The Social Considerations and Emotions of Parents in their COVID-19 Vaccine Decisions for their Children in a Risk Society.

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Abstract

This study explores the social and emotional factors influencing Aotearoa New Zealand parents' COVID-19 vaccination decisions for their children. While much of the literature on vaccine decision-making relies on quantitative data, my research takes a qualitative approach to explore the unique perspectives, experiences and relationships that shape parental vaccine choices. My thesis underscores the value of qualitative research in examining vaccine attitudes and understanding the complex and emotional nature of vaccine decision-making. Throughout the thesis, I reflect on my evolving understanding of the various vaccine beliefs and choices people make. This includes examining how my own feelings toward people who choose not to vaccinate have shifted, highlighting the role of emotion in social research.

Through Ulrich Beck's (1992) Risk Society theoretical framework, I examine how perceptions of risk, uncertainty, and trust in late modernity influence parents' views on the COVID-19 Vaccine, particularly for younger children. My primary methodology was narrative inquiry. I conducted semi-structured interviews with parents, followed by a narrative analysis to capture their unique stories. The structure of the interviews and subsequent narrative analysis allowed me to explore the emotions, social relationships and experiences that influenced the participants' COVID-19 vaccine decision-making. The narrative analysis was complemented by a thematic analysis to identify recurring themes and factors within the interview data and how they featured in the participants' vaccine decisions.

My findings highlight the importance of understanding vaccine attitudes beyond the ternary of pro-vaccine, vaccine-hesitant and vaccine-resistant that is commonly depicted in the literature. Parents' vaccine decisions are often fluid and context-dependent, shaped by emotion, social networks and experience. Emotions play a critical role in shaping how people interpret risk, a factor that Beck (1992) failed to consider. In the case of the COVID-19 vaccine, many of the participants saw the vaccine as a greater risk for their children than the virus due to the novel nature of the vaccine. The risk society lens allowed me to observe how parents are becoming increasingly sceptical of conventional experts, becoming confused by the multitude of "facts" available. This confusion increased their fear and anxiety about the vaccine for their children. Contrary to recommendations in the existing literature, my findings show that providing more information about the value and safety of vaccines to parents may be counterproductive. Information is not enough to overcome the emotions that parents feel when making vaccine decisions for their children.

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Chapter 1 Introduction. The Vaccination Question.

> "*After access to clean water, immunisation is the most effective health intervention in the world for saving lives*" (Te Whatu Ora Health New Zealand. 2024)
>
> "*Vaccines are often dangerous and may even be lethal*" (Smith et al., 2020)
>
> "*Since 1974, vaccination has averted 154 million deaths*" (Shattock et al., 2024)

1.1 Seeking to Understand: A personal need to know what influences parents' vaccine decision-making.

As a mother and grandmother, I have always conformed to vaccination without question. Although I was sometimes apprehensive about taking my children for vaccines, it was because of their tears and distress rather than because the vaccine was going to damage them in some way. I have always been confident in the protection vaccines offer and their safety. I never knew anybody whose child had experienced an ill effect from a vaccine, and I could not understand why some people chose not to vaccinate their children. I was aware of a study that linked the measles, mumps and rubella vaccine (MMR) to autism but had also heard that this had been disproven. To me, vaccines are a necessary and miraculous part of life.

When I first thought about researching parents' vaccine decision-making for my Masters, it was before the outbreak of COVID-19. My interest in vaccination decision-making had been piqued by news coverage of a measles outbreak in Aotearoa New Zealand and Samoa amidst a decline in MMR vaccinations. However, the emergence of COVID-19, the subsequent development of vaccines, and the implementation of vaccine programmes worldwide brought the differing standpoints on vaccinations to prominence. Vaccination became a point of difference and caused social division. In the case of Aotearoa New Zealand, where mandates were introduced, protests erupted across the country and built up to civil unrest on parliament grounds. During this time, I felt frustration and even anger with people who refused to be vaccinated, especially when vaccination had the potential to help end a global pandemic. I could not fathom why some people thought the way they did and why they believed what I considered to be rumours about the vaccines that were so irrational to me.

