

Vaccination Hesitancy Among Parents in Stockholm, Sweden

A qualitative study examining the effect of the incorporation of the “United Nations Convention on the Rights of the Child” into Swedish Law in 2020

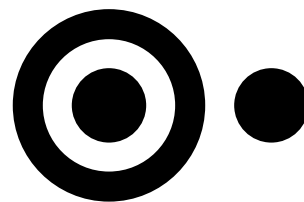
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ABSTRACT

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Title: *“Vaccination Hesitancy Among Parents in Stockholm, Sweden: A qualitative study examining the effect of the incorporation of the United Nations Convention on the Rights of the Child into Swedish Law in 2020”*

Background: On 1 January 2020, the UNCRC was incorporated into the Swedish national law. The Convention argues that all children have the right to health, life, survival and development. The Articles of the UNCRC require higher authorities, health facilities and parents to act in the best interest of children, and to do everything to secure children's rights. Interpreting the Convention, it is possible to conclude that all children have the right to safe and effective vaccines. Even though vaccines are accessible and free of charge to all children in Sweden, vaccination coverage for multiple vaccine-preventable diseases in Sweden has dropped. As one of the reasons for this drop in vaccination coverage is proposed vaccination hesitancy. To fulfil children's rights as proposed in the UNCRC, vaccination hesitancy needs to be understood and addressed.

Aim: The objective of the study is to understand causes of vaccination hesitancy among parents living in Stockholm, Sweden and to examine how healthcare professionals in Stockholm County are working to eliminate vaccination hesitancy, in goal to promote children's rights to health, life, survival and development after the UNCRC became a Swedish law on 1 January 2020. Additionally, to analyze if strategies applied by Stockholm County are truly addressing identified causes of vaccination hesitancy among parents living in Stockholm, Sweden and in that way increasing vaccination rates this year.

Method: This study used a qualitative research strategy. Vaccination hesitancy in Sweden was studied using 20 semi-structured interviews with parents living in Stockholm, while effect of the UNCRC incorporation into Swedish law on vaccination hesitancy was studied using a semi-

structured interview with one health professional working in Stockholm County. The gathered data was summarized, categorized and analyzed according to the proposed themes of two theories. The theoretical framework consisted of the Health Belief Model and Social-Ecological Model.

Conclusion: It was possible to conclude that the choice of immunization among parents is shaped by; 1) sources and type of the received information on vaccines, vaccination and vaccine-preventable diseases included in the general Swedish child vaccination program, 2) their views on vaccine quality, safety, effectiveness and necessity for satisfying children's rights to health, life, survival and development, 3) the level of knowledge of epidemiological concepts, mechanisms, infectious diseases and vaccines included in the vaccination program, and 4) the level of trust in the Swedish Government and healthcare, and belief if they are acting in the best interest of children.

After the UNCRC incorporation into Swedish law, there have not been observed any changes in the strategic work of Stockholm County against vaccination hesitancy. For the past ten years, they are applying methods at the individual- and interpersonal level, which are not quite reaching vaccine hesitant parents living in Stockholm. Other methods at the community- and public policy level are needed.

Due to unclear implications of the UNCRC entrance as a national law and COVID-19 pandemic, it is not possible to estimate if there are any changes in the vaccination rates this year.

Keywords: Swedish child vaccination program, Health Belief Model, Social-Ecological Model, Child Health Perspective, Swedish primary- and preventive healthcare

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LIST OF ABBREVIATIONS

ABBREVIATION	EXPLANATION
CDA	Communicable Disease Act
CHC	Child Healthcare Centers
CYPCS	Children and Young People's Commissioner Scotland
DNA	Deoxyribonucleic Acid
GOS	Government Office of Sweden
FASS	Pharmaceutical Specialties in Sweden
HPV	Human Papillomavirus
SMPA	Swedish Medical Products Agency
SoS	Sveriges officiella statistik
MI	Motivational Interviewing
MMR	Measles, mumps and rubella
OHCHR	Office of the High Commissioner for Human Rights
OLA	Office of Legal Affairs
PHAS	Public Health Agency of Sweden
UN	United Nations
UNCRC	United Nations Convention on the Rights of the Child
UNICEF	United Nations Children's Fund
WHO	World Health Organization

1. INTRODUCTION

According to the United Nations Convention on the Rights of the Child (UNCRC), children have their own right to life, survival, development, health, and healthcare, and all decisions concerning children should be made in the best interest of them (Office of the High Commissioner for Human Rights (OHCHR) n.d.). Interpreting the health-related Articles of the UNCRC (Article 3, 6 and 24, presented in paragraphs 1.3.3.1.-1.3.3.3), it is possible to conclude that all children have right to accessible, safe and effective vaccines against several childhood diseases (Camilleri 2019) and that, higher authorities, health facilities and parents should do everything in their power to satisfy this right.

In Sweden, all children are offered safe, effective and most importantly, free of charge vaccines against multiple childhood diseases (Public Health Agency of Sweden (PHAS) 2019c). Still, there has been a significant decrease in vaccination coverage, between 2014 and 2018 as well as an increase in the incidence of several vaccine-preventable diseases in Sweden. As an example, can be mentioned infectious disease, measles. Measles is highly contagious, and in severe cases can develop serious complications. Unvaccinated children are at the highest risk of severe complications and adverse outcomes, such as death (World Health Organization (WHO) 2019a). In Sweden, there were six confirmed cases of measles in 2010, 26 cases in 2014 and 43 cases in 2018 (PHAS 2020). According to the PHAS, for the past ten years, there have been no recorded deaths caused by measles in Sweden (IBID).

The increased number of cases of vaccine-preventable diseases is linked to a decreased level of vaccination coverage (Lancet 2018). Even though vaccination coverage is high, approximately 97% in Sweden in 2018 (PHAS 2019b, p.12), there has been a decline in the vaccination coverage from 2014 to 2018. Vaccination coverage has dropped from 98.2% to 97.4% for diseases such as; diphtheria, tetanus and whooping cough. For diseases like polio and *Haemophilus influenzae* type b vaccination coverage has dropped from 98.1% to 97.3%. Vaccination coverage has also declined for pneumococcus diseases and combined vaccine for measles, mumps and rubella (MMR). The vaccination coverage for these diseases has declined from 97.5% to 96.8% respectively 97.3% to 97.0% (IBID, p.15).

The PHAS has proposed vaccination hesitancy as one of the reasons for this drop in vaccination coverage (PHAS 2014, p.18-19). Vaccination hesitancy refers to the “*delay in acceptance or refusal of vaccination despite the availability of vaccination services*” (MacDonald 2015). This phenomenon has been rapidly increasing in the recent years in Sweden (PHAS 2014, p.18-19).

Young children are not capable of making complex medical decisions of themselves, therefore parents or other legal guardians are obligated to make this type of decision on their behalf. As stated earlier, immunization is necessary for the child to be able to develop and reach the highest standard of health (Camilleri 2019). However, many parents or other legal guardians are deciding for their children not to undergo the recommended vaccination program. This decision is not only increasing the health risks of the child but also puts the whole community’s health at risk. Further increasing vaccination hesitancy and decreasing levels of vaccination coverage against vaccine-preventable diseases results in herd immunity not being achieved. The consequences of not achieving herd immunity include; widespread outbreaks of infectious diseases (Phadke et al. 2016, see Kocoglu-Tanyer, Dengiz & Sacikara 2020, p.1459), increased hospital admissions, increased utilization rates at emergency departments and increases in the number of children suffering from disabilities and deaths secondary to vaccine-preventable diseases (McClure, Cataldi & O’Leary 2017).

Vaccination hesitancy is a complex and fast-growing phenomenon with severe consequences, which needs to be addressed in order to secure the child’s rights to health, life, survival and development, through decreasing child mortality- and morbidity rates caused by vaccine-preventable diseases.

Article 4 in the Convention argues that “*all state parties shall undertake all appropriate legislative and administrative measures for the implementation of the outlined child’s rights in the UNCRC*” (OHCHR n.d.). To reach the vision of low vaccination hesitancy among parents, high vaccination coverage with all children immunized against childhood disease as well as all children’s rights to health satisfied, new strategies need to be adopted at facilities that provide primary- and preventive healthcare for children.

To be able to successfully address causes of vaccination hesitancy with appropriate strategies, it is vital that determinants of vaccination hesitancy are clearly identified, analyzed and

understood. For that reason, Health Belief- and Social Ecological Model are essential for this particular study.

1.1 AIM

The objective of the study is to understand causes of vaccination hesitancy among parents living in Stockholm, Sweden and to examine how healthcare professionals in Stockholm County are working to eliminate vaccination hesitancy, in goal to promote children's rights to health, life, survival and development, after the UNCRC became a Swedish law on 1 January 2020. Additionally, to examine if these strategies are successful and truly addressing identified causes of vaccination hesitancy among parents or other methods are needed.

1.2 RESEARCH QUESTIONS

Against this introduction, the following research questions were formulated: from the Child Health Perspective

1. Which individual and collective factors are contributing to parents' intent to immunize their children and which factors are increasing vaccination hesitancy among parents/ other legal guardians?
2. Which strategies are health professionals in Stockholm County applying regarding vaccination hesitancy after the UNCRC incorporation into Swedish law on 1 January 2020?
3. Are there observed changes in vaccination rates after the Conventions entrance as a law on 1 January 2020?

1.3 BACKGROUND

1.3.1. THE SWEDISH HEALTHCARE SYSTEM

The Swedish healthcare system is decentralized. It consists of institutions at three different levels: the national-, the regional- and the local level (Wettergren et al. 2016). The national level consists of the National Board of Health and Welfare (Rae 2005), and 15 other governmental bodies (Wettergren et al. 2016). Institutions at the national level are in charge of national goals and

guidelines. The regional level consists of 21 county councils (Rae 2005). Within this level are included seven university hospitals, 70 county council operating hospitals, six private hospitals, 1100 public and private care facilities, and lastly public and private dentists (Wettergren et al. 2016). The main task of county councils is to supply hospitals and healthcare to all citizens (Rae 2005). The local level consists of 290 municipalities and public/private services, such as nursing homes. Swedish healthcare is publicly financed. In other words, it depends on the local taxation money in each county. Healthcare in Sweden is universal and available to all citizens (Wettergren et al. 2016; Rae 2005).

Primary- and preventive healthcare are delivered by county councils (Rae 2005). An example of primary healthcare facilities are, Child Healthcare Centers (CHC), which are led by nurses. These nurses provide children with regular health check-ups, advice, support, and vaccinations (Wettergren et al. 2016).

1.3.2 THE SWEDISH CHILD VACCINATION PROGRAM

Vaccination programs vary across countries (Nelson & Williams 2013). Differences can be observed in diseases against, which children are vaccinated, age of first dose and age of booster doses, as well as the number of recommended doses (PHAS 2018a). Several factors that shape the immunization schedules in a country are; the burden of the infectious disease within the population, the access to effective and safe vaccines as well as economic factors (Nelson & Williams 2013).

The Swedish National Vaccination program is divided into two programs; 1) the general vaccination program, which targets all children and 2) the selective vaccination program, which is recommended for individuals at risk (PHAS 2019d). In the general Swedish child vaccination program, the included vaccinations protect against ten different infectious diseases, which are; rotavirus infection, diphtheria, tetanus, whooping cough, polio, *Haemophilus influenzae* type b, measles, mumps, rubella and some diseases caused by pneumococcus. Additionally, girls are offered vaccination against human papillomavirus (HPV) (PHAS 2019a). Previously, the vaccine against hepatitis-B was recommended only for children whose mothers had tested positive for the hepatitis-B. However, in 2016 vaccinations against hepatitis-B were offered for all infants by the county councils (PHAS 2019c).

The selective vaccination program offers vaccinations against tuberculosis (PHAS 2019c). This vaccine is offered to children with increased risk of exposure to tuberculosis (Fischerström 2019). Children who already have severe underlying conditions are also offered vaccination against influenza and invasive pneumococcal disease (PHAS 2019c).

Many of the vaccinations included in the general Swedish child vaccination program are combined, with the aim of decreasing the number of vaccine administration events. All vaccinations within the vaccination program for children are voluntary and offered free of charge. The CHCs are responsible for the vaccination of infants, toddlers and preschool children. When the child reaches school age, the school health services are then responsible for vaccinations (PHAS 2019c). Children who have not undergone the full vaccination program due to several reasons are offered catch-up vaccinations (PHAS 2018a).

Since 2013, the Communicable Disease Act (CDA) is controlling the Swedish child vaccination program. The maintenance of these programs requires work and cooperation between different stakeholders, such as the Government, the PHAS, the Swedish Medical Products Agency (SMPA), the county councils and municipalities as well as principals of school health services (PHAS 2018b).

1.3.3 THE UNITED NATIONS CONVENTION ON THE RIGHTS OF THE CHILD

On 20 November 1989, the United Nations General Assembly adopted an international legal framework – the United Nations Convention on the Rights of the Child (UNCRC) (The United Nations Children’s Fund (UNICEF) n.d.a; OHCHR n.d.), which took force on 2 September 1990 (Government Office of Sweden (GOS) 2018). The Convention declared that children are not objects of care and charity that belong to their parents. Instead, children are identified as individuals with their own; civil, political, economic, social, health and cultural rights (WHO n.d.a; OHCHR n.d.). In this legal framework, children are defined as individuals under eighteen (UNICEF n.d.c), unless the national legislation that applies to the child has set the age of maturity earlier (OHCHR n.d.).

The UNCRC states how Governments should cooperate in aim to make the children’s rights available for all children, disregarding their race, ethnicity, gender, religion, abilities, language or another status (UNICEF n.d.d). The pressure is put on Governments to satisfy children’s basic needs and help them attain their full potential (Save the Children n.d.) through

adequate health-, education-, legal-, civil- and social services (Office of Legal Affairs (OLA) n.d.).

The UNCRC is the most widely adopted international legal framework (WHO n.d.a). Since the treaty was adopted, 196 countries have signed and ratified it (Save the Children 2020). By ratifying the treaty, States agreed to be legally bound to this particular Convention, as well as accepted to respect, protect and fulfil the children's rights as stated in the treaty (UNICEF n.d.b). This means that States were ready to undertake all necessary legislative and administrative measures with the aim to implement the provisions of the agreement (OHCHR n.d.) as Article 4 in the treaty outlines.

