HPV vaccine, vaccine hesitancy, altruism, parents, young adults, male

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Introduction

The World Health Organization [WHO] (2018) defines immunization as a process in which a person is vaccinated and is therefore made resistant or immune for that specific infectious disease. Through vaccination, one's body is stimulated to make the immune system fight against that infection. The WHO is in favour of immunization to protect people from vaccine preventable diseases. Additionally, the WHO states an estimated 2 to 3 million avoided deaths per year, due to preventive vaccination. Advantages on preventive vaccination include the fact that it is a cost-effective health investment and that strategies exist to make vaccination accessible for vulnerable populations and populations that are hard to get in touch with. Lastly, according to the WHO, no extensive lifestyle change is needed to make use of vaccinations (World Health Organization, 2018).

Multiple studies confirm the findings of the WHO with arguments in favour of the health benefits of vaccinations. For example, Hinshaw et al. (2013) state that many safety studies regarding vaccinations have been done by the Institute of Medicine and no evidence to be concerned about vaccine safety has been found. Additionally, this study concludes that receiving vaccinations is not damaging and that preventable vaccination does decrease the risk of certain diseases and infections. Additionally, Mendel-Van Alstyne, Nowak, and Aikin (2018) state that immunization is needed to maintain high rates of global vaccine coverage for protecting people from infections and diseases.

Vaccination has been a societal relevant topic for years. It has been under pressure, because people believe that certain diseases have disappeared, because the incidence of these diseases have dropped due to vaccines (Chen & DeStefano, 1998). Additionally, the concern on vaccines and their possible unwanted or negative side effects has increased, leading to more people refusing to be vaccinated or to let their children be vaccinated, which leads to lower vaccine coverage (Chen & Hibbs, 1998).

Policy interventions in the United States aim to contribute to high vaccine coverage by increasing vaccination rates and therefore creating herd immunity (Omer, Salmon, Orenstein, Dehart & Halsey, 2009). With this overall immunity, the community benefits, as well as the vaccinated person individually. This person is called the recipient.

Human papillomavirus

The human papillomavirus [HPV] is worldwide the most common cause of cervical cancers (Walboomer et al., 1999). In the study of Bosch and De Sanjosé (2003) specific detection techniques were used and the researchers confirmed this finding. Cervical cancer is a cancer development in the cervix, which is from the vagina, the aperture to the woman's womb (Waggoner, 2003). In the United States, HPV has been estimated to be the sexually transmitted virus with the highest prevalence (Weinstock, Berman & Cates, 2004).

The HPV vaccination programme has been found to be successful in countries such as Australia (Brotherton et al., 2011) and the UK (Pollock et al., 2014). Just as Japan, these programmes have dealt with adverse event crises. However, in Japan the HPV immunisation programme is being criticized by the population. Therefore, the female HPV vaccination completion rate has dropped to 0.6% (Hanley, Yoshioka, Ito & Kishi, 2015). In 2013, the Japanese Ministry of Health, Labour, and Welfare held off on recommendations for the HPV

vaccine (Gilmour et al., 2013). Research has been done on adverse effects of the HPV vaccine and no causal relationship has been found between these vaccines and adverse effects. However, the Ministry still suspended recommendations for the HPV vaccine (Saitoh & Okabe, 2014).

As can be seen in Japan, the HPV vaccination programme is a sensitive topic, involving distrust and suspicion towards the effects of the vaccine. The programme has globally been set up solely for young adult females. Researchers of the Centers for Disease Control and Prevention (2011) stated, however, that the United States in 2011 recommended to cover young adult males as well. For males, the new guidelines affirm that the HPV vaccine has been included in the routine vaccination for 11 and 12 year olds. From 9 to 21 years old, males are eligible for the vaccine, whereas females are eligible till 26 years old (Dunne et al., 2011).

The Dutch Rijksinstituut voor Volksgezondheid en Milieu [RIVM] (2019a) provides information and statistics on HPV and the vaccination. In the Netherlands, the HPV vaccine for female young adults has been included in the national immunisation programme since 2009. In the year females turn 13, they get an invitation for the HPV vaccine. From 2021, male young adults will also be offered to take the HPV vaccine (RIVM, 2019a). 65% of the females born in 2006 have had their first HPV vaccine shot (RIVM, 2019b).

Types of vaccination motives

Four types of motives for vaccinations are elaborated in this paragraph. These include altruistic vaccination, vaccination for self-protection, medical paternalism and indirect vaccination.

Altruistic vaccination differs from vaccination for self-protection, which means that a person is vaccinated for his or her own protection. For example, health-care workers who get vaccinated against influenza, because they are at risk of exposure (Wicker, Rabenau, Kempf & Brandt, 2009). A different type of vaccination includes an individual deciding for the recipient to get vaccinated, which is called medical paternalism. This could be a parent deciding for its child whether or not to get vaccinated for the sake of the child's health or well-being (Wyatt, 2001). Altruistic vaccination on the other hand, is if the autonomous parent would have decided to get vaccinated for the benefit of the child. In that case, altruistic vaccination differs from vaccination for self-protection, because the recipient does not get health benefits from the vaccine, but others do (Shim, Chapman, Townsend & Galvani, 2012). Lastly, indirect vaccination entails another agent who decides that the recipient has to be vaccinated in order to protect others (Kraaijeveld, 2020).

Altruism is defined as increasing the welfare of others, without getting benefits out of it for oneself. Therefore, it is the contradiction of egoism or selfishness, in which one is motivated to increase his or her own welfare (Batson & Powell, 2003). Derlega and Grzelak (2013) specify the following three conditions which define altruistic behaviour: a voluntary act, the intention to benefit another and lastly, the performer of the act does not expect any rewards. Vaccination is viewed as a so-called altruistic medical procedure, since several vaccines have positive effects to a greater extent on society than on the recipient (Pywell, 2000).

In this report, the term 'indirect vaccination' is used instead of 'altruistic vaccination', for the reason that it is assumed that the recipient of the HPV vaccination, in the case of this research, the young adult, is often commissioned by their parent(s) or caregiver(s) to do so.

Indirect vaccination and its (dis)advantages

Vaccination is known to have a positive effect on decreasing the risk of being exposed to various diseases and infections. Therefore, it is highly recommended to healthcare workers to be vaccinated in order to reduce the risk of infecting patients. However, whether to be vaccinated or not, is their individual decision and it turns out that many of them refuse to do so (Betsch, 2014). Others who find themselves in this situation are in the immediate surroundings of children who are too young to be immunized entirely against certain complications like pertussis (Visser, Hautvast, van der Velden & Hulscher, 2016a).

In the case of indirect vaccination, individual decisions are based on self-interest and might also be what is best for the community. This means the total health care costs will be reduced and the risk of diseases and mortality decreased, which leads to improved health outcomes for the community (Shim et al., 2012). Unfortunately, Talbot et al. (2010) concluded that too few healthcare workers are vaccinated, especially against influenza. Willingness to vaccinate is needed to increase vaccination rates and thus to improve public health outcomes.

Additionally, mothers can be vaccinated to reduce the risk of their children getting infected by tetanus or influenza (Verweij, Lambach, Ortiz & Reis, 2016). In the Netherlands, the National Immunisation Programme has been there for years in order to protect children from infections and diseases (RIVM, 2019c). In a report on extended information about pertussis and pregnant women, it is stated that maternal immunisations can protect a baby until it can be vaccinated itself (RIVM, 2018).

According to Downs, de Bruin and Fischhoff (2008), parents' vaccination decisions can be influenced by the ongoing debate on vaccines. Even parents who are in favour of vaccination, can grow doubts on their choices. After doing interviews with these parents, the researchers conclude that there is a lack of information which is provided on the work of vaccines. Also, parents have trouble finding this basic information. Additionally, it turns out that parents who are most in need of receiving information about vaccination, seem to be those who have the most difficulty finding it (Downs, de Bruin, & Fischhoff, 2008). This indicates that there are opportunities for improving communication and education for information needs. Austvoll-Dahlgren and Helseth (2010) confirm the complexity for parents who want to assess information. Checklists, guidelines, websites and neutral providers of information (e.g. public health nurses) are required to inform parents about vaccination decisions.

Scientific relevance

To improve public health outcomes, children need to be vaccinated as well, therefore indirect vaccination is needed. In other words, parents need to be willing to vaccinate their children with a beneficial consequence for others. Nonetheless, what motivates this parental willingness is partially unknown (Quadri-Sheriff et al., 2012). However, one recognized factor to influence parents' vaccination decisions is the use of social networks (Brunson, 2013).

There is a knowledge gap on the motivations that underlie willingness to get vaccinated against HPV, with special attention for male young adults (Gilkey, Moss, McRee & Brewer, 2012). This research fills a gap in the extant scientific knowledge on normative arguments of parents whether or not to let their child be vaccinated with the HPV vaccine.

According to RIVM (2019b), approximately 500 Dutch males yearly get cancer from HPV. This includes mouth, penis, throat and anus cancer. By adding HPV vaccines for male

young adults to the national immunisation programme, males will be protected against the virus and will therefore be less likely to suffer from HPV consequences. Additionally, as mentioned before, this is an indirect vaccination motive, since HPV is a sexually transmitted disease, females will get protected as well by group protection (RIVM, 2019b). Therefore it is scientifically relevant to comprehend the normative arguments of parents with regard to immunizing male young adults with the HPV vaccine. By getting a grip on this information, communication channels can be adapted in order to increase the HPV vaccination rate for male young adults.

Research question

Visser et al. (2016b) describe that the parental uptake on vaccines has an impact on the effectiveness of a vaccination programme. Therefore, it is important to conduct research on the determinants of the intention of young adults, especially males, and parents whether or not to get their child(ren) certain vaccines. Visser et al. (2016b) did a study on parental uptake with regard to the pertussis vaccine, but not on HPV, which thus leads to a knowledge gap. Additionally, a gap exists between the determinants on parental acceptance of certain vaccines and parents' normative arguments. To secure the translation or intention into definite vaccine use, both determinants and arguments with regard to the HPV vaccine for young adult males need to be identified.

This research contributes to the knowledge on attitudes and underlying normative arguments of parents and young adults to whom HPV vaccination is recommended. Therefore the research question is as follows:

“What are the attitudes and normative arguments of young adults to whom HPV vaccination is recommended and what are the attitudes and normative arguments of their parents?”

Terminology on, among other things, normative arguments and young adults is given below.

The following research sub-questions have been formulated:

- *“What role does altruism play in the decisions for parents to accept the HPV vaccine for their son(s)?”*
- *“How can the HPV vaccination (of males) be stimulated?”*

Terminology

Review of the literature did not reveal an established definition of ‘altruistic vaccination’ or ‘indirect vaccination’. In order to establish these definitions, other relevant terms for this research such as young adults, normative arguments and herd immunity must be covered.

In case of this research, young adult males and females are between 12 and 18 years old. This age group has been chosen based on the age that females can receive the HPV vaccine in the Netherlands, namely from 12 years old (RIVM, 2019d).

As regards defining normative arguments, the Cambridge Dictionary (2019) describes ‘normative’ as being related to rules. Therefore, a normative argument includes what ought to be done or said.

There is an ongoing discussion on the exact definition of 'herd immunity'. In the 70s, herd immunity was described as a decreased chance of a patient affecting someone else due to group resistance (Fox, Elveback, Scott, Gatewood, & Ackerman, 1971). In the 80's, vaccines were described as a way to reduce the risk of infection below the critical level and herd immunity was the consequence, if done in the correct proportions and density. In these years, immunization is being closely watched and researched with regard to demographic factors influencing herd immunity and the most appropriate age to vaccinate, etcetera. (Anderson & May, 1985). In the 90's, it is stated that herd immunity has to do with protecting populations against infections which exist because of individuals that are not immune (Fine, 1993). In the 00's, herd immunity is described as the proportion of individuals with immunity in a certain population. Also, a distinction is made between 'herd immunity' and 'herd effect', which is the reduction of the risk of infection because of the immunisation of a part of the population (John & Samuel, 2000). All in all, the term 'herd immunity' has changed over time, from a term used to describe the proportion of immune individuals of a population, to the level of proportion, a threshold, of immune individuals necessary to decrease the risk of infection (Fine, Eames & Heymann, 2011). In this research, the latter definition is used.

