

**RISK PERCEPTION AND PROTECTIVE
BEHAVIOURS REGARDING COVID-19
AMONG PREGNANT PEOPLE IN SWEDEN**

ELLEN SÄLLMAN & EMELIE GUMMESSON | DIVISION
OF RISK MANAGEMENT AND SOCIETAL SAFETY | LTH |
LUND UNIVERSITY, SWEDEN



**Risk Perception and Protective Behaviours Regarding
COVID-19 Among Pregnant People in Sweden**

Ellen Sällman & Emelie Gummesson

Lund 2021

Title: Risk Perception and Protective Behaviours Regarding COVID-19 Among Pregnant People in Sweden

Authors: Ellen Sällman & Emelie Gummesson

Number of pages: 72

Illustrations: 4

Keywords

Risk perception, protective behaviour, Theory of Planned Behaviour, Covid-19, pregnancy, Sweden

Abstract

Few have been left unaffected by the outbreak and consequent impact of the Covid-19 pandemic. One group of people, namely those pregnant during the pandemic, faced a unique set of circumstances that this research has aimed to understand. The purpose of this research was to contribute to filling the knowledge gap by delving into the risk perception and protective behaviours adapted by pregnant people in Sweden in relation to Covid-19. This qualitative research was conducted through semi-structured interviews, based on the Theory of Planned Behaviour by Icek Ajzen, with members of the target group. A link between the risk perception of the participants and the protective behaviours they adhered to was found. It appeared that a favourable attitude towards recommendations from the authorities, favourable subjective norms in the social circle and a realistic level of perceived behavioural control formed a risk perception that in turn led to a protective performative behaviour. This result aligns with the reasoning of the Theory of Planned Behaviour. The enabling environment surrounding the participant as well as the arguably poorly communicated information directed at pregnant people during the pandemic were also found to have had part in determining the perceived risks and performed behaviour. Similarly, the unique conditions of pregnancy, being that it lasts for a limited time and has a clear end goal, also appeared to be an important factor. The influence of this range of factors points towards the complexity of human behaviour, which have become even more apparent due to the pandemic.

© Copyright: Division of Risk Management and Societal Safety, Faculty of Engineering, Lund University, Lund 2021.

Avdelningen för Riskhantering och samhällssäkerhet, Lunds tekniska högskola, Lunds universitet, Lund 2021.

Riskhantering och samhällssäkerhet
Lunds tekniska högskola
Lunds universitet
Box 118
221 00 Lund

<http://www.risk.lth.se>

Telefon: 046 - 222 73 60

Division of Risk Management and Societal Safety
Faculty of Engineering
Lund University
P.O. Box 118
SE-221 00 Lund
Sweden

<http://www.risk.lth.se>

Telephone: +46 46 222 73 60

Acknowledgements

We wish to express our deepest gratitude to all those that had a hand in helping us complete this project. Some deserve special mention;

Firstly, we would like to thank our supervisors, Misse Wester and Phu Doma Lama, for their kind words, support and helpful feedback.

Secondly, we would like to pay special regards to the women that so freely and kindly lent us their time and thought and without whom this would not have been at all possible.

Thirdly, we are indebted to our families and friends for their patience when our minds have been focused on this project and for their many servings of tea and fika during our long study sessions.

Finally, and maybe most importantly we would like to give an extra special thanks to each other for what has been such a successful collaboration, from the very first day to the very last. Not only have we completed a project to be proud of, we have also had so much fun together and have continuously built on a friendship to treasure.

Summary

Few have been left unaffected by the outbreak and consequent impact of the Covid-19 pandemic and it has required people around the world to change their behaviours to stop the spread of the virus. It is important to understand how and why people change their behaviours in different ways when facing unprecedented risks such as the pandemic, to better respond to and communicate about pandemics and other similar events in the future. One group of people, namely those pregnant during the pandemic, faced a unique set of circumstances that this research has aimed to understand. The purpose was hence to contribute to filling this knowledge gap by delving into the risk perception and protective behaviours adapted by pregnant people in Sweden in relation to Covid-19 to see in what ways they are connected. This qualitative research was conducted through semi-structured interviews, based on the Theory of Planned Behaviour by Icek Ajzen, with 15 members of the target group that participated on a voluntary basis.

This research found a link between the risk perception of the participants and the protective behaviours to which they adhered. Most notably was the perceived risk of the partner not being allowed to join during delivery due to Covid-19 symptoms or contraction, which led to many participants carefully complying with the recommendations and isolating themselves ahead of the approaching due date. This perceived risk and the related behaviour of isolation had the most prominent connection among the risks and behaviours analysed. In line with the reasoning of the Theory of Planned Behaviour, it appeared that a favourable attitude towards recommendations from the authorities, favourable subjective norms in the social circle and a realistic level of perceived behavioural control formed a risk perception that in turn led to a protective performative behaviour, whereas a lack of these determinants appeared connected to less compliant behaviours. This confirms the applicability of the Theory of Planned Behaviour to the case to understand the performance of protective behaviours among pregnant people during the pandemic.

Some other factors were also found to be of importance during this unique case of changing behaviours under the conditions of the Covid-19 pandemic. The enabling environment surrounding the participant with focus on lifestyle conditions, some specifically tied to the life of being pregnant, could be seen to allow for certain behaviours to be performed in ways that may not be applicable for other groups in society as well as the arguably insufficient information and

sometimes lacking risk communication directed at pregnant people during the pandemic were both found to be influential factors. Similarly, the unique conditions of pregnancy, being that it lasts for a limited time and has a clear end goal, brings a perspective of motivation and a desired vision of the delivery and aftermath, that also appeared to be an important factor.

Moreover, as this research has not analysed one single behaviour, but rather all protective behaviours related to the Covid-19 recommendations in Sweden, it is arguably rather broad in its initial approach. For this reason, the conclusions on the effect of risk perception on behaviour as stated above, may not be fully applicable to all the behaviours as a joint set of behaviours. In regards to this, this research has further found that the most valuable qualitative conclusions have been drawn when focussing on particular risks or behaviours, rather than making broad judgements. A range of different influential factors and the unique details which may have different degrees of impact has pointed towards the complexity of human behaviour, which has become even more apparent in the face of the Covid-19 pandemic.

The conclusions drawn from this research create an interesting contribution to the research on risk perception and human behaviour during crises, and may also be of value in the field of risk communication as it has explored and elaborated on the link of risk perception and behaviour with the compliance with risk-related recommendations.

List of Abbreviations

ETPB	Extended Theory of Planned Behaviour
MERS	Middle East Respiratory Syndrome
SARS	Severe Acute Respiratory Syndrome
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
PBC	Perceived Behavioural Control
PHA (FHM)	Swedish Public Health Agency (Folkhälsomyndigheten)
PPE	Personal Protective Equipment
WHO	World Health Organisation

List of Contents

Acknowledgements	3
Summary	4
List of Abbreviations	6
1. Introduction	9
1.1 Research Problem	9
1.2 Purpose & Scope	10
1.3 Research Question	11
1.4 Conceptual & Theoretical Framework	11
1.4.1 Risk	11
1.4.2 Risk Perception	12
1.4.3 Protective Behaviour	12
1.4.4 Theory of Planned Behaviour	13
1.5 Thesis Outline	14
2. Context	16
2.1 Covid-19 in Sweden	16
2.2 Pregnancy as Risk Group	16
2.3 Covid-19 Measures Relating to Pregnancy	19
3. Literature Review	20
3.1 Risk Perception	20
3.2 Human Behaviour	22
3.3 Pregnancy & Covid-19	24
4. Methodology	26
4.1 Data Collection	26
4.2 Data Analysis	27
4.3 Limitations	28
4.4 Values	29
5. Results	30
5.1 Demographics of Interviewees	30
5.2 Self-reflection on Worries Before & During Pandemic	31
5.3 Knowledge of Covid-19	31
5.4 Compliance	33
5.5 Perceived Risks	34
5.6 Attitude	36
5.7 Subjective Norms	38

5.8 Perceived Behavioural Control	40
5.9 Intention to Perform Behaviour	42
6. Discussion	44
6.1 Theory of Planned Behaviour	44
6.1.1 Attitude	44
6.1.2 Subjective Norms	46
6.1.3 Perceived Behavioural Control	49
6.1.4 Intention & Performance of Behaviour	50
6.2 Desired Goal & Set Time Period	53
6.3 Enabling Environment & Lifestyle	55
6.4 Risk Communication & Information	57
7. Conclusion	60
8. References	62
9. Appendix	69
9.1 Interview Guide	69
9.2 Consent Form	71

List of Figures

Figure 1: Theory of Planned Behaviour

Figure 2: Sources of information about Covid-19

Figure 3: Knowledge of recommendations

List of Tables

Table 1: Risk groups identified by PHA as of 27th March 2020

1. Introduction

Since the outbreak of the novel coronavirus disease in late 2019, henceforth known as Covid-19, people across the world have had to change their lives in unprecedented ways to reduce the virus transmission and adapt to the new challenges. Governments have tried out a range of proactive and reactive measures, while citizens have washed their hands, socially distanced themselves, worked from home when possible, and much more, to slow down the pandemic. The impact of the pandemic, and the many interventions to stop it, have affected people in complex ways. Some have been profoundly affected and had to completely change their everyday life, whereas others have just made minor alterations. For one group of people, those who were or became pregnant during the pandemic, the risks related to their own situation may have been unclear at times, considering the uncertainty on if pregnancy would constitute a risk group of Covid-19 (NHS, 2021). In Sweden, pregnancy has been generally categorised as a risk group of Covid-19 since the beginning of the virus outbreak, even when at the time there was no published evidence to confirm this (FHM, 2020a:11; FHM, 2020b:11). In light of this, there has been an interest to understand to what extent pregnant people have adapted to the recommendations posed upon them, and whether or not they have perceived Covid-19 as a risk to their own health, or possibly rather faced other consequences related to the pandemic that they have deemed more substantial. Therefore, this research has investigated the risk perception and protective behaviours among pregnant people in Sweden, to contribute to the research on the experiences and effects of the Covid-19 pandemic.

1.1 Research Problem

Prior to the Covid-19 pandemic, it has been found that pregnant people foresee many possible complications during the pregnancy, regardless of if they have experienced these personally or not (Heaman, et al., 2004). A more recent study has concluded that women nowadays have access to more information than ever about their pregnancy, but they are also perceiving higher risk to their health or their pregnancy (Lennon, 2016). There have also been indications of health-based risks related to Covid-19 during pregnancy, even if the research so far remains limited. In relation to this, early research has suggested that pregnant people perceive their health at risk due to Covid-19 (Lee et al., 2020). Other research found pregnant women to have perceived the health of others to be at higher risk due to Covid-19, rather than the health of

themselves or their pregnancies (Din et al., 2020). Furthermore, research has also shown that pregnant women have implemented protective behaviours to prevent the spread of Covid-19, linking this with their risk perception (Aghababaei et al., 2020). Several research studies on this topic have stated that there is a limited amount of data so far and/or a need for additional research before any findings can be considered generally applicable (Din et al., 2020; Lee et al., 2020; Preis, et al., 2020). Similarly, a recent Swedish study, with particular focus on the perception of vulnerability among pregnant people, concluded that it is relevant to pay specific attention to those who are pregnant and give birth during the pandemic as well as their partners, including their view of society, healthcare and their health (Markstedt et al., 2020:6). These studies have been further elaborated in Chapter 3: Literature Review.

At the time of conducting this research, the topic was still developing, and thus left many opportunities to contribute to the understanding of risk perception and protective behaviours among pregnant people relating to Covid-19. This research has explored how pregnant people have perceived Covid-19 and related risks, which protective behaviours they have adopted and which recommendations they have followed. This can strengthen the understanding of the experiences and effects of the pandemic on pregnant people's perception and behaviour, especially in regards to the extent that risk perception has steered the level of protective behaviours implemented. It can contribute to comprehension of how risk communication and different recommendations have been received and implemented during the pandemic. Covid-19 may be the first global pandemic of its kind in our modern history, but scientists are predicting that it will not be the last (WHO, 2020c). Therefore, it is important to gain insights into risk perception and behavioural changes during Covid-19 in particular and pandemics in general, so that in the future, decision-makers are able to develop adequate and relevant communications and interventions.

1.2 Purpose & Scope

The purpose of this research has been to form an understanding of how risk perception towards Covid-19 consequences can affect the protective behaviours among pregnant people during the pandemic in Sweden. This research has thus investigated the experiences of pregnant people in terms of to what extent they have perceived Covid-19 as a risk to themselves, their families or other important components of their lives, as well as whether or not they have followed any of

the protective behavioural measures, and what their reasoning has been behind this. Covid-19 has affected people across the world, and the experiences and perceptions of pregnant people during the pandemic would thus be relevant to explore in most countries. Sweden was chosen as the case study of this research because there was no published research on the topic at the time of choosing, suggesting a potential to contribute to a research gap. Some research has since then been conducted in Sweden, which will be further developed on in Chapter 3, but as the topic and context remains dynamic, the aim has remained to contribute to a fairly novel field. Sweden is also the home country of the researchers, which has facilitated access to materials as well as reduced the risk of a language barrier that might have existed if the research had taken place elsewhere. The role of the researchers has been further discussed in Chapter 4.4 Values.

1.3 Research Question

This research has explored the risk perception of Covid-19 and its possible consequences among pregnant people in Sweden. The risk perception has been further related to their protective behaviours, to investigate possible correlations and gain an understanding of the extent that risk perception has an effect on behavioural changes. This research has therefore attempted to answer the following question:

In what ways, if any, has risk perception of Covid-19 affected the protective behaviours among pregnant people in Sweden?

1.4 Conceptual & Theoretical Framework

This section presents and defines the key concepts and the theoretical framework for this research. The three key concepts have been risk, risk perception and protective behaviour. The main theory has been the Theory of Planned Behaviour, which has served as a foundation for the design, methodology and discussion of this research.

1.4.1 Risk

Risk, defined as “a representation of potential negative deviations in any variable or set of variables representing what human beings value from its preferred expected development over time” (Becker, 2014:133), has been utilised in relation to possible consequences of Covid-19.

Examples of consequences that could be caused by Covid-19 are the risk to the life and health of oneself, one's pregnancy or one's family members, as well as the risk to lose one's job, to suffer mentally or to spread the virus. The risk has thus not been the mere existence of Covid-19 itself, but rather the consequences that could be caused by this existence. In this research, there has not been any predetermined meaning attached to consequences or risks by Covid-19, but rather the interviewees themselves have been asked and allowed to identify which consequences or risks they define related to the Covid-19 pandemic. This includes the way in which they have perceived how these consequences have affected or may affect their lives, and how such perceived consequences have affected their judgements related to the recommendations and restrictions announced to minimise the spread of the virus.

1.4.2 Risk Perception

As mentioned in the definition above, risks are related to what humans value, and thus do not exist ontologically (Becker, 2014:133). Rather, they are found in the risk perception of humans. Risk perception has been defined as “the person's judgement about [. . .] risk”, which could be shaped by a range of factors, including personality, individual calculations, and scientific assessments (Aven & Renn, 2010:10). Humans may also consider the likelihood of the specific risk to take place, which could have further impact on one's judgement and perception (ibid.:6). During the Covid-19 pandemic, several risk groups have been identified, meaning that these groups of people with certain pre-conditions may be of higher likelihood to experience severe complications due to Covid-19, and thus there is a higher risk to their life and health (ECDC, 2020).