Sweden was one of the first countries to ratify the UNCRC in 1990 (The United Nations (UN) 1993). On 13 June 2018, the Swedish parliament decided on making this Convention Swedish law, and two years later on 1 January 2020, it entered into force. This transition from ratified Convention to Swedish law implies several changes, such as; 1) the court and legal practitioners are required to take into consideration the rights of the child as outlined in the UNCRC, 2) it is required to apply the rights of the child in all decision-making processes which are concerning children, 3) other legislations which are concerning children needs to be interpreted with the help of the Convention, and lastly 4) the rights of the child needs to be highlighted in aim to develop a child-oriented approach in activities carried out by public sector (GOS 2018).

The UNCRC consists of 54 Articles (OHCHR n.d.). For this particular study three of the Articles included in the Convention are especially interesting. These are Article 3- 'Best interest of the child', Article 6- 'Right to life, survival and development' and Article 24- 'The right to health'.

1.3.3.1 Article 3- 'The Best Interest of the Child'

Article 3- 'The Best Interest of the Child', states that all actions taken concerning children, the best interest of the child shall be a primary consideration (OHCHR n.d.). The Convention requires that whenever a decision that concerns a child or a group of children is made, the process should be carefully evaluated, listing advantages and disadvantages, positive and negative consequences (GOS 2018, p.78).

1.3.3.2 Article 6- ‘The Right to Life, Survival and Development’

Article 6- ‘The Right to Life, Survival and Development’, states that every child has the right to life, survival and development (OHCHR n.d.). This Article puts pressure on the Government that it needs to do everything that is in its power to secure this right of the child. The main priority is to decrease the mortality rate among children and eliminate factors that are negatively affecting their health and well-being (Children and Young People’s Commissioner Scotland (CYPCS) n.d.).

1.3.3.3 Article 24- ‘The Right to Health’

Article 24- ‘The Right to Health’ directly targets children’s right to health. This Article argues that all children should be able to reach and enjoy the highest standard of health and well-being. For children to be able to reach this standard of health, the Government must address determinants of health and provide children with accessible and high-quality healthcare, take suitable actions in aim to eliminate infant and child mortality as well as provide education on health for both; children and their parents/ other legal guardians (OHCHR n.d.).

1.4 PREVIOUS STUDIES

1.4.1 DETERMINANTS OF VACCINATION HESITANCY

The cross-sectional study carried out by Byström et al. (2020) examined parental confidence in vaccinations and their attitudes towards childhood vaccinations included in the general Swedish child vaccination program. Additionally, the study examined closer which sources parents are using to gain information regarding vaccinations and to what degree parents believe them (Byström et al. 2020).

The study concluded that there are three main reasons for parents to question or refuse immunization for their children. Parents refuse to immunize their children either because they, 1) are concerned about the adverse health side effects of vaccines, 2) they have come across negative information about vaccines or 3) are lacking reliable information about vaccines included in the general Swedish child vaccination program (Byström et al. 2020).

The most common source for information on vaccines and immunization among both, vaccine refusers and vaccine acceptors were nurses at the CHCs. However, comparing to vaccine

acceptors, vaccine refusers tend to receive more information regarding vaccines and vaccinations; online (PHAS, SoS, SMPA, 1177), on media (TV, radio, newspaper), on social media (Facebook, Twitter, blogs) and from their social network (Byström et al. 2020).

Another qualitative study conducted by Sjögren, Ask, Örtqvist and Asp (2017) examined parental conception of rotavirus injection and vaccination. Parental views on this topic were categorized into four major groups. These larger groups were; vaccinate without doubt, hesitant to vaccines, risky to vaccinate and unnecessary to vaccinate against rotavirus (Sjögren, Ask, Örtqvist and Asp 2017).

Parents who vaccinated their children against this virus without doubt, argued that their intent to vaccinate their children is entirely driven by their steadfast trust in nurses working at the CHCs (Sjögren, Ask, Örtqvist and Asp 2017).

Vaccine hesitant parents proposed several arguments on why they have not intended to immunize their children against rotavirus. The main reasons were; 1) concerns about possible unknown side effects which are not studied enough, 2) belief that the vaccine is more dangerous than rotavirus, 3) desire to make their own decisions concerning their children and 4) information overflow and short time for decision-making (Sjögren, Ask, Örtqvist and Asp 2017).

The third group of parents who believed that the vaccination is risky, proposed several concerns regarding the vaccination against rotavirus. These were; 1) at the age of three months, the child is too small for this type of vaccine, 2) rotavirus is not severe enough to carry out vaccination against it and 3) parents prefer that their children naturally build up their own adaptive immune system (Sjögren, Ask, Örtqvist and Asp 2017).

The last group was parents who believed that rotavirus vaccination is unnecessary. Arguments that these parents proposed were; 1) the strong belief in the Swedish healthcare system that they are capable of curing rotavirus in a case when the child is already ill and 2) parents earlier experience with rotavirus and positive health outcomes (Sjögren, Ask, Örtqvist and Asp 2017).

The PHAS (2014) carried out a pilot test of Tailoring Immunization Programs (TIP) method proposed by WHO. The study aimed to identify groups with the lowest vaccination coverage for MMR vaccines in Stockholm, as well as analyze the causes of increased vaccination hesitancy within these communities (PHAS 2014).

In this particular study, was identified that in Järna, Rinkeby and Tensta regions was the lowest vaccination coverage in Stockholm (PHAS 2014). Among these communities identified reasons for low immunization coverage due to high vaccination hesitancy were; 1) parents' concerns about side effects of the vaccine, 2) low perception of the severity of MMR, 3) a strong belief in healthcare professionals in a case when the child would get ill, 4) parents' desire to make their own decisions regarding their children, 5) parents' desire for their children to naturally boost their adaptive immune system, and 6) pressure from family, friends and other members of the community not to immunize their children (PHAS 2014).

1.4.2 STRATEGIES USED TO ADDRESS VACCINATION HESITANCY

Several strategies have been proposed to address vaccination hesitancy among parents. As mentioned earlier, one of the causes of vaccination hesitancy among parents is misperceptions due to lack of knowledge. For that reason, one of the strategies to eliminate this determinant would be to provide vaccine hesitant parents with correct information regarding infectious diseases that vaccines prevent as well as increase their knowledge about the actual vaccines and vaccinations.

For example, a community-based intervention created by Spleen et al. (2012). The intervention took place in Appalachia, the United States. Aim of the intervention was to increase knowledge about HPV among the participants and study if increased awareness will also increase participants willingness to vaccinate their daughters against this particular virus. The results of the study showed that this particular community-based intervention was successful. In other words, the intervention increased parents' knowledge about a particular disease and their intent to vaccinate their children against it (Spleen et al. 2012).

However, it is observed that this type of method, where parents' knowledge about a particular disease is increased, is not always successful. There are existing contradicting studies, which argue that interventions which correct misinformation among vaccine hesitant parents can reduce their intention to vaccinate their children even more (McClure, Cataldi & O'Leary 2017, see Simis & Madden 2016). An example can be seen in the study carried out by Nyhan, Reifler, Richey and Freed (2014) in the United States. The research group examined the effectiveness of messages designed to reduce vaccine misperceptions and increase vaccinations rates of MMR vaccines. Parents were randomly assigned one out of four different interventions; 1) textual

information on the lack of evidence on the misperception that the MMR vaccine causes autism, 2) textual information on the danger of MMR, 3) image with children that have MMR and 4) audio recording of a narrative of an infant which nearly died due to measles. The results of the study showed that none of the interventions were successful in changing the parents' decision to vaccinate their children in the future (Nyhan, Reifler, Richey & Freed 2014).

A study carried out by Lewandowsky et al. (2012) proposed reasons why this type of intervention rarely is effective. Lewandowsky et al. (2012), in his study, listed four different origins for misinformation. These were rumours and fiction, Governments and politicians, vested interests, and the media. He argued that it is difficult to eliminate the misinformation because the community will continuously be exposed to it. For that reason, he concluded that it is important to tackle the continued influence of misinformation instead. He proposed three strategies on how it can be done. The first strategy would be to warn people about the misleading information which is circulating in the community or on media. The author argued that this method is more effective when people get warned about misinformation before they come across it than after. With the help of this method, people will learn how to be more critical and challenge untrustworthy sources when hearing or reading information on complex issues. The second strategy was the correction of the misinformation. In other words, trading of myths with facts. Lewandowsky et al. (2012) argued that this method to be successful, facts need to be as simple as possible. The third strategy was a combination of correction of misinformation and alternative explanations. This method fills the knowledge gaps and answers peoples' questions regarding complex issues. For that reason, this method was seen as the most effective (Lewandowsky et al. 2012).

As another commonly mentioned reason for vaccination hesitancy was parental concerns about vaccine safety and possible side effects. In previous studies about determinants of vaccination hesitancy it was identified that high parental trust in healthcare professionals, especially in nurses at the CHCs is associated with high intent to immunize their children. For that reason, a solution to tackle parental concerns about vaccines would be to increase vaccine hesitant parents' trust in healthcare professionals.

A study carried out by Smith et al. (2006) examined parental belief in vaccinations safety and the influence healthcare providers have on parental decision to immunize their children.

Smith et al. (2006) concluded that healthcare professionals should address all of the concerns that parents might have regarding vaccines as well as outline the benefits of immunization in order to increase parental intent to vaccinate their children. This can be achieved by building more honest and respectful relationships (Smith et al. 2006) through providing parents with unbiased (McClure, Cataldi & O’Leary 2017, see Ames, Clenton & Lewin 2017), scientifically-based and balanced information (Edwards & Hackell 2016). According to Edwards and Hackell (2016), every healthcare professional should be educated and able to answer questions on the science behind vaccination schedules, how vaccines are tested before they get licensed and enter the market, the severity of the disease prevented by the vaccine, as well as being able to highlight the importance of vaccinating infants and toddlers, as they are the most susceptible to infectious diseases and most vulnerable to severe outcomes (Edwards & Hackell 2016). However, this method might not be universal and suitable for all individuals and contexts (McClure, Cataldi & O’Leary 2017).

There is a contradicting study, which argues that a more suitable strategy to gain a parental trust, increase their acceptance of recommended vaccines as well as increase their intent to vaccinate their children, is a method called Motivational Interviewing (MI) (McClure, Cataldi & O’Leary 2017). This therapeutic strategy helps the vaccine hesitant parents to understand their dangerous behaviour and allows the medical professional to guide the parent to change their health behaviour to become favourable of recommended vaccinations. The process of MI begins with parents expressing their concerns which they might have regarding vaccines and vaccinations. Later on, the healthcare professional does not try to change parents’ beliefs and attitudes by providing the parent with information and facts. Instead, the healthcare professional tries to reflect on the parents’ concerns, showing empathy and understanding. It is also proven that by focusing on actual disease and its severity parental intent to vaccinate their children will increase more, then when healthcare professionals focus only on obstacles which force parents not to vaccinate their children (IBID).

1.4.3 THE UNITED NATIONS CONVENTION ON THE RIGHTS OF THE CHILD EFFECT ON VACCINATION RATE

A study carried out by Reinbold (2019) examined the differences in the effect of the UNCRC adoption on vaccination rate between countries, which adopted the Convention year 1990 and

1993. The results from analysis showed that there is a positive relationship between the UNCRC adoption and vaccination rates. Vaccination rates significantly increased with approximately 4-5% on average, three to seven years after the UNCRC was adopted. The main conclusion of the study was that the UNCRC adoption generally is improving children's rights to health through increasing vaccination rates. The author argued that it is easy to increase vaccination rates by improving; 1) professional knowledge exchange, 2) autonomy for public health managers and 3) coordination with international agencies (Reinbold 2019).

1.4.4 THE GAP IN PREVIOUS STUDIES

There were three significant gaps observed in previous studies.

First of all, there are limited numbers of scientific writings which have closely examined the causes of vaccination hesitancy in Stockholm, Sweden, while no earlier studies have examined parental view on immunization from the Child Health Perspective.

Second of all, to my knowledge there are no earlier studies which have examined strategies that institutions providing primary- and preventive healthcare in Stockholm, Sweden are using against vaccination hesitancy in aim to secure children's rights to health, life, survival and development.

Third of all, there are no previous studies which have examined how the UNCRC incorporation into law has affected the vaccination rates and work against vaccination hesitancy. There are no previous studies on this topic in Sweden nor in other countries that have adopted the Convention as their national law.

With this study, the hope is to contribute to this particular field by filling the research gap through giving new insights on causes for vaccination hesitancy among parents and on how health professionals in Stockholm County are working in aim to eliminate the vaccination hesitancy among parents after the UNCRC incorporation into Swedish law on 1 January 2020. It will be examined if these newly adopted strategies are increasing parental intent to immunize their children, contributing to increased vaccination rates and promoting children's rights to health, life, survival and development.

2. THEORETICAL FRAMEWORK

In the theoretical framework two different health behaviour change models were applied, the Health Belief Model and Social-Ecological Model. Both of these theories are used when explaining the findings of this study.

2.1 HEALTH BELIEF MODEL

The Health Belief Model is a combination of psychological and behavioural theories (LaMorte 2019; Jenz & Becker 1984). It was formulated in the early 1950s by social scientists; Hochbaum, Rosenstock and Kegels at the United States Public Health Service (Roth, Park, Prentice & Fleurisma n.d). The theory was formulated with the purpose of gaining a better understanding of health behaviours among individuals, mainly focusing on the failure of individuals to uptake the disease prevention strategies and healthcare services (LaMorte 2019).

The Health Belief Model consists of six different constructs: a) perceived susceptibility, b) perceived severity, c) perceived benefits, d) perceived barriers, e) cue to action (Jenz & Becker 1984; Hochbaum, Kegels & Rosenstock 1952), and f) self-efficacy (LaMorte 2019). (See Figure 1).

Perceived susceptibility includes individuals' subjective assessment of the risk of becoming ill, which argues that individuals who feel vulnerable and believe that they have an increased risk of developing a disease are more likely going to take part in health actions. In other words, individuals who believe that they have a low risk of developing a disease are more likely going to avoid health-promoting actions and are more likely going to take part in a risky behaviour. At the same time, individuals who assess that they have a high risk of developing a disease are going to take part in health-promoting actions to decrease their risk and prevent themselves from this particular disease. This perceived susceptibility depends on individuals' knowledge of a specific disease (LaMorte 2019).