Despite the vocal opposition to the mandates and the vaccines during the initial vaccine rollout in Aotearoa New Zealand, over 90% of people aged twelve and over were fully vaccinated against COVID-19. Children over twelve can be vaccinated without their parent's consent in Aotearoa New Zealand. Therefore, they are included in the adult vaccination rates. The high vaccination rate did not continue when the vaccine became available for children aged five to eleven. Less than 30% of children aged five to eleven have been vaccinated against COVID-19. As children under twelve need their parents' or caregivers' consent to be vaccinated in Aotearoa New Zealand, and the decision, therefore, ultimately rests with parents, I have focused on parents' decision-making for these younger children in this thesis rather than on the children's influence or decision-making. In contrast to the large uptake amongst the over-twelves, the low uptake amongst children made me wonder why so few were vaccinated. What was different when parents considered the vaccination for themselves and their older children compared with when they considered the vaccination for their younger children? Although childhood vaccination rates are declining in Aotearoa New Zealand, 77% of children are fully vaccinated against common childhood diseases (Te Whatu Ora, 2024). So, what was different for parents when considering the COVID-19 vaccine for their younger children?

1.2 Research Purpose and Questions: Uncovering the Complexities of Parents' COVID-19 Vaccination Decisions.

The COVID-19 pandemic and subsequent vaccine rollout revealed wide variances in vaccine attitudes in Aotearoa New Zealand and the significant difference in rates of adults being vaccinated compared with young children. Understanding parents' vaccine decisions is vital as childhood vaccination prevents disease and protects vulnerable members of society. Parents' vaccine decision-making for their children is complex, and understanding the social, experiential and emotional influences can help inform public health policy and increase vaccination rates. However, increasing vaccination rates should not be the sole purpose of vaccine attitude studies. Instead, learning how and why vaccine decisions are made offers insights into how parents navigate risk in an increasingly polarised society and can help ease potential tensions, should there be another public health emergency.

The literature on vaccination attitudes, both before and during the pandemic, predominantly focuses on finding causal links between specific, quantifiable factors (such as socio-economic status) and vaccine hesitancy or refusal (Prickett et al., 2021; Dube et al., 2015; Kata, 2009;

Lee & Sibley, 2020; Ruiz & Bell, 2022; Honcoop et al., 2023). This narrow focus misses crucial aspects of people's decision-making, such as the role of emotions, experience and social relationships in how people interpret information and perceive risk. Additionally, the literature often fails to recognise that many people encounter the same information and perspectives but make different decisions, and these decisions are not necessarily the same for themselves as they are for their children. Studies often aggregate people into three distinct groups: vaccine acceptors, vaccine hesitators, or vaccine resistors (anti-vaxxers), and most studies focus on the resistant or the hesitant groups (Blume, 2005; Dube et al., 2015; Glanz et al., 2013; Kata, 2009; Ruiz & Bell, 2022; Atwell, 2017). However, these groupings oversimplify the complexity of vaccine decisions, leading to a narrow understanding of vaccine decision-making from a social and emotional context. Furthermore, in Aotearoa New Zealand, most research on vaccine attitudes focuses on quantitative survey data (Lee & Sibley, 2020; Lee et al., 2018). Although useful, this research fails to recognise the complexity of vaccine decision-making and why people of the same demographics can make such different decisions. The focus of vaccine attitude studies on causal links and quantitative data has led much of the literature to conclude that more information is all that is needed to increase vaccination rates.

Ulrich Beck's (1992) conception of the risk society focuses on the manmade global nature of risk, the notion of equality of risk, governments' reliance on experts, the public's growing mistrust of experts, individualisation, and reflexivity to discuss the pandemic and parents' vaccine decision-making. Individualisation refers to what Beck (1992) considered a shift from traditional, collective forms of social life to a society where people are increasingly responsible for their own life choices and identities. Reflexivity refers to how, in late modernity, individuals continually monitor, question and adapt their actions and beliefs in response to risks.

Applying the risk society framework to vaccine decision-making allowed me to consider how parents view the risk of vaccination in the context of their children's health. Governments and health authorities presented the vaccine as the solution to mitigating the risk of COVID-19. However, some simultaneously perceived them as a source of potential harm. This perception aligns with Beck's (1992) assertion that contemporary risks are often manufactured and can arise from attempts to mitigate other risks. Additionally, Beck's (1992) theory highlights the role of reflexivity, where individuals question established norms and re-evaluate their trust in experts, institutions, and science. This reflexive approach to vaccine decisions is particularly

relevant in the context of COVID-19, where conflicting information and changing guidelines have prompted many to seek alternative viewpoints, relying on personal research and social networks instead of official sources.