1.4.3 Protective Behaviour

Protective behaviour has in this research been defined as the practices used to avoid, prevent, mitigate or stop negative outcomes related to Covid-19 consequences. An official definition of protective behaviours in research has not been found. As a clarification, the focus of this research has been on behaviours through the lens of risk perception, rather than solely focused on behaviours related to health. Health risks, as consequences caused by Covid-19, have been included as potential risks perceived among the interviewees, as mentioned in Chapter 1.4.1 Risk. However, interviewees may have perceived risks that are not directly related to health, and

thus the focus has been on a broader range of perceived risks. In the case of Covid-19, multiple recommendations of protective behaviours have been communicated and promoted, with the aim of people to protect themselves and their communities from spreading the virus. The protective behaviours referred to in this research have stemmed from the recommendations as communicated within Sweden by the national government and other experts, which has been further elaborated in Chapter 2: Context.

1.4.4 Theory of Planned Behaviour

In this research, risk perception and human behaviour has been explored through the Theory of Planned Behaviour (TPB). This theory, developed by social psychologist Icek Ajzen, is “designed to predict and explain human behavior in specific contexts” (Ajzen, 1991:181). The TPB understands human behaviour through analysing the intention of a person to perform the behaviour in question. The assumption of the theory is that the intention can give an idea of whether or not the person is motivated, willing or planning to perform the behaviour. It is stated that generally “the stronger the intention to engage in a behavior, the more likely should be its performance” (ibid.:181). Three independent determinants are assumed to together lead to the intention: attitude, subjective norm, and perceived behavioural control (PBC) (see Figure 1).

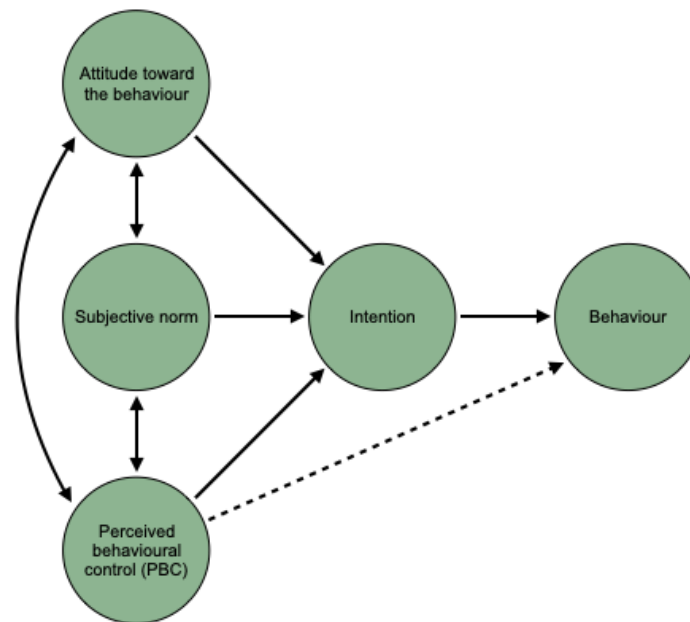


Figure 1. Theory of Planned Behaviour (Ajzen, 1991:182)

The first determinant, attitude, refers to “the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior” (ibid.:188). The second, subjective norms, looks into perceived norms of the social surrounding of the person, and whether or not there is pressure to perform the behaviour. Thirdly, PBC regards to what extent the person perceives themselves able to perform the behaviour, including if the person expects obstacles to stand in the way of the behaviour (ibid.:188). Ajzen clearly differs PBC from actual control, which covers more tangible resources, such as “time, money, skills, [and] cooperation of others” which can enable or make available the likelihood to perform the behaviour (ibid.:182-183). The PBC can be considered realistic or unrealistic, depending on the degree to which perception aligns with the actual control (ibid.:184-185). The general rule of the TPB is that “the more favorable the attitude and subjective norm with respect to a behavior, and the greater the perceived behavioral control, the stronger should be an individual’s intention to perform the behavior under consideration” (ibid.:188).

The TPB has been diversely applied within research on health-related behaviours, to name a few relating to reproduction and maternal health: birth control behaviours (Hanson et al., 2018), condom usage (Albarracín, et al., 2001), and exercising during pregnancy (Lee et al., 2016). More recently, the theory has also been used to study behaviours of different kinds during the ongoing Covid-19 pandemic, such as social distancing (Adiyoso & Wilopo, 2020) and minimised contact during travels (Bae & Chang, 2020). Thus, as the concepts of risk perception and human behaviour are central to the TPB, and since it has proven to be useful to analyse health behaviours, it has been considered an appropriate theory for the type of research presented. The full details of how the TPB has been incorporated and utilised in this research has been explained in Chapter 4: Methodology.

1.5 Thesis Outline

In Chapter 1, there is an introduction of the topic and a presentation of the purpose, research problem and question. The conceptual and theoretical frameworks are outlined. Chapter 2 provides a relevant summary of the Covid-19 pandemic from spring 2020 to spring 2021 with focus on the Swedish context and interventions affecting pregnant people. Chapter 3 is the literature review, which explores some of the central themes to this research: risk perception and

human behaviour. This chapter also includes findings of relevant research related to pregnancy during the Covid-19 pandemic. The methodology is described in Chapter 4, where data collection and analysis is presented. This chapter also recognises the limitations of this thesis. Chapter 5 presents the results from the data collection and analysis, and Chapter 6 discusses the results with reference to the research question and theoretical framework. In Chapter 7, the research is concluded.

2. Context

2.1 Covid-19 in Sweden

On 30th January 2020, the World Health Organisation (WHO) declared a “public health emergency of international concern” due to the outbreak of Covid-19 (WHO, 2020a). On the following day, the first case of the virus, which has its origin in China, was confirmed in Sweden (Ludvigsson, 2020:2461). Roughly six weeks later, on 10th March, the Swedish government raised the nationwide risk level due to Covid-19 to the ‘highest level’ (ibid.). On 11th March, when more than 118,000 cases had been reported in 114 countries, WHO stated that the Covid-19 outbreak was a pandemic (WHO, 2020b). In Sweden, the pandemic has been managed by the Public Health Agency (PHA) at the national level. Moreover, the responsibility of the healthcare sector has been divided between 21 regions (Vetenskapsrådet, 2020). Further restrictions were put in place in Sweden during the weeks that followed, including banning gatherings with more than 500 people and later 50 people, stopping any visits to care homes, advising against international travel and closing high schools and universities (Ludvigsson, 2020:2465-2467). Interventions particularly affecting pregnant people have been explained in Chapter 2.3.

2.2 Pregnancy as Risk Group

On 20th March, the PHA began publishing weekly reports on Covid-19 updates and information. In the second weekly report, published on 27th March, 12 risk groups had been identified as shown in table 1 below (FHM, 2020a:11). Notably, pregnancy was at this point categorised as a risk group.

Table 1: Risk groups identified by PHA as of 27th March 2020	
Diabetes	Chronic liver/kidney failure
Chronic heart/lung disease	Chronic kidney failure
Chronic heart disease	Chronic liver failure
Chronic lung disease	Extreme obesity
Hypertension	Pregnancy
Immunocompromised	Other

In the weekly report published on 3rd April 2020, it was explained that even if pregnant people are included in the risk group list, there has been no reported evidence that pregnancy would indicate an increased risk to become seriously ill from Covid-19 (FHM, 2020b:11). Within the same time period, the PHA observed that “a relatively high number of pregnant and postpartum women with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection were or had been treated in intensive care units (ICU) in Sweden” (Collin et al., 2020:819). Of the 53 women that at that point had been admitted to ICUs due to Covid-19, 13 of them were either pregnant or one week postpartum. Several of them belonged to other risk groups, such as diabetes and obesity. Furthermore, at least two had been identified as giving birth through cesarean section due to Covid-19 symptoms (ibid.:820). At the time of this study, there was still very limited research available on pregnancy and risks related to Covid-19, but it indicated that there could be further risks for pregnant people. On 27th April, a supporting document on pregnancy and Covid-19 disclosed that one pregnant woman had died with Covid-19 in Sweden (Tegnell, 2020). In the spring of 2021, this remained the only reported fatal case of a pregnant person with Covid-19. In the weekly report following this supporting document, pregnant people were advised to be careful, especially towards the end of the pregnancy and close to delivery. Furthermore, it was stated that pregnant people that also belonged to another risk group, such as obesity or diabetes, should be particularly careful (FHM, 2020c:2).

In early December 2020, a WHO study concluded that “it is currently unknown if pregnant women are more susceptible to infection and severe disease from SARS-CoV-2” (WHO, 2020d:9). The study also stated that the possible implications by Covid-19 on pregnancy are yet to be established, and that it remains undetermined whether or not Covid-19 “can be transmitted from the mother to the fetus in utero or at childbirth” (ibid.:10). Moreover, the study refers to previous outbreaks of other coronaviruses, including Severe respiratory syndrome (SARS-CoV) and Middle East respiratory syndrome (MERS), from which the mortality rate among pregnant women had ranged between 25-30% (ibid.:9). It also indicated that contracting Covid-19 during the pregnancy could lead to increased risk of implications, such as “fetal distress, preterm birth and perinatal death” (ibid.:10). On 17th December, the PHA made a statement, referring to unpublished Swedish studies, that pregnant people may be at higher risk of serious illness caused by Covid-19, including pregnancy-related complications such as premature delivery, thrombus and preeclampsia (FHM, 2020d). In the same statement, pregnant people were recommended to

implement the protective behaviours identified to prevent the spread of Covid-19 between people, such as social distancing, careful hand hygiene, avoiding crowds and virus exposure in the workplace and vaccinating against the seasonal flu (ibid.). Furthermore, pregnant people were recommended to be extra careful, especially towards the end of the pregnancy, with reference to week 36 of the pregnancy and onwards (ibid.).

Similar conclusions to those made by WHO and PHA regarding the health risks related to pregnancy with Covid-19 have also been stated by an international research team reviewing 77 studies from across the world focused on clinical manifestations of pregnant women. One main finding from this review is that pregnant women are less likely to develop symptoms from Covid-19, but “more likely to need intensive care treatment for Covid-19, compared to non-pregnant women” (Allotey et al., 2020:2). Moreover, research is ongoing to find out the possible effects on the health of the baby in case of the parent contracting Covid-19 during the pregnancy or while breastfeeding, but any long-term effects remain unknown at this stage (MotherToBaby, 2020). These different studies and statements thus reiterate similar findings, albeit at an early stage, at the same time as they give an indication of concern towards the increased risks of pregnant people contracting Covid-19.

The interviews for this research were conducted in January and February 2021. On 24th February, after the final interview had been conducted, the National Board of Health and Welfare presented a new analysis on pregnancy and Covid-19, with the conclusion that pregnancy should also be considered as a risk group during week 22-36. They had found a higher risk of premature birth among pregnant women with Covid-19 from week 22 onwards. The motivation of this was not due to serious illness of Covid-19 but rather premature birth as a risk for the health of the baby (Socialstyrelsen, 2021). It has been recognised that this decision may affect the behaviours of the interviewees going forward, but as the interviews were conducted prior to this statement, this research has been based on the previous communication that pregnancy is regarded a risk group from week 36 and onwards.

2.3 Covid-19 Measures Relating to Pregnancy

There have been some measures aimed at reducing the virus transmission that have specifically affected pregnant people. For example, parenting and birth classes have been cancelled, partners have not been allowed to join routine checks or stay at the maternity wards post-delivery, and partners with any kind of symptom have not been able to be present during the delivery (Markstedt et al., 2020:2). The measures regarding delivery have differed regionally. In Skåne, both parents could take rapid Covid-19 tests on arrival, and a negative test result, combined with not showing any Covid-19 symptoms, would allow the non-pregnant parent to join the delivery ward. However, the non-pregnant parent was not allowed at the post-partum maternity ward (Vårdguiden Region Skåne, 2021). In Stockholm, the parent or one other relative was allowed to stay post-birth at the maternity ward (Vårdguiden Region Stockholm, 2021). In Dalarna, it was stated that planned cesarean sections were only available if there is medical reason, due to limited resources for surgery (Vårdguiden Region Dalarna, 2021), and thus limiting the birthing choices for the pregnant person.

In September 2020, the Swedish Work Environment Authority decided, on request from the Värmland regional authority, that pregnant people should not have to work directly with Covid-19 patients. This particular decision concerned the hospitals in Värmland, but the Swedish Work Environment Authority stated that they would make similar decisions in cases of comparable nature, also referencing to the ‘precautionary principle’ meaning that there should rather be too many protective measures than too few (Arbetsmiljöverket, 2020). Furthermore, the PHA has stated that parental allowance can be accessed from week 32 of the pregnancy, which would allow pregnant people to not work during the final weeks of the pregnancy (FHM, 2021).

3. Literature Review

For the literature review, two central themes of this research have been explored: risk perception and human behaviour. The latter has been in relation to the Theory of Planned Behaviour, which has provided a foundation for the theoretical framework of this research. Furthermore, due to the novelty of Covid-19 at the time of the research taking place, there was an inherent knowledge gap as well as a limited amount of available literature on the topic. However, a number of studies have been found in relation to risk perception and behaviour among pregnant people during Covid-19, which have been presented below. This research has made an attempt to complement these studies with an additional discussion of the experiences of pregnant women in Sweden.

3.1 Risk Perception

Many relevant studies have been conducted on the general topic of risk perception. The concept has been found useful for many purposes, including to understand and evaluate public responses to hazards and to improve the communication of risk information (Slovic, 1987:281). One prominent theorist in the field of risk perception is Paul Slovic, who participated in introducing a fundamental approach referred to as the Psychometric Paradigm (1987). Assuming each person's biases shape how they make sense of an uncertain world, the approach attempts to create cognitive maps to discern this. By using this paradigm, it was found that people make judgements about the risk of various hazards and the desired consequent regulation. These judgements are then related to judgements about other things, such as voluntariness, dread, knowledge, controllability, potential benefits of the hazard and the mortality of the hazard in an average year versus a disastrous year (ibid.:281). The theory can be used to view events as signals for unexpected consequences. While a risk or hazard in itself might not produce direct consequences, repercussions can still be significant in terms of indirect consequences if society perceives the event as disastrous through a ripple effect (ibid.: 283).

This recognition that public perception and acceptance of risk weighs in on the opinions of experts in the field has been further explored by Roger E. Kasperson et al. in the theory of Social Amplification of Risk (1988). The need to combine risk analysis with the inability to accurately anticipate public response to risks has created a unique dilemma that often has a secondary impact on society through social or economic consequences. The theory of Social Amplification

of Risk attempts to explain this phenomenon by which “information processes, institutional structures, social-group behaviour and individual responses shape the social experience of risk, thereby contributing to risk consequences” (ibid.:181). It describes an information system that can either intensify or weaken, as well as filter, how risks are communicated. When risk information is first transmitted, there are many factors that influence how this is then interpreted by society. This interpretation arguably connects back to how Slovic describes the judgements people make of risks, often simplifying it to make sense of difficult information. Such simplification is an example of how the theory can explain how certain risks are amplified and some are attenuated (ibid.:179). For example, so-called “stations” that can signalise information about the risks include agencies and institutions, media, scientists and activists, as well as personal social connections (ibid:181).