Theoretical framework

The theoretical framework is divided into determinants of intention and behaviour, determinants of vaccine hesitancy, determinants of vaccination acceptance and determinants of altruism.

The determinants of intention of behaviour include the Theory of Planned Behaviour [TPB] (Ajzen, 1991) and the Reasoned Action Approach [RAA] (Fishbein & Ajzen, 2010) are used as a cause for deepening the knowledge on vaccine hesitancy. The determinants of vaccine hesitancy include the 'Three C's' model of vaccine hesitancy of the WHO (2014) and a useful matrix covering important determinants of vaccine hesitancy (World Health Organization, 2014). The determinants of vaccination acceptance include a framework of vaccination acceptance (Visser et al., 2016b). Lastly, the determinants of altruism include the Empathy-Altruism hypothesis (Batson, 1991) and through information on altruistic development, also in children (Derlega & Grzelak, 2013).

Determinants of intention and behaviour

In the US, researchers Jozkowski and Geshnizjani (2016) identified factors influencing women's intention whether or not to get the HPV vaccine. The underlying factors were identified using the RAA (Fishbein & Ajzen, 2010), which is an extension of the TPB (Ajzen, 1991). The TPB is used in psychology to link belief and behaviour to each other, while the RAA can help elaborate on why people behave differently, even though they share the same attitudes, perceived norm and behavioural control. In the research of Jozkowski and Geshnizjani (2016), it is concluded that RAA can help to design interventions and specify determinants on behaviour with regard to health behaviour like getting the HPV vaccination. According to this study, interventions should be focused on norms and attitudes, because they turn out to be the most important predictors in deciding whether or not to get the HPV vaccine. It turns out that the intention to get the HPV vaccine is stronger when an individual's general health perception is high and when there is a low perceived severity to harshness to cervical

cancer (Jozkowski & Geshnizjani, 2016). Based on this information, it was useful to deepen the knowledge on vaccine hesitancy.

Determinants of vaccine hesitancy

The “Three C’s” model of vaccine hesitancy

The WHO’s Strategic Advisory Group of Experts [SAGE] built a model of the three determinants influencing vaccine hesitancy: the “Three Cs” model. This model exists of the determinants confidence, complacency and convenience (World Health Organization, 2014). The determinant ‘confidence’ has to do with trust in vaccines and their degree of safety and effectiveness. Secondly, confidence in the quality of the systems like health services and professionals that deliver vaccines. Lastly, trust in the arguments and attitudes of the policy makers behind vaccine-related decisions (World Health Organization, 2014). The determinant ‘complacency’ includes the fact that amongst a population there is a low perceived risk of diseases that could be prevented by vaccines. Meaning that these people disagree with the fact that vaccination is needed in order to prevent the spread of diseases and infections. Individuals are unaware of the potential dangers of vaccine-preventable diseases and they are satisfied with the existing situation. This attitude can be influenced by various factors like prioritising other health issues. Complacency is being kept alive by successful immunisation programmes since these programmes decrease the prevalence and incidence of a disease. Hence, individuals assume that taking the vaccine is of higher risk than not taking it because to them, the disease simply does not exist anymore. It goes without saying that an individual’s ability to take action to be vaccinated has an influence on the hesitancy as well (World Health Organization, 2014). Finally, the determinant ‘convenience’ has to do with the physical and geographical accessibility to vaccination services, as well as their affordability, understandability, the willingness-to-pay, culture, and the quality of the service (World Health Organization, 2014).

With regard to this research, the “three Cs” model of vaccine hesitancy is used in order to categorise potential vaccine hesitancy of the participants of the focus groups. The determinants are included in the deductive coding scheme (see appendix IV). Thereafter, the determinant can be elaborated using the matrix below.

Determinants of vaccine hesitancy matrix

An elaboration on the “ three Cs” model of vaccine hesitancy, is a matrix created to arrange determinants of vaccine hesitancy into three categories: ‘contextual’, ‘individual and group’ and ‘vaccine/vaccination specific issues’ (World Health Organization, 2014). The matrix can be found in table 1.

The matrix shows elaborated determinants of vaccine hesitancy and can therefore be used in this research in order to comprehend reasons for vaccine hesitancy of the focus group participants. Several determinants of this matrix have been included in the deductive coding scheme (see appendix IV). MacDonald (2015) states that the matrix describes factors which influence the behavioural decision on whether to accept, refuse or delay vaccines. Also, the more hesitancy there is, the lower the vaccine demand is. However, this does not necessarily mean that lower hesitancy leads to higher vaccine demands (MacDonald, 2015).

<p><u>CONTEXTUAL INFLUENCES</u> Influences arising due to historic, socio-cultural, environmental, health system/institutional, economic or political factors</p>	<ul style="list-style-type: none"> a. Communication and media environment b. Influential leaders, immunization program gatekeepers and anti- or pro-vaccination lobbies c. Historical influences d. Religion/culture/gender/socio-economic e. Politics/policies f. Geographic barriers g. Perception of the pharmaceutical industry
<p><u>INDIVIDUAL AND GROUP INFLUENCES</u> Influences arising from personal perception of the vaccine or influences of the social/peer environment</p>	<ul style="list-style-type: none"> a. Personal, family and/or community member's experience with vaccination, including pain b. Beliefs, attitudes about health and prevention c. Knowledge/awareness d. Health systems and providers-trust and personal experience e. Risk/benefit (perceived, heuristic) f. Immunisation as a social norm vs. not needed/harmful
<p><u>VACCINE/VACCINATION-SPECIFIC ISSUES</u> Directly related to vaccine or vaccination</p>	<ul style="list-style-type: none"> a. Risk/benefit (epidemiological and scientific evidence) b. Introduction of a new vaccine or new formulation or a new recommendation for an existing vaccine c. Mode of administration d. Design of vaccination program/Mode of delivery (e.g. routine program or mass vaccination campaign) e. Reliability and/or source of supply of vaccine and/or vaccination equipment f. Vaccination schedule g. Costs h. The strength of the recommendations and/or knowledge base and/or attitude of healthcare professionals

Table 1: Working Group Determinants of Vaccine Hesitancy Matrix (World Health Organization, 2014)

Determinants of vaccination acceptance

Visser et al. (2016b) created a theoretical framework of vaccination acceptance in pertussis cocooning, based partially on the foregoing RAA and its psychosocial determinants (Fishbein & Ajzen, 2010) and partially on their literature and qualitative research. The framework can be found below in figure 1. The model anticipates negative effects like feelings and experiences on the acceptance or non-acceptance of vaccination. Decisional uncertainty is also covered in the model, which has to do with whether a person thinks it is easy to decide on accepting the vaccine or not. Visser et al. (2016b) conclude that uncertainty is an important determinant in decision making. Several determinants of attitude of the framework of vaccination acceptance have been included in the deductive coding scheme (see appendix IV).

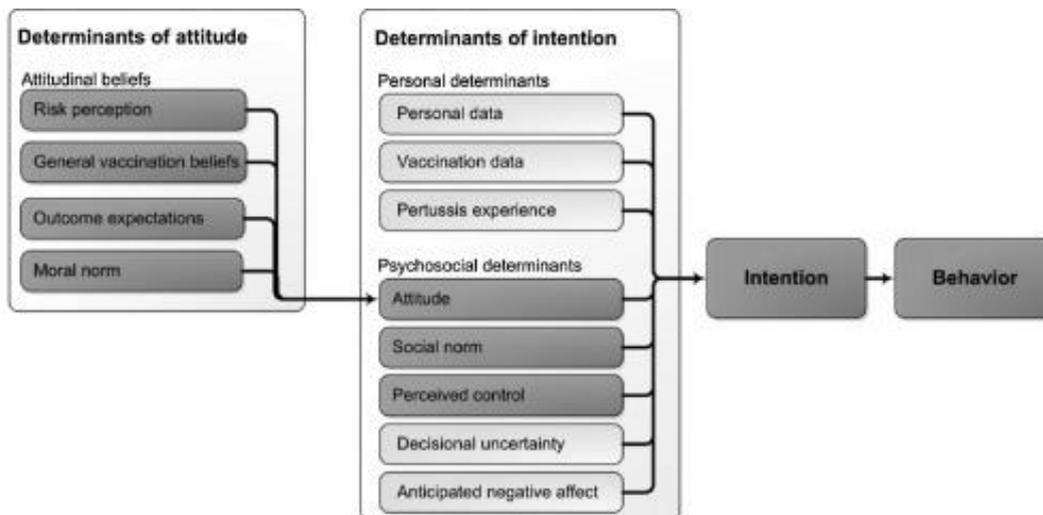


Figure 1: Theoretical framework of vaccination acceptance in pertussis cocooning (Visser et al., 2016b).

Determinants of altruism

Empathy-altruism hypothesis

According to the empathy-altruism hypothesis (Batson, 1991), altruistic motivation is produced by empathic feelings for others. In this hypothesis, empathy is a term referring to among other things, sympathetic and tender feelings. The hypothesis offers insight on why people help or fail in helping others and based on which motives this social behaviour happens. It turns out that individuals with a high level of empathy are more likely to offer help, in comparison to individuals feeling lower levels of empathy. However, it is unsure what the exact motives of helping individuals are. For example, an opportunity exists that these individuals offer help in order to not feel bad or looking bad for not helping out. Hence, the motive of helping others might include an egoistic motivation to feel good about yourself or to look good. All in all, over the last three decades, the empathy-altruism hypothesis is proven to be correct and human individuals turn out to be capable of altruism (Batson, 1991).

For this research, the empathy-altruism hypothesis is used to create codes for the coding scheme (see appendix IV). In this scheme, altruism has been divided into several aspects which influence or might result in altruistic behaviour.

Altruistic development

It is important to keep in mind that freedom is required to perform an altruistic act (Seglow, 2002). One needs freedom to perform self-initiated behaviour in order to benefit another person, while not expecting any profit or reward (Derlega & Grzelak, 2013). Altruistic behaviour is formed by cognitive, social-perspective and moral development. Thus, altruistic behaviour cannot be performed by children and can be seen as a broadening accomplishment (Derlega & Grzelak, 2013). Like so, helping behaviour develops with age, which is why it is meaningful to study the normative arguments of male and female young adults with regard to the HPV vaccine. This makes parents an important factor in the decision-making for the HPV vaccine.

Altruistic development is divided in six stages, respectively being: 1) being commanded or requested to do something, followed by a punishment or reward, 2) obeying a command or request of an authority, 3) voluntarily helping because a reward will follow, 4) normative

behaviour, helping because it is expected and not helping will lead to punishment, 5) helping because one day the person will get help in return, 6) altruistic behaviour (Derlega & Grzelak, 2013). For this research, the stages are used in the deductive coding scheme (see appendix IV) as determinants of altruism.

Methodology

Concepts for the topic list and deductive coding scheme resulted from the theoretical framework. The aim of this research was to collect data and to analyse and report the obtained data in order to answer the research question. Three focus group discussions were performed, two with parents and one with young adults. The latter group is the target group of the Dutch HPV immunisation programme. The research is qualitative and empirical due to the focus group discussions and an extensive literature review. Below, the focus groups are described with an elaboration on the recruitment strategy, the participants, the procedure, data collection and data analysis. Lastly, the literature review is described.

Focus groups

In total, three focus groups were conducted to explore attitudes and normative arguments with regard to indirect vaccination. Interaction between the participants had been encouraged in order to open relevant discussions. Focus groups are effective in obtaining knowledge and experiences and to discover considerations and how and why the participants have decided upon them. Also, in discussion groups, people who would normally not speak up, are encouraged to contribute in the debate (Kitzinger, 1995).

The target groups for the focus group discussions were chosen based on the literature study of RIVM (2019a) of which it was made clear that male young adults will be the added target group for the national HPV immunisation programme. Wyatt (2001) described how parents play a role in the vaccination decision, therefore parents are also involved in this research.

Recruitment strategy

Participants have been selected by a company which was hired to do so. The participants of the three focus groups, Dutch parents and Dutch young adults, have all been educated on a middle to high level, all had a generally positive attitude towards vaccination and all have participated in the national immunisation programme. This was to prevent the debates occurring about vaccination in general. The parents were divided into two groups, one with parents living in a rural area and one with parents living in an urban area. Their age did not matter, as long as they had a child or children. There was aimed for a composition of which one third of the parents would have one or multiple sons, one third of the parents would have one or multiple daughters and the final third of the parents would have a son and a daughter. Additionally, for all participants it was important that religion did not play a leading role in their lives.