Perceived severity includes individuals' subjective assessment of the seriousness of developing a disease and possible consequences if the disease is left untreated. Individuals are more likely going to engage in health-promoting actions if they believe that the disease has severe medical outcomes, such as life-long disability, pain or death (Jenz & Becker 1984). Also,

more individuals are going to take part in health actions if they believe that the disease or illness has a strong, negative effect on their social life; affecting their relationships with family and friends (IBID; LaMorte 2019) as well as causing emotional and financial burden (Hochbaum, Kegels & Rosenstock 1952).

Perceived benefits include individuals' subjective assessment of the effectiveness of a health-promoting action. Individuals who believe that the particular health action is capable of reducing the susceptibility as well as the severity of a specific disease, are more likely going to take part in it. They will take part in the health action, regardless of the available objective information on the actual effectiveness of the health-promoting action (LaMorte 2019).

Perceived barriers include individuals' feelings when it concerns the possible obstacles to engage in a health-promoting action. When an individual tries to decide either to take part in a health-promoting action or not, they will evaluate the possible barriers against benefits. Only individuals who believe that there are more benefits from the health action than there are obstacles will perform the health procedure. As some of the possible barriers can be mentioned; the cost of the health-promoting action, safety and length of the procedure (LaMorte 2019), experienced pain or side effects (Jenz & Becker 1984).

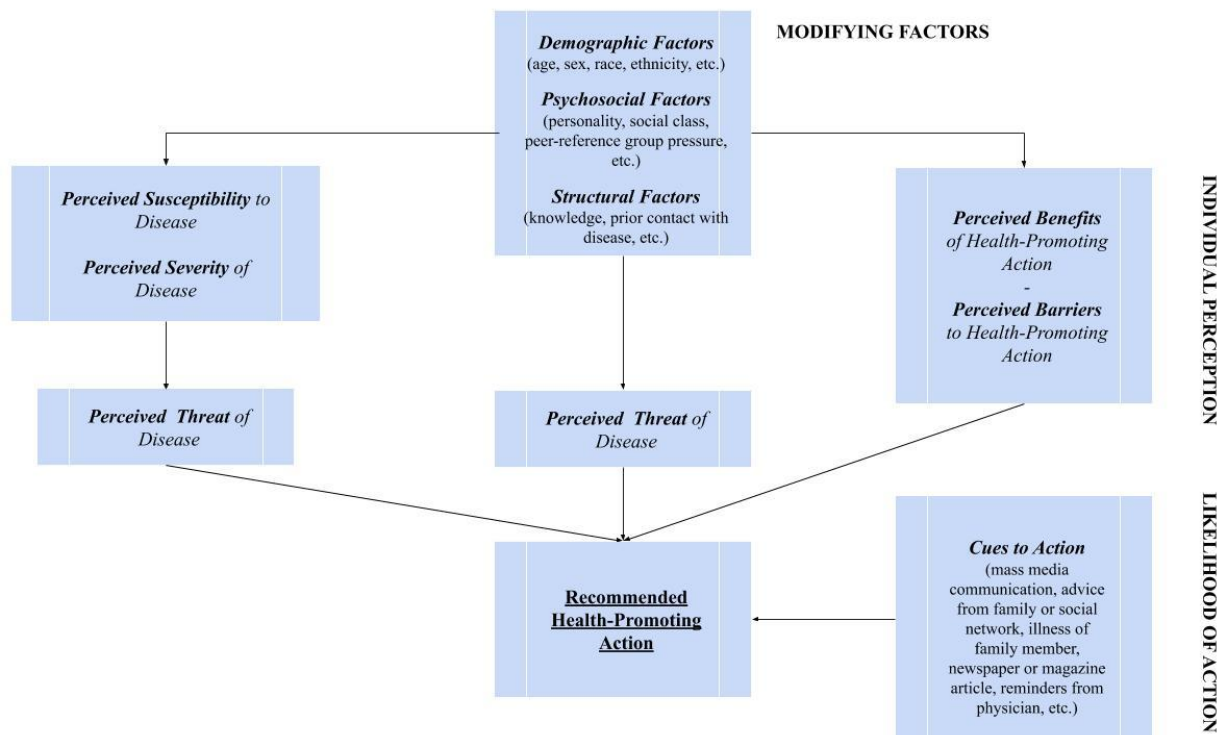
Cues to action include driving factors for an individual to decide favourably to health-promoting action. These factors can be internal and external. Example of internal factors can be symptoms of a specific disease. As an example of external factors can be mentioned information received from media or advice received from individuals' social network (Janz & Becker 1984). Also, the family's medical history plays a role. If a particular disease is common among family members, it is more likely that an individual will take part in health-promoting actions to prevent the disease, mild or cure it when the disease is already present (LaMorte 2019).

Self-efficacy includes individuals' perceived capability to undergo the recommended health action (LaMorte 2019).

In general, it is possible to say that according to the Health Belief Model, there are two main factors, which are predicting the likelihood of an individual to engage in disease preventive actions. The first one is the individuals' belief in the personal risk of an illness, and the second one is the individuals' belief in the effectiveness of recommended health-promoting actions (LaMorte 2019). In other words, it is in the human nature to want to avoid illness or get well if

already ill, and the main factor which will affect the individuals' decision favourable to recommended health action is the individuals' belief in it. The individual will engage in health action only if they firmly believe that this health action will prevent or cure a specific disease.

However, this likelihood of engaging in health-promoting actions is also influenced by modifying factors, which are affecting individuals' perceived severity, susceptibility, benefits and barriers. These modifiers are; demographic-, psychosocial-, and structural factors (Hochbaum, Kegels & Rosenstock 1952). The demographic factors include individuals' age, sex, race, ethnicity and more. The psychosocial factors include individuals' personality, social class, peer-reference group pressure and more. Lastly, structural factors include individuals' knowledge about the particular illness or disease, and the actual health action as well as earlier experience with the disease (Rosenstock 1974).



(Modified from Rosenstock 1974, see Becker, Drachman & Kirscht 1974).

Figure 1: The Health Belief Model

There are several proposed limitations of the Health Belief Model. One of these limitations is that there are many more factors besides the health beliefs which affect an individual's decision-

making regarding recommended health-promoting actions. This model fails, for instance, to include environmental factors which are affecting individuals' decision-making (LaMorte 2019). That is why an additional health behaviour change model is included in the theoretical framework of this study. This additional model is called the Social-Ecological Model of health behaviour.

2.2 SOCIAL-ECOLOGICAL MODEL

The Social-Ecological Model is a combination of Bronfenbrenner's (1977) ecological framework of human development and McLeroy, Bibeau, Steckler's et al. (1998) ecological model of health behaviour (Nyambe, Van Hal & Kampen 2016).

The Bronfenbrenner's (1977) ecological framework of human development argues that an individual creates an environment in which it lives. At the same time, the individual is shaped by the created environment. Bronfenbrenner (1977) defines the environment as a setting which includes a place with physical features in the defined time period, there an individual carries out specific activities according to its social role. He argues that human development is affected by relationships and interactions occurring within and between these different settings as well as the broader social context (Bronfenbrenner 1977).

The McLeroy, Bibeau and Steckler's (1998) ecological model of health behaviour argues that individuals' decision-making regarding health-promoting actions is shaped by multiple levels of influences. These multiple levels of influences are intrapersonal (individual), interpersonal, institutional, community and public policy (McLeroy, Bibeau, Steckler et al. 1998) (See Figure 2).

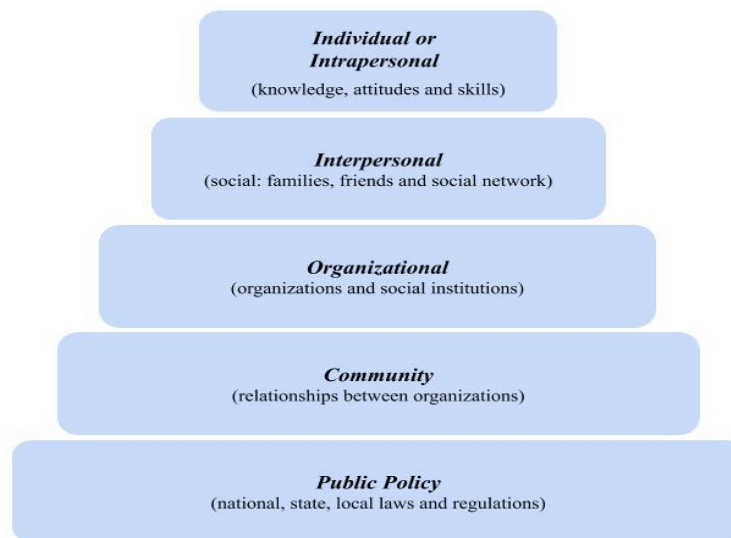
Within **intrapersonal or individual level** are included characteristics of the individual, such as knowledge, behaviour, attitude, self-concept and skills (McLeroy, Bibeau, Steckler et al. 1998). At this level knowledge about particular disease plays an important role, arguing that increased knowledge and understanding of concepts like susceptibility and threat of a disease can change attitudes and individuals' decision-making (Aronica, Crawford, Llcherdell & Onoh n.d).

At **interpersonal level** are included cultural influences, social network (Sallis, Owen & Fisher n.d) and support systems (McLeroy, Bibeau, Steckler et al. 1998), arguing that relationships between the individual, its family and social network are affecting individual's decision-making (Aronica, Crawford, Llcherdell & Onoh n.d).

The **organization level** includes organizations with their own rules and regulations. As examples can be mentioned; schools, workplaces and other social institutions (McLeroy, Bibeau, Steckler et al. 1998). The Social-Ecological Model is highlighting organizations responsibility to improve and promote health actions among members of their organization (Aronica, Crawford, Llcherdell & Onoh n.d).

The next level of the model is the **community level**, which is a cluster of multiple organizations, institutions and social networks (McLeroy, Bibeau, Steckler et al. 1998). This level of the model stresses out the importance of cooperation between multiple organizations in the goal to improve the community's health (Aronica, Crawford, Llcherdell & Onoh n.d).

Lastly, the **public policy level** incudes all governing bodies; local, state, national laws and policies (McLeroy, Bibeau, Steckler et al. 1998). This particular level highlights the governing bodies responsibilities to take the lead in health-promoting interventions. It is arguing that the governing bodies should set appropriate laws and enforce them in aim to promote health among the public (Aronica, Crawford, Llcherdell & Onoh n.d).



(Modified from Lee, Bendixsen, Liebman & Gallagher 2017, see Centers for Disease Control and Prevention 2015).

Figure 2: The Social-Ecological Model

According to the theory, there are multiple factors which are affecting individuals' decision-making regarding the recommended health actions and they are distributed across all earlier mentioned levels of influences. This means that in aim for intervention for disease prevention and control to be successful, it is needed that the particular intervention addresses factors from all the levels (Aronica, Crawford, Llcherdell & Onoh n.d).

There are proposed several intervention strategies, which are helpful in aim to change an individuals' health behaviour favourable to recommended health-promoting actions. These are Behaviour Change Communication, Social Change Communication, Social Mobilization and Advocacy.

Behaviour Change Communication is an approach applied to the individual- as well as to the interpersonal level. This approach aims to raise awareness and knowledge about different health problems and health-promoting actions, reduce existing stigma concerning various health issues, increase demand for health-promoting actions and health services, as well as improve individuals' skills and self-efficacy (Aronica, Crawford, Llcherdell & Onoh n.d). According to this approach, for intervention to be successful at the individual- and interpersonal level, it is crucial that the intervention is adopted to the targeted populations' needs. In other words, when the intervention is created, it should consider the populations' knowledge, attitudes, beliefs and behaviours (McLeroy, Bibeau, Steckler et al. 1998). As an example of the Behaviour Change Communication strategy can be mentioned information exchange between individuals; either it is via support groups and peer counselling, educational programs and mass media campaigns (IBID) through social media (Aronica, Crawford, Llcherdell & Onoh n.d).

Social Change Communication is an approach applied to the interpersonal- and community level. The purpose of this approach is to target a large population with specific health behaviour, either through mass media, social media campaigns or other information communication strategies. According to this approach, for a strategy to be successful, it is vital that health problem is clearly identified, and that the needed actions for health behaviour change are feasible to carry out. In other words, for health intervention to be successful, the community must have the possibility to modify the unhealthy social norms, culture characteristic practices, environment and policies (Aronica, Crawford, Llcherdell & Onoh n.d).

Social Mobilization is an approach applied to the organizational level. This approach aims to broaden the knowledge about a specific health issue. It attracts and engages leaders at national, regional and local levels to make changes favourable to health, health-promoting actions, and health institutions (Aronica, Crawford, Llcherdell & Onoh n.d).

Advocacy is an approach applied to the public policy level. This approach aims to reach policymakers and community leaders to take actions favourable to health. Within the advocacy level, there are identified three different types of advocacy: policy, community and media. Policy advocacy requires changes in the legislative-, social-, and infrastructural- components with the help of the changes in the policies. The community advocacy requires for the community to be active and demand the changes in the policies when it is concerning the environment in which the community is living in. Lastly, the media advocacy requires for media to be active in order to reach policymakers so that they would be influenced and motivated to change the environment and make it healthier for the community (Aronica, Crawford, Llcherdell & Onoh n.d).

2.3 APPLICATION OF THEORETICAL FRAMEWORK

2.3.1. APPLICATION OF THE HEALTH BELIEF MODEL

The Health Belief Model includes six different constructs of individual factors and tries to explain why individuals' fail to uptake offered disease prevention strategies and health services.

As mentioned earlier, these constructs are perceived susceptibility, severity, benefits, barriers, cues and self-efficacy. Although this model looks at individuals and their own perception of themselves engaging in health actions, this model can also be applied to parental decision-making regarding vaccinations of their children. In other words, these six constructs can be adopted and seen as influences which will affect the parental decision either to vaccinate or not to vaccinate their children.

Interpreting this model from the Child Health Perspective, the likelihood for parents to vaccinate their children will be defined by the parental subjective assessment of; 1) their child's vulnerability and risk to become ill, 2) the seriousness and consequences of the disease when it has already developed in the child, 3) effectiveness and benefits which the child will gain when undergoing the recommended vaccinations, 4) obstacles that prevent parents from vaccinating their children, 5) driving forces which encourage parents to vaccinate their children and lastly

parental subjective assessment of their child's capability to undergo the recommended vaccinations.

As written in the earlier paragraph 1.3.3.1, Article 3 of the UNCRC argues that all actions taken concerning children, the best interest of the child shall be a primary consideration. It is required that all decisions taken regarding children are carefully evaluated, listing all the advantages and disadvantages. With the help of the Health Belief Model, it will be possible to observe which factors parents are identifying as the leading reasons for their decision either to immunize their children or not. Furthermore, identify which factors parents are raising as an argumentation, that according to them, they are acting in the best interest of their children.