In Neil Weinstein’s concept of Unrealistic Optimism (1980), such dissociation can also be found. The concept is based on the notion that “people believe that negative events are less likely to happen to them than to others” (ibid.:807). To an extent, the concept has already been applied to understand people’s risk perception in relation to Covid-19. One study in Poland found that both men and women thought of themselves as being less likely to contract the virus compared to others (Dolinski et al., 2020). Again, this study confirms what has been at the core of both Slovic and Kasperson et al., that the vitality of understanding risk perception lies in its ability to predict human behaviour and in extension inform risk communication (Slovic, 1987:181; Kasperson et al., 1988:184-185). The same dissociative trait that Weinstein describes can arguably also be seen in Ali Siddiq Alhakami and Paul Slovic’s study of the relationship between perceived risk and perceived benefit (1994). The study revealed that when people perceive a high level of benefit of a certain item, the perceived risk appears lower. It also showed that people’s attitudes towards the item could influence their perception of benefit and risk. For example, if people had a positive attitude towards a certain item, they might perceive this item as having high benefits and thus lower risks. This aligns with Slovic’s previous claims of the impact of attitude on perception and behaviour (Slovic, 1987:283). These findings indicate that people may tolerate a risk in case it is perceived to bring them a certain level of benefits (Alhakami & Slovic, 1994). For this research, the relevance potentially resides in understanding how pregnant people balance their risk perception of Covid-19 with the perceived benefits of certain alteration of their regular behaviour.

3.2 Human Behaviour

The term ‘human behaviour’ can refer to a range of conceptual ideas in many different fields. This literature review has focused on the ideas that appear the most relevant to this research. As previously introduced, the theoretical framework underpinning this research is the Theory of Planned Behaviour (TPB). The theory, proposed by Icek Ajzen, attempts to explain aspects of human behaviour and claims that it is predicted by intention, which in turn is influenced by attitudes towards the behaviour, subjective norms and perceived behavioural control (PBC). In other words, the degree to which an individual holds an attitude, subjective norm or PBC towards a particular behaviour determines the likelihood of that individual intending to perform the behaviour (Adiyoso & Wilopo, 2020:3). Prior to the TPB, Ajzen together with psychologist Martin Fishbein, developed the Theory of Reasoned Action (TRA) (1975). This formed the basis for the TPB, in which Ajzen simply added the determinants of actual control and PBC. This notion of actual and perceived control had not been part of TRA, as this theory had the underlying assumption of “perfect volitional control” (Ajzen, 2020:316). In later years, the TPB has been further elaborated into the Extended Theory of Planned Behaviour (ETPB) by Aurelio Tommasetti et al. (2018). These researchers initially focused their research on sustainable consumption and hence added two determinants to what influences intention and behaviour. Perceived usefulness and curiosity were both added based on their well-established evidence of playing into people’s decision making processes (ibid.:9). The applicability of the TPB, in any variation, in a wide range of contexts has resulted in the development of multiple studies with the theory as their base, similar to what will be conducted in this research.

Adiyoso and Wilopo (2020) has conducted such a study (yet to be peer-reviewed) based on the TPB, that also holds certain relevance for this research, focusing on social distancing intentions and behaviours in the Covid-19 pandemic in Indonesia. Through the application of the TPB, it was found that the most important factors determining social distancing behaviour revolved around the subjective norms and PBC, not so much influenced by prevailing attitudes on the matter. However, it is conceded that this might be a flaw of the scope of the study as respondents might prioritise other means of limiting their exposure to the virus than socially distancing (ibid.:11). The study also makes interesting reference to the power of various media sources in affecting human behaviour in the context. It was found that how information is communicated

did have an impact on risk perception, and then in extension on intention and behaviour, which aligns with the conclusions drawn on information sharing by Kaspersen et al. (1988:184; Adiyoso & Wilopo, 2020:11).

While the TPB emphasises the importance of attitudes in determining how individuals behave, an approach proposed by Patricia Labaw suggests that this is not sufficient (1980). This approach criticises the attitudinal nature of the TPB, claiming that the gap between the actions of individuals and their consciousness of these actions is too large. It hereby introduces ‘consciousness’ as a factor for predicting behaviour, given that “as a rule, people have not thought about, and do not know their feelings about most issues that have not directly affected them” (Labaw, as cited in Holdershaw & Gendall, 2018:7-8). The theme is comprised by three components: current and past behaviour, as this is likely to mirror what future behaviour will look like; knowledge, as actions often reflect the level of understanding of a topic; and environment, as the physical aspects over which individuals have little power influences their ability to act in various ways (Gendall, 1998:29-30).

Cognitive Dissonance Theory is another established theory of human behaviour that was first presented in 1957 by Leon Festinger. It stated that pairs of cognition, also known as elements of knowledge, can be relevant or irrelevant to one another. When cognitions are relevant, they can either be consonant or dissonant, meaning that they either follow each other or be in opposition to each other. The theory assumes that dissonance is psychologically uncomfortable and hence motivates people to take action; for example, through limiting the intake of information that increases dissonance in efforts to reduce it (Harmon-Jones & Mills, 2019:3-4). Festinger uses the example of a habitual smoker faced with the news that smoking is bad for their health. The newfound knowledge that smoking has a negative impact on their health is dissonant with the fact that they continue to do it. This dissonance can be reduced in a number of ways; through a change of behaviour by stopping smoking, through countering the information with positive aspects of the behaviour or through comparison with actions that could potentially be even more hazardous for their health to justify their continued smoking. Additionally, the smoker might take into account the enjoyment they get from smoking and consider this worth the risk (ibid.:4). These findings on human behaviour are congruent with what Alhakami and Slovic found in their study on perceived risk and perceived benefit (1994). Arguably, the findings are also not in direct

contradiction to what the TPB would be able to predict in terms of smoking behaviour. The latter would, in contrast, likely suggest a higher influence of subjective norms and social pressures on the decision of an individual to quit or not to quit smoking (Topa & Moriano, 2010:30).

3.3 Pregnancy & Covid-19

Risk perception and protective behaviours among pregnant people in relation to Covid-19 has thus far been explored by a limited number of research studies. In March 2020, a Chinese study concluded that pregnant women were increasingly worried about the possibility of them or their families contracting Covid-19, with 81.3% perceiving that “pregnant women are more susceptible to Covid-19 than the general population” (Lee et al., 2020:5). One of the main sources of information in the study were medical professionals, with the reflection that these are often considered respected authorities in China (ibid.). Another study based in Pakistan explored risk perception combined with fear and anxiety among pregnant women. The study concluded that “pregnant females are more concerned about risks to their families, unemployment and other children than their unborn child. Our females are least concerned about their own health” (Din et al., 2020: 180) However, the study did not go into detail on the possible reasons for this risk perception, more than contemplating whether the socioeconomic status of the studied people, being of low and middle class, could be a factor that influenced perception and behaviour (ibid.).

Yet another study on risk perception among pregnant women has been conducted in Iran. The study found that 97.3% of the participants showed “high performance in preventative behaviors” related to Covid-19 (Aghababaei et al., 2020:4). Some of the highest ranked protective behaviours found, in terms of performance, included avoiding crowded or indoor places, reducing use of public transport, not coughing close to others, and staying informed about healthcare through television and conversations (ibid.:3). The study also found that “women with better economic status had better protective behaviors” and that women who had not previously given birth showed stronger risk perception than women who had given birth at least once before (ibid.:7). The conclusion of this study was that “risk perception of pregnant women can predict their protective behaviors against Covid-19” (ibid.:8). Given the conclusions made from these three different studies, it can be claimed that previous research indicates that pregnant people

have experienced high levels of risk perception in relation to the Covid-19 pandemic in different parts of the world, as well as altered their behaviours to protect themselves or their families.

In Sweden, the University of Gothenburg and the SOM-institute have investigated how pregnant people and their partners have experienced the Covid-19 pandemic, with focus on perception of vulnerability and worries related to Covid-19. The study was released during the autumn of 2020, at a time when the topic of this thesis had already been established. It was found that couples expecting a child worried more and spent more time thinking about Covid-19 compared to non-expecting couples (Markstedt et al., 2020:4). It was also found that pregnant women thought more about Covid-19 than people aged over 70, which have been identified as one of the main risk groups, and had the same perception of vulnerability as people aged over 70 (ibid.). These findings indicate that pregnant people have perceived themselves vulnerable and worried about the consequences of Covid-19, which has been a motivating factor for this thesis and for further research on this particular group's risk perception and protective behaviours.

4. Methodology

The methodology has been defined as qualitative, with in-depth semi-structured interviews as the main source of data collection about the risk perception and protective behaviour among pregnant people in Sweden. In-depth interviews have been chosen as they provide an opportunity to learn about the perspectives of the interviewees (Blaikie, 2010:207). This method has allowed each interviewee to answer openly and reflect on personal experiences (Scheibelhofer, 2008:405-406).

4.1 Data Collection

An interview guide was developed as one of the first preparatory steps of data collection (Appendix 9.1). The guide was created based on the theoretical framework of this research, the Theory of Planned Behaviour (TPB), to facilitate an analysis through this lens at later stages. The TPB does not offer any standard form for interviews (Ajzen, 2020:318). Thus, the questions and format were established by the researchers. Some questions were developed to gain a better understanding of the interviewee and their perspective; however, most questions were created to cover the three main determinants of the TPB: attitude, subjective norms, and PBC. Furthermore, the interviewees were asked about their main sources of information, and their knowledge of the restrictions and recommendations in Sweden. Finally, more general information was gathered from the interviewees regarding their age, geographical location, gestational age, and whether or not they had had a confirmed contraction of Covid-19. The guide was mainly developed as a navigating document, and the interviews have been approached with an openness to potential changes in the sequencing of questions as well as follow-up questions (Scheibelhofer, 2008:406).

The participants in this research were gathered through social media, predominantly through Facebook groups, where the research topic was presented and participants could sign up. The group sample was hence relatively random, as no active selection was made other than that the request was only available to the members of the Facebook groups the posts were made in. A large group of interested interviewees was identified at an early stage and interviews were booked and conducted until full data saturation was satisfied, which was defined by the researchers to be when several similarities could be identified between the interviewees. 16

interviews were scheduled but in the end 15 interviews were conducted as one person did not attend the meeting, for reasons unknown to the researchers.

Prior to the conduction of the interviews, a consent form was developed and shared with participants to ensure high ethical standards and voluntary and informed participation (SRA, 2003:14; Appendix 9.2). The participants were given time and opportunity to consider the terms before then agreeing and giving consent to participate. Due to the Covid-19 recommendations at the time of this research, the interviews were conducted through the digital platform Zoom. The interviews were recorded to allow for the researchers to be present and attentive during the interview, and to enable accurate transcription. The interviews were conducted in Swedish as all interviewees were most comfortable with this, and this would hence facilitate the most open dialogue. Transcriptions of the interviews have also been made in Swedish, with English translations of quotes used in-text in the written research.

In addition to the collection of primary data through the interviews, secondary data has also contributed to the research. A number of studies from previous research on relevant topics has been considered in Chapter 2. Context and Chapter 3. Literature Review. Among other things, this has involved studies on risk perception, human behaviour and the Covid-19 situation, including statements on recommendations and restrictions, and the impact on pregnant people.

A conscious decision was made not to use a control group, but rather to analyse the findings in relation to the secondary data. This was primarily due to the time limits of this research, as the inclusion of a control group may have taken up valuable time from the target group of pregnant people. Furthermore, risk perception regarding Covid-19 among the general population has been studied in other research, and thus these are referred to for further insight into groups beyond pregnant people (for example Dryhurst et al., 2020).

4.2 Data Analysis

The interviews have been transcribed into written text as part of the data preparation (Wirenga, 2014:135). This facilitated the use of quotes in-text as well as further analysis of the data. The transcriptions were slightly condensed in cases where the interviewees were pausing, stumbling or humming, to make them easier to read and follow the train of thoughts. For the data analysis of the primary data, the analytical tool NVivo has been utilised. All the transcribed interviews

were imported to NVivo and then coded into the different topics, primarily following the interview guide for structure. During the analysis phase, different themes were identified, and these have been added as new codes. NVivo has thus been used for qualitative data analysis, and it has offered opportunities to scan through the transcriptions efficiently. The data has been sorted into different relevant categories to identify correlations, divergences and other interesting aspects among the responses. The data has also been analysed through the theoretical framework of this research as well as the secondary data deemed relevant. As aforementioned, the Theory of Planned Behaviour was used in the development of the interview questions and then again used as a basis in the analysis of the results.

4.3 Limitations

A number of limitations has been recognised; some inherent and some that were mitigated. Firstly, the researchers are not medical students and that the focus throughout the paper remains on risk perception, protective behaviour and related elements. Secondly, the Covid-19 pandemic has provided a unique set of practical and logistical limitations that has required a certain amount of flexibility in comparison to what would have been preferred; for example, interviews have taken place through digital platforms rather than in-person. In relation to Covid-19, it is also relevant to note that there was limited published research on the topic at the time of the conduct of this research, both in general on the pandemic and in relation to pregnancy. During the process of this research, the terms of the pandemic have constantly been changing. The researchers have taken necessary precautions to ensure that the information used is up to date and have adapted the research continuously to the extent possible. Still, it is acknowledged that the interviews are time and context dependent of the period when they were conducted (late January & early February 2021).

Furthermore, it has been acknowledged that recruitment from specific Facebook groups may have, without intention, led to higher representation of specific social groups among the interviewees. There was a lack of representation among non-Swedish speaking residents in Sweden, which may be due to the interview opportunity being presented in Swedish. This limitation arguably reduces the level of heterogeneity, and thus generalisability, of the results. Finally, the limited scope and time of the research period has resulted in sacrifices to keep the

level of ambition manageable. Again, this limits the generalisability of the results as the experience of all pregnant people in Sweden during the pandemic can never accurately be reduced to the 15 interviewed in this research project. The research has hence instead aimed to contribute to analytical generalisability in the field.

4.4 Values

The researchers have recognised that their feminist values have influenced the choice of research problem, especially in terms of choosing pregnant people as a target group. This group in society is predominantly made up of women, as further elaborated below, which is a systematically under-researched group, particularly in relation to health (Slawson, 2019). Beyond the purpose of this research, there has thus been a deeper intention to give voice and space to this specific group, within the fields of risk perception and Covid-19 related research.

There has been a conscious choice to refer to the target group as ‘pregnant people’ rather than ‘pregnant women’. In biology science, to become physically pregnant, female reproductive organs are needed. However, from a perspective of feminism and queer theory, it has been further recognised that not all people who can become pregnant identify themselves as women (Butler, 2004). To remain inclusive of people’s individual gender identity, this research has thus referred to pregnant people in its overall approach. ‘Pregnant women’ may be referred to in the discussion of referenced research and data. Furthermore, each interviewee has been allowed to state their own gender identity during the interview, and thus any particular reference to this has been based on the interviewees’ chosen gender.

5. Results

This section summarises the findings of the interviews. The findings have been presented in accordance with the interview guide (Appendix 9.1) as it appeared the most logical method to display the answers in the order of which the questions were asked. First, some results on the demographic, perspectives and experience related to Covid-19 of the interviewees will be presented, then follows the determinants of the Theory of Planned Behaviour with a presentation of the results on attitude, subjective norms, PBC and intention.

5.1 Demographics of Interviewees

A total of 15 interviews were conducted in January and February 2021. The interviewees ranged in age from 25 to 33 years old. The gestational age ranged from week 21 to week 38. The majority of the interviewees, 11 people, were expecting their first child, and the rest were expecting their second child. All the interviewees chose to go by the pronoun 'her/she'. There was quite a large geographical spread, with interviewees living in 10 out of the 21 regions in Sweden. As previously mentioned in Chapter 2. Context, there have been some different recommendations in different regions, especially related to the delivery. Nearly half of the interviewees, seven people, resided in urban areas and the remaining half was evenly divided between living in suburban areas and the countryside.