An overview of the composition of the participants of the focus groups can be found in appendix V. Gender is shown, as well as the age of children of participants and whether or not the female young adults have received the HPV vaccine and their rural or urban living area. Below, the parent participants and the young adult participants are elaborated below.

Parents

The first focus group consisted of parents living in rural areas around Amersfoort and took place in Amersfoort with seven participants. The second focus group consisted of parents living in Amsterdam, hence an urban area and took place in Amsterdam with nine participants. Both groups were mixed with parents, as well fathers as mothers, having either sons, daughters or both. The topic list for these focus groups can be found in appendix II.

Young adults

The third focus group, the beneficiary group, was a mixed group with male and female young adults aged 18 to 20 years old. This group included as well females who received the HPV vaccine as females who did not. In total, two males and four females participated. The discussion took place online, namely through Skype chat. The topic list of this online focus group can be found in appendix III.

Procedure

The focus groups were conducted in Dutch, which means that the quotes used to elaborate on results are translated by the author of this research. On top of that, the informed consent (appendix I) has also been given out in Dutch.

Data collection

The focus groups were organized in detail with regard to the selection of target groups and recruitment strategy. The topic list had been devised based on themes from the results of the literature study. The groups were run, audiotaped, transcribed by an external company, analysed based on the attitudes and normative arguments of the target group and lastly, reported. The coding scheme to code the transcript has partially been developed deductively, based on the literature review of this research. Partially this coding scheme has been developed inductively, based on the empirical data which has been received from the focus groups. The combined deductive and inductive coding scheme can be found in appendix IV.

Data analysis

A deductive coding scheme (see appendix IV) was created based on the determinants and topics of the theoretical framework. Several changes on the tables and models in the framework have been made in the creation of codes for the transcripts of the focus groups. To start, not all contextual influences of vaccine hesitancy (World Health Organization, 2014) were considered relevant for this research. Communication and media environment has been split into sub categories and influential leaders, culture, gender, socio-economic, politics, policies and geographic barriers have been removed. With regard to the individual and group influences of vaccination hesitancy (World Health Organization, 2014), beliefs and attitude on health and prevention is removed, while knowledge/awareness has gotten its own sub categories. Last of this group, risk/benefit has been categorised under risk perception in determinants of attitude. In the category vaccine/vaccination-specific issues (World Health Organization, 2014), risk/benefit has been changed to (negative) side effects. The introduction of a new vaccine has been deleted, as well as mode of administration, design of vaccination program, reliability, vaccination schedule and the strength of recommendation. Instead,

uncertainty on effectiveness has been added. With regard to the determinants of attitude (Visser et al., 2016b), outcome expectations and moral norms have been deleted. Personal determinants (Visser et al., 2016b) have been deleted since this is covered in the category of individual and group influences on vaccine hesitancy. The psychosocial determinants of intention (Visser et al. 2016b) have been covered already by other categories, meaning that this category is deleted as well. Lastly, categories have been inductively added. These are knowledge/communication determinants, protection and other. The deductive and inductive coding scheme can be found in appendix IV.

Literature review

The topic lists of the focus groups were developed based on the results of a literature review. Below, the used search machines, terms and inclusion and exclusion criteria are mentioned. However, this information is not extended with the amount of hits, because in the results of this research, the results of the focus groups are presented.

To obtain literature, various search machines have been used, such as Google Scholar, PubMed and Web of Science. The following search terms have been used: “vaccination”, “indirect vaccination”, “HPV vaccination”, “HPV vaccine”, “HPV male”, “HPV female”, “HPV immunization”, “HPV vaccine benefits”, and “HPV vaccine refusal”.

Inclusion criteria for this literature review are:

- studies in which HPV is described
- studies in which national immunisation programmes in various countries are described
- studies which describe why HPV is added to a national immunisation programme or not
- studies which provide attitudes and arguments in favour or against (HPV) vaccination;
- studies which address changes in (HPV) immunization rates;
- studies which state arguments on changes in (HPV) immunization rates;
- as well international as national (Dutch) studies

A criterion for exclusion of this literature review were studies on the (indirect) effects of vaccines, because the biological (adverse) effects of vaccines are no noteworthy contribution to this research.

Results

In this chapter, the results of the three focus groups are described based on the sub-questions and the research question.

As described in the methodology, focus group 1 consisted of seven parents living in rural areas, called ‘rural parents’. The atmosphere in this group was calm, open and welcoming. There were no heated arguments or harsh feelings towards one another, even during moments when there was no consensus.

This was different from focus group 2, which consisted of nine parents living in a city, called ‘urban parents’. The atmosphere in this group was less relaxed than it was with the rural parents. Several moments happened in which participants disagreed with each other strongly. Also, there was less understanding towards choices some other urban parents made in this

group. The urban parents placed more emphasis on getting information from the moderators, in contrast to the rural parents who informed each other more.

Lastly, the participants of the online focus group were participants aged between 18 and 20, they are called 'young adults' and they behaved differently than the rural and urban parents. The discussions were less rapid because the debate happened online and therefore the young adults were chatting instead of talking to each other. This gave them more time to respond and the young adults seemed to follow up more on the content of the conversation.

The answers, stories and experiences of the participants are elaborated below. First, the sub-question on altruism will be answered, based on the overarching themes altruistic behaviour, motives to be altruistic, moral norm and health protection. Then the sub-question on HPV vaccination acceptance will be elaborated supported by the overarching themes general vaccination beliefs, experiences with vaccination, vaccination barriers, risk perception, knowledge & education and finally communication. Lastly, the main research question will be answered based on the disagreements and agreements of the participants on the HPV vaccine for males.

Altruism

The answer to the sub-question "*What role does altruism play in the decisions for parents to accept the HPV vaccine for their son(s)?*" is not one-sided. Among the young adults, a clear link was to be found between altruistic behaviour and the willingness to get vaccinated against HPV for the sake of others, which is mostly the case for males. With regard to parents, this link was less clear. All in all, altruism does play a role in the decision for the HPV vaccine, but this depends on the degree to which the parents teach their children about altruism.

The provided answers to the sub-question "*What role does altruism play in the decisions for parents to accept the HPV vaccine for their son(s)?*", have been divided into the following themes: altruistic behaviour, motives to be altruistic, moral norm and protecting health. Below, these themes and the answers of the participants are elaborated.

Altruistic behaviour

Altruistic behaviour comes in various forms and exists for various reasons. The most common form of altruistic behaviour was found to be voluntary work by the participants. There was consensus about this between and within the focus groups. Participants of the focus groups mentioned historical changes in altruistic behaviour, like the upcoming of individualism. Also, they spoke about the importance of knowing someone to be willing to help, except when this is an emergency situation. Lastly, in both focus groups with the parents, the influence of religion and culture or origin were stated. However, between the urban parents, consensus was lacking on the link between culture and altruistic behaviour. The topics are elaborated below.

Voluntary work included neighbours helping refugees, family members, elderly people with dementia or acquaintances helping at the food bank. Also giving your seat to elderly people in public transport was mentioned. The young adults shared experiences of parents working in care centres, which makes it their job to act helpful.

Remarkably, historical changes in altruistic behaviour were solely mentioned by the rural parents. According to several of these participants, altruism used to exist more in the past. According to the beliefs of the rural parents, some people nowadays award each other

less and they live more superficial, therefore one could feel less welcome. On the other hand, the rural parents acknowledged the increase of altruistic acts in communities like neighbourhoods. Individualism has grown bigger over time as well, because one does need someone else as much as they used to. In the group with urban parents on the other hand, there was a focus on the act of greeting one another. To the participants, this behaviour changed as well over time, but it also differs per neighbourhood and urban versus rural. Even within the urban area, differences were noticed. Apparently, some neighbourhoods feel like small villages, but others can be extremely impersonal and harsh, thus leading to less altruistic and helpful behaviour.

In all three focus groups, knowing someone seemed to make it easier and more appropriate for the participants to behave helpful, altruistic or welcoming. Acquaintances can offer more appropriate help to each other and can accept help easier as well, because they know exactly what to say and when to remain silent. However, in emergency situations it is not that relevant anymore whether you know someone or not. Rural parents stated that not knowing someone can result in a vicious circle. An example was given of a divided street in which half of the people know each other and the other half does not know each other. The latter group does not get invited to parties and gatherings and even experience receiving less help. These people will subsequently not offer help or send invitations to the other half of the street either. Furthermore, donating money was a topic which was solely brought up by the young adults. They mentioned that making a donation might feel useless or unnecessary when the cause is unknown or non-relatable. Also according to the young adults, crisis situations closer to home can generate empathic feelings more easily than cases that do not seem one's concern.

Rural parents mentioned religion as a reason to perform voluntary work. They shared experiences with churches who built religious communities which include social movements on voluntary work and helping the weak or less wealthy. However, one participant noticed that this differs per country. She explained that in France, religious communities are not involved in social voluntary work at all, because of the separation between church and state. Several positive and negative experiences with religion and religious communities were shared and altruistic motives could stem from religion. "Love thy neighbour" was a frequently used phrase among the rural parents regarding religious motivation for performing voluntary work. Urban parents on the other hand, focused more on culture than on religious influences. The young adults did not mention religion.

Culture is strongly involved in motives for altruistic behaviour and raising children, the urban parents stated. However, they made a distinction between culture and origin. One of the participants claimed that she is helpful and welcoming because of her South-American roots, while another participant disagreed with that statement because she has been raised the Dutch way herself, but she is generous and welcoming as South American or African cultures. Remarkably, culture was only mentioned by the urban parents. This could be due to the variation of cultures and origins there were within the group. Participants also stated that big cities are a place of gathering for different cultures and origins. According to the urban parents, this differs from small villages in the Netherland where the cultural presence and cohesion are less strong. Besides origin, differences were stated with regard to the work and office culture. One rural parent said that her company stimulates her employees to do voluntary work, while an urban parent mentioned that her colleagues barely greet each other at the office.

Although religion and culture are involved with certain altruistic behaviour, these can also be considered as motives to be altruistic. Below, more motives are elaborated.

Motives to be altruistic

The most important conclusion from this topic, is that motives to be altruistic are situational. There was consensus within and between groups about this. Meaning, there is no guideline for behaving altruistically, because multiple paths could result in or could counteract altruistic behaviour. Throughout all three focus groups, several motives to be altruistic came to light. These motives include egoistic motives to be altruistic like benefitting, but also motives like empathic feelings and helping someone else out of association-commitment. The motives are elaborated below.

First, egoistic motives to be altruistic. In all three focus groups, the amount of participants who mentioned to benefit out of helping someone else is lower than the amount of participants stating that helping someone else is their pure motivation. Satisfaction is unanimously mentioned as the most frequent form of benefitting. These people gain energy out of behaving helpful, hence helping themselves indirectly. The participants stated social engagement and social in/exclusion as common topics within benefitting. According to rural parents, this seems to happen in religious communities because these congregations institutionalise social care. None of the participants mentioned anything about not feeling bad or guilty as a reason to help someone. Also getting punished if you do not help someone, is a consequence that is not mentioned in all three focus groups.

With regard to empathic feelings, only a rural parent behaved from this motive. She stated that friends from her children can be given candy or time to play games, out of empathy, because these children do not get these chances at home. Only one young adult mentioned that sometimes people help others just because they assume that their time or money is better spent that way. Someone else might need it more, which can indicate empathic feelings towards that person in need. The fact that empathic feelings were not mentioned often, shows that this is not a common motive to behave altruistically from.

Helping someone else is, according to most participants, considered as a good reason to make yourself useful to others. People said that the world becomes more and more beautiful with every good deed. Also, people mentioned that they want to be there for each other and make others happy. Lastly, young adults mentioned that they help others because they are members of an association. Remarkable is the fact that they mentioned this association-commitment more often than the parents did. This might have to do with the fact that the young adults are more invested in these associations, due to their age and their interpretation of leisure activities.