2.3.2. APPLICATION OF THE SOCIAL-ECOLOGICAL MODEL OF HEALTH BEHAVIOUR

The Social-Ecological Model is useful when it is desired to gain a better understanding of collective- and environmental factors affecting individuals' health behaviour (Office of Behavioral & Social Science Research n.d.). The model stresses out the importance of environment and policy for individuals' health behaviour, while integrating multiple social and psychological determinants (Sallis, Owen & Fisher n.d.). This model aims to examine individuals themselves and factors which are affecting their engagement in health-promoting actions. However, similarly as the Health Belief Model, also this model can be applied to parents and their decision to vaccinate their children on their behalf. In other words, the influence levels can be seen as factors which affect parents and their decision regarding the recommended vaccinations.

As written in the earlier paragraphs 1.3.3.2 and 1.3.3.3, Article 6 and 24 of the UNCRC argue that it is necessary to eliminate factors which are negatively affecting children's health and well-being by taking suitable actions to secure children's rights to health, life, survival and development. Vaccination hesitancy is identified as one of the factors that is negatively affecting children's health and limiting their rights to health. The Social-Ecological Model not only allows to identify causes for increased vaccination hesitancy but also proposes several strategies how to eliminate them and increase parental engagement in the general Swedish child vaccination program. These strategies are, amongst other Behaviour Change Communication, Social Change Communication, Social Mobilization and Advocacy.

This part of the health behaviour model will allow to examine and analyze strategies which are adopted by Stockholm County to fight vaccination hesitancy, promote children's rights to health, life, survival and development, after the UNCRC incorporation into Swedish law.

3. METHODOLOGY

In order to answer the earlier formulated research questions, two different methodological approaches were used: the individualism and collectivism. The methodological individualism approach argues that the occurrence of a particular social phenomenon can be understood only by subjectively examining individuals' actions and factors that are controlling them. In this approach, actions are defined as meaningful human behaviour that has a significant effect on the social phenomenon (Heath 2015).

Through applying this approach to the study, it was possible to examine why the phenomenon of vaccination hesitancy is occurring in Stockholm. This was done by closely analyzing the beliefs, experiences, thoughts, attitudes, and characteristics of parents and how these factors contributed to their behaviour regarding the choice of immunization of their children.

The methodological collectivism approach tries to explain how individuals' actions can be shaped by other social phenomena, such as; social organizations, social processes, culture and traditions, norms and rules, properties of social networks, social structures, and social roles (Zahle 2016). This methodological approach allowed to study the environment in which parents are living and how these factors affected the parental choice of immunization. Additionally, the collectivism approach allowed to examine how the UNCRC adoption as Swedish law has affected the strategies used by Stockholm County against vaccination hesitancy.

4. METHOD

This study was carried out in Stockholm, Sweden in the time period between April and August 2020. This particular study used a qualitative research strategy. This type of strategy was more suitable for the aim of the study, as it allowed to receive detailed descriptions and explanations of complex realities and processes (Bryman 2016; Theorell & Svensson 2007).

In the study a deductive approach was used, there the theoretical framework provided a lens through which the research problem and gathered findings were analyzed (Amsterdam Public Health Institute 2017). Theories included in the analysis were the Health Belief Model and Social-Ecological Model. Both of the theories were also used when the interview questions were composed.

This study was both; descriptive and explanatory (Theorell & Svensson 2007). The first research question included cause analysis, explaining why the phenomenon of vaccination hesitancy is occurring among parents/ other legal guardians in Stockholm County, Sweden. The second research question included both description and effect analysis, describing how the health professionals providing primary- and preventive healthcare in Stockholm County are working against vaccination hesitancy to increase vaccination rates and coverage, as well as promote children's rights to health after the incorporation of the UNCRC into Swedish law in January 2020. Lastly, it was explained if the actions taken were successful, favouring the vaccination rate and promoting child rights to health, life, survival and development.

4.1 DATA COLLECTION

Empirical data was gathered with the help of semi-structured interviews with 20 parents or other legal guardians with children in the age group between 0 and 5 years of age living in Stockholm, Sweden, and the Public Health and Immunization Advisor in Stockholm County, Paediatrician Sahar Nejat.

4.1.1 SAMPLING STRATEGY

4.1.1.1 Parents / Other Legal Guardians

The sampling strategy used was called a non-probability sampling method. This method means that not all individuals who are part of the target population had the same probability of taking part in the study, nor individuals who took part in the study were randomly selected (Trochim & Donnelly 2007, Bryman 2016).

In this study, the purposive sampling method was more reasonable, feasible and practical, in comparison to other sampling methods, allowing the target sample to be reached quickly and easily (Trochim & Donnelly 2007, Bryman 2016). That is a sample of parents/ other legal guardians with children in the age group between 0 and 5 years of age that either have or have not been immunized. Additionally, it allowed a broad variety of people, with different backgrounds, characteristics, values, behaviour, attitudes, experiences and beliefs to be reached.

For this part of the study, parents were recruited with the help of social media, Facebook. Family groups were searched within Facebook. Keywords: “vaccination”, “family”, “parents” and “mothers/ fathers” were used. It was also a criterion that these groups should aim to reach parents living in Stockholm. The total number of groups which included these search words were six. Interest was shown in all six of these groups, but only one accepted me as a member, the other ones rejected me. The reasons for rejection were that I do not have children myself or the groups do not allow the carrying out of studies on their members. The group where I became a member is called “*Familjehjälpen Stockholm*”. This Facebook group has around 6800 members. I posted a request for volunteers that would like to take part in my study. The inclusion criteria were that they are living in Stockholm and have children in the age group between 0 till 5 years of age. 29 parents replied to my post, of which 20 participated in my study. Ten of the parents had immunized their children according to the general Swedish child vaccination program, and ten had not immunized their children.

4.1.2 INTERVIEWS

Participants in the parental interviews were 20 parents with children in the age group between 0 and 5 years that either has received vaccinations according to the general Swedish child vaccination program or not.

Interviews were 30-45 minutes long and were conducted in Swedish. The interviews were carried out via telephone and were not electronically recorded. Instead, during all the interviews, notes were taken using pen and paper. With this method, it was expected to make interviewees more comfortable and receive more honest and accurate answers (Trochim & Donnelly 2007).

The interviews were semi-structured, which means that there was a specific interview guide, with a list of questions and topics which were desired to cover (Bryman 2016). Interview guide between vaccine accepting and vaccine hesitant parents differed. Questions were adopted to children's immunization status and different constructs proposed by the Health Belief- and Social-Ecological Model in that way gaining a deeper understanding of the cause of the vaccine acceptance and vaccine hesitance. Interview questions were not asked in direct order. The order of asked questions depended on the flow of the conversation. Also, some additional questions which arose from interviewees replies were asked. In that manner, it was possible to clarify interviewees answers, gain a deeper understanding of their thoughts, opinions and beliefs, and generally gain a greater understanding of the research problem.

Besides the interviews with parents, an interview with Paediatrician Sahar Nejat was conducted. Sahar Nejat is a Public Health and Immunization Advisor in Stockholm County. The aim of the interview was to find out which factors healthcare workers are identifying as causes for vaccination hesitancy, and to find out which strategies Stockholm County are applying against this hesitancy, after the UNCRC entrance as Swedish law. During this interview, the same data gathering method was as in previous parental interviews.

Interview guides for interviews with parents and the health professional are attached in the Appendix.

4.1.3 ETHICAL CONSIDERATIONS

In this study, all participants were voluntarily participating. Before the interviews, informed consent was verbally obtained from all participants. All participants were informed about the

purpose of the study, how the interviewing procedure would be conducted, and how the results and obtained data would be used in the study (Trochim & Donnelly 2007). Once informed consent was obtained, it was possible to carry on with the interviews.

Participating parents were informed that the information obtained from interviewing would not be made available to anyone who was not part of the study.

As discussed earlier, it was not possible to secure complete anonymity of the interviewees, because their names and pictures were available on Facebook. To make parents more comfortable, increase their trust, honesty and willingness to engage in interviews, it was made explicit for them that no personal data would be presented in the study as well as, all the information obtained from each individual would be presented in a group summary. Participants were reassured that it would not be possible to identify individuals based on the data gathered, securing their identity.

4.1.4 LIMITATIONS

The study was conducted in the time period between April and August 2020, when Sweden was affected by the COVID-19 pandemic. This current pandemic affected the study's methods. Initially, it was planned to conduct face-to-face interviews with parents and health professionals. Due to the PHAS and WHO recommendations to follow social distancing, it was decided to gather data through telephone interviewing, instead.

Additionally, it was desirable to conduct interviews with someone from the Stockholm Regional Council in aim to gain more exceptional picture on the incorporation of the UNCRC into their daily work, but due to work overload caused by pandemic they were not able to participate in this study.

As Sweden has a decentralized healthcare system, it was planned to interview another valuable component of the regional level, being nurses at the CHCs. It was assumed that they would be able to answer questions regarding the Stockholm Regional Council and describe new guidelines and recommendations on vaccinations that they have received from the county council. However, due to work overload and many CHCs being closed due to the pandemic, it was not possible to conduct interviews with nurses working at the local CHCs either.

Following the Stockholm Regional Council and the head of one particular CHC recommendation to contact Stockholm County, interview with their Public Health and Immunization Advisor, Paediatrician Sahar Nejat was conducted.

4.2 DATA ANALYSIS

Interviews with parents and health professional were conducted in Swedish. During all the interviews, detailed notes were taken, which later on were translated into English. Notes from the parental interviews were summarized and categorized according to parental choice of vaccination and according to themes of the most frequent answers.

Parents that had fully immunized their children according to the general Swedish child vaccination program were included in the first group summaries, vaccine accepting parents. While parents that had not fully immunized their children were included in the second group summaries, vaccine hesitant parents. The most common themes were; 1) Source of information, 2) Prior experience with infectious diseases, 3) Quality, safety and effectiveness of vaccines and vaccination, 4) Severity and child's susceptibility to diseases, 5) Child's rights to health and their best interest.

The received primary data, further on, was analyzed with the help of the Health Belief Model and Social-Ecological Model.

The notes documented during the interview with the health professional, the Public Health and Immunization Advisor in Stockholm County, Paediatrician Sahar Nejat were also categorized in three themes and analyzed with the help of the Social-Ecological Model. The three main themes were; 1) Main causes for vaccination hesitancy, 2) Strategies used to address vaccination hesitancy and 3) Effect of the UNCRC incorporation into the Swedish law.

5. RESULTS

The empirical data consists of answers, which were received during the semi-structured interviews with parents and a health professional in Stockholm County.

5.1 VACCINE ACCEPTING PARENTS

Ten parents who were classified as vaccine accepting were in the age group between 25 and 45. Five out of ten vaccine accepting parents were men, and five were women. These parents had a wide variety of occupations. Three participating parents were nurses; three were engineers; two were army officers; one was a social worker and one was a teacher. These parents had either a university degree or a vocational training. Five out of ten parents had one child; three parents had two children, and two parents had three children in the age group between 0 and 5 years of age.

5.1.1. SOURCE OF INFORMATION

Among all vaccine accepting parent, it was common to receive information on vaccines from nurses at the CHCs. The majority of parents believed that information received at primary care facilities is trustworthy and scientifically-based.

However, three out of ten vaccine accepting parents have had a bad first experience at the CHCs, arguing that the information they received from nurses was not enough to make a decision regarding child immunization. There was observed to be a wide knowledge gap in the information on the side effects of vaccines and diseases that the vaccines protect from. These respondents felt it was necessary to do additional reading in order to receive more information regarding child vaccines. They read articles on homepages like; 1177, which is a Swedish healthcare service online, the PHAS and WHO. One of the respondents even argued that she believes in these homepages more than the actual nurses at the CHCs.

Only two respondents received information on vaccines, vaccination and vaccine-preventable diseases, from family members and friends. The only reason why they believed in this information was that these friends and family members were working in medicine, either as nurses or physicians at the hospital.

It was common among vaccine accepting parents to distrust the internet and social media, regarding the information on vaccines.

5.1.2. PRIOR EXPERIENCE WITH INFECTIOUS DISEASES

Two vaccine accepting parents mentioned their experiences abroad and how this experience affected their intent to immunize their children.

One of the interviewed mothers has lived in South Africa for an extended period of time. She saw how sick children could get from diseases that are included in the vaccination program. Not only did she want to protect her child from these diseases, but she also wanted to protect the Swedish healthcare system. She said that if more and more people were to decide against vaccinating their children, it might put pressure on healthcare and limit children's access to healthcare when needed. Also, she pointed out that she decided to vaccinate her child because she is familiar with the concept called herd immunity. Herd immunity is achieved when so many people are immune to the disease, the risk of nonimmunized individuals being in contact with an infected individual is very low, and the outbreaks become to be impossible. Many children cannot get recommended vaccines because of their underlying health conditions. For that reason, she decided to vaccinate her child to protect other children through herd immunity.

Another parent recalled stories that her grandmother told her. These stories were about the grandmother's first son, who died at the age of one due to measles. This tragic event and detailed information on the child's suffering, made this parent realize the importance of immunization and increased her intent to vaccinate all of her children, in aim to protect them from suffering and premature death.

5.1.3. SAFETY AND EFFECTIVENESS OF VACCINES AND VACCINATION

All the vaccine accepting parents believed that vaccines included in the general child immunization program are safe. Two of the parents argued that these vaccines had been around for a long time, and for that reason, they are reliable.

Almost half of the vaccine accepting parents showed their concerns and carefulness with new vaccines. An example of this, can be seen the vaccine against rotavirus. The parent of two children reported that his first child did not receive the rotavirus vaccine, but some years later, the second child did receive it. This father decided to be careful with this vaccine and immunize his

second child only when the vaccine had been around for a longer period of time and was in his opinion tested enough to call it safe. Another mother also talked about her experience with the safety of vaccines. She said that parents should be careful and not immunize their children right away when a new vaccine enters the market. This mother spoke of her own experience with the Swine flu vaccine. Two of her friend's children developed narcolepsy after receiving the Pandemrix vaccination.

From all interviewed parents, one child had experienced severe side effects. This child had received a vaccine against MMR, and some hours later had difficulties breathing. This mother expressed concern that the nurses at the CHCs did not warn her about possible side effects. She would have liked to have been able to prepare herself for any possible side effects that may have developed.