None of the interviewees nor any member of their households belonged to an identified Covid-19 risk group, pregnancy set aside. Two of the interviewees had tested positive for Covid-19, both during early stages of their pregnancies, neither with any serious implications during the illness. The rest had either not tested at all or not tested positive for Covid-19 or antibodies.

About half of the interviewees were working from home, with one of them working part-time due to pregnancy related medical conditions. Six people out of the group had jobs that required their presence at the workplace, and among these, a majority had stopped working and were either on parental allowance or medical leave, whereas the remaining were still working. Two people were neither working nor on parental allowance at the time of the interview.

5.2 Self-reflection on Worries Before & During Pandemic

The interviewees were asked to reflect on their relation with risks and worries. When thinking about themselves before the pandemic and before their current pregnancy, two thirds considered themselves as not being worried in their everyday life, whereas a third thought of themselves as worried. Among the respondents who considered themselves ‘not worried’, several mentioned their trust in science and logical thinking as a general reason not to worry. Just over half of the total considered themselves as more worried during the pandemic than before, and three people were less worried. Two participants with contrasting views on this said *“It is so weird because it was summer at the beginning of my pregnancy and at that point it was calmer and my worry about Covid disappeared. It was so paradoxical because I thought I would get more worried, but I didn’t”* and *“I am significantly more worried, because now I cannot think only about myself”*. The rest said their level of worries had not changed.

Some respondents felt that their worries were directly a result of the pandemic, whereas others thought the pregnancy was the main source of worry. One participant expressed this by saying that *“My worry about the pregnancy [...] has increased a lot, but I think it is more connected to the pregnancy and not to corona”*. Several respondents considered the combination of pregnancy and pandemic, as they could physically feel that the pregnancy was affecting their lung capacity, and thus were concerned about whether this would be harmful in case of a Covid-19 contraction. One participant said that *“It is the combination. If I had not been pregnant I would not have been as scared of corona. But as I grew larger and larger and felt that the stomach started pressing on the lungs, I got more out of breath, and then I thought that ‘what if I get it now, if it gets to my lungs...’ In the beginning we also didn’t know what would happen with the baby if it got ill”*. Lack of knowledge and information about the effects of Covid-19 on the pregnancy as well as on the baby in the future were also sources of worry for several people.

5.3 Knowledge of Covid-19

The interviewees were asked to reflect on their sources of information on Covid-19 and their knowledge about recommendations. The main sources used by the respondents were the Swedish Public Health Agency (PHA) and news media. Other sources frequently mentioned were the Swedish Healthcare Guide aka 1177, the workplace, and other health sector sources. In addition,

social media and word of mouth were mentioned by a few. See figure 2 below. Most of the interviewees mentioned two to four sources of information. Some reflected on contradicting information as well as the reliability of sources. One respondent said *“We’ve also been fed information through Facebook and people with opinions, but I have tried to think that they don’t know what they’re talking about, and instead tried to listen to those who know more”*. Another expressed similar thoughts through saying *“I have watched not just Swedish media but also international ones, and have tried to watch those that actually say something scientific. Not just people who have an opinion, but people who have researched and checked. Those are the sources I have focused on”*.

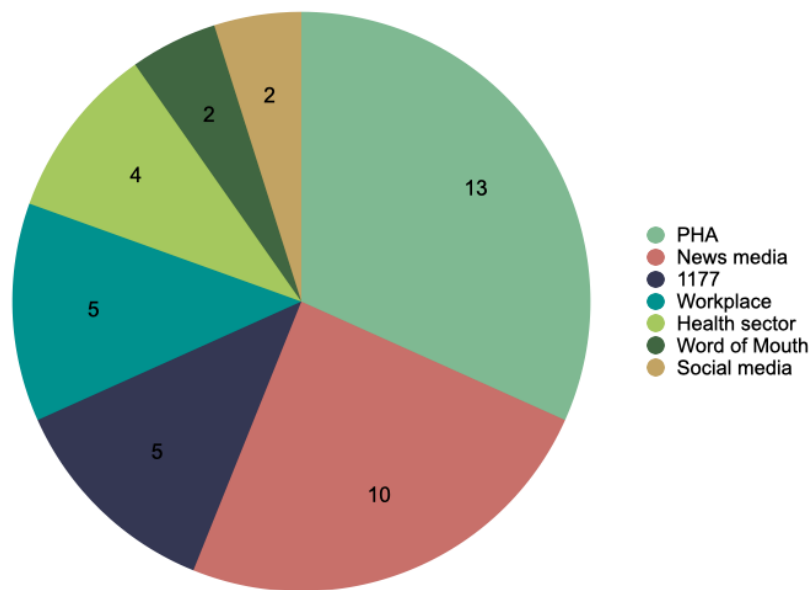


Figure 2: Sources of information about Covid-19

As for the knowledge of recommendations in Sweden, all the interviewees mentioned at least three recommendations. The most common recommendations mentioned were social distancing, limitations on social interactions (e.g. create a social bubble), wash hands, and avoid public spaces or crowds. These, as well as the other recommendations mentioned by the respondents are gathered in Figure 3 below. A few interviewees also acknowledged that the recommendations had been changed several times over the past year.

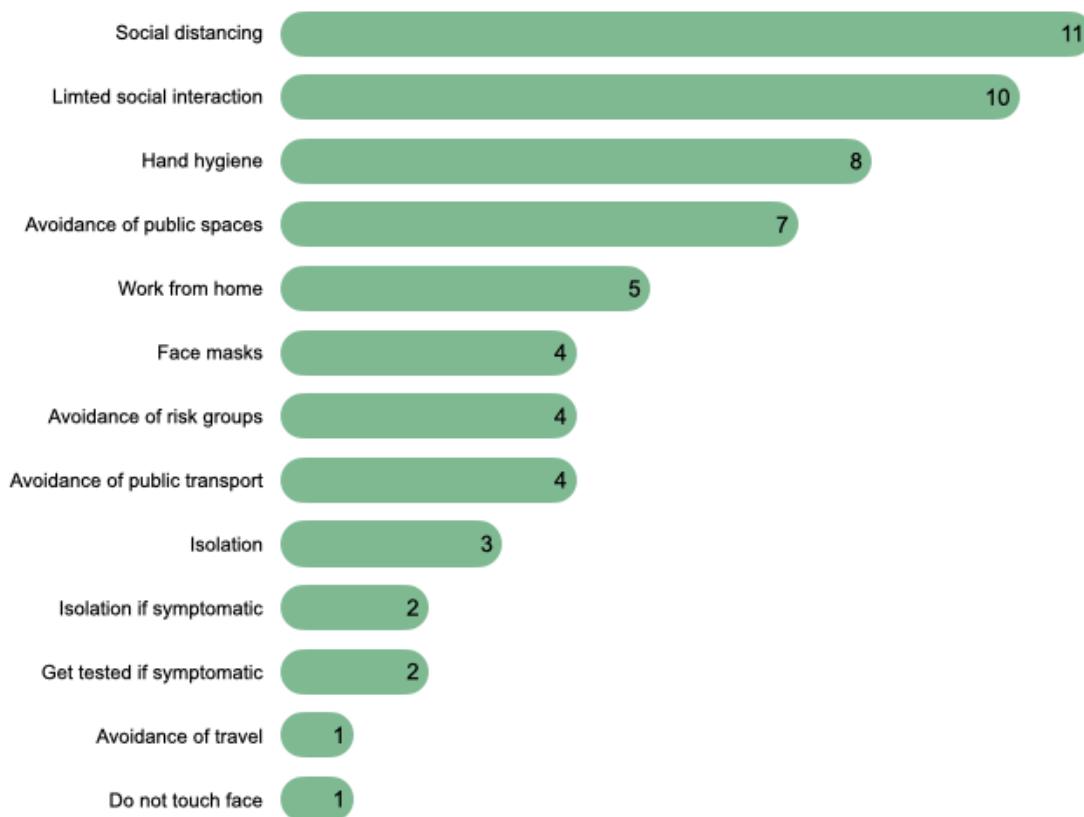


Figure 3: Knowledge of recommendations

5.4 Compliance

In regards to compliance with the recommendations in Sweden, the interviewees were asked to identify which recommendations they had complied with during the pandemic. A majority of the interviewees mentioned that they had limited their social interactions or created a social bubble. About half the group had avoided public spaces as well as avoided taking public transport. Public spaces have in this case included visiting shops in person, as many interviewees mentioned turning to online shopping. One participant vocalised this as *“During the last few weeks I haven’t even been to the shops, it’s so awful, the only time I leave the house is to see my midwife once a week”*. Another said that *“I have tried to follow, but I haven’t isolated myself to my household, as I have also chosen to meet my closest family members [...] I have stopped taking the bus and we have driven each other if someone needs to go somewhere. We have bought everything online, and just picked it up in the shops, or ordered food. Not been to a restaurant, perhaps done a food delivery, it’s so tragic, not gone to the pool or anything, nothing fun at all. It has really been*

weird'. All of the participants that had been given the possibility of working from home, just under half of the total group, had complied with this, with a few exceptions of visiting the office once every now and then. Among those who were unable to work from home, several had been in dialogue with their workplaces to find solutions where they would be less exposed to new people. Social distancing, hand hygiene and staying at home if showing symptoms of Covid-19 were all mentioned by a third of the interviewees. A few mentioned that they had worn masks and some had avoided travelling. The interviewees had a range between two and eight recommendations with which they had complied.

Furthermore, many interviewees also reflected on recommendations that they had not complied with fully. Just under half the group said that they had at some point visited some 'unnecessary' public spaces. In these cases, the interviewees themselves defined these public spaces or visits as 'unnecessary', and they mentioned primarily shops, restaurants and gyms. Some of the interviewees thought that they had not limited their social interaction to the extent that may have been recommended, with a few referring to the uncertainty regarding how many people one was allowed to meet. *"I am negotiating all the time, like I know that the recommendation says this and this, but still find a way in my brain to make it okay [to not comply]"* was one respondent's thoughts on this. Three participants had met up with others from various risk groups, particularly family members. A few had not avoided public transport and one person had travelled within Sweden.

5.5 Perceived Risks

The interviewees were asked open-ended questions about which possible consequences or risks they had considered in relation to Covid-19, and which consequences they felt had the most influence on their reasoning regarding following recommendations and changing their behaviours, as well as which consequences they were the least concerned about. In this section, it is acknowledged that the interviewees may have had more than one answer to this question, and all answers have been included in the results.

Firstly, the interviewees were asked which possible Covid-19 consequences they worried about or perceived in relation to their own life. The health of family, especially members of risk groups, and the health of themselves were both mentioned by just over half of the group of

interviewees. In the regards to concerns over their own health, some also mentioned the worry on negative long-term consequences following Covid-19 contraction. The strain on healthcare and risk for negative effects on the baby in the future, as a result of contracting Covid-19 as pregnant, were both mentioned by four of the interviewees. Other consequences mentioned were the health of others beyond the family and the negative consequences for society in general. Furthermore, nearly all of the interviewees expressed worries regarding the awaiting delivery, the uncertainty on whether or not the partner would be allowed to be there, due to the restrictions at hospitals and the risk of the partner showing Covid-19 symptoms. Just under half of the interviewees considered the uncertainty regarding the delivery and the health of their partners as the potential consequence with the most impact on their motivation to change behaviours and follow recommendations. Moreover, six participants mentioned negative consequences on their own health in case of Covid-19 contraction was also considered a main influential factor on behavioural change. Beyond this, the health of family, including members of risk groups as well as the strain on healthcare, were also mentioned as influencing consequences. One respondent also mentioned feeling ashamed when not complying, and thus considered this a reason to follow the recommendations.

On the other hand, approximately half the group of interviewees mentioned negative consequences on their own health as the possible consequence they were the least worried about. In relation to this, several referred to themselves as young and healthy as a reason for not being concerned. Several also said that they thought “*everyone will get Covid eventually*” and thus felt less worried about it. Interestingly, none of the participants mentioned death as a possible risk to Covid-19. Furthermore in this category, many considered the risk of losing their job or income as the least concerning possible consequence. Other less concerning consequences for some were health risks to family, the quality of healthcare in relation to delivery, and the strain on the healthcare sector.

The interviewees had different perceptions regarding whether or not pregnancy is categorised as a Covid-19 risk group. Two thirds of the group considered pregnancy as a factor contributing to making them a risk group, with most of them referring to the end of the pregnancy as being more at risk. Among these, several expressed some uncertainty but referred to the statement from the PHA in mid-December 2020 as a basis for considering pregnancy as a risk group, as the

statement emphasises the need to be extra careful especially from week 36 onwards (FHM, 2020d). One respondent said *“I would maybe wish that it had been a bit clearer that pregnancy is a risk group, because it feels as if this just slinked in, and that as a pregnant person, I kept track. But I don’t think that my friends have understood that. It has been my own responsibility as a pregnant person to find out, so I have missed that [more information]”*. A few also mentioned that their midwives had told them about possible risks to being pregnant and contracting Covid-19. However, the majority felt that they had not received any specific information from their midwives or the healthcare sector, and that they would have wanted more information. Three of the interviewees did not think pregnancy was a risk factor. One participant expressed this by saying that *“Some think that they [pregnant people] really are in a risk group, but I don’t think that because it doesn’t say so anywhere, and I have to base it on the information that exists”*. The remaining two people were uncertain, one of them expressed this uncertainty by saying that *“What I find to be the weirdest thing during my pregnancy is that pregnant people have not really been included in a risk group. Since it’s not certain. But still pregnant people cannot take the vaccine. Social distancing has felt good but as a pregnant person I have thought about why, should there not be anything more for us? But if they say it’s okay, then I guess it’s okay. We are part of the research right now...”*.

5.6 Attitude

The attitude of the interviewees, reflecting one of the key determinants in TPB, towards Covid-19 and suggested behavioural changes was measured predominantly using three questions. The questions were designed to gauge the degree to which the respondents were in favour of the various protective behaviours suggested. Upon being asked of their opinion on the management of the pandemic in regards to the recommendations and restrictions implemented by the Swedish government, all interviewees expressed that they were overall positive to this management. A third of the respondents were unconditionally pleased with the management, expressing that they appreciated that there has been enough room for interpretation for them to lead their lives the way they saw fit, that it was suitable for a democratic nation and that reliance on scientific research rather than politics had been comforting. One respondent said that *“I am a person with a lot of trust in the health sector and authorities so I think it has been great. I struggle with that others feel the need to get involved with what the experts say, because who*

knows better than the experts? That's my basic opinion. I think the restrictions have been good and I think you should follow them. Not really much more to say than that". The rest expressed contentment but with certain reservations. Out of those, some expressed that they were pleased with the management in terms of the recommendations present, but that the poor compliance of others was a concern of theirs. Others expressed similar concerns and that they believed the recommendations were not quite enough. Suggestions were made that they were *"too little, too late"* and that they should be stricter with more tangible repercussions when transgressed. A few also expressed that the authorities had failed to properly communicate the recommendations. Some comments were made saying that the recommendations were sometimes hard to interpret and that this created questions for the interviewees of the seriousness of the situation.

The interviewees were then asked of the impact of the recommendations on their sense of safety and security as pregnant people during the pandemic. A majority agreed that the recommendations were enough for them to feel safe and secure. A few expressed that they felt fully content with the precautions communicated by the authorities. A third of the respondents agreed that the recommendations were enough in themselves, but that other people's lack of compliance with these created feelings of unsafe and insecure. One respondent said that *"If they [the recommendations] had been followed, it would have been good, but there are those who do not give a damn. When they are followed, absolutely, when they are not, no"*. Another third expressed similar contentment with the recommendations but felt uncertain due to their experienced lack of communication and targeted support for pregnant people. This included the unclarity regarding belongingness of pregnant people to risk groups, cancellations of prenatal classes without digital replacements and that the partners could not join routine checks. Some also expressed that they felt safe and secure with the degree of recommendations privately but felt they were not sufficient at the workplace.