As mentioned before, motives to behave altruistically are situational. Various situations in which help is offered, have been described by the participants. For example the difficult situation of helping someone who is ashamed of their financial situation was described. According to a rural parent, offering help is made impossible if one is not accepting help or if one is not willing to ask for help. Urbanisation and increasing welfare were seen by the participants as a cause for the individualistic society we live in nowadays. A rural parent shared his interest in history and how people needed each other right after World War II way more than nowadays. According to him, children were spoiled because they had parents who lived through the war and these parents were desperate to give their children everything they could not get themselves. Generation differences like this are mentioned by rural and urban parents. One rural parent explained that she can feel burdened to ring the doorbell and ask for

donations on behalf of a foundation. With regard to years ago, this was different. Remarkably, the young adults did not mention any of this. In a rural parent's opinion:

“Generations created this themselves. Maybe it is time to adjust the social clock a bit again. That would be a nice swing.”

(Y5, male rural parent)

An urban parent noticed a rural and urban difference in greeting and helping each other. An example given was how people living in big cities are more occupied and it would be useless to greet anyone you meet on the streets or in the metro. Also, in rural areas people rely on each other more frequently. Other urban parents said that this difference has to do with culture as well, because the level of hospitality for example differs.

All in all, motives to be altruistic are situational and can differ per function, situation and character of a person.

Moral norm

The most important finding was the consensus on the complexity of finding a balance between helping others and behaving egotistically. Also, norms and values were considered important motives for altruistic behaviour. The participants were asked to share things they teach their child(ren) with regard to helping others and self-interest. The young adults were asked to share what they have been taught with regard to this by their parents. Some participants mentioned a mutual benefit, which is called reciprocity. To them, reciprocity can be seen as the norm, but to others, this was not the case, which indicates a contradiction between some participants. Below, the answers of the participants with regard to moral norms are elaborated.

Most participants mentioned norms and values when they spoke about altruism and helping others. The rural parents as well as the young adults, mentioned the literal words 'norms and values'. Doing things for someone else is considered normal to most participants of all three focus groups. However, where this comes from is debatable. Several participants state that helpful behaviour is their ideal, that this feels like the right thing to do and that they do not know any better. Others claim that this is part of one's upbringing. This is illustrated in the following quotation.

“My daughter does voluntary work as well, to her that is normal.”

- **“Because you see it as the normal thing to do.”**

“Exactly.”

(respectively Y6, female urban parent & Y5, female urban parent)

Sharing your goods and toys fairly and the fact that receiving is better than giving, were mentioned in all three focus groups. The young adults mentioned that they were taught to keep talking to the people around you and to try to understand them.

Other norms that were mentioned, included not forgetting the people you care about, but do not forget about yourself either. Help others as much as you can, even if it is small, but always help yourself as well. This way you will prevent people from walking all over you. That being said, the participants opened the next topic automatically, namely finding a balance between helping others and egoism. The quote below fits this situation.

‘My grandmother used to say: ‘What you give is what you get.’”

(Y1, female urban parent)

The participants of all three focus groups agreed that the balance between helping others and egoism or self-interest is important, yet difficult to achieve. A young adult stated that helping others should not be in the way of your own luck and health. One rural parent experienced trouble saying no when people are in need, resulting in putting aside her own issues. Others state that self-interest is a part of helping others, but it can be hard to teach that to children. A young adult stated that:

**“To me, it is important to commit myself to others,
but it is me before anything else.”**

(Y4, male young adult)

Health protection

The most important finding was that most participants get vaccinated in order to initially protect themselves, instead of protecting someone else. Being asked what participants do to protect someone else’s health, the answers were diverse. From coughing in your elbow to telling someone to stop smoking or to slow down mentally. Luckily the experiences got more specific and participants even started talking about vaccinations without the mediators asking them to. Talking about self-protection was in all three focus groups less common than talking about how others are protected by vaccines. With regard to self-protection, the participants placed emphasis on various topics like getting vaccinated because of travelling or self-protecting health by not shaking hands. This shows the several types of health protection.

One of the rural parents stated that she gets vaccines before travelling, mainly to protect herself. That is because she does not want to spread things to the incoming country, but she also does not want to bring diseases or viruses with her back home. To prevent this, she has to start with protecting herself. In this focus group, limiting risks and protecting yourself are extensively discussed, but there was consensus on the HPV vaccine and self-protection. An urban parent gave an example on how people protect themselves from bacterial risks by not shaking hands with people who act non-hygienical. With regard to self-protection for HPV, not much is mentioned. There was a discussion on how testing for HPV might be useless, because one can receive the virus over and over again, no matter if this person was tested positive or negative before. If this test would be on the market, it would create a feeling of fake-safety, according to one of the participants. Among the young adults, one of them showed to be more altruistic than the average person. As a male, this participant was more willing to get the HPV vaccine for the sake of his future bed partners, thus protecting others. The other male of this group performed less altruistic behaviour and turned out to be less willing to protect others by getting the HPV vaccine. To him, the main reason to get vaccinated against HPV would be out of self-protection. That way, the young adults showed how altruism is linked to health protection, in this case with regard to indirect vaccination. At first there was consensus amongst as well the female as the male young adults on how getting the HPV vaccine is initially out of self-protection, namely females protecting themselves against cervical cancer. Later on, an addition is made on the fact that the HPV vaccine could protect males as well against several types of cancer, making this an important reason for male self-protection as well. One of the male young adults stated that he would be willing to get the HPV vaccine

in order to protect himself. The daughters of one of the participants both got the vaccine without a debate, because they were aware of the risks for themselves.

The young adults mentioned minimizing the risk of spreading HPV and thus protecting the health of others. The young adults talked about how HPV is an easily communicable virus and they accepted the fact that transmission is made easier when the vaccination did not happen. Also, there was recognition for societal damage if people choose to not vaccinate against HPV. Reasons for males in this group to get vaccinated against HPV included self-protection as well as protecting others by minimizing the spread-risk. However, the arguments in favour of protecting others were only given after the mediators explained that HPV can cause damage to males as well. It is remarkable that the male young adults mention self-protection and protecting others, while females mainly mention self-protection with regard to the HPV vaccine. The quote below shows the importance of vaccination.

“Vaccination can be necessary for the well-being of our society.”

(Y4, male young adult)

The urban parents agreed with the young adults that covering mouths and washing hands is about protecting others as well as preventing the spread. One of the urban parents shared a story that she works at a bone marrow transplantation department and she explained how she meets people there with an extremely low resistance. With regard to the HPV vaccine, most respondents were shocked to hear that males could also get symptoms from HPV, this was similar in the group with rural parents. One of the participants admitted to not have deepened her knowledge on the HPV symptoms for males, because she has a daughter. The rural parents placed less emphasis on self-protection for males by getting the HPV vaccine. One of the rural parents expressed disbelief with regard to people who refuse to get their child(ren) vaccinated in general, so-called anti-vaxxers. To him, vaccination is a part of protecting your children, just as providing your child with clothes against the cold is. Therefore, religion plays a role in the decision whether to get vaccinated or not. Another participant mentioned that he is religious, but this is not the reason that he did decide to not get his son vaccinated. His doubts in the effectiveness of the vaccine made him decide to not get his son vaccinated. With regard to protecting others and vaccination, day-care centres for children are mentioned as a place to easily contract diseases, thus vaccines help to protect children. Specifically for the HPV vaccine, to the rural parents it is important being able to protect others by preventing the spread of the virus when you carry it with you. The fact that a disease can be eliminated by vaccinations has only been mentioned once, solely by a rural parent.

All in all, most participants see vaccination initially as self-protection.

Acceptance of the HPV vaccination

The answer to the sub-question “*How can the acceptance of HPV vaccination (of males) be stimulated?*” includes various considerations. Firstly, the general vaccination beliefs of the individual must be positive towards vaccination. This includes confidence in the systems, the vaccine and the policy makers behind the vaccine. This positive vaccination belief is formed by vaccination experiences and the narratives of peers. Different perceived barriers are identified that could prevent people from getting vaccinated. These include a low accessibility to vaccination services, high costs (and/or low willingness-to-pay), religion and perceived risk of negative side effects. With regard to the HPV vaccine, it is important to acknowledge the

autonomy of the children who are invited to get the vaccine, but not let it overrule the parent's decision. Additionally, risk perception is an important aspect influencing the acceptance of the HPV vaccine. People actively seek information on the risks of conceiving HPV, before considering getting vaccinated. This includes questions like "What are the chances of me getting sick because of HPV?", "What are the chances of me getting infected by HPV?", "What are the chances of me infecting someone else with HPV?" and "What are the symptoms of HPV?". The answers to these questions have to do with the obtained knowledge and given information. Immunisation was initially not seen as a social norm and therefore vaccination is done in order to self-protect. To encourage people to get vaccinated, they must be informed of all possible risks of HPV and the HPV vaccine. Spreading information can be done by using the appropriate communication channels like schools, leaflets, tv advertisements and most importantly, understandable and neutral information on government websites.

Determinants regarding the acceptance of the HPV vaccine have been divided into the following themes: general vaccination beliefs, experiences with vaccination, vaccination barriers, risk perception, knowledge & education and lastly, communication.

General vaccination beliefs

The most important finding regarding general vaccination beliefs is that people are curious about what substances are in a vaccine, and what the consequences are of having them in the body. Also, initially most people don't see immunisation as a social norm. In general, all participants have a positive attitude towards vaccination and as described in the methodology section, all participants have participated in the national immunisation programme. General vaccination beliefs of the participants have to do with various matters like attitude, trust in vaccines and systems, degree of safety of vaccines and degree of effectiveness of vaccines. Additionally, general vaccination beliefs relate to whether participants consider immunisation as a social norm or not. Most participants saw immunisation as a social norm, but there was some contradiction in this topic. Remarkably, in all groups emphasis was placed on transparency and information from the government, but only the young adults had in-depth discussions about the composition of the national government. Within the group with urban parents, there was no consensus on the effectiveness of vaccines. This went hand in hand with contractionary thoughts on the trust arguments and policy makers behind vaccine-related decisions. The participants spoke about the government and its right to be neutral. Among the young adults there was no consensus on the trust one should have in the government and its decisions. Lastly, after some debate, there was consensus in all three focus groups on immunisation as a social norm. However, especially the young adults saw the HPV vaccine as something to do with self-protection. Below, all aforementioned matters of general vaccination beliefs are elaborated.

In all three focus groups, there were some doubts towards the national immunisation programme and the effectiveness of vaccines. One young adult mentioned that it is impossible to get vaccinated against each virus, especially because they can develop themselves and mutate. One of the rural parents on the other hand shared his experience with not vaccinating saying that the youngest of his three children did not participate in the national immunisation programme. He claims that his son does not experience diseases or infections any more or less than any of his siblings. Therefore, he has doubts about the effectiveness of vaccines. The other participants agreed with getting their children vaccinated because they trust the government. Despite this, being critical was considered to be important. Also, an urban parent stated her disbelief in the fact that children get vaccinated, but adults only get vaccinated when

they travel to certain countries. She would prefer to have the opportunity to choose her extra vaccinations as an adult, such as meningitis. In her opinion:

“It irritates me that the government and doctors act like vaccinations are the same as a paracetamol. (...) That is simply not correct.”

(Y6, female urban parent)

On the other hand, one urban parent admitted that he does not feel the need to know everything about vaccinations. He said that he would never understand whether a vaccine was effective or not and whether the national immunisation programme is correct or not. To him it is important that child mortality rates dropped massively over the century. He did not agree with one-sided information and he had no distrust towards the government. He goes on to say that:

“To me, the only objective of the government is to prevent the outbreak of diseases. I believe that these successes are evidential.”

(Y8, male urban parent)

In general, the participants of all three focus groups had trust in vaccines as much as they could. With regard to the HPV vaccine, information is lacking, which results in a lack of trust in this vaccine. However, one rural parent mentioned that the risk of getting infected is always present if you decide on not getting vaccinated. Therefore, he would not see why anyone would reject getting a vaccine. Not much was said about the quality of systems of vaccine services. However, one of the young adults noticed that healthcare systems differ globally. A rural parent talked about the trust she has in the Dutch healthcare system and its high quality healthcare. Within and between the focus groups, there are mixed feelings regarding the trust in arguments and policy makers behind vaccine-related decisions.