My research aims to address existing gaps in the literature and help develop a deeper understanding of vaccine decision-making. To do this, I will explore the following research questions using a social constructionist approach, employing Ulrich Becks Risk Society framework, alongside a narrative interview and analysis methodology.

Research Question 1: How do parents' social relationships, emotions and experiences shape their COVID-19 vaccination decisions for their children?

Research Question 2. How do parents make vaccination decisions for their children in a risk society?

Based on my research findings, I will argue throughout this thesis that much of the existing literature oversimplifies parents' vaccine decision-making by categorising people into three groups of vaccine acceptor, vaccine hesitator, and vaccine resistor (anti-vaxxer). My research demonstrates that a range of social and emotional factors influence vaccine decision-making. People can interpret and be influenced by these factors differently, depending on who they are deciding for and when they are making the decision. By developing a deeper understanding of people's vaccine decision-making, my study aims to help prevent the social polarisation witnessed in Aotearoa New Zealand during the 2021 to 2022 COVID-19 vaccine rollout. My study also seeks to influence public health policy by advocating for a shift from information-focused campaigns aimed at increasing vaccination uptake to a more empathetic and engaging approach. These changes will be significant should another pandemic or epidemic emerge.

1.3 Methodological Approach: Capturing Parents COVID-19 Vaccine Decision-Making Narratives.

I chose to adopt a qualitative, narrative research design within a social constructionist risk society framework to explore parents' decision-making regarding the COVID-19 vaccine for their children. I performed nine semi-structured narrative interviews and narrative analysis complemented by thematic analysis. Through the narrative interviews and analysis, I sought to capture the complexity of parents' vaccine decisions, recognising the influence of emotions, social interactions, and life experiences in their choices. The thematic analysis

enabled me to identify recurring themes and patterns. To minimise the impact of my biases in the interviews and analysis, I carefully considered the ethical implications and practised reflexivity. The methodology and ethical implications are explored fully in Chapter 3.

1.4 Thesis Structure

Chapter 2, the literature review, introduces the main concepts of Ulrich Becks' (1992) Risk Society and comprehensive overview of the literature on vaccine decision-making. It examines the existing research and establishes a foundation for my qualitative approach. My literature review covers studies from Europe, the USA, Australia, and Aotearoa New Zealand.

In Chapter 3, the methodology chapter, I discuss my use of narrative interviews and analysis within a social construction framework. This chapter outlines the process of participant selection, data collection, and analysis, highlighting the importance of reflexivity and ethical considerations in qualitative research. It also reflects on my position as a researcher and how my initial stance on vaccination shaped but did not limit my understanding of the participants' experiences.

Chapter 4, the first findings chapter, presents the participants' personal narratives, with each participant assigned a moniker that reflects their unique vaccination journey. This chapter underscores the complexity of vaccine decision-making and challenges and expands the conventional categorisation of parents as vaccine-accepting, hesitant, or resistant.

In Chapter 5, my second findings chapter, I discuss the results of a thematic analysis to explore factors influencing parents' vaccine decisions. This analysis reveals how a single factor can affect individuals differently, depending on their unique circumstances. This chapter provides a deeper understanding of the social and emotional dynamics underlying vaccine decisions.

In Chapter 6, I explore how parents' vaccine decisions can be understood through Beck's Risk Society theory. I discuss how the risk society lens provides valuable insights into the complexities of vaccine decision-making, whilst also considering limitations in Beck's (1992) framework.

In Chapter 7, I summarise the thesis and discuss my findings and their implications for future vaccination research and vaccine policy.

Chapter 2 If only there were more vaccine information out there! A review of parents' vaccine decision-making literature.

2.1 Introduction

This literature review discusses past and current research into vaccine decision-making pre-and-post the COVID-19 pandemic. The review focuses mainly on research into parents' vaccine decision-making across Europe, the USA, Australia and Aotearoa New Zealand. It includes findings from quantitative and qualitative studies and critical reviews of previous vaccine attitudes studies. Vaccine decision-making and people's statuses of vaccine-acceptor, vaccine-hesitant, and anti-vax have been a research focus since compulsory childhood vaccination programs against smallpox began in earnest in parts of Europe in the late nineteenth century (Blume, 2006). However, they have become a significant area of concern following the emergence of COVID-19 and the rapid development of COVID-19 vaccines.