The interviewees were queried about their thoughts on the division of responsibility between the personal, the collective and the state in regards to Covid-19 protective measures. Most respondents were in agreement of the division but expressed this in slightly different manners and with different emphasis. A third of the respondents expressed that while they thought that recommendations should be enough for citizens to take personal responsibility to follow them, the state should step in where and when compliance is visibly not enough. In regards to this one

participant said that *“I think it is good that we live in a country where there are recommendations and not laws on restrictions, or how to put it. But it also means that it is a very big personal responsibility and that is good, but I can get annoyed anyway, that it seems to be so difficult for people to follow. So I think it is good that we have a great personal responsibility, but then I think that if you notice that the personal responsibility is not enough, the state needs to go in to a greater extent and tighten the restrictions”*. Some expressed a similar sentiment but specified that the state has a responsibility to make suitable recommendations and restrictions for public areas and that it is each person’s responsibility to follow this. A few said that it was the feeling of contributing to a collective responsibility, rather than personal, that motivated them to comply. A couple interviewees expressed that the state should carry responsibility over public areas while the personal responsibility resides over private matters. One person agreed that the state should have responsibility over public spaces but did not mention areas for personal responsibility, while some of the participants granted the state all responsibility. Additionally, one person had not reflected on this division but had noted a change in others behaviour after the adoption of the pandemic law that they related to a shift in responsibility.

5.7 Subjective Norms

The subjective norms surrounding the interviewees were identified using four questions. Initially the participants were asked to describe how they perceived the compliance with recommendations of their social circle. A majority said that it was with variety that their social circle complied, some were very compliant whilst some had several areas for improvement. Some specified that compliance was more mixed in their wider group of acquaintances, while their close circle of friends and family, with whom they had formed a bubble, complied well. A third expressed that their social circle was generally very compliant, though mentioning that it might be on a range from good to very good, that different people might have different ability to follow recommendations fully and that it was a balancing act between the pandemic and mental health that they constantly take into consideration. *“Everyone I know has in one way or another changed their behaviour and is actively thinking about it. But people are worried to different degrees and have different life situations. Some live nearly as normal while others have limited themselves a lot”* one person said. One person also expressed that compliance within their social

circle was poor and that people near them were always looking for loopholes to do as they pleased regardless.

The interviewees were then asked to specify what they understood to be the main risks and consequences of Covid-19 that their social circle perceived. A third responded that there was a concern for their own health, mainly amongst those who were elderly or belonged to other risk groups. Over half of the participants identified the fear of infecting others with Covid-19, and having to live with the consequences, as the main concern of their social circle. One respondent expressed this saying that "*I think there is a strong concern over infecting someone who does not survive, having to live with that*". Feelings of a collective responsibility or civic duty to follow recommendations were mentioned by some as a critical reason for why their social circle acted in a particular way. A few participants expressed that they had family and/or friends that were concerned over either losing their job or not getting a job after completion of their studies. A couple also expressed that those in their social circle either did not clearly see the risk and consequences of Covid-19 or were not very concerned about anything in particular. One person additionally stated that they had not discussed this with their family and friends and hence did not know.

Following this the interviewees were asked to reflect on how they felt that the risk and consequence perception as well as behaviour of their social circle had affected their own perception and behaviour. Many expressed that they did feel like the behaviour of those near them affect their actions. One participant said that "*You become like the people you surround yourself with*". The reasons behind this and similar statements were varied. Some said it made them think twice about their behaviour while some said that it could feel like a support and confirmation when others behaviour aligned with their own. Others mentioned that knowing how poor compliance some people in their wider circles adhered to made them fear strangers when out in public spaces. A few participants felt the opposite; that the behaviour of their social circle did not affect their own risk perception and behaviour. They expressed that they would likely have acted the same regardless, but also conceded that their close circles consisted of such a homogenous group that they already behave in similar manners. Some respondents pondered that it was hard to distinguish what affects what and who affects whom.

The interviewees were also asked to describe if and how their family and friends had encouraged them to behave in their situation as pregnant in a pandemic. A third of the respondents expressed that their social circle was generally very supportive and that they felt as though they trusted the participant to make good and educated decisions regarding their own pregnancy. One respondent said that *“We have completely chosen not to meet up with friends and such and everyone has been very understanding of it and not been like ‘Oh God how silly you are’”*. The remaining two thirds of the group explained how their social circle had encouraged them to be extra cautious as a result of their pregnancy. Some said the reason for this was a concern for the effects on the baby. Some also expressed that the concern seemed to have increased the longer into the pregnancy the participant progressed and that it had gone in waves depending on the amount of cases at different points in time. A few mention how it had led to that their family and friends helped to facilitate isolation for the participant and their partner as the due date approached.

5.8 Perceived Behavioural Control

The PBC of the interviewees was measured with questions regarding the extent to which they experienced control over their situation, both in terms of practical control and their emotional reactions to this. The purpose was to identify potential obstacles to their compliance with relevant recommendations. First they were queried about their perceived control over practical elements of their lives in the context of Covid-19. The responses were for most participants naturally divided into their work and private spheres; only one person gave a general answer that they experienced full control over the practical elements of their life, without going into detail. Over half of the participants expressed that they were in full control of elements surrounding their work. Some of these said it was due to that they worked from home, were supported by their workplaces to do so and were given the choice to be at home at an early point. Some expressed that their pregnancy was the reason while some would have had to leave the office regardless. The remaining expressed that they had no control over the situation at their workplace. Some of them, working in spaces with many people around them, mentioned that they experienced a slight regain in control when Personal Protective Equipment (PPE) became available. In regards to the private sphere, again over half the group expressed that they were in full control. They listed aspects such as availability of car, ability to order groceries to the door and digital communication tools as enabling their control. One respondent related this to

privileges and said that *“I am privileged to be able to avoid what should be avoided”*. Only one person expressed a loss of control in the private sphere, relating their experience with their pregnancy and inability to bring their partner to prenatal meetings and ultrasounds. Some nuanced their answer and said that how they perceived control over practical elements in their private sphere depended on how they viewed it; while they conceded that they had no control over the recommendations presented, they did feel like they had control over how they behaved in relation to them. One participant expressed that *“I have not felt that I really have control over anything, but I have done my best to feel that like I am in control, by wearing a face mask and washing my hands extra much and so on. Everything is really out of one's own control”*.

The second question aimed to gauge the emotional response the interviewees felt in relation to their PBC regarding the compliance with recommendations. When reflecting on this, almost half the group expressed that they found it emotionally difficult with the need to comply. The reasons behind this included feelings of having the pregnancy pass everyone by and not being able to share it with near and dear ones as well as unwanted isolation and uncertainty over the future. One respondent expressed this through saying that *“Many of my closest friends have barely seen me pregnant [. . .] It's a bit ridiculous, but you go through a whole lot, and you talk about it, but don't really see each other; just the face, it's a little weird. It's strange to go through such a life changing thing, to be pregnant, I would have liked to have shared it with a few more people”*. A few expressed mixed feelings, also mentioning some of the factors just listed, but at the same time saying that it was an easy choice because the consequences they perceived of not complying were not an option to consider. This was also the overwhelming reason for why the remaining interviewees expressed ease over following recommendations. One interviewee mentioned that it was partly due to the concrete personal benefits she saw of following recommendations, referring to her own and her partners' health at the time of delivery, that she did not find it too difficult to change her behaviour. It should be noted though that a majority of those expressing ease also mentioned grief over what their partner missed out on when not being allowed to participate in prenatal meetings and ultrasounds. One person had not reflected on the subject and did hence not answer the question further.

5.9 Intention to Perform Behaviour

The intention to perform a behaviour, made up of the three main determinants of the TPB previously presented, was explored in this research through two questions. The first question aimed to investigate if the participants had any intentions of changing their behaviour as their due dates approached and how this in such a case would play out. The participants all revealed intention to become increasingly cautious as delivery approached, to a varying degree and with different precautions in mind. The participants all mentioned at least one or more precautions, with the exception of one person that had not yet planned so far in advance and hence did not answer further. Two thirds of the participants indicated that they planned to fully isolate themselves a few weeks ahead of their due dates, some specifying from week 36 which at the time of their interviews was the recommendation from authorities. One respondent said that *“I will stop working from week 36 and then I will basically just sit at home and we will probably isolate ourselves completely. We will not socialise at all and really try to minimise other contacts, buy groceries at times when there are no other people in the store and so on”*. A third of the respondents mentioned that they planned to avoid public spaces, and the same amount also mentioned that they intended to cease all social interaction outside the immediate family. Face masks were stated by some of the respondents as a measure of protection at this particular time of the pregnancy. A few indicated that they had no plans to change their behaviour as delivery approached but rather continue to follow the same regimen as they had. These people were already rather strict in their compliance with recommendations according to previous answers.

The second question asked how the interviewees intended to comply with recommendations after the delivery of their baby. The purpose of this was to see if their risk perception and protective behaviors were to change when they were no longer pregnant. The responses from the participants were mixed and most mentioned more than one factor. A third believed that the first couple of weeks after delivery would result in a natural form of isolation as they would be in a so called baby bubble. Just under half the group were uncertain of how they would proceed or had not yet planned for this, mentioning that it would depend on the rate of infection and pace of vaccination when the time would come. One participant mentioned that they planned to ask for recommendations from healthcare professionals. Two interviewees mentioned that they had discussed with their partner to let their close circle meet their newborn, one of which specifically

mentioned that they would take extra protective measures such as wear masks and use hand sanitiser at these events. One of them expressed that *“Then [after the baby is born] we will probably be a little less careful actually. We will not meet a lot of people, but the absolute closest we want to meet pretty soon after. As long as no one has any symptoms”*. A third of the participants mentioned that they hoped the change of season from winter to spring that was approaching at the time of the interviews would improve the overall situation in society and enable them to reduce their precautionary measures after the baby was born. Some then also expressed that they would be willing to see friends and family outdoors. One participant expressed this as *“We have told those we socialise with today, family and so, that for the first two weeks we want to be able to be in our bubble as a family, and then to meet outdoors [. . .] It feels safer outdoors than it does indoors, and they have also agreed that we will meet outdoors when he [the baby] has arrived”*. A couple expressed concern over the health of their baby as the reason for their intended behaviour after delivery, one of these participants also expressed concern over their own health and one mentioned the lack of research on Covid-19 and babies as a source of worry.

6. Discussion

This chapter analyses the results presented in the previous section and relates them back to the research question, namely *‘In what ways, if any, has risk perception of Covid-19 affected the protective behaviours among pregnant people in Sweden?’* The results are initially compared with the relevant theoretical framework, the Theory of Planned Behaviour, to discuss where these align and diverge. This discussion will be presented through the determinants of attitude, subjective norms, PBC and intention. The chapter has then handled additional themes that came through in the interviews: the unique conditions of a desired vision and set time period, the effect of an enabling environment and lifestyle, and the impact of ineffective information and communication.

6.1 Theory of Planned Behaviour

This research has explored risk perception and human behaviour through Ajzen’s Theory of Planned Behaviour (TPB). The theory has served as a foundation for the methodology of the research, and as a framework for analysing the results, testing the applicability of the general rule of the theory that “the more favorable the attitude and subjective norm with respect to a behavior, and the greater the perceived behavioral control, the stronger should be an individual’s intention to perform the behavior under consideration” (Ajzen, 1991:188). The analysis of these results are presented below.

6.1.1 Attitude

Based on the results, the attitude among the interviewees has been interpreted as generally favourable towards changing behaviours, in terms of adopting protective behaviours and complying with the recommendations related to Covid-19. Firstly, this was based on the indications that no participant was explicitly against the requested behavioural changes, which made the spectrum of attitudes quite narrow, compared to what it possibly could be in cases with a wide array of opinions. It may be seen as quite extreme to be actively against measures to reduce the virus transmission, and thus it should perhaps not be considered surprising that the participants at a fundamental level were in favour of there being recommendations on behavioural changes. Quite a few participants even thought that the recommendations could have been stricter or implemented at an earlier stage. This could arguably suggest that the participants

would have had a favourable attitude towards an even larger degree of behavioural changes. With that said, the recommendations were still appreciated by many participants as they felt that these allowed room for adaptation in ways that were suitable to people's lifestyle and situations, rather than being forced to live under stricter conditions, as has been the case in many other countries. This can be related to the overarching difficulty in finding the appropriate balance between recommendations and restrictions, and to what extent a population will be allowed some leeway in the behaviour. Whilst different countries have approached this differently during this pandemic, it remains noted that the participants of this study were approving of the recommendations implemented in Sweden.

Moreover, many of the interviewees considered themselves to have some level of personal responsibility in following the recommendations, which can suggest a favourable attitude towards themselves changing behaviours. Thus being open to own some responsibility in the situation appeared to have made them more in favour of actively committing to that responsibility. It can be argued that the attitude was overall favourable among all participants, which in accordance to the TPB would suggest an increased intention to perform the behaviours, here being to comply with recommendations from the authorities. However, there were instances of expressed criticism against the recommendations as being difficult to interpret, which caused inconsistencies in the role of attitude. When such criticism occurred, there was also a sense of defiance present; if there was room for interpretation in the communication from the authorities, then that could be utilised to the interviewees' benefit, even if they knew this was wrong. Despite this, there did not appear to be a clear link between this criticism and poor compliance with recommendations. Even if some participants were more critical, the spectrum of opinions was relatively narrow and the overall attitude can be concluded as favourable. Thus it can be claimed that attitude in itself was a strong determinant for people to approve of the behavioural changes; however, it may not be the determinant that created the variation in behaviour between the participants. This suggests that other TPB determinants were involved, including subjective norms, PBC and finally, intention. Furthermore, factors not directly handled by the theory can also have been influential.

6.1.2 Subjective Norms

There was some more variation in terms of favourability in the subjective norms. Firstly, for this research, the subjective norms need to be considered under the light of the pandemic and the conditions that it brought. As the Swedish recommendations urged limited social interaction and suggested the creation of social bubbles, there may have been an awareness regarding whom one actively chooses to interact with or not, in a way that could be different from ‘normal’ pre-pandemic circumstances. This kind of awareness was noted in the way the interviewees reflected on their social interactions during the pandemic. Many interviewees generally differentiated between three groups of people in their social surroundings: their close circle, being people they chose to meet in person during the pandemic; their wider circle of friends and acquaintances, including people they met up with prior to the pandemic and people that they interacted with through social media; and the general public, people they did not know but encountered in public spaces. Many considered their close circle to be compliant with the recommendations at a level with which they agreed. In addition, the majority had experienced both their close and wider circles to be encouraging towards them taking extra precautions while pregnant during the pandemic. These extra precautions were mainly expressed in the shape of supportive encouragement, rather than something that the interviewees’ felt heavily pressured into taking. Even if these two circles may have complied to a different extent with the recommendations, there still seemed to be an overall awareness that pregnant people should be more cautious, and thus there was a high level of social norm to comply with the recommendations. As mentioned, this experience of subjective norms has potentially differed slightly from how the determinant has been initially put forward in the TPB. Beyond the aforementioned point that there can be different circles with different subjective norms, this may also indicate that subjective norms can come in different forms, and thus not only in terms of pressure but also encouragement. With that said, something that was intended to be encouragement could be perceived as pressure, with a more negative connotation; however, that has generally not been the case in this research as the participants described their particular experience of social encouragement as positive.