A young adult stated that counter arguments for vaccinations are poorly supported by scientific evidence. Also, in this group, a participant stated that one does not blindly trust the government. He said that the government constitutes elected representatives of the people, and are defending our interests and needs. They obtain information from scientists and therefore, trust in the government means trusting in science, your own electoral decisions and those of society. Despite, an individual young adult stating that governmental decisions are always based on political interest, in all groups there were participants who generally trust the government and policy makers without thinking about it. Unfortunately, through negative experiences, lack of individual help & service and bad communication, this trust might reduce. As a result, trust in arguments made by the government in favour of the HPV vaccine might reduce as well.

Most participants thought that research is lacking on the side effects of vaccines. Therefore, they consider it difficult to express themselves on the degree of safety of vaccines. In general, most participants agreed with the fact that immunisation is a social norm. However, most of them agreed to this only after having a debate and receiving more information on herd immunity and the fact that diseases and viruses can be spread easily. Several participants admitted that they have never thought about immunisation as a social norm before. The opinions of some young adults contradicted the opinions of others because they considered vaccination as something you do out of self-protection, not to protect others. Their arguments

included the fact that if others decide not to get vaccinated, it is your own responsibility to risk contamination. A young adult went on to say that:

“If you do not want to become sick, you should get vaccinated.”

(Y4, male young adult)

Some young adults said that protecting others is not the main reason to get vaccinated, but it plays a role in the decision making. However, one of the young adults who seemed altruistic, disagreed with this and he stated that he would also get vaccinated if it was solely for protecting society, instead of self-protection. Two other young adults disagreed with him, because they would get vaccinated for self-protection initially and if this leads to herd immunity, that is a bonus. The fact that the participants are protected as well if someone else decides to get vaccinated, was experienced positively.

One of the rural parents shared that she travels a lot and she has seen the importance of immunisation as a social norm. She said that complete villages have been wiped out or got extremely sick because one person did not get vaccinated. Another rural parent shared that because of anti-vaxxers, she understood immunisation as a social norm because of the decrease in the vaccination coverage rate. Another rural parent said one of her old classmates dropped out of the caretaker study because she could not get vaccinated against hepatitis B, while the vaccination was compulsory out of protection for the vulnerable people in the care centres. In her opinion:

“I do not want to be the cause of people becoming ill.”

(Y1, female rural parent)

Since HPV is a sexually transmitted virus, the rural parents agreed with the fact that this is about self-protection initially, especially because they stated that sons would get vaccinated to protect their female bed partners. Urban parents agreed with this. To them, females would get the HPV vaccine out of self-protection and males would do so in order to protect others. Again, the lack of information on the (negative) side effects and the long-term effects of the HPV vaccine were mentioned.

Experiences with vaccination

Negative experiences with the HPV vaccine were most heard, because these stories induced more debate among the participants. These were stories of females who got sick after receiving the vaccine. The participants shared their family and acquaintance (negative) experiences with vaccination. There was some contradiction within both parent groups, because some parents questioned whether negative experiences are the result of the vaccine or are to be caused by other factors. The urban parents got more into detail on things that went wrong with vaccinations in general. One of the female young adults even mentioned that she regretted getting the vaccine, because of negative side effects and the fact that there were rumours about the vaccine being unhealthy. She stated that:

**“It was said that the vaccine would not lead to negative side effects,
but I saw everyone around me getting sick because of it.”**

(Y5, female young adult)

Only a few personal experiences were shared, but many participants questioned the effectiveness of the HPV vaccine. However, another female young adult mentioned that she did not get sick from the HPV vaccine. The group talked about how they were happy that their parents had decided for them. One of the parents of a young adult works as a caretaker and she recommended it, while another parent also works in this field, but she advised against it because of the lack of evidence on the effectiveness of the HPV vaccine, the lack of information and the perceived negative side effects. This was similar to the group with rural parents, who also shared stories about children who are afraid of needles, which could hinder the decision to take the HPV vaccine. Then the rural parents discussed side effects and how one can be sure that the receiver of the vaccine got sick of the vaccine or from something else. A rural parent stated that this has to do with perception and opinions that are made up by people. Lastly, stories were shared about people getting cervical cancer, but this is immediately called into question by another rural parent who asked whether this happened to young females or not. That question was not answered.

One of the urban parents also mentioned that a lot of negative stories on the HPV vaccine were spread, especially coming from England, but she did not mention where she read these stories. One parent mentioned that her daughter will be nine years old soon, meaning that she will get invited to get the HPV vaccine. Most of the family and friends of this parent did not let their daughter(s) get the vaccine, so she is still in doubt herself and she will try to get more information. Another urban parent shared that her daughter did not experience any side effects, but she was shocked when she heard stories about the vaccine causing cancer. One of the parents admitted to having had her doubts about the vaccine, but they disappeared over time. On the other hand, one urban parent got both of his daughters vaccinated against HPV. He stated that he did not really think about potential side effects, because he has trust in the government and their decisions. Then an urban parent talked about how children should not be allowed to get vaccines when they are sick or are having a cold, because that could result in more serious sickness because of the vaccine. Also, a story is told on how the father of one of the parents got extremely sick because of the annual influenza vaccine, resulting in traumas against that vaccine. Lastly, a story is shared about a baby ending up at the intensive care after getting vaccinated. All in all, it was found that a multitude of experiences or stories on vaccines, some with evidence and some without, drive people's opinions.

Vaccination barriers

The most important finding with regard to vaccination barriers was that potential negative side effects were seen as the most important influence on the HPV vaccination decision. Besides that, the participants in all three focus groups talked about how costs of the vaccine and therefore willingness-to-pay and religion might occur as vaccination barriers. There was a contradiction between some parents about the willingness-to-pay, since some parents would be willing to pay more money for the HPV vaccine than others. Also, most participants did not see religion as a vaccination barrier, but some could understand that this might be a barrier for religious people. The young adults discussed the young age of getting the HPV vaccine as a possible barrier to get it. Vaccination barriers can also appear in various forms like physical and geographical accessibility to vaccination services and affordability. However, none of these were mentioned by the participants. Below, the perceived vaccination barriers are elaborated.

The negative side effects of vaccinations have to do with experiences the participants heard or had with regard to the vaccine. Knowledge and risk perception also play a role in the view that participants have on the side effects. As mentioned before, participants in all three focus groups shared stories on how females in their surroundings got sick and got other side effects because of the HPV vaccine. On the other hand, some participants shared that they did not get sick themselves or that their daughter(s) did not. A rural parent claimed that vaccinations cause attention deficit disorder in as males as well as females. This parent also stated that this disorder, and a decrease in fertility do not always have to be caused by the vaccinations, but experimenting and taking the chance is too risky to him. Also, several participants in all three focus groups stated that fear is the result of stories on negative side effects. All participants wondered about percentages on the risk of getting side effects.

With regard to costs and willingness-to-pay for vaccines, most participants agreed that costs might be a vaccination barrier. The young adults stated not much on this topic. Among the rural parents, a debate occurred on the costs of getting the HPV vaccine at a later age instead of in the year one turns 13. Some parents assumed that the prices would be sky-high, while others counter reacted with the expectation of lower prices when the demand grows. One of the rural parents used to work for the municipal health service and explained that the price is around €80,-, instead of thousands of euros as some participants expected. The rural parents agreed that the costs of vaccinations go down when more people get HPV and more people want to get the vaccine. One of them stated that:

“Obviously, it has to do with market forces.”

(Y3, female rural parent)

As stated before, costs of the HPV vaccination was mentioned as a possible barrier to not get the vaccine. This goes hand in hand with the fact that some a contributing factor for some parents who got their children vaccinated was that it was for free back then. One of the urban parents claimed costs might make her doubt the decision. One of the urban parents claimed that she would not get vaccinated during her pregnancy, not even when it would have been for free. So there is some disagreement here between people who are willing to pay for vaccines and people who are not willing to pay.

With regard to the HPV vaccine, a rural parent claimed that religious people hope that their children will find the one and that they share a sexual experience solely with this partner. However, there is no guarantee that this will happen, which makes it, according to the rural parents, even more important to get vaccinated against HPV. Religion was not mentioned as a possible vaccination barrier by the urban parents or the young adults. However, one of the urban parents said that her son has been circumcised and to them, this may be a reason not to vaccinate against HPV. This is because to the urban parent, circumcision leads to better hygiene and a decreased risk of spreading infections.

Autonomy

The most important finding of the debate on autonomy is that it differs per child whether the child can act autonomously or not yet. This also has to do with communication between parents and the child and involving the child in decision making.

In the beginning, there was consensus within and between the focus groups on the fact that 12 years old is too young to get the vaccine, since most children are not even sexually

active then. However, after the mediators explained that the HPV vaccine is most effective before one is sexually active, the opinions of the participants changed. The female young adults agreed that they were happy that their parents made the decision for them. This is remarkable, because both groups of parents assumed that their children would see this as a problem. However, fierce discussions on autonomy happened, especially among the urban parents. In this group, there was a contradiction on the appropriate age to give children autonomy. Some agreed with 12 years old, while others thought that 18 years is old enough. All participants agreed that things have changed over time, namely that the people got more individualistic and that there is more knowledge available which leads to people requiring more information and thus need for autonomy. Parents stated when they were younger, they did not ask their parents about vaccines, they just got the invitation and went to get the vaccine. No important differences in opinions on autonomy of children were to be found between the rural and the urban parents. All participants agreed that communication between parents and children is key, especially with regard to sexual activity and the HPV vaccine. In this paragraph, the participants' opinions on compulsory vaccination, autonomy and understandability are elaborated.

Surprisingly, compulsory vaccination was mentioned a few times in all three focus groups, even though most participants realised that there is no compulsory vaccination in the Netherlands. One of the young adults stated that the government should oblige vaccination on frequently common diseases, while vaccination on less-frequently diseases should be voluntary. Two other young adults agreed on this, while one strongly disagreed, because this would not be a realistic intervention, because it is hard to determine the benchmark for the severity of a disease. Also to this opponent, the mortality rate of a disease should not be the benchmark to decide whether a disease is severe enough to include compulsory vaccination. Additionally, one young adult stated that she disagrees with HPV as a compulsory vaccine, even though this will not be the case in the Netherlands. A rural parent shared a story on how one of her classmates had to drop out of her caretaker study because she was obliged to get a certain vaccine and she refused to get it. The parent who decided not to get his child vaccinated, got questioned whether it would be a problem to him if his child would get vaccinated in the hospital after he had an accident and the parent responded that this would not be a problem to him. Also, he would not mind if vaccinations would become compulsory, but another parent responded that nothing is compulsory yet in the Netherlands. Also, among the urban parents there was a debate on compulsory vaccination. To them, compulsory vaccination would take away freedom, but it would be good for the safety of the country. They agreed that there is a difference in an influenza vaccine and a polio vaccine. One of the urban parents stated that she is obliged to get the influenza vaccine for her job and only with written arguments to the manager, this would become debatable. Additionally, allergies are discussed, since some people are allergic to some ingredients of certain vaccines, which would make it impossible to make them compulsory. Lastly, a few participants mentioned that some children cannot get vaccinated because they are for example treated with chemotherapy. That is the reason some child care centres make vaccination compulsory before allowing children to join their centre.

Autonomy of children to decide on getting vaccinated or not, was a much talked-about topic in all three focus groups. Most participants thought 12 was too young. However, one young adult mentioned that age 16 could be too late, because then some people could have already gotten HPV. There was consensus on the fact that it is the parents' responsibility to decide, after discussing this with the child. One of the young adults said that she was happy

to have her mother making this decision for her. Another said that she was also happy to have had her parents to advise her, because she is afraid of needles, which is, to another young adult, exactly the reason why children would not be allowed to make this decision on their own. A young adult responded to that:

**“It is your body and not your parents’,
so you should decide what to do with it.”**

(Y2, female young adult)

The rural and urban parents had a similar discussion going on. One of the rural parents shared the story of her daughter who got the first part of the HPV vaccine a few years ago, but now at 18 years old she refuses to get the second part of the vaccine. Also, among all participants, there is a need for information on the consequences of not getting the second part of the HPV vaccine, before being able to make an appropriate decision on this.

A rural parent claimed that autonomy is very important, provided that the children are well informed. For instance, children do not care about retirement yet either, so thinking about the consequences of HPV might be too early for them as well. Another rural parent stated that his daughters agreed with getting the vaccine, after they talked about it. One rural mother stated that her son would not disagree with her and at the age of 12, she thinks she does not have to tell him what it is all about. Another mother said that it is not allowed to have a look at your child’s medical data anymore from 12 years old. Apparently, a child must give permission for that to happen, showing children’s autonomy according to the law. This was also mentioned by one of the urban parents. In both focus groups with parents, not all participants were aware of this.