This review employs the Risk Society framework to analyse the various perspectives and arguments presented in the literature. By discussing eight key themes that emerge from the vaccine decision literature. It aims to provide a comprehensive understanding of vaccine decision-making through the lens of this framework by discussing eight key themes that I have identified as central foci in the research on vaccine decision-making. These themes include (1) the role of mainstream media, social media, and the internet; (2) the influence of science and experts; (3) the impact of personal experience on vaccine decisions; (4) perceptions of risk, vaccine safety, and efficacy; (5) trust in medical professionals and health systems; (6) the role of complementary and alternative medicine; (7) the importance of social networks; and (8) the principle of freedom of choice. Before delving into these themes, I first introduce the Risk Society.

Ulrich Beck first coined the term "Risk Society" in his 1992 book "Risk Society: Towards a New Modernity." In it, Beck describes how the distribution of risks rather than goods is changing the world's social structure from a class society to a risk society (Beck, 1992). The risk society theory centres around this idea of the distribution of risk and four other key concepts. First, there is the emergence of new, man-made mega-risks that pose a global threat to humanity (Nygren & Olofsson, 2020). According to Beck (1992), advanced industrialisation is creating unfathomable risks, referred to as manufactured risks, such as climate change, nuclear threats, and genetic engineering. Our lack of knowledge and

awareness about manufactured risks means we cannot prevent, protect or insure against them (Adam & van Loon, 2012). Second is globalisation and the global nature of risks. Risks are no longer confined within the borders of nation-states, meaning that governments and organisations will need to unite and work together to mitigate risk (Lupton, 2023). Third, due to the complexity of risks, governments and individuals increasingly rely on experts and scientific knowledge (Nygren & Olofsson, 2020). Fourth is individualisation, which refers to the breakdown of traditional social structures such as class, religion, and family (Nygren & Olofsson, 2020). These social structures had some influence over who we became and how our lives panned out, and with their breakdown, there is a move toward deciding from almost infinite options who we choose to be and how we live our lives (Sorenson & Christiansen, 2012). Decision-making occurs individually based on interpreting varying, often opposing information from experts, social networks, and other sources; Beck (1999) refers to this process as reflexivity.

2.2 Mainstream Media, Social Media, the Internet, Risks and Vaccine Controversy

One of the most important findings from the literature is that Health authorities' attempts to increase vaccination rates often consider a lack of good information to be the reason for hesitancy or refusal. Therefore, they provide pro-vaccine information to encourage parents to vaccinate (Blume, 2005; Yaqub et al., 2014). A 2018 Cochrane review found that vaccine uptake strategies focusing on providing facts to parents who are resistant or hesitant to vaccinate are unsuccessful, and educational programmes about vaccine safety are generally ineffective in changing parental attitudes to vaccines (Kaufman et al., 2018). The review's conclusion is congruous to the findings of Betsch et al. (2010), who found that the intention to vaccinate for the parents who viewed anti-vaccination information did not increase when they engaged with pro-vaccination information.

Due to the interpretation of risks being subject to different perspectives and social constructs, those with influence and power, such as the media, scientists and politicians, are commonly positioned to define the nature of risks (Adam & van Loon, 2012). Often, people only become aware of potential risks after witnessing an event, such as the Fukushima nuclear disaster, when the media begins to report on the event and raises awareness of other similar risks. For Beck (1992), risks are events that have not yet happened, and once a risk becomes a reality, as in the case of Fukushima, it is no longer a risk but a catastrophe. Once an event or media reporting reveals a risk, it cannot be unrevealed. The consequences of the revelation

cannot be undone but can be changed (Adam & van Loon, 2012). Baxter (2020) explores online media's role in the social amplification of risk, which aligns with Beck's risk society theory. The social amplification of risk suggests that social structures and institutions can amplify or diminish public concerns about hazards. Baxter (2020) argues that unlimited access to online media determines whether individuals become concerned about potential environmental or health threats. The internet provides a platform where people can connect over shared concerns, such as vaccine risks, forming communities that produce and disseminate information. These communities often become influential sources quoted or featured in mainstream media, further amplifying their perspectives (Baxter, 2020). Risks are not fixed entities. They are constructs that society can maintain, change and evolve through social interactions, experience and interpretations. A risk that was once at the forefront of people's minds may disappear, only to reemerge differently in the future (Lupton, 2023).