Other vaccine accepting parents pointed out that nothing is 100 % safe, and of course, there are risks with vaccines. However, these parents were prepared to take these risks and vaccinate their children, as the risks were lower and less severe than the disease itself and its associated complications. One parent repeatedly spoke of his strong belief in the Swedish healthcare system. He felt if his children were to develop any side effects caused by a vaccine, medical staff would be more than capable of treating them.

When it is concerning the effectiveness of the vaccines, all of the vaccine accepting parents were united in their belief that these vaccines included in the general Swedish child vaccination program are effective and will truly protect their children and the community from multiple infectious diseases.

5.1.4. SEVERITY AND CHILD'S SUSCEPTIBILITY TO DISEASES

On this question, parental views were diverging. Some of the vaccine accepting parents believed that the diseases included in the vaccination program are severe but some of the parents believed that these diseases are not as severe and that current Swedish healthcare system can take care and treat their children if they get sick with the specific diseases. However, they still decided to vaccinate their children.

Many parents argued that the most dangerous diseases included in the program are not present anymore in Sweden, so their children are not susceptible to these diseases. However, if more and more people decided not to immunize their children, the most severe diseases can

return. One of the interviewed mothers used the example of low-income countries with particularly low vaccination coverage, where children suffer and die from vaccine-preventable diseases every day. She argued that for this reason it is crucial to immunize children. It is vital to maintain the high vaccination coverage even though some diseases are forgotten and not present in Sweden.

One of the interviewed mothers also had a strong opinion on which diseases are dangerous to her child. She argued that rotavirus is not dangerous, while pneumococcal diseases are, as they can lead to pneumonia and bloodstream infections. Additionally, she pointed out that the environment plays an essential role in disease susceptibility for her child. She stressed the importance of vaccines against diphtheria and tetanus, as her family is living with animals, like dogs and horses.

5.1.5. CHILD'S RIGHTS TO HEALTH AND THEIR BEST INTEREST

All of the interviewed vaccine accepting parents had the intent to immunize their children against childhood diseases even before they went to the CHCs. In general, these parents expressed their trust in the Swedish healthcare system, arguing that they have always intended to immunize their children because they want to follow the health recommendations that are applied within the county and country. These parents also believed that they were acting in the best interest of their children when they vaccinated them according to the Swedish child immunization program. Additionally, vaccine accepting parents believed that they are not only acting in the best interest of their own children but the interest of all children within the community. These parents strongly believed that vaccines are an important component and are necessary for securing children's rights to life, health, survival and development.

Some parents also expressed their opinion on individuals who decide not to immunize their children. Vaccine accepting parents thought that vaccine refusers are not only limiting their own children's rights, but also other children's rights to health. For instance, many children are not able to receive vaccines due to their underlying health conditions. To live a safe, healthy life without childhood diseases, these children are depended on herd immunity within their community to protect them. For that reason, decreasing vaccination coverage due to increasing vaccination hesitancy is increasing these children's risk of contracting particular vaccine-

preventable diseases and decreasing their rights to a healthy life. One of the parents even argued that unimmunized children should not be allowed to enrol in daycare centres.

Two vaccine accepting fathers felt that it is acceptable that some parents choose not to vaccinate their children. They understood that vaccine hesitant parents believe they are protecting their children from a vaccine and vaccination associated side effects. Still, at the same time, they felt these parents do not realize that by not immunizing their children, they put other children's health at risk. These two fathers argued that as long as these vaccine hesitant parents are acting reasonable and responsible, it should be fine. These fathers raised an argument if children who did not receive recommended vaccines are sick that their parents will do everything in goal to limit these children's social contacts and isolate them from other children. These families need to limit the spreading of particular childhood disease and make sure that other children do not get ill. These two fathers want vaccine hesitant parents to take responsibility when a particular disease outbreak takes place.

Regarding the question, are the Swedish Government and health institutions acting in the best interest of children and promoting their right's to life, health, survival and development, parental views again were similar. They firmly believed that health institutions are working in the best interest of children and that the recommended vaccinations included in the Swedish child vaccination program are tested enough, safe and effective.

One vaccine accepting parent believed that if it was known that vaccines were dangerous, the Government would remove the particular vaccine from the market and the general Swedish child vaccination program.

Nine out of ten vaccine accepting parents believed that the Government is acting in the best interest of children. Parents could not think of any reasons why the Government and health institutions would not act in the best interest of children. These parents stressed the importance of research on vaccines and diseases for children's health now and in the future. Vaccine accepting parents believed that individuals working in the Government and health institutions are highly educated and experts in the topic. For these reasons' vaccine accepting parents felt that they had no reasons to doubt the Governments' intent with recommended vaccines included in the vaccination program.

Another parent even stated the reason he vaccinated his child is due to the fact that these vaccines are free of charge. He believed that these vaccines are beneficial for the child, but if there was a financial cost, he would not be able to pay for all recommended vaccinations, as they are eleven and many of them have a follow-up or booster vaccinations. For that reason, by making vaccines free of charge the Government is acting in the best interest of children.

However, only one vaccine accepting mother expressed a different opinion and believed that it is possible that maybe the Government is not acting in the best interest of children. She recalled the incidence of Swine flu outbreak year 2009 and 2010 in Sweden. The Swine flu vaccine was developed very quickly, and it was recommended that all Swedes receive it. Almost five million Swedes received the vaccine. Later on, it was proved there was a weak association between Pandemrix vaccine and narcolepsy, especially among young people. This mother argued, that by not testing the vaccine enough and recommending it to people too early, the Government was not acting in the best interest of children and limited their right's to health and high-quality of life in the future. This incident made her suspicious and question, where is the guarantee that this situation does not recur?

5.2 VACCINE HESITANT PARENTS

Ten parents who were classified as vaccine hesitant were in the age group between 29 and 49 years. Two of the interviewed parents were men, and eight were women. These parents had a wide variety of occupation. Four participating parents were unemployed at the moment; one was working with communications and media; one was a salesperson; one was a social worker; one was an entrepreneur and CEO; one was working as a human resource manager and one was a homoeopath. Seven of the interviewed parents had a university degree, while the other three had a high school education. Four of the ten parents had one child, four parents had two children; one parent had three children; one parent had four children, all in the age group between 0 and 5 years of age.

5.2.1. SOURCE OF INFORMATION

In contrast to vaccine accepting parents, none of the vaccine hesitant parents mentioned as a source for information nurses nor paediatricians at the CHCs. The most common source for information among vaccine hesitant parents were healing practitioners and homoeopaths. Five of

the interviewed vaccine hesitant parents mentioned these alternative medicine practitioners as a source of information on vaccines and vaccination.

It was also common among vaccine refusing parents to receive information from other parents whose children were vaccinated and developed side effects. These parents were either acquaintances from their own social network or parents from family discussion boards online.

Two of the vaccine hesitant parents received information from Pharmaceutical Specialties in Sweden (FASS), arguing that on this homepage they could receive all information needed for their decision-making. This information included facts about the additives of the vaccines, possible side effects of vaccines and vaccine administrations as well as possible interaction with medicine or other vaccines. These parents argued that information on this homepage is safe, as this homepage bases their facts on information received from the SMPA.

Only one vaccine hesitant parent received information from the Swedish healthcare service provided by telephone and online, called 1177. This parent argued that it is possible to receive both unbiased information on advantages and disadvantages of vaccination, information on particular vaccines and vaccine-preventable diseases.

Additionally, one parent stated that he received all information on vaccines and diseases from international and national statistics and research.

On the question, why these vaccine hesitant parents do not receive information from nurses at the CHCs, they pointed out the employees' lack of knowledge and competencies. Vaccine refusing parents believed that nurses do not have any knowledge of damages that vaccines can cause nor scientifically-based information on the advantages and disadvantages of immunization. These parents thought that many nurses receive information from large, medical companies that are only profit-driven and do not care about children's health.

One of the vaccine refusing parents even raised a point that he believes that nurses at the CHCs are taught what to say to parents, similar to a salesperson, just to convince parents to vaccinate their children. He felt that nurses leave out important information on side effects, and possible danger to children's health in aim to make vaccines look better.

5.2.2. QUESTIONABLE QUALITY OF VACCINES AND VACCINATION

Two of the parents stated their lack of trust in Swedish healthcare and nurses as the main reason for their vaccination hesitancy. One of the fathers thought that nurses are not skilled enough, and that vaccine administration can be dangerous to his child.

One of the parents stated the main reason for her deciding not to vaccinate her children was due to her concerns about the vaccine's quality. This mother has more than ten years of working experience abroad. Working in the international context, she has seen the importance of vaccination and that they are useful for improving public health. However, from working abroad, she has come across information that there are different quality levels of the same vaccines. She told that in some African countries there the vaccine-preventable diseases are highly prevalent, children would be provided with cheaper and lower quality vaccines. In contrast, some of the high-income countries would be provided with the highest quality vaccines that are much more expensive. It depends on the Government if they are ready to allocate more money for the purchase of the vaccines. She was uncertain if children in Sweden are receiving the highest quality vaccines. She did not want to put her children at risk of developing severe side effects due to vaccines that may be ineffective and not protect her children from particular childhood diseases.

5.2.3. SAFETY AND EFFECTIVENESS OF VACCINES AND VACCINATION

All of the interviewed parents who were classified as vaccine hesitant believed that the vaccines offered in the Swedish child immunization program are dangerous and not effective.

Parents were knowledgeable about the additives in the vaccines and argued that substances include; aluminium, formaldehyde and monosodium glutamate which are dangerous in large amounts to children. Aluminium increases the risk for cognitive impairment, Dementia and Alzheimer's later in life. Formaldehyde is dangerous to the nervous system, can cause brain damage and vision impairment and sometimes even cause cancer. Monosodium glutamate is negatively affecting the endocrine system, causing headache and excessive sweating. Some parents even believed that vaccines include mercury, even though it is not mentioned on the additive labels. Mercury, even in small doses, is dangerous to the nervous system, most notably

to the brain. Interviewed parents stated that due these additives vaccines were poisons to the human body.

All of the vaccine hesitant parents were united that vaccines are dangerous and can cause severe side effects, affecting children's health negatively and even putting their lives at risk. One of the parents even compared vaccines as a game of Russian Roulette, in that no one knows how a child will react to a particular vaccine. Maybe the child develops a severe allergic reaction to additives, maybe not. Maybe the child develops mild short-term side effect or maybe it develops long-term severe side effect. It is not possible to predict it in advance.

Some of the vaccine refusing parents argued that they do not believe that vaccines are effective. One of the interviewed parents developed a disease which she was vaccinated against as a child. This incidence made her sceptical regarding the effectiveness of vaccines. She questioned, what was the point of vaccinating her children, putting them at risk of developing vaccine related side effects, and still potentially they are at risk of contracting the disease.

Another parent believed that combined vaccines, such as the MMR vaccine is not effective at all. He believed that combined vaccines interact with each other and confuses the immune systems' defence mechanisms and memory, in that way not providing any immunity against any of the infectious agents.

5.2.4. SEVERITY AND CHILD'S SUSCEPTIBILITY TO DISEASES

The vaccine hesitant parents believed that none of the included diseases is severe and dangerous to their children. They also believed that their children are not susceptible to particular vaccine-preventable diseases included in the vaccination program, as some of the diseases have not been around for an extended period of time, and according to them, will more likely not come back.

Two of the vaccine hesitant parents believed that vaccination does not boost the immune system and its memory. Instead, vaccines limit the individual's immune system and body's own healing ability, making children more susceptible to diseases. These parents believed that the best method to boost the immune system is through using natural methods and exposing children to different environments. Additionally, vaccine refusing parents suggested as the best way to boost individual's health is through getting an adequate amount of sleep, foods with lots of nutrition, vitamins and supplements (colloid silver and quercetin), while also practicing good hygiene and breastfeeding infants.

5.2.5. *CHILD'S RIGHTS TO HEALTH AND THEIR BEST INTEREST*

The vaccine hesitant parents believed that by not immunizing their children, they were acting in the best interest of their children. These parents were protecting their children from the possible side effects that could negatively affect their health, lives, survival and development.

Also, all of the vaccine hesitant parents were united in their belief that immunization is not an important component for securing children's rights to health, life, development and survival. In fact, they believed that immunization is health limiting.

On the question, if the Government is acting in the best interest of children, parental views were varying. Four out of the ten vaccine hesitant parents argued that by not making the immunization program mandatory, the Government is acting in the best interest of children. One of the humans' rights is access to healthcare. However, it is still in the individuals' power to decide whether they want to receive offered healthcare or not. It is similarly with vaccinations.

Even though vaccinations are offered free of charge and accessible to everyone, it is the individuals' decision as to whether they would like to receive these vaccines or not. As children are not capable of making complex medical decision, parents are obligated to make these decisions on their children's behalf. Of course, decision is made by weighting all the advantages and disadvantages, in aim to make the best possible decision favouring their children.

Additionally, two of the vaccine hesitant parents argued that they have not immunized their children because they wanted to leave the decision to their children. One of the interviewed mothers did not immunize her child against HPV and hepatitis-B. Her argument was that if her child wants to receive these vaccines, she can do so later in life. At the moment the mother was not comfortable of making this decision for her child.

Another parent raised a different point of view. Even though the parents are obligated to make medical decisions on behalf of their children, parents should listen to their children and respect their opinion regarding vaccinations. This respondent felt parents simply needed to pay more attention to their children. Many children cry and try to remove their arms from the nurses during the vaccination. This parent felt these actions were the, children's way of expressing their unwillingness to receive the vaccine. So, this mother wondered why many parents pin their children's hands down and force them to be vaccinated? These children clearly show that they do not want to be vaccinated. In these cases, parents and nurses are limiting children's rights to

decide for themselves. This respondent felt that even though these children are small, they are smarter than we realize.

Another parent raised a different concern. He believed that the Government, with the help of the immunization program, is acting in the interest of all children and not in the best interest of one specific child, such as his child. This father believed that the Government is trying to maintain high vaccination coverage at any cost, and that the Government maybe is prepared to “sacrifice” one child, just to protect 20 other children. For that reason, he felt that parents need to protect their own children and not rely on the Government and their recommended vaccination program.

Lastly, two of the interviewed parents even raised the concern that healthcare professionals are making a living from sick people. If there were only healthy people, doctors and nurses would be unemployed. For that reason, two of vaccine hesitant parents believed that the Government and health institutions are purposely making children sick and for that reason, not acting in the best interest of children.