Among the urban parents, a fierce discussion happened between two parents. One of them stated that 14-year olds are not capable of deciding for their own, while the other lets her daughter make decision. Another parent added that it is important to listen to the opinion of his children. Therefore, they can talk about it, but in the end, the parents make the decision. A discussion also occurred around the topic of sexual activity. One parent did not have trouble talking to her son about this, while others thought it can be difficult to talk about sex with children. One of the urban parents stated that he tries to have conversations with his daughters which connect to their current experiences and opinions, just as one of the rural parents did. Peer pressure is mentioned as one of the challenges at the school yard, because children could feel left out based on their decision to get or to not get vaccinated against HPV. To conclude, parents and the young adults agreed that this decision and this degree of autonomy depends on the type of child and that information is again key in this topic.

It turns out that the degree of autonomy that is given to a child, has to do with understandability. Being able to understand the matter well, has mainly to do with age and specifically with HPV, with sexual activity as well. This is because females are 12 years old when they get invited to get the HPV vaccination. As previously mentioned, the parents as well as the young adults assumed that it is not a problem to get vaccinated against HPV at a later age. However, this changed after the participants were told that the vaccine is most effective before the receiver is sexually active. After that, the young adults agreed with the invitation age of 12 and they said that it is the parents’ responsibility to communicate this well to their child(ren). To them, this includes giving sex education and talking about the consequences of HPV. On top of that, the young adults agreed that it is always a good idea

to use a condom, even though they realised that this does not fully protect against HPV. In the opinion of a young adult:

“I do not think that a 13-year-old has the right knowledge to make a decision.”

(Y4, male young adult)

The debate on understandability was different among the young adults than among the parents. One of the rural parents stated her disbelief that males are not eligible yet to get the HPV vaccination. She said that she would love to give her sons the vaccine as well. Another participant said that she does not understand why HPV was a much-debated topic in 2009 when the vaccine was promoted, but nowadays nobody bats an eye anymore. Additionally, according to all participants, understandability depends on the character of the child, as was the case with autonomy. Multiple parents thought that 12 years old would be too young to start talking about sex. They will probably just get the HPV vaccine without asking what it is for. However, based on the experience of one of the parents, this changes when they get older and when they get the autonomy to decide on the second HPV vaccine themselves. However, one of the rural parent did not see the problem in giving sex education to 12 year olds. To him, it is important to adjust the information you tell them, based on their age. The older they get, the more details a parent can discuss. In general, the parents stated that they feel sorry for children nowadays because they have to grow up faster than they used to.

Risk perception

The most important finding regarding risk perception is that participants lacked information on risks. This includes risks of getting infected, getting sick, getting implications from HPV like cervical cancer and the chance of infecting someone else. Within and between the focus groups, there was consensus on the fact that important information on risks is lacking. With regard to personal risk perception, participants mentioned that getting negative side effects from the vaccination is worth it if that means that one will be protected against HPV. However, the young adults agreed that this could be a reason for people to reject the vaccine. A young adult claimed:

“Better safe than sorry.”

(Y3, male young adult)

One of the young adults said that the importance of getting vaccinated increases when the chance of getting a disease becomes higher. One other young adult agreed with this, but she stated that she would want to be informed as well as possible before deciding. Another said that chances are chances, and it does not matter to her how small they are. Most participants agreed that this is the same for males and females, even though the consequences of HPV are less common and mostly less severe for males. Most parents agreed with the young adults on this. However, the debates differed between the focus groups with regard to the emphasis some parents placed on costs or herd immunity. One of the rural parents stated that problems will exist when there is a low chance of getting infected, but the costs for the society and the health care system are high. Another rural parent disagreed by

stating that high prices would be outweighed by saving the small amount of people who would get infected. She said that this is similar to the current rheumatism situation in the Netherlands.

The urban parents discussed herd immunity. To them, the responsibility for the individual contribution to herd immunity depends on the type of disease. With regard to HPV, the urban parents have difficulty stating the extent of responsibility, since there are unknown long-term consequences and side effects. Some urban parents stated that risk behaviour in sexual activity is always present, but some do not care about minimum risk behaviour. These people are better safe than sorry, just like some young adults.

Finally, complacency in vaccine hesitancy has been barely mentioned. Complacency of vaccine hesitancy entails a low perceived risk of diseases that could be prevented by vaccines. The rural parents discussed some doubt on current vaccines and the diseases they eliminate. Diseases like diphtheria, pertussis, tetanus, measles and the mumps currently do not prevail. According to a rural parent, this makes his non-vaccinated son protected against these diseases. However, another parent stated that the other rural parent's son would be the first to get sick when these diseases start to prevail again. Obviously, the fact that these diseases currently do not prevail anymore thanks to vaccination, does not mean that the diseases have disappeared. This was stated by the rural parents as well.

Knowledge and education

In all three focus groups, the need for knowledge was a commonly discussed topic. There was consensus on the need for knowledge on the risk of getting infected, with and without the vaccination, the risk of spreading the disease and the negative side effects that might occur. Also, the correct and knowledge and misperceptions of the participants corresponded between and within the groups. Knowledge and education include matters like correct knowledge, lack of knowledge, misperceptions and need for knowledge.

In general, in all three groups correct knowledge was shared by some participants, including the fact that HPV is a sexual transmitted virus and it can be transmitted as well by males as females. Also most participants knew that in many cases, the infection is not noticeable. The young adults searched for information on HPV online, during the focus group. This led to correct information about the consequences of HPV, namely cervical cancer and other types of cancer like throat and mouth and warts, also for males. Additionally, the governmental plans on letting males as well get vaccinated against HPV from 2021 on, was mentioned, as well as the decrease in participation grade. One of the young adults also knew that HPV can still be transmitted despite the use of a condom. In contradiction to the young adults, the parents did not have the chance to search for information on HPV during the focus groups. However, the parents were also aware of the fact that HPV can cause cervical cancer and that females get invited to get the HPV vaccine in the year they turn 13, followed up by another one in the year they turn 15. One of the urban parents had extensive knowledge on the cancer-related consequences of HPV.

Some participants lacked knowledge on the contagiousness of HPV and the substance of vaccines in general. One of the young adults admitted that with her current knowledge on HPV, she would still not have gotten the vaccine at 12 years old, but she would make the decision perhaps later. Also, all participants talked about a lack of knowledge on (negative) side effects and the effectiveness of the vaccine. One of the female young adults who did not get the vaccine, said she might have made a different choice back then if she would have gotten more information. A rural parent mentioned that people create some kind of fear against vaccines because of their lack of knowledge on vaccines in general. Also, among these rural

parents there was a lack of knowledge on HPV tests and they questioned why only women aged 30 years and older would get tested. One of the rural mothers explained that she would not have the right answers ready if one of her children asked why they should get vaccinated against HPV. With the urban parents, the lack of knowledge started with not knowing what the abbreviation HPV stands for and whether the vaccine makes you sick with HPV or helps against it. Also there was uncertainty of why only younger females could get HPV, but luckily this was rejected immediately. One of the urban parents admitted to be lacking knowledge on scientific articles and therefore being unable to read and understand these. Another urban parent mentioned the danger of not being informed well, which could lead to people making wrongful decisions. Lastly, some urban parents stated the lack of provided information and communication again. They missed information on side effects, fertility, communication channels like an emergency phone number and easy-to-understand research.

During the focus groups, misperceptions were corrected. These misperceptions included HPV as non-transmittable and HPV not being able to damage males. Also, most participants thought that the effectiveness of the vaccine did not depend on whether the receiver has been sexually active already or not. Among the young adults, there was uncertainty on the difference between a sexually transmitted disease (STD) and HPV, while of course, HPV is an STD as well. Also, with regard to HPV, it was not clear to one of the rural parents that this virus is only transmittable through sex. Among the rural parents, there were misperceptions on vaccines in general, namely that these include chemical toxins. Lastly, some rural parents thought that nowadays the HPV vaccine is voluntary for males and some urban parents thought that the HPV vaccine for males would become compulsory.

All in all, the need for knowledge was clearly present among all participants. The following subjects have been listed by the participants with regard to the need for information on HPV and the vaccine: (negative) side effects, the way of transmitting, the substance of vaccines, symptoms and consequences for males and females, (proof of) effectiveness of vaccine, does the vaccine protect permanently, how often you should get vaccine, HPV in general, prevalence and incidence, risks, where to find correct and understandable information, costs of vaccinations, cervical cancer, amount of cases transmitted by males to females, fertility consequences, an emergency phone number, more suitable information for males, age-related questions, autonomy of children and tests.

All in all, there is a need for knowledge on the risk of getting infected, with and without the vaccination, the risk of spreading the disease and the negative side effects that might occur.

Communication

The most effective way of stimulating the acceptance of the HPV vaccine, is through clear communication. Communication must be neutral and transparent, which means that it highlights all sides of the topic. Also, there was consensus that different information should be provided for males and females, because their motives and consequences differ. In all focus groups, contradiction happened with regard to the participants' opinions on the role and transparency of the government. Especially among the urban parents, there was some anger on the fact that the available information is one-sided. However, some participants disagreed with this and trusted the government. Lastly, some participants suggested that current information is not easy to understand and then, among the parents, there was consensus on the fact that information should be easy to find and easy to understand.

As mentioned before, all participants felt the need for knowledge on specific themes. Appropriate communication channels were suggested such as the school, neutral websites covering all sides of the information, easy to understand information and the invitation letter for the HPV vaccine. This communication strategy was not just mentioned to stimulate males to get vaccinated against HPV, but also females.

Based on the aforementioned lack of knowledge and the need for knowledge, the communication of the media and the government and its transparency were discussed. Some urban parents doubted the neutrality of newspapers and tv programmes after the HPV vaccination debate. This could create fear and distrust in national communication channels. Most participants mentioned that the information they were given on the HPV vaccine, included the fact that this vaccine could reduce the chance of cervical cancer. Therefore, the information was solely focused on females, rather than explaining the male consequences as well. Also, there was an overall need for transparency with regard to possible side effects and the effectiveness of the vaccine. There is also a need for multiple websites which are independent and highlight all sides of the topic and not only the benefits of the vaccine. However, some participants contradict this statement by mentioning that the government always acts in favour of its citizens and has the duty to protect the society. Additionally, an urban parent mentioned the importance of the understandability of the information. In the opinion of two young adults:

“A website of the government should be neutral, right?”

- “The government has a duty to protect the society.”

(respectively Y6, female young adult & Y4, male young adult)

As mentioned before, the young adults looked up information during the focus group. This information was to be found on websites like rijksvaccinatieprogramma.nl, RIVM and general practitioner websites. School was mentioned as a useful information source by the young adults as well as by the rural and urban parents. However, schools already have a high responsibility and lots of information to cover. Also, there might be disagreement with the tactics of the school and therefore the school would be criticized. Additionally, the problem that school should provide sex education before the age of 12 could be created. Some parents felt like this should be their own decision and it should not be made by school. That way, the parents would be forced into having the talk about sexual activity with their child(ren). However, one of the urban parents shared the fact that her daughter did receive information on HPV at school and she was content about how this went. The children got the opportunity to put their questions anonymously in a box. This activity made it easier to talk to her daughter about this topic. Besides school, governmental websites, tv advertisements and information letters at home were preferred ways for youth to be informed. The rural parents suggested support groups within municipalities, community centres and social media as useful communication channels. According to a rural parent, information packages are often not read by children, which could indicate communication improvement. Rural parents concluded that the HPV vaccine information should be addressed to the child and their parents/caretakers. Also, the HPV campaign which was organised a few years ago in the Netherlands was mentioned. She used to answer questions about the vaccine. Lots of people called, which might indicate a need for knowledge. Lastly, one of the urban parents shared a story on the lack of personal service and help she got with getting her daughter vaccinated. According to

her, the municipal health service claims to follow the governmental guidelines and is therefore not able to offer personal help and service.

Normative arguments and attitudes

The first part of the results; altruism, exists to provide an overview of the altruistic behaviour and acts of the participants and to find a link between altruism and the willingness for males to get vaccinated against HPV, since this has to do with indirect vaccination. This part is followed by the acceptance of the HPV vaccination by identifying factors influencing the vaccination decision, like beliefs, experiences and attitudes towards autonomy of children, risk perception, knowledge and communication. Lastly, this final part of the results is an overview of all the normative arguments and attitudes of parents and young adults towards the HPV vaccination for males and to provide an answer to the research question.