Several interviewees expressed that people in their wider circles of friends and acquaintances did not seem to comply with the recommendations. This non-compliance seemed in many cases to involve larger social gatherings, and were distinguished from situations where people were unable to comply with certain recommendations due to life conditions (i.e essential work, limited socio-economic options), where the latter was generally more accepted and the former was seen as disrespecting the recommendations. Rather than this causing the participants to be more lenient in their compliance, it seemed to have the opposite effect, as participants expressed their annoyance with those that did not comply to the degree that the participants themselves deemed 'appropriate'. Several participants also made it clear that they did not meet up with these people that they considered non-compliant. Thus, whereas the subjective norms of the wider social circle can be considered non-favourable towards adopting protective behaviours, this seemed to have caused the participants to distance themselves from those not complying and continue on with their own relatively higher level of compliance. So, regarding the subjective norms, the main takeaway has been that participants perceived that they had a compliant close circle and a mixed or less compliant wider circle, as well as mixed experiences of compliance of the general public. As it can be assumed that most people belong to more than one social circle, it can thus be possible to be exposed to different subjective norms, which at times may be directly contradicting each other. In this unique situation of the pandemic, where people have been asked to make conscious decisions about limiting their social circles, it could also be considered possible that one has chosen a social circle with a similar standard of subjective norms as oneself. For this research, it can be concluded that many participants have limited their social interaction to a close circle or bubble with relatively similar levels of compliance, and thus been primarily surrounded by a uniform approach to behavioural changes during the pandemic.

In the TPB, an explicit definition in terms of who or what counts as sources of social pressure has not been described. However, whereas three kinds of social circles have been discussed so far, it is possible to include a fourth dimension of social influence in this case: the Swedish authorities during the pandemic. In the case of the pandemic, the recommendations on protective behaviours have come directly on behalf of the government and experts within the health field. The idea of changing behaviours did thus not originate from any of the three aforementioned social circles and was not directed towards any isolated group of society, but rather came from the state and was directed towards society in its entirety. This as a form of social influence may

be quite diffusely defined, as it has not been a singular person or group, nor someone that the participants had direct social contact with, but rather an arguably powerful actor with the function of being both norm-setting and protective of the society in which the participants live. This may also be of further value when considering that several of the interviewees expressed their trust in the government and scientific experts making these recommendations. Again, whereas the TPB does not define explicit actors or sources of social pressure, it can arguably be complemented with the Theory of Social Amplification of Risk, to better describe the distinctions the interviewees in this research have made of social pressure as well as how these might have affected their risk perception and behaviour. As aforementioned, the Theory of Social Amplification of Risk presents the idea of explicit “stations” that may amplify or attenuate people’s understanding of a risk (Kasperson et al., 1988:181). Those in charge of making decisions on recommendations in Sweden during the pandemic, including scientists, agencies and institutions, could all be claimed to represent such stations. How these decision makers, in their especially influential role, have chosen to frame the situation consequently has an impact on how people behave, in a similar way to how the other groups of social pressure identified through the interviews have affected the participants perceptions and behaviours. Thus, it could also be argued that subjective norms do not arrive from a sole source of social pressure, and depending on the source combined with the type of pressure, it may be of different importance and have different impacts on behaviour.

Furthermore, the perceived risks among the social circles seem not to have had a significant impact on the perceived risks of the participants. This can in many cases simply be explained through the lens of the different standpoints of the pregnant participants and the members of their circles. Many of the participants related their main perceived risks due to Covid-19 to their pregnancy, including the uncertainty of the delivery and the risk of the partner not being able to join, their own health during the end of the pregnancy and the health of the baby in the future. Thus, these are risks that non-pregnant people around them would not be faced with, and as such there has been a difference in what risks one may perceive as relevant for oneself. Similarly, many participants who had family members belonging to a risk group expressed that those family members were more concerned about their own health than anything else, which again would suggest a degree of personal application in one’s perception of risks.

6.1.3 Perceived Behavioural Control

PBC is defined by the TPB to be the extent to which a person perceives themselves able to perform a behaviour, including if the person expects obstacles to stand in the way of the behaviour (Ajzen, 1991:188). Several of the participants had different experiences of control in the situation depending on how they defined it for themselves. It was expressed that while they had no real control over the framework of recommendations and restrictions in which they had to operate, they did express feelings of control over their behaviour in accordance to said framework. One possible explanation for this perception of control in an uncontrollable environment might be the importance of personal responsibility that several of the participants expressed. As a way to regain a sense of control, the participants arguably turned the limitations in their lives into an active choice for the greater good. Some elaborated on this explaining how their personal responsibility contributed to the collective responsibility in society to take control of the situation. This distinction between what they could control and what they could not somewhat aligns with the distinction made by Ajzen between actual control and PBC. The former refers to the more tangible aspects, such as that they have no control over the externally established recommendations that they are expected to follow, and the latter refers more to how they perceive their ability to perform accordingly.

The most mentioned practical aspect of control regarded the participants' work situation, whether they were able to work from home and to what extent this was a matter within their control or not. Those who had the ability to work from home expressed high levels of PBC while those who had professions that required them to physically show up expressed lower levels. However, it could be questioned whether their experience of PBC in fact was instances of actual control exerted over them, meaning to what degree was it their own decision to work from home and would they have perceived this control if their employer had a less favourable attitude or opposed it? This question arose in analysis of the interviewees' descriptions of the situation in relation to the TPB and PBC as the aids or obstacles many times mentioned by the participants were in fact often tangible resources as defined by actual control. Similarly, there were arguably emotional elements of perceived control present. The inability to bring a partner to prenatal meetings and ultrasounds was a concern for many of the participants, in regards to which the interviewees expressed low levels of PBC. However, it can again be questioned whether this is

an issue of perceived or actual control as the obstacle to the desired outcome was tangible. This discrepancy in the definitions led to suggestions that for the particular case of this research, while there might be a reasonable division between actual control and PBC in theory, in practice it appears almost impossible to consider one without the other. Perhaps because there is arguably a time lag between the definitions, where PBC takes place before actual control is then executed. In this research this meant that the changes in the participants' lives were already initiated and how the interviewees had perceived their control over the changes before they happened was difficult to identify.

However, an alternative explanation could be found in Ajzen's distinction between realistic or unrealistic PBC (Ajzen, 1991:184-185). It could be argued that the reason it presented a challenge to distinguish between the interviewees' PBC and actual control was because their PBC simply completely aligned with the actual control they had over the situations. In other words, the participants that felt empowered in their ability to work from home did so because their employer with the actual power held a similar stance while those forced to physically attend their workplace experienced less power over the situation as they knew that the actual power would not budge for various reasons. The same logic can be applied to the example of the inability to bring a partner to prenatal meetings, where the pregnant couples expressed powerlessness because they in fact were in this instance. It could be suggested that their PBC was highly realistic and the perception to a large degree aligned with the actual control. Although even in this alternative explanation the issue of the time lag between definitions can be questioned, it is not possible to identify if the interviewees were aware of the stance of their employers before they created the mental idea of their perceived control.

6.1.4 Intention & Performance of Behaviour

The TPB has stated that favourable attitude and subjective norms, and a greater degree of PBC, would lead to the intention to perform a certain behaviour. Thus, to summarise the previous sections of this chapter, it has been concluded that most of the participants have had an overall favourable attitude, they have had certain degree of favourable subjective norms with specific focus on the close social circle's compliance with the recommendations as well as their encouragement towards the participants' compliance, and they have had a relatively realistic

PBC. Based on this, there should be an intention to perform the behaviour, here being the protective behaviours recommended due to Covid-19 in Sweden.

While it should be recognised that not every perceived risk or protective behaviour revealed a strong correlation for intention, there were instances that did. The health of their partner at the time of the delivery, within the overall uncertainty of the conditions at the time of the delivery, was one of the most commonly mentioned perceived risks that participants identified when considering consequences stemming from Covid-19. This perceived risk was by many participants closely related to their intention and plan to isolate from roughly week 36 onwards at the end of the pregnancy. Thus the desired vision of how the pregnancy should be, with the partner by one's side, was a very significant motivational factor for many regarding the degree to which they would change their behaviours. These interviewees, which were a majority of the total participants, were isolating or intended to isolate at the end of their pregnancies, to minimise this risk. When applying this particular example to the TPB, it can be noted that the majority of participants had a favourable attitude towards this behaviour, possibly linked to the perceived benefits. Furthermore, the majority also had supportive social circles who encouraged their caution and accepted their decision to isolate. There was also a common perception of being able to control this behaviour, through minimised or completely eliminated social interaction and visits to public spaces during those final weeks. This can be considered further possible through the actual control available, such as working from home or being on parental allowance in those final weeks, which may have enabled the participants to fully perform their intended behaviour of isolation. It was also been noted that this example have consisted of a couple of favourable conditions beyond those suggested by the TPB, including the desired goal and incentive of what these behaviours when performed well would achieve, and the set time period during which they would be performed, with the notion that the participants may no longer isolate beyond this time period. However, eased protective behaviour post-delivery should not be considered equal to non-compliant behaviour, as the recommendations only suggest isolation as a protective behaviour during the end of the pregnancy. To conclude, a strong correlation between this particular perceived risk (health during delivery) and protective behaviour (isolation) was found in this research.

It was also found that those further ahead in their pregnancy had a clearer intention of how they planned to behave during the remainder of their pregnancies. Their plans were often made in reference to the PHA recommendations of isolation, and as they were at the end of the pregnancy or soon would be, it could be noticed that they had already made such plans, compared to those at an earlier stage of pregnancy. This indicated a clear correlation between the recommendations communicated and the intentions of behaviour at that certain stage of the pregnancy. For those at an earlier stage, many expressed the hope of the conditions of the pandemic changing for the better towards the end of their pregnancies. Sources of hope included eased restrictions because of vaccinations or the arrival of summer, as the summer of 2020 showed comparatively fewer reported cases. This also indicated that these participants considered the recommendations as quite fluid and set in a context dependent on the current severity of cases. Thus they would adapt their behaviours to whatever the circumstances would be in the future, with the notion that the circumstances could have been both improved or worsened, even if most of them, as mentioned, expressed hope for an improved situation. Similar behavioural adaptations were noted throughout the interviews as many participants reflected on different levels of compliance with recommendations depending on the at-the-time conditions of the pandemic in their region or city. This again can be reflected in the uniqueness of the situation of the Covid-19 pandemic, with the different waves of cases and different amounts of cases in different parts of Sweden. Most participants linked an intention to perform protective behaviours to the extent that the at-the-time recommendations suggested. Even if it has been long-term, the recommendations remain within the context of a specific time period that will, sooner or later, come to an end.

Moreover, among the few participants who had been less compliant with the recommendations, there were some similarities in their reasoning. Even if they all had a generally favourable attitude, they also expressed that there perhaps had been too much personal responsibility and that the recommendations could have been stricter. All of them had less favourable subjective norms with perceived mixed or poor compliance within their circles. However, these participants had different answers regarding PBC, with some experiencing full control and some less control, indicating that this might not have been a determining factor. Thus when considering this through the lens of the TPB, it could be deduced that these participants had a weaker intention to perform the behaviours recommended, mostly due to their less favourable attitudes and subjective norms.

There are also a few other factors that have been at play. Firstly, among these participants, while it was recognised that several were in favour of the recommendations and generally attempted to comply, there were still inconsistencies in their compliance. This could be explored through Labaw's critique of the TPB which claims that a favourable attitude does not directly cause a particular behaviour as there is often a gap between an individual's actions and the consciousness about these actions. According to Labaw, this gap comes from a lack of awareness of every single decision made regarding one's behaviour, combined with that in the spur of the moment input from other factors might influence the conscious intention and cause an unintended behaviour (Labaw, as cited in Holdershaw & Gendall, 2018:7-8). Secondly, the majority of these specific participants did not consider pregnancy to be a risk factor. This has been further explored in Chapter 6.4 Risk Communication & Information. Thirdly, another similarity regarding the risk perception of this group was that the majority of them did not consider the health of their partner at the time of the delivery as one of their main risks, and thus it can also be suggested that they may not have perceived the same incentive to comply or isolate themselves as the previously described group of participants. Thus, to conclude, the TPB can show instances of explaining both the behaviour of those who complied and those who did not. In addition, the risk perception of the participants have in some cases had influence on the behaviour performed. Beyond this, a couple of other factors have also been considered influential regarding the behaviours of the participants, and these have been further discussed below.

6.2 Desired Goal & Set Time Period

The discussions above regarding the applicability of the TPB to the particular case of pregnant people in Sweden in relation to Covid-19 led to the identification of a first theme. It was found that some key factors in this case could not be covered or accounted for by the TPB, namely factors that describe the degree to which a behaviour is conditioned to a specific goal. The complementary considerations to the theory can be deconstructed into two main parts: a perceived benefit with a desired goal and a set time period with an 'expiration date'.

A majority of the participants planned to reduce their protective behaviour after the delivery of their baby. This indicated a clear 'before and after' where the conditions change after the pregnancy is over and where risk perception and protective behaviours are reevaluated. This is a unique condition that only pregnant people have as a risk group, as pregnancy is a temporary

condition, compared to other risk groups, such as elderly people or those with a chronic heart disease or diabetes. From one day to another, as the baby is born, a person goes from being included in a risk group to not, a change that the interviews indicated to some degree changed the risk perception and protective behaviour of the participants. This is arguably what is at play when the participants described how they had planned to isolate themselves from week 36 but then scale back on restrictive behaviour after delivery. This can also be connected to how one of the biggest worries expressed by many, that their partner would not be able to attend the delivery of their baby, is a concern that is no longer relevant once the delivery has happened. The observation also matches with the fact that only a few of the participants expressed worry over their baby contracting Covid-19. It should be noted though that this research was limited from connecting back with the interviewees after their pregnancy was over, hence it has not been confirmed that a change in risk perception and protective behaviour after delivery was actualised, just that there was an intention for this to be the case.

The components of the theme can arguably also be connected to the concept of perceived benefit as introduced by Slovic et al. The concept, as defined by the authors, describes how people may tolerate higher risks if it is perceived to bring them a certain level of benefits (Alhakami & Slovic, 1994). For the particular case of this research this would mean that pregnant people for example accepted certain risks related to Covid-19 if they saw a benefit to a behaviour that did not conform to the recommended behavioural changes. This in part explains the behaviour of some of the participants that accepted the risk of contracting Covid-19 in benefit of occasionally socialising outside their household. However, all the participants, although to a varying extent, recognised benefits in complying with the recommended behavioural changes as there was a payoff at the end of the road if they did where they and their partners were healthy at the time of delivery. An interviewee conveyed this clearly by expressing that complying with the recommendations from the authorities was not that difficult for her emotionally as she felt there was a concrete win in it for her. This suggested that the participants did not necessarily view protective behaviour as something negative and that the sacrifice of a restricted quality of life was tolerable due to the large perceived benefit of behavioural change. This pattern conforms to the idea that a desired vision and a limited time period makes an important contribution to determining the risk perception of a person in cases similar to the relevant one. Another theoretical contribution that could partly explain this goal-oriented behaviour is the Extended

Theory of Planned Behaviour (ETPB) added determinant of perceived usefulness by Tommasetti et al. (2018). Perceived usefulness would in this case then indicate that the participants were able to recognise how a behavioural change would be useful for them in a future scenario (i.e. health at the time of delivery).