5.3 HEALTH PROFESSIONAL

Interview with the Public Health and Immunization Advisor at Stockholm County, Paediatrician Sahar Nejat.

5.3.1. MAIN CAUSES FOR VACCINATION HESITANCY

From the interview conducted with Sahar Nejat, five different reasons for vaccination hesitancy among parents living in Stockholm County were identified. The first reason stated for vaccination hesitancy is information overflow on the internet. Many years ago, the only source of information was the local CHCs. Today almost everyone has access to additional information available online. Nejat pointed out that everyone can share and search for their desired information. She told that on the internet there are many people who are expressing anti-vaccination opinions, misleading and incorrect information. Many parents have difficulties in navigating themselves, as Nejat called it, in the “jungle of information”. Among these conflicting messages, a lot of parents express confusion when it comes to which information or source to trust.

A second reason for vaccination hesitancy is distrust in health staff and experts, according to Nejat. A few parents believe that nurses working at the CHCs are recommending and

promoting vaccines because they are cooperating with vaccine manufacturing industries, who are profiting from childhood vaccinations.

The third reason for vaccination hesitancy clearly is the parental concern about long-term side effects that vaccination can cause due to additives present in vaccines. Many parents are worried about additives such as, aluminium and mercury, and their possible negative effect on the child's health.

The fourth reason for vaccination hesitancy was due to parents own observations and information received from their social network. For instance, if they have met someone that has developed severe health complications due to vaccination or heard stories from their acquaintances about someone affected by vaccines, these negative experiences regarding vaccines and vaccination increase parents' concerns about vaccine safety for their children.

Lastly, from her own experience working as a paediatrician at the CHC in Rinkeby, Nejat identified the last reason for vaccination hesitancy. She argued that vaccination coverage of measles in neighbourhoods with children from families with higher socioeconomic status is around 99%, while in Rinkeby it is around 85%. According to Nejat, one reason for this difference in vaccination coverage is the issue of equity, and parents' socioeconomic factors such as parental education level.

5.3.2. STRATEGIES USED TO ADDRESS VACCINATION HESITANCY

Nejat stated that her department is working as a knowledge unit for the local CHCs across Stockholm County. They are continuously educating nurses and paediatricians who are working in primary healthcare facilities. They are not only training health professionals on vaccines, vaccination and vaccine-preventable diseases, but also educating them about child development and growth.

In these courses, nurses and doctors are trained on how to meet and have a conversation with parents that have concerns about vaccinations and the vaccines included in the general Swedish child vaccination program. These nurses learn how to apply the MI method. For this method to be successful, it is required that nurses have a great ability to express empathy, ask questions and listen to parents concerns and reflect on them. For that reason, it is important, that during these practical courses, nurses are educated about frequently asked questions about vaccines, such as side effects that vaccines can cause and additives that they include.

Additionally, during these educational courses, nurses receive information on how to meet parents that have already made up their minds not to immunize their children. Nejat said that in these cases where parents are not seeking to receive any information about vaccines, it is important to respect the parent's decision and not to pressure them to vaccinate. Vaccination is, after all, voluntary in Sweden. As mentioned earlier, besides providing vaccinations for children, the CHCs provide other health support for children. For that reason, it is vital that parents who have decided not to immunize their children still feel welcomed to attend the CHCs for other matters. In such a manner, the CHCs' nurses will earn parental trust, and more parents will be attending primary healthcare facilities.

Nejat pointed out that for parents who are contemplating not to immunize their children according to the general Swedish child vaccination program, information is provided through the CHC (available online), on precautions that need to be taken if, for example, the child, gets a wound and has not been vaccinated against tetanus.

On the questions which methods nurses at the CHCs are using when introducing vaccines, vaccination and vaccine-preventable diseases to new parents, Nejat answered that nurses can decide themselves which method they want to use. She said that some nurses are using brochures, some are using illustrations, and some are using information materials from the PHAS. Stress induced by meeting vaccination hesitant parents in combination with long working hours can affect the nurse's performance. For that reason, Nejat expressed that nurses need to be comfortable with the method they use.

Nejat explained that in Stockholm County, they are using so-called *staircase design*. That they are providing the local CHCs' nurses and doctors with the necessary information on vaccines, vaccination and vaccine-preventable diseases so that they can perform well, with the highest confidence and quality at the primary level. Later on, nurses and paediatricians can share this received information further on to parents. These health professionals provide parents with the necessary information to support them in decision-making regarding vaccinations for their children. The aim is to provide parents with enough information so that they would feel safe and secure with their decision; to vaccinate or to not vaccinate their children.

Nejat stressed that all health professionals who are working within the CHCs are highly competent and educated in the field. They are using information which is scientifically-based and

retrieved from reliable sources, such as the PHAS. Nejat wanted to be clear that vaccination is nothing that nurses at the CHCs are trying to “sell” and force on parents. Nurses at the CHCs also present risks associated with the vaccination and vaccines. In that way, presenting both advantages and side effects of vaccinations and helping parents to weight advantages against their fear, to make the best decision according to them for their children.

Besides this staircase design, there are also introduced seminars organized by the department for parents who have many concerns and questions regarding vaccines and vaccination. These seminars are for parents who feel that they have not received enough information from the CHCs. Seminars are taking place every six months and usually are attended by around ten parents. Some of the parents have articles with them that they have read and would like to receive a professional’s opinion on. Nejat argued that it is very important to make sure parents feel welcome with their questions and make them feel like their questions and concerns are taken seriously.

The purpose of the seminars is not to try to change parental views and force them to vaccinate their children, instead, the main aim is to use health professional’s knowledge to answer parental questions, increase parents’ confidence and assist in their decision-making. Nejat said that from her experience, parents are very grateful for the information they receive from the health professionals. However, Nejat added that these seminars are only attended by parents that have concerns and are curious about vaccines and vaccination, and might not be helpful for parents who have entirely made up their minds already. As mentioned earlier, parents who are completely against child immunization and vaccines, are not willing to receive any information and for that reason are not attending these seminars. However, for parents who are open-minded, this kind of parental support is sufficient in assistance to make up their mind on immunization.

5.3.3. EFFECT OF THE UNCRC ENTRANCE INTO SWEDISH LAW

According to Sahar Nejat, the UNCRC entrance into Swedish law on 1 January has not directly affected their work in Stockholm County against vaccination hesitancy. The guidelines and actions used to decrease vaccination hesitancy in particular County have been used for a long period of time, around ten years. These methods have been developed continuously throughout the years.

Nejat claimed that everyone who works in healthcare and are directly working with children are pleased about the UNCRC incorporation into Swedish law. However, what that means and what type of implications it will have is still very unclear and too early to tell, as it has been in force only for seven months.

From the received information from experts, Nejat has been informed that the Convention is mainly going to have implications for higher authorities in their strategic work. It is very difficult to predict if and how the UNCRC will affect vaccination policies in Sweden.

Nejat claimed it is essential to draw attention to children's rights to health and act in their best interest. Although, the real question is, how the UNCRC can be applied in practice? She pointed out that Sweden has bound themselves to the Convention, but there are no mechanisms from the UN to hold countries accountable to the UNCRC. There are no legal consequences in cases when the country is not following Articles accordingly as they are outlined in the Convention. However, Nejat mentioned that the UNCRC could be used in discussions regarding vaccinations between parents and nurses working at the CHCs. Nurses and paediatricians can use the UNCRC as a tool to raise the question, what is truly the best interest for the child?

As one example, Nejat spoke of parents who have concerns regarding combined vaccines and their additives. Some parents are concerned about one particular vaccine included in the combined vaccine and desire to remove it. According to Nejat, this is possible to do. However, often when one specific vaccine is removed from the combined vaccine, it results in additional vaccine administrations. Nejat said that in these occasions when parents wish to exclude a vaccine from the combined vaccine it is possible to discuss what is best for the child and the UNCRC can help to support and strengthen the healthcare worker arguments. In this case, there is a conflict between responding to the parents' wishes and the best interest of the child. In these occasions, it is important for nurses to explain the consequences of parents' decision to exclude the particular vaccine from the combined vaccine. This manipulation of the vaccines can result in a need for additional injections and possible exposure to double doses of additives. Also, it will be necessary for parents to attend the CHC more times than previously intended as well as the child getting more painful injections.

It is important to increase parents trust in health-promoting services so that children's best interests are protected. Parents have to feel welcomed to the CHCs, even if they have decided not

to immunize their children. Immunization of children is one out of many health-promoting actions that CHCs are practising. It is in the best interest of all children that parents attend primary healthcare facilities for various concerns.

Lastly, Nejat raised the question of vaccine safety. She did not want to deny, that there are risks associated with immunization. However, severe side effects are very rare. Vaccines which are included in the general Swedish child vaccination program have been studied and tested over a long period of time. Health professionals have mainly good experience with these vaccines. Nejat also believed that side effects caused by a vaccine must be weighed against the effects of the real disease developed in children and also against the risks of the disease spreading in the population.

6. ANALYSIS AND DISCUSSION

In this section, the link between the proposed theoretical framework consisting of the Health Belief Model and Social-Ecological Model, and the gathered findings from the conducted interviews with parents and health professional in Stockholm County is presented. As well as the received findings discussed in relation to previous studies.

6.1 ANALYSIS OF RESULTS

6.1.1 PARENTAL VIEWS ANALYZED WITHIN THE THEORETICAL FRAMEWORK

By analyzing the obtained data from the parental interviews within the theoretical framework, it was possible to observe significant differences between vaccine accepting- and vaccine hesitant parents. The differences were observed in thoughts, beliefs, attitudes, experiences and other factors that are affecting their choice of vaccination.

6.1.1.1 Intrapersonal level and factors shaping perceived susceptibility

Interpreting the Health Belief Model, perceived susceptibility means a parental subjective assessment of risk for their children to contract a particular infectious disease. Parents who feel like their children have an increased risk of becoming ill are more likely going to take part in the health-promoting action, in this case, undergo vaccination of their children according to the general Swedish child vaccination program.

From the conducted interviews with vaccine accepting parents, it was possible to observe that these parents did not believe their children are susceptible to communicable diseases included in the vaccination program. These parents believed that their children are not susceptible at the moment because some of the infectious diseases have not been present in the country for a long time, due the high vaccination coverage. The main reason for these parents deciding to immunize their children was the concern about the future. Vaccine accepting parents were sure that vaccination hesitancy is going to increase in the near future, leading to increased numbers of unimmunized children in the community. Vaccine accepting parents believed that their children might become highly susceptible to infectious disease in the future if they were unimmunized.

In contrast, vaccine hesitant parents did not believe that their children are susceptible to these diseases now, nor will they be in the future. These parents believed that severe diseases which are not currently present in Sweden would not re-emerge. At the same time, vaccine hesitant parents did not believe that their children were susceptible to any diseases. These vaccine hesitant parents thought that vaccinations are ineffective and unnecessary because they are naturally boosting their children's immune system. According to these parents, natural preventive methods are enough to keep their children healthy now and in the future.

As mentioned earlier, the Health Belief Model proposes that perceived susceptibility to infectious diseases depends on parental knowledge of particular diseases. Vaccine accepting parents received information from nurses at the CHCs, the PHAS and WHO. These institutions provide much information on new emerging and re-emerging diseases, a concept called herd immunity and the importance of it. From the conducted parental interviews, it was possible to observe that vaccine hesitant parents mainly received information on vaccines from online forums and alternative medicine practitioners, not receiving any information on the actual infectious diseases that vaccines protect against. This limited knowledge and understanding of how contagious diseases can return is leading towards the decision not to engage their children in the vaccination program. This parental understanding of diseases and susceptibility is in line with the individual level in the Social-Ecological Model. This intrapersonal level predicts that parents who have a greater understanding of actual vaccine-preventable diseases and their possible threat to children are more likely going to immunize them, while parents who have limited knowledge on infectious diseases are not going to vaccinate their children.

6.1.1.2 Perceived benefits of immunization

The Health Belief Model argues that recognized advantages of the immunization shape the likelihood for parents to engage their children in the vaccination program. Among vaccine accepting parents' advantages received through the immunization were very clear. Vaccine accepting parents identified infectious diseases included in the general vaccination program as severe. For that reason, these parents stated as a clear advantage, the effectiveness of the vaccine to truly protect their children from the risk of developing particular diseases. Majority of these vaccine accepting parents did not only see as an advantage the protection of their own children

but also the protection of other children within the community. These parents saw as a major advantage the high vaccination coverage and herd immunity that they would help to maintain within the community. Vaccine accepting parents hope that in this way, children who are not able to receive the recommended vaccines would also be protected.

Vaccine accepting parents see the immunization as an essential component for children's possibility to live a healthy and high-quality life, free from vaccine-preventable diseases and their associated disabilities. In contrast, vaccine hesitant parents did not see this advantage. Vaccine hesitant parents did not see the included infectious diseases in the vaccination program as severe, nor did they believe that vaccinations are an important factor for their own and others children's health, life, survival and development. These vaccine refusing parents believed that vaccines are health limiting due to the possible side effects.

6.1.1.3 Perceived barriers of immunization

According to vaccine hesitant parents, vaccinations included in the general Swedish child vaccination program can have both short- and long-term adverse side effects. The Health Belief Model argues that, whenever the barriers outweigh the possible advantages, it is more likely that the parent will refuse the recommended health-promoting health action. This statement is in line with the received results. Vaccine hesitant parents did not see any clear advantages with immunization. These parents did not believe that vaccines are effective in any way nor safe to their children. The perceived risk of developing severe side effects outweighed the perceived advantages, causing parents not to engage their children in the immunization program.

Of course, vaccine accepting parents also identified as a possible barrier, the risk for side effects. What makes it different, is the level of trust in the Swedish healthcare system and Government. Vaccine accepting parents believed more in the Swedish healthcare and Government. They were arguing that the vaccines included in the immunization program have been researched and tested enough to the point that the Government and healthcare professionals have accepted them as safe. These parents believed the risk of developing severe side effects after vaccination are extremely low. However, they stated that nothing is 100% safe, and in a case, if the child would develop severe side effects, nurses and doctors will be able to help the child and avert the adverse health effects. Vaccine accepting parents believed that the Government and

healthcare workers are acting in the best interest of children and will do everything in their power to provide children with good health. In contrast, vaccine refusing parents lacked this trust in the Swedish healthcare and Government. They were arguing that both of these instances are profiting from ill children, and for that reason not acting in the best interest of children, limiting their rights to health.