The answer to the research question *“What are the attitudes and normative arguments of young adults to whom HPV vaccination is recommended and what are the attitudes and normative arguments of their parents?”* is diverse and differs per individual. The attitudes and normative arguments of parents as well as the young adults depend on a combination of the beforementioned factors like culture, religion, education, upbringing, altruism and experiences with vaccination. In general, the young adults had positive attitudes towards HPV vaccination for males, but this was only after being informed about what HPV is. Most young adults were willing to get vaccinated against HPV, even if this mainly meant for the protection of others. However, for females as well as males, self-protection was the initial argument to get vaccinated against HPV. Regarding the parents, some could not wait until the HPV vaccine would get available for males, while others were still in doubt about the effectiveness and would therefore like to get informed well before they can make this decision.

The provided answers to the research question have been roughly divided into two themes, namely disagreement on the HPV vaccine for males and agreement on the HPV vaccine for males. These categories include a summary of what participants thought about the HPV vaccine for males and why they would agree or disagree with this. All in all, agreement on the HPV vaccine for males would grow if there is more information available on risks and consequences of HPV and the vaccine. Also, males would agree, mainly out of self-protection, while females agree with the HPV vaccine for males out of protection to others. The answers can be found below.

Disagreement on HPV vaccination for males

The most striking reasons to disagree with HPV vaccination for males are the doubt about the effectiveness of the vaccine and the potential negative side effects. Besides that, factors resulting in disagreement on the HPV vaccine for males include possible costs, a lack of information, the age at which the vaccine is given, and religious or cultural beliefs. Normative arguments against the HPV vaccine for males include the complexity of autonomy of children and the parents' role in this.

All in all, the attitudes towards the HPV vaccine for males were positive, but there is still crucial information lacking on this topic like what HPV is, the effectiveness of the vaccine, the symptoms, risks, potential side effects and that a HPV vaccine for males is in the making. This lack of information results in doubts towards HPV vaccination for males.

Agreement on HPV vaccination for males

Normative arguments in favour of the HPV vaccine for males include the fact that males will be protected as well and that they will be able to protect females. Agreement on the HPV vaccine had mainly to do with minimizing the risk of spreading HPV. Regarding self-protection, some contradictions appeared. Some participants, like one of the male young adults, would agree with the HPV vaccine for males in order to protect themselves or their son(s). However, since the risk of males getting serious complications from HPV is relatively small, this could be a reason not to get vaccinated against HPV.

The agreement on HPV vaccine for males was a more frequently talked-about topic than the disagreement on this. Most participants agreed that the HPV vaccine should be available for males as well, because that way the responsibility is not just the females. One of the young adults said that she would feel guilty for spreading it. However, it is surprising to see that most male parents and young adults agreed with the HPV vaccine for males because of the risk of them getting infected or even sick. Females mostly agreed with the HPV vaccine for males to minimize the risk of spreading the infection. A parent stated that:

“To me, it is extremely weird that males do not get the HPV vaccine.
I would love for my sons to get vaccinated against HPV.”

(Y4, female rural parent)

Most participants perceive that the small risk of males getting sick because of the virus does not matter. Even a small risk seems like a good reason for males to get vaccinated as well. One of the rural parents mentioned that getting the vaccine for free, would definitely make her decide in favour of the vaccine for her sons. Another parent admitted that she would not know how to convince her son into getting the HPV vaccine. To her, this has to do with the fact that the son would mainly have to get vaccinated for the sake of others. She said that she could explain the male consequences, but the small risk of getting those might not convince her son. Another rural parent shared how she would just tell her son to go get the vaccine, without having the talk on sex education with him. She believed that her son would not ask her what the vaccine is for exactly. Even the parent who did not let his son participate in the national immunisation programme, is positive towards the HPV vaccine for males. Mainly because of the risk of spreading the virus. He said he would talk to his son about this with the approach of protecting others. When being asked whether males should also get an invitation for getting the HPV vaccine, the participants unanimously said yes. This should be as young as possible, but combining this with the talk on sex education, differs per child. Urban parents also thought that the HPV vaccine should be available for males, but several of them said that they still had to think about it and get more information on the topic.

Discussion

This research was meant to inform about the normative arguments and attitudes towards the HPV vaccine for males, but the focus group discussions also led to arguments and attitudes towards the HPV vaccine for females. Several arguments were given in favour of and against the HPV vaccine, but the most striking topic was the lack of information and knowledge.

Literature stated various aspects to be involved with vaccine hesitancy in general, but not all of these determinants and factors turn out to be important for the HPV vaccine

hesitancy. In the literature comparison below, more information can be found on the models and determinants regarding the HPV vaccination. Additionally, the strengths and limitations of this research are mentioned. Lastly, recommendations for further research and practical recommendations are given.

Literature comparison

The lack of knowledge was mentioned in all three focus groups. A rural parent explained that she used to answer questions about the HPV vaccine during the campaign a few years ago. Lots of people called, which indicates a need for knowledge and the recurring doubts on the effectiveness of the vaccine and the potential negative side effects. On top of that, other aspects play a role in decision making with regard to the HPV vaccine, like autonomy of children and altruism. Surprisingly, compulsory vaccination was mentioned a few times in all three focus groups, even though most participants realised that there is no compulsory vaccination in the Netherlands. This was striking since this did not come forward in the literature research as a matter that could potentially lead to vaccine hesitancy.

What this study adds, is more information on altruism, risk perception, the effectiveness of vaccines and the importance of information and communication as determinants of vaccine hesitancy. Below, altruism, the “Three C’s” model, the determinants of vaccine hesitancy matrix, risk perception, effectiveness of the HPV vaccine, protection and knowledge and communication are elaborated with a comparison between the literature found on these topics and the results of this research.

Altruism

The most striking finding was the fact that the literature lacked the aspect of autonomy, resulting in vaccine hesitancy. According to the parents, if a parent teaches his or her child(ren) about altruism and the proper way to behave altruistically, the child(ren) can turn out to be more willing to get vaccinated. Just like the male young adult who showed above average altruistic behaviour. It seems that if parents stimulate altruistic behaviour, these parents see the importance more of getting children vaccinated. However, the male rural parent who did not let his youngest son get vaccinated, is an exception on this.

Historical influences were mentioned, mostly with regard to the change in altruistic behaviour, but not as an aspect involved with HPV vaccine hesitancy. With regard to motives to be altruistic, none of the participants mentioned anything about not feeling bad or guilty as a reason to help someone. Additionally, getting punished if you do not help someone, is a consequence that is not mentioned in all three focus groups, just like altruism from empathic feelings. Association commitment was an aspect which was not stated in the literature but it was mentioned by participants as a motive to be altruistic.

The “Three C’s” model

The three determinants of the “Three C’s” model (World Health Organization, 2014), confidence, complacency and convenience were included in the deductive coding scheme. Complacency with regard to vaccine hesitancy has been barely mentioned by the participants of the focus groups. Complacency of vaccine hesitancy entails a low perceived risk of diseases that could be prevented by vaccines. It seems like the model is too restricted for the use of recognizing elements for HPV vaccine hesitancy. The rural parents discussed some doubt on

current vaccines and the diseases they eliminate. Diseases like diphtheria, pertussis, tetanus, measles and the mumps currently do not prevail. According to a rural parent, this makes his non-vaccinated son protected against these diseases. However, another parent stated that the other rural parent's son would be the first to get sick when these diseases start to prevail again. The fact that these diseases currently do not prevail anymore thanks to vaccination, does not mean that the diseases have disappeared. This was stated by the rural parents as well. Also, the fact that a disease can be eliminated by vaccinations has only been mentioned once, solely by a rural parent, which indicates the lack of importance for this aspect in the decision making.

Determinants of vaccine hesitancy matrix

Several aspects were not to be found in the results of the focus groups of this research, even though they were stated in the literature (World Health Organization, 2014). These include contextual influences like geographical accessibility, influential leaders, politics/policies and perception of the pharmaceutical industry. Regarding individual and group influences, general beliefs and attitudes about health and prevention were not clearly mentioned. Additionally, several vaccine/vaccination-specific issues from the matrix (World Health Organization, 2014), were not clearly mentioned. These include the mode of administration, design of the vaccination programme or the mode of delivery, reliability of vaccination equipment and supplies and the strength of the recommendations and/or knowledge base and/or attitude of healthcare professionals. With regard to the quality of systems of vaccine services, not much was said. However, one of the young adults noticed that healthcare systems differ globally. Most participants thought that research is lacking on the side effects of vaccines. Therefore they consider it difficult to express themselves on the degree of safety of vaccines. However, costs, the uncertainty of effectiveness of the HPV vaccine and the potential negative side effects were commonly discussed vaccination-specific issues. There is no clear reason to be found for this, but this might have something to do with interest.

Risk perception

Risk perception was mentioned, just like in the literature (Visser et al., 2016b), but it turned out to be relatively more important than some other aspects. Risk perception was commonly discussed in all three focus groups and is therefore an important topic in this research. Literature could continue to build on determinants of risk perception with regard to vaccine hesitancy or acceptance.

Effectiveness of HPV vaccine

Just like risk perception, another important topic in this research is the effectiveness of the HPV vaccine. This uncertainty of effectiveness has been mentioned in the literature (World Health Organization, 2014), but it deserves more attention, since it seems an important determinant in vaccine hesitancy or acceptance. According to the participants, uncertainty of the effectiveness of the HPV vaccine leads to doubt about the HPV vaccination.

Protection

Protection was not a clear determinant to be found in the literature. The arguments in favour of protecting others were only given after the mediators explained that HPV can cause damage

to males as well. It is remarkable that the male young adults mentioned self-protection and protecting others, while female young adults mainly mentioned self-protection as a reason to get vaccinated against HPV. All in all, the need for knowledge was a commonly discussed topic. This shows that in general, people receive similar knowledge.

Knowledge and communication

In all three focus groups, knowledge and communication were mentioned and discussed extensively. However, in the literature, there is no clear information to be found on the role of knowledge, information and communication influencing the decision to vaccinate.

Differences between focus groups

The most remarkable difference was noted between the young adults and the rural and urban parents. The discussions among the young adults were less rapid because the debate happened online and therefore they were chatting instead of talking to each other. This gave them more time to respond and the young adults seemed to follow up more on the content of the conversation. This might be attributed to the lack of personal contact in this online group. Additionally, the young adults responded in the group with regard to themselves, instead of for their child(ren) like the rural and urban parents did. Also, the young adults were not so firmly on this topic of HPV and the female young adults agreed that they were happy that their parents made the decision for them. This is surprising, because both groups of parents assumed that their children would see this as a problem.

Among the urban parents, a distribution of several various cultures and origins was to be found. This distribution was less clear in the other two focus groups. The variation of cultures and origins might influence the group dynamic and attitude of participants, because upbringing and norms and values were mentioned as determinants for altruistic behaviour.

In general, there was no striking difference in attitude for the HPV vaccine between parents with sons or parents with daughters. However, the parents with daughters were in general slightly more aware of HPV, because of the debate in 2009.

Strengths and limitations

Like any other research, this research also has its strengths and limitations. These are mentioned below.

Strengths

One of the strengths of this research is the use of triangulation. The credibility of this research is strengthened with the use of two different sources of information. These are literature research and qualitative research of focus groups. The literature research led to useful codes and themes for the focus groups. Through credibility, the results of this research represent the reality, just like the focus groups do with the different types of parents and young adults. The variation of participants from a rural living area and an urban living area, created a more complete image. Another strength of this research is the use of focus groups instead of one on one interviews. Focus groups stimulate debates which could lead to interesting results.

Limitations

This research also has its limitations. The online focus group has its limitations by the lack of social interaction and not being able to respond quickly. Another potential limitation was the variation of cultures and origins, especially within the group with urban parents. One of the urban parents claimed that she is helpful and welcoming because of her South-American roots, while another participant disagreed with that statement because she has been raised the Dutch way herself, but she is generous and welcoming as South American or African cultures.