6.3 Enabling Environment & Lifestyle

One common theme found across several interviews concerned the impact of various existent or nonexistent preconditions and the lifestyle of the participants. Reaching beyond the range of factors that can be directly included the determinants of the TPB, the results of this research indicated that the enabling environment surrounding the pregnant person and their way of living has an important effect on which protective behaviours they chose to adapt or not. One portion of the enabling environment that was repeatedly mentioned by all the participants arguably concerns what Ajzen refers to as actual control, a contrast to PBC also discussed previously in the chapter. Whether the participants were able to work from home or not, and if they had access to a car or relied on public transport, appeared to be recurring themes for determining the degree to which they were able to adopt protective behaviours in accordance with the recommendations. None of the participants were single households, which has also been of importance as this enabled them to outsource all tasks required outside of the home to their partner. This could also be considered a heightened risk, as the additional people in the household would have had to adhere to a similar degree of protective behaviour for it to be beneficial. The factor of timing was also raised by interviewees. Depending on what week the interviewees were in during different points of the timeline of the pandemic, they might have affected their risk perception and consequent protective behaviours. For example, those who were in a late stage of pregnancy during peaks of the pandemic had adopted more protective measures than those who were in earlier stages. This could be read between the lines in some of the interviews where the gestational weeks differed more and suggests that timing was an important condition in determination of risk perception and protective behaviour among some in the group. However, a heightened safety behaviour could also be attributed to the general progression of the pregnancy; it has been without the scope of this research to control if this differs depending on presence or absence of a pandemic.

Furthermore, it was noted that the pandemic was not necessarily the sole or even the most considerable reason for why some of the interviewees came to increasingly stay at home and limit their social interaction. Pregnancy-related conditions such as significant nausea, pelvic girdle pain and other physical complications were mentioned as factors contributing to that the participants limited their movements more than they otherwise might have. It would be impossible to determine whether the participants would have made conscious decisions to still follow recommendations regarding protective measures if they had complication-free pregnancies. However, it is important to recognise that Covid-19 related risks were not necessarily the only reason for why they behaved the way they did. Another pre-existing condition that arguably can have an impact on risk perception and consequent protective measures undertaken has been whether the current pregnancy was the participants' first pregnancy or not. One of the studies handled in the literature review by Aghababaei et al. found that "women who had not previously given birth showed stronger risk perception than women who had given birth at least once before" (2020:7). This seems consistent with what was found in this research. The interviewees who were expecting their second child were not disrespectful of the recommendations present, but seemed to experience a higher degree of emotional control because they had already been pregnant. Thus, they did not express as though they missed out on things to the same degree in the way those expecting their first child did; for example, the sadness of doing ultrasounds without partners present.

Many interviewees thus referred to the specific lifestyle that can simply develop as one is going through pregnancy, which has led to another interesting observation that arguably also has repercussions for how protective behaviours played out. While risk perception might not be altered as a result of this change in lifestyle, certain behaviours automatically became more or less natural according to the participants. Certain conditions caused by pregnancy, such as increased tiredness, unwillingness to drink alcohol, as well as other related complications, may have facilitated the compliance with recommendations, as it came with the pregnancy to be less active. Here the connection was made that complying with certain recommendations did not present as much of a change to the lifestyle while being pregnant, and that the participants may have changed their behaviour in a few similar ways, regardless of if there was a pandemic ongoing or not. This also aligned with what some mentioned with reference to their wider circle of friends and acquaintances that were less compliant with recommendations. Some of the

participants made a point of saying that some of their friends' preconditions were different, such as them being young, single or generally having a bigger need of socialising than themselves.

While many of the interviewees, particularly those expecting their first baby, expressed that they had missed out on experiences related to their pregnancy, there were also notions of silver linings that can be important to recognise. One such silver lining was that they were able to work much longer into their pregnancy than what otherwise likely would have been possible, since they were able to work from home. Another silver lining mentioned was that they expected their partner to be able to be more available and present for a longer period of time than otherwise possible, again due to them working from home and not going into an office just a couple of weeks after delivery. While these silver linings were not discussed at length in the interviews, it can still be interesting to consider the connections such an optimistic outlook might have with compliance with recommendations. Comparison of statements made by those that mentioned these silver linings confirmed that they were also on the more compliant end of the spectrum, something that suggests that there has been a link. While this research cannot make any conclusions on this, it can be claimed that an optimistic outlook on the situation makes it easier to accept and follow recommendations. However, there are many other surrounding factors that could play into this.

6.4 Risk Communication & Information

Information and communication are two interconnected factors that many interviewees have reflected on, and thus this has been identified as another theme relevant for this research. The interviewees were all fairly well-informed on the recommendations for protective behaviour to reduce Covid-19 transmission as well as symptoms and some risk groups related to Covid-19. However, the stand-out aspect in this regard was whether or not pregnancy would be considered a risk group. Even if pregnancy has been stated as a possible risk group since April 2020 in Sweden, this has been based on limited information and thin layers of empirical evidence. The lack of research could indicate that the risk group status of pregnancy may have been more derived from uncertainty rather than evidence. Without knowing the reasoning behind the decision-making process of the PHA, it may have been the case that pregnancy as a risk group was initially a safety measure, because the consequences of not including them as a risk group could be unacceptable. As shown in Chapter 2. Context, there has since then been more research

indicating certain risks for pregnant people; however, a lot of it remains at early stages. The lack of information and research, especially from the healthcare sector, was the main reason referred to when the interviewees expressed their uncertainty regarding being in a risk group or not. This gap may be due to the recency of the pandemic and the lack of time to gather evidence, but could also be part of the more systematic concern regarding what receives research funding. There have been other instances showing that pregnant people, as well as women's health overall, are an under-researched group (Slawson, 2019). Finally, the role of media may also have affected this, depending on what topics are covered, how they are framed and through which channels these are communicated (Kasperson et. al, 1988:184; Adiyoso & Wilopo, 2020:11). It is beyond this research to make any conclusive remarks on this, but it has been deemed important to mention considering that lack of information and risk communication regarding pregnancy and Covid-19 was brought up as concerns for many participants. The risk communication cannot be categorised as exclusively unsuccessful, since the majority of the participants still adhered to the recommendations and accurately made references to the information shared by PHA at the time of the interviews. However, there was still an uncertainty, especially as the information at this point remained brief. The lack of information can be understandable, considering the novelty of the virus and the time and resources required for research to make any type of conclusions, but even if this can be comprehended from a logical point of view, it may still have an effect on the perception and emotions of the affected people. It has also been important to highlight since a lack of information could, as seen among some interviewees in this case, cause less compliance and thus potentially lead to people putting themselves at unnecessary risk. It may also create speculations and unverified assumptions, or as Slovic noted, consequences could be caused by the perception rather than the risk itself (Slovic, 1987:283).

There were also some parallels between seeing pregnancy as a risk group and perceiving risk to one's own health, and vice versa. Slovic stated in the Psychometric Paradigm theory that mortality caused by the hazards can have an effect on the people's judgement of risks (1987). As risk groups have been based on mortality and severity of illness caused by Covid-19, it may not be unsurprising that this factor has an influence on the extent to which one may consider one's own health at risk. However, there were still a few participants who stated that pregnancy was a risk group yet did not consider themselves at risk. Again, there may have been several factors here at play, including other aspects balanced with the risk group discourse, such as one's

relatively young age and level of health. As many of the interviewees expressed their primary concern for the health of others, often elderly or chronically ill family members, rather than themselves, it may be possible to consider Weinstein's concept of Unrealistic Optimism. Being more worried about others than oneself does fit the premise of the concept, but whether or not this should be considered unrealistic may depend on the actuality of the risk. As pregnancy has been stated as a risk factor, it may be unrealistic to not see one's own health at risk while pregnant. At the same time, it can be understandable that some pregnant people did not identify with the risk group narrative. For example, there has been just one fatality of a pregnant person reported in Sweden. Based on this rate of mortality, it may not be unrealistic, as the actual risk can be considered very low. Again, this can be connected back to the lack of information, going beyond *if* pregnancy is a risk group and rather *why* it is. If the mortality rate is low, then there may need to be other information that can validate the risk group belonging, for people to take the matter seriously.

The level of information was not only considered low in relation to Covid-19, but also something that many interviewees felt that they missed out on in general as being pregnant during a pandemic. The cancellation of pregnancy-related informative sessions and the exclusion of the partner at all routine checks may have effects in the future that are yet known. These decisions were made to stop the spread of the virus, and even if that could be justified considering the circumstances, there may be a risk of this causing undesired consequences of parents feeling less prepared, less involved, less informed and less connected to the baby and to parenthood. It has been beyond this research to make any conclusions on this, but as it has come up as a concern during quite a few interviews, it may indicate a need to devote further attention to the possible long-term and ripple effects of the pandemic on pregnancy and parenthood.

7. Conclusion

The novel risks brought by Covid-19 and the changes in behaviour required to reduce the virus transmission has affected people across the globe. Pregnant people have been a particularly interesting group due to the uncertainty of the risks to their health and the measures and recommendations especially affecting their experience as pregnant. The purpose of this research has been to explore and understand protective behaviours adapted by pregnant people and in what ways their risk perception of Covid-19 has affected this. It has been concluded that the risk perception of the pregnant participants has indeed affected their protective behaviours. Most notably was the perceived risks of the partner not being allowed to join during the delivery due to Covid-19 symptoms or contraction, which led to many participants carefully complying with the recommendations and isolating themselves ahead of the approaching due date. This perceived risk and the related behaviour of isolation had the most prominent connection among the risks and behaviours analysed. Furthermore, with basis in the Theory of Planned Behaviour (TPB), it has been seen that a favourable attitude towards the recommendations, favourable subjective norms and a realistic level of perceived behavioural control has laid the foundation of performing these protective behaviours, whereas a lack of these determinants have been connected to less compliant behaviours. It has thus also been concluded that the TPB has been applicable to understand the performance of protective behaviours among pregnant people during the pandemic. Beyond this, it has also been concluded that some other factors are of importance during this unique case of changing behaviours under the conditions of the Covid-19 pandemic. Firstly, the set time period of pregnancy has been considered as an influence on the behaviours as it has brought motivation through the end goal and desired vision of the delivery, as well as a finalisation of the risk group belongingness. Secondly, the enabling environment with focus on lifestyle conditions, some specifically tied to the life of being pregnant, have also allowed for certain behaviours to be performed in ways that may not be applicable for other groups in society. Thirdly, the insufficient information and the sometimes lacking risk communication related to pregnancy and Covid-19 has affected the risk perception as well as the behaviours among the targeted group. Moreover, it has been recognised that this research has not analysed one single behaviour, but rather all protective behaviours related to the Covid-19 recommendations in Sweden, thus being quite broad in its initial approach. These conclusions, regarding how risk perception has affected the behaviours have, as stated, been specific to

particular risks and behaviours, but may not be fully applicable to all the behaviours as a joint set of behaviours. Thus, this research has further found that the most valuable qualitative conclusions have been drawn when focusing on particular risks or behaviours, rather than making any broad judgements. The influence of a range of factors and the details which may have different degrees of impact certainly has pointed towards the complexity of human behaviour, which under the condition of the Covid-19 pandemic have become even more multi-faceted. This notion, combined with the previously stated conclusions of this research, make for an interesting contribution towards the research on risk perception and human behaviour during crises, and may also be of value in the field of risk communication as it has explored and elaborated on the link of risk perception and behaviour with the compliance with risk-related recommendations.

8. References

- Adiyoso, W. & Wilopo, W. (2020). Social distancing intentions to reduce the spread of Covid-19: The extended theory of planned behaviour. *Research Square*. doi: 10.21203/rs.3.rs-61524/v1
- Aghababaei, S., Bashirian, S., Soltanian, A., Refaei, M., Omidi, T., Ghelickhani, S., & Soltani, F. (2020). Perceived risk and protective behaviors regarding Covid-19 among Iranian pregnant women. *Middle East Fertility Society Journal*, 25, no. 29, pp. 1-9. doi: 10.1186/s43043-020-00038-z
- Allotey, J., Stallings, E., Bonet, M., Yap, M., Chatterjee, S., Kew, T., Debenham, L., Llavall, A. C., Dixit, A., Zhou, D., Balaji, R., Lee, S. I., Qiu, X., Yuan, M., Coomar, D., van Wely, M., van Leeuwen, E., Kostova, E., Kunst, H., Khalil, A., Tiberi, S., Brizuela, V., Broutet, N., Kara, E., Kim, C.R., Thorson, A., Oladapo, O.T., Mofenson, L., Zamora, J., & Thangaratinam, S. (2020). Clinical manifestations, risk factors, and maternal and perinatal outcomes of coronavirus disease 2019 in pregnancy: living systematic review and meta-analysis. *The BMJ*, 370, 3320, pp. 1-14. doi: 10.1136/bmj.m3320
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behaviour and Human Decision Processes*, 50, pp. 179-211. doi: 10.1016/0749-5978(91)90020-T
- Ajzen, I. (2020). The theory of planned behavior: Frequently asked questions. *Human Behavior & Emerging Technologies 2020*, no. 2, pp. 314–324. doi: 10.1002/hbe2.195324
- Ajzen, I. & Fishbein, M. (1975). *Belief, attitude, intention and behaviour: An introduction to theory and research*. London: Addison-Wesley Publishing Company.
- Albarracín, D., Johnson, B.T., Fishbein, M., & Muellerleile, P.A. (2001). Theories of reasoned action and planned behavior as models of condom use: A meta-analysis. *Psychological Bulletin*, 127, no. 1, pp. 142–161. doi: 10.1037/0033-2909.127.1.142
- Alhakami, A.S. & Slovic, P. (1994). A psychological study of the inverse relationship between perceived risk and perceived benefit. *Risk Analysis*, 14, no. 6, pp. 1085-1096. doi: 10.1111/j.1539-6924.1994.tb00080.x
- Arbetsmiljöverket. (2020). *Gravida och covid-19 på arbetsplatsen – försiktighetsprincipen ska råda*. Retrieved from: <https://www.av.se/nyheter/2020/gravida-och-covid-19-pa-arbetsplatsen--forsiktighetsprincipen-ska-rada/>

Aven, T. & Renn, O. (2010). *Risk management and governance: Concepts, guidelines and applications*. Berlin Heidelberg: Springer. doi: 10.1007/978-3-642-13926-0.

Bae, S.Y. & Chang, P.-J. (2020). The effect of coronavirus disease-19 (Covid-19) risk perception on behavioural intention towards ‘untact’ tourism in South Korea during the first wave of the pandemic (March 2020). *Current Issues in Tourism*, pp. 1-19. doi: 10.1080/13683500.2020.1798895

Becker, P. (2014). *Sustainability science: managing risk and resilience for sustainable development*. Amsterdam: Elsevier.

Blaikie, N. (2010). *Designing social research: The logic of anticipation* (2nd ed.). Cambridge and Malden: Polity Press.

Butler, J. (2004). *Undoing gender*. New York: Routledge.

Collin, J., Byström, E., Carnahan, A., & Ahrne, M. (2020). Public Health Agency of Sweden’s brief report: Pregnant and postpartum women with severe acute respiratory syndrome coronavirus 2 infection in intensive care in Sweden. *Acta Obstetrica et Gynecologica Scandinavica* 2020, no. 99, pp. 819–822. doi: 10.1111/aogs.13901

Din, Y.M., Munir, S.I., Razzaq, A.S., Ahsan, A., Maqbool, S. & Ahmad, O. (2020). Risk perception of Covid-19 among pregnant females. *Annals of King Edward Medical University*, 26, special issue, pp. 176-180.