6.1.1.4 Cues to action and interpersonal level

According to the Social-Ecological and Health Belief Model, individual's decision-making regarding health-promoting actions is easily influenced by their social networks, such as friends and family. From the conducted interviews, it was possible to observe, that many vaccine hesitant parents decided not to vaccinate their children because they had received information from their acquaintances on their experiences with side effects caused by vaccines. Similarly, many vaccine accepting parents pointed out that they decided to vaccinate their children because they had received information from their acquaintances on their experiences with vaccine-preventable diseases. According to this observation, it is possible to state that the likelihood for decisions favourable to vaccines and vaccination depends on the information received. Either the information is about barriers (adverse side-effects) or advantages (protection from severe diseases).

From the Child Health Perspective side effects associated with immunization as well as vaccine-preventable diseases and their associated complications are dangerous to children. During the parental interviews, it was common among both parental groups, vaccine hesitant and vaccine accepting to believe that with their vaccination decision, they are acting in the best interest of their children. The Health Belief Model consists of constructs, perceived severity and perceived barriers. Information received only on infectious diseases, will increase individuals perceived severity and susceptibility, while individuals who only receive information on side effects of vaccines, will increase perceived barriers. By vaccinating or not vaccinating children, both parental groups believed that they are eliminating the only risk that they are acknowledged about and in that way are acting in the best interest of their children.

6.1.2 APPLIED STRATEGIES ANALYZED WITHIN THE THEORETICAL FRAMEWORK

During the interview with Sahar Nejat, five reasons for vaccination hesitancy among parents living in Stockholm were identified. These reasons were amongst other; 1) information overflow on the internet, 2) distrust in nurses and doctors working at the CHCs, 3) parents' concerns about side effects caused by additives included in vaccines, 4) negative experience with vaccinations of parental social-network, and lastly 5) socioeconomic status of parents. Examining these retrieved results with the help of the Social-Ecological Model it is possible to observe that four out of five factors are included in the individual- and interpersonal level, and one factor is included in the community level.

The Social-Ecological Model also proposes four different intervention strategies used to change individual's health behaviour favourable to particular health-promoting actions. From the information received from the interview with Sahar Nejat, it is possible to observe that methods used in Stockholm County are in line with the Behaviour Change Communication strategy at the individual- and interpersonal level. The Behaviour Change Communication approach aims to increase individuals' skills and knowledge about the particular health issue and provided health-promoting actions, so that the demand for available health-promoting actions increases.

First of all, through training nurses and doctors working at the CHCs, as well as by organizing informative seminars for parents, health advisors in Stockholm County are increasing parents' knowledge about vaccines and vaccination. The gained knowledge can be used by parents to make an advanced medical decision in their children's behalf and distil what indeed is in the best interest of them.

In the interview with Nejat, it was mentioned that the informative seminars are only attended by parents who are not entirely sure and have some concerns regarding immunization. When these parents have received answers to their questions, they usually, in the end, decide to immunize their children, which means that parents become more accepting of vaccinations after the informative seminar. Without informative seminars organized by Stockholm County, there probably would be even more parents who would decide not to vaccinate their children. This would result in higher level of vaccination hesitancy among parents and lower vaccination coverage in Stockholm County, causing vaccine-preventable disease outbreaks and many children suffering in the community.

Second of all, nurses are trained not to force immunization on children whose parents are completely against it. Instead, nurses are providing vaccine hesitant parents with information on precautions what to do in the case when the child who is not vaccinated gets exposed to a risk factor associated with a vaccine-preventable disease. This method is also in line with the Behaviour Change Communication. By practising this approach, parents trust in primary healthcare and healthcare professionals increases. This trust results in more parents attending the CHCs and increases demand of other healthcare services, besides vaccination. Even though the service of vaccination of children is not increasing, parents demand for other health support and advices is increasing children's rights to health, life, survival and development.

6.1.3 WHAT IS NEEDED TO REACH VACCINE HESITANT PARENTS

As it was concluded in the earlier paragraph 6.1.2, to address vaccination hesitancy, health professionals in Stockholm County are using the Behaviour Change Communication strategy, which is targeted at the individual- and interpersonal level.

During the interview with Public Health and Immunization Advisor in Stockholm County, Paediatrician Sahar Nejat, the information was received that at their department they are training nurses and doctors not to force immunization on parents who have already made the decision not to vaccinate their children. Additionally, vaccine hesitant parents are not willing to receive information on vaccines and vaccination, and for that reason are not attending the informative seminars organized by Stockholm County. The vaccine hesitant parents are not reached by the methods used in Stockholm County to increase parental knowledge and assistance in their decision-making regarding immunization of their children. It was clearly evident in the conducted interviews with vaccine hesitant parents. These parents stated that they have not received any information on vaccines and vaccination from nurses working at the CHCs, nor they are attending these primary healthcare facilities. Also, none of the parental groups during the interviews mentioned seminars organized for parents about vaccines and vaccination, which means that they are not advertised enough and not reaching all of the parents.

Clearly, health professionals in Stockholm County are aware of this problem, that true vaccine hesitant parents are not reached with the methods used. However, it is not seen as a major issue. As Nejat pointed out, Sweden still has a high vaccination coverage, and not everyone needs to get immunized to maintain the produced protection against infectious diseases included in the

general Swedish child vaccination program. Nevertheless, a significant problem can arise if more parents with similar behaviour, in this case, with the unwillingness to receive information on vaccinations, decide not to immunize their children and are living in the same neighbourhood. A larger group of unimmunized individuals can lead to severe infectious disease outbreaks. In this case, the Behaviour Change Communication strategies are not suitable, because they are not adopted to target populations needs and that is why are not reaching this group. For that reason, other methods at the community- or public policy level are needed in aim to reach these families and secure vaccine-preventable disease-free environment.

From the parental interviews, it was possible to observe that vaccine hesitant parents search for information on vaccines and vaccinations online, on social media and parental discussion forums. One possible suggestion on how to reach these vaccine hesitant parents would be to use a different intervention proposed by the Social-Ecological Model, called Social Change Communication. The Social Change Communication proposes to use social media campaigns as a way to reach and change parental views and behaviour. The information included in the social media campaigns should include facts about the side effects of the vaccines, and information on infectious diseases more in detail. As it was concluded in paragraph 6.1.1, a greater understanding of epidemiological concepts, safety and effectiveness of the vaccines, increases parental intent to immunize their children. In such cases, an increased knowledge assists for parents to realize the advantages of the vaccinations. Realization of clear advantages help to overweight the barriers, such as concerns about vaccine related side effects and increases parental intent to immunize their children.

Another suggestion based on the Social-Ecological Model would be the usage of the advocacy strategy applied at the public policy level. This method would be supported by the UNCRC. As Article 4 in the Convention outlines, “all State parties shall undertake all appropriate legislative and administrative measures for the implementation of the outlined child’s rights in the UNCRC” (OHCHR n.d.). According to Nejat, the UNCRC entrance into Swedish law will affect the highest authorities strategic work. The UNCRC supports legislative changes to secure children rights to health. It is possible to speculate that in the case of extreme drop in vaccination coverage, the Government would receive additional support from the UNCRC, for instance, to introduce mandatory immunization of children across the country. In cases when the vaccination

coverage and rate would drop dangerously low, the Government would be able to argue that with introducing a mandatory vaccination program, they are acting in the best interest of children within the community in particular space and time. This would also be useful to gain trust in the Government among vaccine hesitant parents.

During the parental interviews it was possible to observe that vaccine hesitant parents lack trust in the Swedish Government and healthcare system and for that reason are not immunizing their children. It is possible that by using the UNCRC in their argumentation for vaccination, the Government would reach vaccine hesitant parents and influence their opinion on vaccinations.

From the interviews with vaccine accepting parents, a common concern about the future was observed. These vaccine accepting parents were concerned about re-emerging of infectious diseases due to increased vaccination hesitancy. Besides earlier discussed policy advocacy, the Social-Ecological Model also proposes a strategy called community advocacy. According to community advocacy, individuals within a specific community can require and put pressure on policymakers regarding a specific health action. Interpreting this strategy, it would be possible for vaccine accepting parents to require changes in the general Swedish child vaccination program, as well as policy changes regarding voluntarily immunization.

6.2 DISCUSSION OF RESULTS AND PREVIOUS STUDIES

6.2.1 DETERMINANTS OF VACCINATION HESITANCY

Some of the received results were in line with previous studies outlined in paragraph 1.4.

Firstly, studies conducted by Sjögren, Ask, Örtqvist and Asp (2017) and PHAS (2014) concluded as one of the causes for vaccination hesitancy, the parental assessment that diseases included in the general Swedish child vaccination program as not severe. This statement was also present in the parental interviews with vaccine hesitant parents. These vaccine hesitant parents believed that diseases included in the vaccination program are not severe, and the most dangerous diseases are not present in Sweden, decreasing the risk for children to develop them. For that reason, parents believed that vaccinations are unnecessary.

Secondly, during the parental interviews, parents from both groups expressed the concern about side effects caused by vaccines. However, only vaccine hesitant parents raised a point that

vaccines are more dangerous than the actual diseases. It was also concluded in the study by Sjögren, Ask, Örtqvist and Asp (2017).

Thirdly, the study carried out by Byström et al. (2020) identified as cause for vaccination hesitancy the source of information. Similarly, in this study source of information among vaccine accepting parents mainly were, nurses at the CHCs. Byström's study also concluded that vaccine hesitant parents received information on vaccines and vaccinations from nurses working at the local CHCs. This was not the case in this particular study. None of the interviewed vaccine hesitant parents received information from any nurse working at the CHCs, due to their lack of trust in them and Swedish healthcare. This will be discussed later on. Instead, these parents received information from alternative medicine practitioners, healing practitioners and homeopaths.

As mentioned in paragraph 1.4.4, there are limited numbers of scientific writings which have examined causes of vaccination hesitancy among parents living in Stockholm. The goal with this study was to expand the field by identifying additional individual/ collective determinants of vaccination hesitancy by examining parental view on immunization from the Child Health Perspective. Several determinates of vaccination hesitancy were identified, that were not present in earlier studies presented in paragraph 1.4.

Firstly, during the parental interviews, it was observed that vaccine hesitant parents did not believe their children are susceptible to infectious diseases included in the general Swedish child vaccination program for two reasons. The first reason for their belief that their children were not susceptible to diseases, was that these parents naturally boosted their children's immune system. These parents believed that vaccines are ineffective, and that natural preventive methods are much more successful in infectious disease prevention. Two of the earlier studies conducted by Sjögren, Ask, Örtqvist and Asp (2017) and PHAS (2014) concluded, that one of the reasons for vaccination hesitancy is the parental desire to boost their children's adaptive immune system in a natural way. Nevertheless, none of these two studies raised a parental concern about the lack of effectiveness of vaccines as the underlying factor for this desire to boost their children's immune system naturally. The second reason why these parents believed that their children are not susceptible was because they thought that many infectious diseases included in the vaccination program have been not present in Sweden nor will return, and for that reason there is

no risk for their children to develop it. This argument was not also concluded in two earlier mentioned studies carried out by Sjögren, Ask, Örtqvist and Asp (2017) and PHAS (2014).

Secondly, it was interesting to observe that in this particular study interviewed vaccine accepting parents argued that they had vaccinated their children because they highly trust in Swedish healthcare. They believed that with recommending vaccination programs, health professionals have only good intentions and are acting in the best interest of children. Also, these parents believed in case their children would develop side effects associated with a vaccine, the health professionals would be able to cure it. In contrast, vaccine hesitant parents lack this trust in healthcare workers. They even believed that nurses and doctors working at the CHCs, make children purposely sick, and in that way are not acting in the best interest of them, and of course, are limiting their rights to a healthy life.

In previous studies presented in paragraph 1.4, it was identified that vaccine hesitant parents also had high trust in the Swedish healthcare, but only when it comes to their competencies to treat childhood diseases when they have already occurred among children. And for that reasons believed it is not necessary to vaccinate their children (Sjögren, Ask, Örtqvist and Asp 2017; PHAS 2014).

Thirdly, besides the trust in healthcare, during the parental interviews was also observed as one of the differences between vaccine accepting and vaccine refusing parents the level of trust in the Swedish Government. None of the earlier studies presented in paragraph 1.4. has identified this determinant.

Vaccine accepting parents believed that the Swedish Government is acting in the best interest of children and are going to do whatever is in their power to eliminate factors negatively affecting children's health and wellbeing. The Government is proving high-quality primary- and preventive healthcare for all children, offering vaccines accessible and free of charge for all children as well as are carrying out tests and research on vaccination safety and effectiveness. These parents believed that if the vaccine were identified as dangerous, the Government would remove it from the vaccination program. These vaccine accepting parents did not see any reasons why the Government would want to harm children.

The vaccine refusing parents raised a different viewpoint. First of all, similarly as with the healthcare, some of the vaccine hesitant parents believed that the Government is purposely

making children sick. Some other vaccine hesitant parents believed that the Swedish Government is acting in the best interest of all children and sometimes are even ready to sacrifice one or two children. For that reason, parents said it is important for them to evaluate what is the best for their own child, because maybe the Government is not prioritizing their child. Some parents even argued that by not making immunization mandatory, the Government is acting in the best interest of children, because then parents can themselves decide regarding their children and vaccinations, and choose the best option according to them.

6.2.2 STRATEGIES APPLIED TO ADRESS VACCINATION HESITANCY

As mentioned in the earlier paragraph 1.4.4, to my knowledge there were no earlier studies which have examined strategies that institutions providing primary- and preventive healthcare in Stockholm, Sweden are using against vaccination hesitancy in aim to secure children's rights to health, life, survival and development. This study aimed to fill the research gaps by examining how health professionals are working against vaccination hesitancy in Stockholm County.

During the interview with the Public Health and Immunization Advisor, Paediatrician Sahar Nejat, it was observed that at her department they are using two methods to reduce the vaccination hesitancy. The first method is the staircase design, where they train nurses and doctors working in the CHCs. The second method is that they are organizing informative seminars for parents who have many concerns regarding immunization. The aim with both methods is to increase parental knowledge on vaccines and vaccinations, correcting misinformation that they have come across in some articles or received from their social network.

In paragraph 1.4. were presented two studies that contradicted each other on the method where parental knowledge is increased, and the misinformation corrected. A study carried out by Spleen et al. (2012) concluded that this type of method increased parental intent to immunize their children, while a study conducted by McClure, Cataldi and O'Leary (2017) concluded that this type of intervention even more decreases parental intent to vaccinate their children. During the interview with Nejat, it was observed that parents who had many concerns regarding vaccinations after attending these seminars organized by Stockholm County decided to immunize their children. Arguing that this method where parental knowledge on the topic is increased and misinformation corrected is suitable and successful for the particular context.