It is important to realise that focus groups in general might lead to some limitations. In focus groups, there are always a few more dominant and several less dominant people. Even though attempts of involving the lesser dominant people, these people will probably say less. Maybe these people would be willing to give more information during a one on one interview. Also, the composition of the focus groups might lead to limitations, because there was no exact ratio of one-third parents with only sons, one-third parents with only daughters and one-third parents with sons and daughters. Also, a requirement for the age of the children of the participants was that they were 10-16 years old, but it was hard to collect these people, so that age requirement expired. Also, the rural living area involved the environment of a big city, so not really the countryside and some participants were living there, but they originated from big cities. Lastly, the participants were called in by a company which was hired to do so. However, participants who are in a likewise database, are already people who are willing to participate in research and they either have interest in the topic or they are slightly professional in participating in research and they do it for the money. This might distort the variety of participants. On the bright side, the company arranged a substitute as well and as soon as they could for people who did not show up.

Lastly, a limitation includes the fact that some codes have overlap, such as costs which went hand in hand with willingness-to-pay. This made analysing the results harder. Also there was no intercoder-reliability, which might result in researcher bias in the analysis of results.

Recommendations

Recommendations from this research include recommendations for further research and practical recommendations. Both are mentioned below.

Further research

First, further research might focus on HPV vaccine hesitancy instead of vaccine hesitancy in general. The determinants of vaccine hesitancy can then be changed into relevant aspects with regard to HPV. Second, with regard to participants of focus groups or respondents for interviews, the determinants like level of education or religion might result in other outcomes. Maybe a model can be built on the determinants and themes which play a role in specifically the HPV vaccine acceptance or hesitancy.

After implementing the HPV vaccine for males, research will most likely be done on the amount of people getting the vaccine, but research can also be done on their normative arguments and attitudes. Just as research on people who decided against the HPV vaccine for males. That way, information and communication can be adjusted.

Practical recommendations

This research indicates several practical recommendations with regard to the HPV vaccine for males. First, improve information and communication on HPV, the HPV vaccine and risks. Secondly, it is important to make the information suitable for males, just as information for females should be made suitable for them. Thirdly, this information should be neutral, transparent, easy to find and accessible and should be easy to understand. Communication channels like schools, websites and tv advertisements can be used. Maybe even discussion forums or formal gatherings can be organised in order to improve the communication on HPV and the vaccine. Lastly, the information package with the invitation for the HPV vaccine needs some improvement. Make it more attractive for young males and females to read it and the information should be honest, open and transparent.

Conclusion

The participants of the focus groups showed consensus often, among other things that urbanisation and increasing welfare were seen as a cause for the individualistic society we live in nowadays. However, the most commonly discussed aspect was the fact that there is a need for information with regard to HPV and the HPV vaccine. This matters to the vaccine for females and males as well. There is doubt about the effectiveness of the HPV vaccination and there is a need for knowledge on the risk of spreading and the risk of getting infected, with and without the HPV vaccine. Also, information on the risk of getting negative side effects and more information on these potential short-term and long-term side effects are wanted. This information is needed in order to make an appropriate decision whether to get your child(ren) vaccinated against HPV or not. Allow me to recap on all information that is needed about HPV and the HPV vaccine: short-term and long-term negative side effects, the risk of spreading HPV, the risk of getting infected by HPV, symptoms of HPV for males and females, evidence of effectiveness of the vaccine, the frequency of vaccinating which is needed in order to be protected from HPV, prevalence and incidence of HPV, costs of the HPV vaccine, fertility consequences, an emergency phone number, suitable information for males, suitable information for females, the accessibility of tests and lastly, where to find transparent, accessible and understandable information. Providing all this information, might have a positive influence on the stimulation of parents to get their child(ren) get vaccinated against HPV.

It turns out that females in general act from self-protection, while males reason in favour of the HPV vaccine out of protection to others and out of self-protection. After being informed on the consequences of HPV, more people are willing to get vaccinated against HPV for the sake of others, instead of solely out of self-protection.

To conclude, it goes without saying that more information is needed in order to make an appropriate decision on getting as well males as females vaccinated against HPV. The need for knowledge can be fulfilled with transparent, understandable, accessible information.

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Appendices

Appendix I: Informed consent

Toestemmingsformulier voor focusgroep infectieziektebestrijding

- Ik heb de informatiebrief gelezen. Ook kon ik vragen stellen. Mijn vragen zijn voldoende beantwoord. Ik had genoeg tijd om te beslissen of ik meedoe.
- Ik weet dat meedoen vrijwillig is. Ook weet ik dat ik op ieder moment kan beslissen om toch niet mee te doen of te stoppen met het onderzoek. Daarvoor hoef ik geen reden te geven.
- Ik geef toestemming voor het verzamelen en gebruiken van mijn gegevens voor de beantwoording van de onderzoeksvraag in dit onderzoek.
- Ik weet dat voor controle dr. Bob Mulder toegang tot mijn gegevens kan krijgen. Ik geef toestemming voor die inzage door deze personen.
- Ik wil meedoen aan dit onderzoek.

Naam respondent:

Persoonlijke code: *Ingevuld door onderzoeker*

Handtekening:

Datum: __ / __ / __

Ik verklaar dat ik deze respondent volledig heb geïnformeerd over het genoemde onderzoek.

Naam onderzoeker: Jacintha Merts

Handtekening:

Datum: __ / __ / __

Appendix II: Topic list focus groups parents

Set up

- Introducing Bob Mulder and Jacintha Merts
- Goal of the research
- Create a safe and open environment

Introduction

- Who are you? (First names, age, where are you from)
- Do you have a son, daughter or both? How old are they?

Altruism

- Do you see people doing something for each other?
- Why do these people choose to do this for one other?
- What are the lessons you want to teach your child(ren) with regard to doing things for other people and egoism?

Vaccination

- What is your attitude towards vaccination?
- What is the role of the society in vaccination?
- What is your attitude towards vaccination of your children?
- What is your opinion on vaccination being an altruistic act?

Human papillomavirus (HPV)

- What is HPV?
- What is your attitude towards vaccination (for male young adults)?
- What are reasons to let your child get vaccinated against HPV?
- What are reasons to not let your child get vaccinated against HPV?
- What information on HPV (vaccine) are you missing?
- Where would you like to find this information?
- What is the government's role or position in the HPV vaccination debate?
- What is your attitude towards the risk perception of HPV? Is there a higher chance you will get your child vaccinated against HPV if there is a relatively high chance of receiving or passing on the virus? Or is it the other way around?

Considerations

- How important are the considerations towards the HPV vaccine for the benefit of others?
- What is your attitude towards the HPV vaccine, now that you know that your child(ren) will also be protected if someone else will get vaccinated against HPV?
- What is your opinion on the decision to let sons not get vaccinated against HPV?
- What is your opinion towards letting children decide for their own vaccination?

Appendix III: Topic list online focus group

Set up

- Introducing Bob Mulder, Jacintha Merts and Andrea van der Eerden
- Goal of the research
- Create a safe and open environment

Introduction

- Who are you? (First names, age, where are you from)

Altruism

- Do you see people doing something for each other?
- Why do these people choose to do this for one other?
- What are the lessons were taught by your parents with regard to doing things for other people and egoism?

Vaccination

- What is your attitude towards vaccination?
- What is the role of the society in vaccination?
- What is your opinion on vaccination being an altruistic act?

Human papillomavirus (HPV)

- What is HPV?
- What is your attitude towards vaccination (for male young adults)?
- What are reasons to get vaccinated against HPV?
- What are reasons to not get vaccinated against HPV?
- What information on HPV (vaccine) are you missing?
- Where would you like to find this information?
- What is the government's role or position in the HPV vaccination debate?
- What is your attitude towards the risk perception of HPV? Is there a higher chance you will get vaccinated against HPV if there is a relatively high chance of receiving or passing on the virus? Or is it the other way around?

Considerations

- How important are the considerations towards the HPV vaccine for the benefit of others?
- What is your attitude towards the HPV vaccine, now that you know that you will also be protected if someone else will get vaccinated against HPV?
- What is your opinion on the decision to let males not get vaccinated against HPV?
- What is your opinion towards letting children decide for their own vaccination?

Appendix IV: Deductive and inductive coding scheme

In this scheme, the inductive changes have been made *italic* and grey.

	VACCINE HESITANCY*: COMPLACENCY
G00	Low perceived risk of diseases that could be prevented by vaccines.

	VACCINE HESITANCY*: CONFIDENCE
G01	Trust in vaccines
G02	Degree of safety of vaccines
G03	Degree of effectiveness of vaccines
G04	Confidence in quality of systems
G05	Trust in arguments and policy makers behind vaccine related decisions

	VACCINE HESITANCY*: CONVENIENCE
G06	Physical and geographical accessibility to vaccination services
G07	Affordability
G08	Understandability (<i>e.g. age and sexual activity related topic</i>)
G09	Willingness-to-pay
G10	Culture

	VACCINE HESITANCY**: CONTEXTUAL INFLUENCES
G11	Historical influences
G12	Religion

	VACCINE HESITANCY**: INDIVIDUAL AND GROUP INFLUENCES
G13	Personal/family/acquaintance (negative) experience with vaccination, including pain
G14	Personal experience in health system and providers-trust
G15a	Immunisation as a social norm
G15b	<i>Immunisation not as a social norm</i>

	VACCINE/VACCINATION-SPECIFIC ISSUES**
G16	(negative) Side effects
G17	Costs
G18	Uncertainty on effectiveness

	DETERMINANTS OF ATTITUDE***
G19	Risk perception
G20	General vaccination beliefs

	DETERMINANTS OF KNOWLEDGE/COMMUNICATION
G21	Lack of knowledge
G22a	Incorrect knowledge
G22b	<i>Correct knowledge</i>
G23	Need for knowledge
G24	Critics on communication (e.g. of media, <i>government and transparency</i>)
G25	Communication channels

	PROTECTION
G26	Self-protection
G27	Protecting others
G28	Eliminating disease

	ALTRUISM
G29	To benefit (egoistic)
G30	To not feel bad/guilty/get punished (egoistic)
G31	To help someone else/voluntary work
G32	Empathic feelings
G33	Because you're taught to (norms and values)

G34	<i>Balance between helping others and egoism</i>
G35	<i>(not) Knowing someone</i>
G36	<i>Situational (e.g. shame, time or country)</i>

	OTHER
G37	Fear
G38	Ethical relevance (of stretching life time)
G39	Introduction
G40	Closing
G41	<i>Job</i>
G42a	<i>Agreement on HPV vaccine for males and females</i>
G42b	<i>Disagreement on HPV vaccine for males and females</i>
G43	<i>Compulsory vaccination</i>
G44	<i>Autonomy</i>

- * "Three Cs" model of vaccine hesitancy (World Health Organization, 2014)
- ** Working Group Determinants of Vaccine Hesitancy Matrix (World Health Organization, 2014)
- *** Visser, O., Kraan, J., Akkermans, R., Ruiters, R. A., van der Velden, K., Hautvast, J. L., & Hulscher, M.E. (2016b). Assessing determinants of the intention to accept a pertussis cocooning vaccination: A survey among Dutch parents. *Vaccine*, 34(39), 4744-4751.

Appendix V: Overview of composition of participants

Focus group 1 (rural living area)		
	Gender	Children
Y1	Female	Sons (6 & 10)
Y2	Female	Son (12)
Y3	Female	Son (15)
Y4	Female	Sons (11, 14 & 16)
Y5	Male	Daughters (16 & 20)
Y6	Male	Sons (11 & 18) - Daughter (21)
Y7	Female	Son (10) - Daughter (12)

Focus group 2 (urban living area)		
	Gender	Children
Y1	Female	Sons (15) - Daughter (1)
Y2	Female	Sons (13 & 14) - Daughters (3 & 8)
Y3	Female	Sons (21 & 12) - Daughter (22)
Y4	Female	Daughter (15)
Y5	Female	Son (10)
Y6	Female	Daughter (10)
Y7	Male	Son (14) - Daughter (10)
Y8	Male	Daughters (11 & 11)
Y9	Male	Sons (12 & 15) - Daughter (8)

Online focus group			
	Gender	HPV vaccine?	Living area
Y1	Female	Yes	Urban
Y2	Female	Yes	Urban
Y3	Male	n/a	Urban
Y4	Male	n/a	Rural
Y5	Female	No	Rural
Y6	Female	No	Urban