Dolinski, D., Dolinska, B., Zmaczynska-Witek, B., Banach, M. & Kulesza, W. (2020). Unrealistic optimism in the time of Coronavirus pandemic: May it help to kill, if so - whom: disease or the person? *Journal of Clinical Medicine*, 9, no. 5, pp. 1-9. doi: 10.3390/jcm9051464

Dryhurst, S., Schneider, C.R., Kerr, J., Freeman, A.L.J., Recchia, G., van der Bles, A.M., Spiegelhalter, D., & van der Linden, S. Risk perceptions of Covid-19 around the world. *Journal of Risk Research*, pp. 1-13. doi: 10.1080/13669877.2020.1758193

ECDC. (2020). *Risk factors and risk groups*. European Centre for Disease Prevention and Control. Retrieved from: <https://www.ecdc.europa.eu/en/covid-19/latest-evidence/epidemiology>

Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford: Stanford University Press.

FHM. (2020a). *Veckorapport om covid-19, vecka 12*. Folkhälsomyndigheten. Retrieved from: https://www.folkhalsomyndigheten.se/globalassets/statistik-uppfoljning/smittsamma-sjukdomar/veckorapporter-covid-19/2020/covid-19-veckorapport-vecka-12-2020_final.pdf

FHM. (2020b). *Veckorapport om covid-19, vecka 13*. Folkhälsomyndigheten. Retrieved from: https://www.folkhalsomyndigheten.se/globalassets/statistik-uppfoljning/smittsamma-sjukdomar/veckorapporter-covid-19/2020/covid-19-veckorapport-vecka-13-2020_final.pdf

FHM. (2020c). *Veckorapport om covid-19, vecka 17*. Folkhälsomyndigheten. Retrieved from: <https://www.folkhalsomyndigheten.se/globalassets/statistik-uppfoljning/smittsamma-sjukdomar/veckorapporter-covid-19/2020/covid-19-veckorapport-vecka-17-final.pdf>

FHM. (2020d). *Gravida uppmanas till extra försiktighet för att inte bli sjuka i covid-19*. Folkhälsomyndigheten. Retrieved from: <https://www.folkhalsomyndigheten.se/nyheter-och-press/nyhetsarkiv/2020/december/gravida-uppmanas-till-extra-forsiktighet-for-att-inte-bli-sjuka-i-covid-19/>

FHM. (2021). *Om covid-19 för gravida*. Folkhälsomyndigheten. Retrieved 16 February 2021 from: <https://www.folkhalsomyndigheten.se/smittskydd-beredskap/utbrott/aktuella-utbrott/covid-19/skydda-dig-och-andra/gravida/>

Gendall, P. (1998). A framework for questionnaire design: Labaw revisited. *Marketing Bulletin*, 9, no. 3, pp. 28-39.

Hanson, J.D., Nothwehr, F., Jingzhen G.Y., & Romitti, P. (2018). Indirect and direct perceived behavioral control and the role of intention in the context of birth control behavior. *Maternal and Child Health Journal* 2015 Jul, 19, no. 7, pp. 1535-1542. doi: 10.1007/s10995-014-1658-x

Harmon-Jones, E., & Mills, J. (2019). An introduction to cognitive dissonance theory and an overview of current perspectives on the theory. In E. Harmon-Jones (Ed.), *Cognitive dissonance: Reexamining a pivotal theory in psychology* (p. 3–24). American Psychological Association. doi: 10.1037/0000135-001

Heaman M., Gupton A. & Gregory D. (2004). Factors influencing pregnant women's perceptions of risk. *MCN: The American Journal of Maternal/Child Nursing*, 29, no. 2, pp. 111–116. doi: 10.1097/00005721-200403000-00010

Holdershaw, J. & Gendall, P. (2008). Understanding and predicting human behaviour [paper presentation]. Power and Place Conference, Wellington.

Kasperson, R.E., Renn, O., Slovic, P., Brown, H.S., Emel, J., Goble, R., Kasperson, J.X. & Ratick, S. (1988). The social amplification of risk: A conceptual framework. *Risk Analysis*, 8, no. 2, pp. 177-187. doi: 10.1111/j.1539-6924.1988.tb01168.x

Labaw, P. (1980). *Advanced questionnaire design*. Cambridge: Abt Print.

Lee, C-F., Chiang, I-C., Hwang, F-M., Chi, L-K., & Lin, H-M. (2016). Using the theory of planned behavior to predict pregnant women's intention to engage in regular exercise. *Midwifery*, 42, pp. 80-86. doi: 10.1016/j.midw.2016.09.014

Lee, T., Zhong, Y., Zhou, J., He, X., Kong, R., & Ji, J. (2020). The outbreak of Coronavirus disease in China: Risk perceptions, knowledge, and information sources among prenatal and postnatal women. *Women Birth*, 1130, pp. 1-7. doi: 10.1016/j.wombi.2020.05.010

Lennon, S. L. (2016). Risk perception in pregnancy: a concept analysis. *Journal of Advanced Nursing*, 72, no. 9, pp. 2016–2029. doi: 10.1111/jan.13007

Ludvigsson, J. F. (2020). The first eight months of Sweden's COVID-19 strategy and the key actions and actors that were involved. *Acta Paediatrica*, 109, pp. 2459-2471. doi: 10.1111/apa.15582

Markstedt, E., Naurin, E., Wallin, A., Elden, H., Linden, K., & Sengpiel, V. (2020). *Hur upplever gravida och deras partners coronapandemin?* SOM-institutet and Göteborgs Universitet.

Retrieved from:

https://www.gu.se/sites/default/files/2020-11/11.%20Hur%20upplever%20gravida%20och%20deras%20partners%20pandemin_Naurin%20m%20fl.pdf

MotherToBaby. (2020). *Covid-19: Fact Sheet*. Organization of Teratology Information Specialists. Retrieved 19 January 2021 from: <https://mothertobaby.org/fact-sheets/covid-19/>

NHS. (2021). *Pregnancy and coronavirus*. National Health Service. Retrieved 19 January 2021 from:

<https://www.nhs.uk/conditions/coronavirus-covid-19/people-at-higher-risk/pregnancy-and-coronavirus/>

Preis, H., Mahaffey, B., Heisman, C., & Lobel, M. (2020). Vulnerability and resilience to pandemic-related stress among U.S. women pregnant at the start of the Covid-19 pandemic. *Social Science & Medicine*, 266, pp. 1-4. doi: 10.1016/j.socscimed.2020.113348

Scheibelhofer, E. (2008). Combining narration-based interviews with topical interviews: Methodological reflections on research practices. *International Journal of Social Research Methodology*, 11, no. 5, pp. 403-416. doi: 10.1080/13645570701401370

Slawson, N. (2019). 'Women have been woefully neglected': does medical science have a gender problem? The Guardian. Retrieved from:
<https://www.theguardian.com/education/2019/dec/18/women-have-been-woefully-neglected-does-medical-science-have-a-gender-problem>

Slovic, P. (1987). Perception of Risk. *Science* 236, pp. 280-285. doi: 10.1126/science.3563507

Socialstyrelsen. (2021). *Uppdrag att löpande se över och vid behov uppdatera sammanställningen över de identifierade grupperna som löper störst risk att drabbas av särskild allvarlig sjukdomsutveckling vid insjuknande i covid-19 (S2021/00825 delvis)*. Socialstyrelsen. Retrieved from:
<https://www.socialstyrelsen.se/globalassets/sharepoint-dokument/dokument-webb/ovrigt/socialstyrelsen-delredovisning-riskgrupper-covid-19.pdf>

SRA. (2003). *Ethical guidelines*. Social Research Association. London.

Tegnell, A. (2020). *Underlag om gravida med covid-19*. Folkhälsomyndigheten. Retrieved from:
<https://www.sfog.se/media/336951/gravida-med-covid-19-01907-2020.pdf>

Tommasetti, A., Singer, P., Troisi, O. & Maione, G. (2018). Extended theory of planned behavior (ETPB): Investigating customers' perception of restaurants' sustainability by testing a structural equation model. *Sustainability*, 10, no. 2580. doi: 10.3390/su10072580

Topa, G. & Moirano, J.A. (2010). Theory of planned behavior and smoking: Meta-analysis and SEM model. *Substance Abuse and Rehabilitation*, no. 1, pp. 23-33. doi: 10.2147/SAR.S15168

Vetenskapsrådet. (2020). *Det svenska sjukvårdssystemet*. Retrieved from:
<https://www.kliniskastudier.se/forskningslandet-sverige/det-svenska-sjukvardssystemet.html>

Vårdguiden Region Dalarna. (2021). *Covid-19 virusinfektion och graviditet*. Retrieved 16 February 2021 from:
<https://www.1177.se/Dalarna/barn--gravid/graviditet/covid-19-virusinfektion-och-graviditet2/>

Vårdguiden Region Skåne. (2021). *Information om covid-19 för dig som ska föda barn i Skåne*. Retrieved 16 February 2021 from:
<https://www.1177.se/Skane/barn--gravid/gravid-och-foda-barn-i-skane/ska-du-foda-snart/information-om-covid-19-for-dig-som-ska-foda-barn-i-skane/>

Vårdguiden Region Stockholm. (2021). *Coronavirus och graviditet i Stockholms län*. Retrieved 16 February 2021 from:
<https://www.1177.se/Stockholm/barn--gravid/graviditet/coronavirus-och-graviditet-i-stockholms-lan/>

Weinstein, N. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology*, 39, no. 5, pp. 806-820. doi: 10.1037/0022-3514.39.5.806

WHO. (2020a). *Novel Coronavirus (2019-nCoV) situation report - 11*. World Health Organisation. Retrieved from:
https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200131-sitrep-11-ncov.pdf?sfvrsn=de7c0f7_4

WHO. (2020b). *WHO Director-General's opening remarks at the media briefing on Covid-19 - 11 March 2020*. World Health Organisation. Retrieved from:
<https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>

WHO, (2020c). *WHO Director-General's opening remarks at the media briefing on Covid-19 - 7 September 2020*. World Health Organisation. Retrieved from:
<https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---7-september-2020>

WHO. (2020d). *Generic protocol: A prospective cohort study investigating maternal, pregnancy and neonatal outcomes for women and neonates infected with SARS-CoV-2, 2 December 2020, version 2.6*. World Health Organisation & Human Reduction Programme. Retrieved from:
<https://apps.who.int/iris/handle/10665/337325>

Wieringa, R. J. (2014). *Design science methodology for information systems and software engineering*. Berlin and Heidelberg: Springer.

9. Appendix

9.1 Interview Guide

Intervjufrågor

Demografi

- Personlig information:
 - Hur gammal är du?
 - Vilket pronomen vill du att vi använder?
 - Var i Sverige bor du? Bor du i stad/landsbygd/förort?
 - Vem består ditt hushåll av?
 - Vad är din sysselsättning vanligtvis?
 - Vilken vecka är du i?
 - Har du varit gravid/fött barn tidigare?
 - Tillhör du eller någon i ditt hushåll en annan Covid-19 riskgrupp?
 - Har du testat positivt för Covid-19 eller antikroppar?
 - Om ja, under graviditet? Hur allvarligt?
 - Relaterat till graviditeten, har du behövt uppsöka sjukvård under din graviditet utöver rutinbesök?

Reflektion kring oro och risk

- Hur skulle du beskriva dig själv i relation till oro/risker/rädsla i vardagen? Innan pandemin och graviditeten.
- Hur har din relation till oro/rädsla/risker varit under graviditeten och pandemin? Har den förändrats? Känner du igen dig själv i dina reaktioner?

Information sources

- Vilka rekommendationer/restriktioner har du uppfattat gäller under pandemin?
- Vilka har varit dina främsta källor till information kring Covid-19 och rekommendationer/restriktioner?
- Har du fått några specifika rekommendationer från barnmorska/sjukvården gällande Covid-19 i relation till din graviditet?

Actions and why

- Vilka rekommendationer/restriktioner har du följt under din graviditet?
 - Följdfrågor: varför, varför inte?
- Vad har du oroat dig mest för när det gäller konsekvenser/risker (som följd av Covid-19)?
- Vilka konsekvenser/risker har vägt tyngst i ditt resonemang kring huruvida du följer rekommendationer/restriktioner?
- Finns det någon konsekvens/risk som du oroat dig minst för?

Attitude

- Vad tycker och tänker du kring de rekommendationer/restriktioner som finns i Sverige?
- Tycker du att restriktionerna och rekommendationerna som finns är tillräckliga för att du ska känna dig trygg i din situation?
- Hur ser du på uppdelningen av ansvar gällande Covid-19? Inom vilka områden anser du att vi har ett personligt ansvar och var bör staten ta vid?

Subjective norms

- Hur har du uppfattat att personer i din omgivning har följt/följer rekommendationerna?
- Vilka konsekvenser/risker uppfattar du att personer i din omgivning oroar sig mest för?
 - Följdfråga: Känner du att detta har påverkat din egen uppfattning kring konsekvenser/risker?
- Hur har dina nära och kära uppmuntrat dig att agera, pga graviditeten?
- Om du eller andra i ditt hushåll är i riskgrupp (utöver graviditet), hur har det påverkat era resonemang kring rekommendationer/restriktioner?

Perceived behavioural control

- Har du kunnat anpassa din vardag rent praktiskt, till exempel i din arbetssituation, i relation till rekommendationerna/restriktionerna? Vad har underlättat/hindrat? På vilket sätt har du haft kontroll över detta?
- Hur jobbigt/lätt har du upplevt det vara att följa de rekommendationer och restriktioner som kommunicerats? Vad har underlättat/hindrat? På vilket sätt har du haft kontroll över detta?
- Om det inte kommit upp: Finns det något du inte känner att du kunnat kontrollera när det gäller att följa rekommendationer?

Intention to perform behaviour/going forward

- Hur planerar du att agera/följa rekommendationerna när förlossningen närmar sig (i relation till Covid-19)?
- Hur planerar du att agera/följa rekommendationerna när bebisen är nyfödd (i relation till Covid-19)?

Avslutningsvis: Fråga om personen har några mer tankar eller upplevelser relaterat till ämnet.

9.2 Consent Form

Samtycke för deltagande i intervju

Denna forskningsstudie sker i samband med Ellen Sällman och Emelie Gummessons masterutbildning vid Lunds universitet under våren 2021. Forskningen har som mål att förstå riskuppfattning och skyddsåtgärder och beteenden bland gravida personer i Sverige i relation till Covid-19 pandemin.

Deltagandet sker frivilligt. Deltagaren har rätt att avsluta intervjun eller återta sitt samtycke samt få ens data borttaget och förstört. Intervjun kommer att spelas in digitalt för transkribering och sedan raderas efter slutförandet av studien, senast juni 2021. Materialet kommer under studieperioden sparas i skyddad mapp på Ellen Sällman och Emelie Gummessons datorer, som även är de enda som kommer att ta del av det inspelade materialet. Forskningen kommer presenteras inför lärare och studenter på Lunds universitet. Allt material från intervjuerna kommer presenteras anonymt, varken personuppgifter kring deltagaren eller svar som specifikt kommer från en deltagare kommer kunna spåras via forskningen. Forskningen bedöms ej ha negativ påverkan på deltagarnas säkerhet eller hälsa. Informationen som deltagaren delger kommer ej att användas i något annat sammanhang än det beskrivna.

Vid frågor kring forskningen eller intervjun ombeds deltagaren att vända sig till Ellen Sällman och Emelie Gummesson.

Deltagaren lämnar muntligt samtycke innan intervjun påbörjas efter genomgång av detta dokument.