Nevertheless, it was concluded in the earlier paragraph 6.1.3, that applied strategies are not reaching true vaccine hesitant parents. These seminars and the local CHCs are only attended by parents who have questions and concerns, but still are open-minded. True vaccine hesitant parents are not willing to receive information from nurses and doctors working at the CHCs and for that reason are not even attending the local CHCs nor informative seminars. The main reason for this absence, in the parental interviews and the interview with Sahar Nejat, was mentioned the distrust in healthcare and healthcare workers. It was common among vaccine hesitant parents to believe that nurses and doctors working at the local CHCs were not acting in the best interest of children and lack the knowledge and scientifically-based information on vaccines and vaccination.

A study carried out by Smith et al. (2006) concluded to increase parental trust in health professionals, nurses and doctors should address all parent's concerns as well as provide them with unbiased and scientifically-based information. According to Nejat, Stockholm County are applying all of these methods claiming that the nurses and doctors are highly educated in the topic, trained on the most frequently asked questions on vaccines, vaccine-related side effects and additives, using reliable sources for information, as well as they are applying the MI method. However, still the vaccine hesitant parents are not reached.

It is evident that vaccine hesitant parents are not reached at the individual- and interpersonal level, but at the community-level as concluded in paragraph 6.1.3. Lewandowsky et al. (2012) argued in his study that vaccine hesitant parents are continuously exposed to misinformation circulating on media and in the community, and for that reason, they should be warned about this misinformation and trained to distinguish correct information from false in advance.

From interviews with the vaccine accepting parents it was observed that all of these vaccine accepting parents had the intent to vaccinate their children even before they attended the CHCs. Which means that to increase vaccine hesitant parents' intent to immunize their children they need to be reached with information on vaccines, vaccinations and vaccine-preventable diseases even before they go to the CHCs.

6.3 DISCUSSION OF METHOD

6.3.1 SAMPLING ERROR

It was possible to observe some limitations in the applied sampling method, degrading the external validity of the study.

First of all, in this study a purposive sampling method was applied, which is a non-probability sampling method. Using this method, it is not possible to generalize the obtained findings from the study sample to the target population (Delgado-Rodriguez & Llorca 2003; Bryman 2016). However, in this study, the aim was not to produce results that are generalizable to the whole population of vaccine hesitant parents. The main aim was to make theoretical inferences and draw conclusions from the obtained data with the help of two theories. In other words, the purpose was to gain a better understanding of the phenomenon called vaccination hesitancy. For this purpose, the applied sampling method was suitable and the most feasible.

Second of all, the volunteers who partook in this study were those who showed their interest in the study via Facebook. It is possible that by using volunteers, a non-response bias was introduced into the study. By the non-response bias means that individuals who participated in the study might differ in many characteristics from those who did not want to participate in the study (Delgado-Rodriguez & Llorca 2003). It was not possible to explain why 29 parents showed their interest in the study, but nine of them dropped out later on.

Third of all, it was possible only to reach and include participants in the study who had internet access, a Facebook profile and were members of a particular Facebook group at the time when the study was carried out. There is a high risk of exclusion bias present in the study. By the exclusion bias, means that many individuals with different opinions, beliefs and characteristics that are part of a target population might have been excluded from the study sample (Delgado-Rodriguez & Llorca 2003). This is particularly problematic because, to my knowledge, there was a more suitable Facebook group for my study, called “Vaccinationens baksida”. However, after multiple tries, I was never accepted as a member of this group. It is possible that the most radical and true vaccine hesitant parents were members of this group. There is a high chance that members of this group would provide different answers to my interview questions, than parents whom I recruited from the Facebook group, called “Familjehjälpen Stockholm”.

6.3.2 MEASUREMENT ERROR

Besides the sampling error, it was also vital to analyze the possible errors in the measurement, affecting the internal validity and reliability of the study.

With internal validity means that phenomenon, which was intended to examine, is truly measured by the data gathering method (Svensson & Teorell 2007). In this case, internal validity meant that the interview questions truly measured causes for vaccination hesitancy among parents.

To increase internal validity, interview questions were carefully formulated. These questions were formulated as short and clear as possible to avoid any misunderstandings. The advantage of semi-structured interviews was that the participants could ask clarification of some interview question which were difficult for them to understand.

Additionally, it was necessary to formulate interview questions objectively without guiding the interviewees towards a specific answer. Of course, in qualitative studies, there is always a risk for evasive answers, especially when it is not possible to secure participants anonymity during the interviews. However, in this study were used volunteers who wanted to share their thoughts, beliefs and experiences. Also, participants were informed that the results would be presented in a group summary, and their names will remain confidential. It is expected that this method increased the number of honest and correct answers, and in that way, improved the internal validity of the study.

With reliability means that the obtained results would be the same when someone else carries out a similar study, or that similar study is carried out at different time point, assuming that the phenomenon of the interest is not changing (Trochim & Donnelly 2007). It was difficult to predict how the current COVID-19 pandemic might have affected vaccination hesitancy among parents living in Stockholm. For that reason, this issue was examined with the help of interviews. This issue was included in interview questions for both parents and the health professional in Stockholm County. The goal was to examine if the current pandemic has affected parental health behaviour and changed their opinion regarding immunization.

During the interviews with parents, majority of them argued that this current pandemic had not changed their minds regarding vaccinations, either they still strongly believed in immunization as a great health-promoting and protecting action, or they believed it to be a

harmful and risky health action. Regarding the question, if other parents might be affected by this COVID-19 outbreak, and their attitude towards immunization might have changed, their thoughts were diverging. Some parents believed that if people are reading enough information about immunization and the pandemic, then they will probably not be affected, and their opinion will remain the same. However, some parents believed that COVID-19 outbreak could change people's thoughts. It is possible that some parents might draw parallels with this current pandemic and other diseases that are included in the general Swedish child vaccination program. If media continues to propose the vaccine as the only solution for COVID-19 elimination and as the only solution for saving people's lives, people can begin to think similarly about vaccines and diseases included in the general Swedish child immunization program. It is possible that parent's intent to vaccinate their children would increase.

Sahar Nejat replied to this question, stating that there is no clear evidence for this statement to be true, that the COVID-19 pandemic could have affected parental health-behaviour or view regarding immunization. From her own observations, this was the first year that no one has signed up themselves for the seminars organized for parents who have questions regarding vaccines and vaccination. She said it is possible that people follow the recommendation to practice social distancing to limit COVID-19 spreading and for that reason are not attending these seminars. Or they have realized the importance of vaccines during this pandemic, how a vaccine can effectively prevent disease spreading and protect the community, and for that reason are not attending informative seminars. Nevertheless, it is not possible to say how parental views have changed due to the pandemic, nor explain why none of the parents have attended the organized seminars.

7. CONCLUSIONS

First of all, factors which contribute to increased parental intent to immunize their children are; 1) information received from sources such as, CHCs, PHAS and WHO, 2) information received mainly on infectious diseases included in the general Swedish child vaccination program, 3) knowledge and understanding of epidemiological concepts and mechanisms, 4) concerns about the future, 5) belief that diseases included in the vaccination program are dangerous and vaccines are an effective tool in the children's protection, 6) desire to protect other children who are not able to receive vaccinations, 7) see vaccines as an essential component for child's rights to health, life, survival and development, 8) advantages outweigh concerns about side effects, 9) trust in the Swedish Government and healthcare, that they are acting in the best interest of children.

The main reasons for the vaccination hesitancy are; 1) information received mainly on vaccines from different sources than CHCs, 2) belief that their children are not susceptible to infectious diseases, 3) do not see diseases included in the general Swedish child vaccination program as severe, 4) do not believe that vaccines are effective, and for that reason do not see a clear advantage of vaccinations, 5) concerns about side effects caused by additives in the vaccines outweigh the advantages, 6) lack of understanding about vaccine-preventable diseases, epidemiological concepts and mechanisms, 7) belief that vaccines and vaccinations are limiting children's rights to health, life, development and survival, 8) distrust in the Swedish Government and healthcare, belief that they are not acting in the best interest of their children.

Second of all, the UNCRC incorporation into Swedish law on 1 January 2020 has not directly affected Stockholm County's work against vaccination hesitancy. The guidelines and actions used to address vaccination hesitancy in particular County have been the same for approximately ten years. Interventions carried out in Stockholm County are targeting individual- and interpersonal levels. In other words, trying to decrease vaccination hesitancy by increasing parents' knowledge and eliminating their concerns about vaccines and vaccination. One of the methods nurses and doctors working at the CHCs are trained to use in their daily work, is MI. Since the UNCRC entrance into force as a Swedish law, healthcare workers can use the Convention for argumentation to raise the question what truly is in the best interest of the child, and what is needed to satisfy children's rights to health, life, development and survival.

However, it is possible to observe that the used strategies in Stockholm County are not effective as it does not reach the true vaccine hesitant parents. Other strategies at the community- and public policy level are needed.

Third of all, it is too early to see any apparent effects of the UNCRC entrance into Swedish law on the vaccination rates. It has only been seven months and what actually the implementation of the UNCRC into Swedish law means, is still very unclear.

There have been observed changes in the attendance numbers of seminars organized by Stockholm County for vaccine concerned parents, but it is not possible to say if the changes are due to current COVID-19 pandemic, or due to the UNCRC entrance into law. Additionally, many CHCs were closed due to pandemic, and for that reason, it is not possible to estimate if there have been any changes in the vaccination rates this year.

7.1 FURTHER STUDIES

It has only been seven months since the UNCRC incorporation into Swedish law. It was too early to study the changes in the strategic work against vaccination hesitancy and too early to examine its true effect on vaccination rates. Additionally, COVID-19 pandemic affected different parts of this particular study. One of the suggestions for future studies would be to carry out similar study, but only when the situation in the county is more stable and clearer.

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APPENDIX

INTERVIEW QUESTIONS

A. PUBLIC HEALTH AND IMMUNIZATION ADVISOR IN STOCKHOLM COUNTY, SWEDEN

Question 1: From your own experience and knowledge, which are the main reasons for the vaccination hesitancy among parents living in Stockholm?

Question 2: How has the incorporation of the UNCRC into Swedish law affected your work in Stockholm County against vaccination hesitancy? Are there any new actions, guidelines and recommendations adopted at the individual-, organizational- and community level?

Questions 3: After the UNCRC incorporation into Swedish law, have you provided nurses working at the CHCs with new guidelines in aim to decrease vaccination hesitancy among parents and increase their intent to immunize children?

Question 4: Which methods are nurses working at the CHCs using in their daily work, when they for the first time are introducing vaccination to new parents? Are all the nurses using the same methods across all the CHCs in Stockholm County?

Question 5: From where and who nurses working at the CHCs are receiving information on vaccines, vaccination and vaccine-preventable diseases?

Question 6: Whenever a parent doubts the immunization of their children, is there anything special that nurses are trained to do in aim to increase parents' intent to immunize their children?

Question 7: From your own experience, have you observed changes in vaccination rates this year or changes in the attendance rates of the organized informative seminars for parents with concerns regarding vaccinations?

Question 8: What is your opinion on the COVID-19 pandemic? Do you believe this pandemic is affecting parents' attitude towards immunization and their intent to vaccinate children?

B. PARENTS/ OTHER LEGAL GUARDIANS LIVING IN STOCKHOLM, SWEDEN

a. Background information

Question 1: How old are you?

Question 2: What education level do you have?

Question 3: What is your occupation?

Question 4: How many children do you have?

Question 5: Have your children received or will receive all the recommended vaccinations included in the Swedish child vaccination program? (rotavirus infection, diphtheria, tetanus, whooping cough, polio, *Haemophilus influenzae* type b, measles, mumps, rubella and some diseases caused by pneumococcus, hepatitis-B, optional: human papillomavirus)

b1. Questions for parents/ other legal guardians who HAVE VACCINATED their children.

Question 1: Before vaccinating your children, where did you receive information on vaccines/vaccinations? Who do you trust the most and who do you trust the least for information regarding vaccines/vaccinations?

Question 2: Can you recall any events in the past that encouraged you to vaccinate your children?

Question 3: What are your thoughts on the safety and effectiveness of vaccines included in the general Swedish child immunization program?

Question 4: What are your thoughts on the severity of infectious diseases included in the general Swedish child immunization program?

Question 5: Do you believe that with vaccinating your children you are acting in the best interest of them?

Question 6: Do you think immunization programs are necessary for securing children's right to life, health, survival and development?

Question 7: Do you trust the Swedish Government and health institutions in decision making regarding vaccinations? Do you believe that they will act in the best interest of children and will do everything to secure their right to health?

Question 8: How was your first experience at the CHCs? Can you please describe how the CHCs' nurses introduced vaccines, vaccination and vaccine-preventable diseases to you?

Question 9: According to you, what is needed in aim to increase vaccine-hesitant parents' intent to immunize their children according to the general Swedish immunization program?

Question 10: What is your opinion on the COVID-19 pandemic? Do you think this pandemic is affecting parents and their decision-making regarding vaccinations of their children?

b2. Questions for parents/ other legal guardians who HAVE NOT VACCINATED their children.

Question 1: Before making the decision not to vaccinate your children, where did you receive information on vaccines/vaccinations? Who do you trust the most for the information and who do you trust the least for the information regarding vaccines/vaccinations?

Question 2: Can you recall any events in the past that discouraged you from vaccinating your children or diminished your trust in vaccines/vaccinations?

Question 3: What are your thoughts on the safety and effectiveness of vaccines included in the general Swedish child immunization program?

Question 4: What are your thoughts on the severity of infectious diseases included in the general Swedish child immunization program?

Question 5: Do you believe that with not vaccinating your children you are acting in the best interest of them?

Question 6: When you hear words human rights, the child's right to life, survival and development, what is your opinion on immunization? Is immunization promoting or limiting a child's rights to health?

Question 7: Do you trust the Swedish Government and health institutions in decision-making regarding vaccinations? Do you believe that these institutions will act in the best interest of children and will do everything to secure their right to health?

Question 8: How was your first experience at the CHCs? Can you please describe how the CHCs' nurses introduced vaccines, vaccination and vaccine-preventable diseases to you?

Question 9: What is your opinion on the COVID-19 pandemic? Do you think this pandemic is affecting parents and their decision-making regarding vaccinations of their children?