This emergence and regression of perceived risk has been seen throughout vaccination history thanks in some part to mainstream media (Dube et al., 2015). According to Adam and van Loon (2012), the media do not simply make people aware of emerging risks; they play a role in creating risks. Without mass media publishing information about potential hazards, risks are insignificant (Beck, 2014). Motta and Stecula (2021) found that the publication and subsequent press coverage of Andrew Wakefield's disproven study linking the MMR vaccine and autism led to more than double the number of reports of adverse MMR events. Although this number has subsequently decreased, it continues to be higher than prior to the publishing of Wakefield's study. It increases again when there are any reports of vaccine concerns in the mainstream media. This correlation has led Motta and Stecula (2021) to conclude that the publication of Wakefield's study and subsequent widespread media coverage led to parental concerns, hesitancy, and refusal of the MMR vaccine.

Dube et al. (2015) draw on the MMR media coverage when they describe how stories published or broadcast by the media, even when proven false, are kept alive by anti-vaccination groups, who share and quote them across anti-vaccination websites and social media. The internet and the ability for anyone to create and share content allow for rapid, widespread dissemination of anti-vaccination information. Stories published on these websites are often emotive personal stories of parents whose children have suffered adverse effects from vaccines. Stories of this kind affect and sway parents more emotionally than the positive factual information published by official sources, and parents are becoming more likely to seek health information from user-generated websites than legitimate vaccine or

health websites (Dube et al., 2015). Anti-vaccination websites have also adapted their strategies to appeal to a broader audience. As Dube et al. (2015) note, these websites often shift from overtly anti-vaccine messaging to framing themselves as "pro-choice" or as sources of balanced information. By presenting themselves as advocates for informed decision-making, they can influence parents who may already feel uncertain, further complicating efforts to promote public confidence in vaccination (Dube et al., 2015).

The role of the media in people's COVID-19 vaccine decisions has not been widely researched to date. However, some preliminary studies have been conducted. Honcoop et al. (2023) conducted qualitative research into COVID-19 vaccine hesitancy amongst parents in minority and disadvantaged communities in the US, and their findings contrast with those of Dube et al. (2015). They found that people are more likely to seek their COVID-19 vaccination information from reputable websites rather than user-generated ones, although vaccine refusers trusted religious websites over more reputable websites (Honcoop et al., 2023). All participants in Honcoop et al.'s study considered social media to be an untrustworthy source for COVID-19 vaccine information, with both refusers and acceptors preferring to access information from health professionals, as well as from others with COVID-19 vaccination experience, the news, and the internet. Quon et al.'s (2023) study discusses the news as a source of vaccine information in the US and how mass media influences COVID-19 decision-making. They found through an online survey of 1757 people that the mass media significantly moulds vaccine attitudes, particularly in its capacity to disseminate misinformation and propagate discord. Their results highlighted the spread of misinformation through mainstream news channels and the role of politics in the media within the US, finding that those who consumed more liberal or Democratic media were more likely to receive the vaccine than those who consumed more conservative or Republican media (Quon et al., 2023).

According to the literature, the role of politics and the dissemination of misinformation across some mainstream news channels seems to be particularly marked in the United States. However, the claim that those who are vaccine-hesitant or accepting source their information from different places is not particular to the United States. In a cross-sectional online survey conducted amongst adults in the Netherlands, de Vries et al. (2022) found distinct differences in the COVID-19 vaccine information sources of hesitant individuals than the somewhat hesitant and accepting individuals. Those who are hesitant prefer to share information through messaging services like WhatsApp and access written media (news websites and

newspapers) much less often than the other two groups (de Vries et al., 2022). They also found that hesitancy across the groups was greatest for certain vaccines, such as the AstraZeneca, due to widespread media coverage of the risk of side effects. Their findings support the findings of Motta and Stecula (2021) and Dube et al. (2015) that media coverage directly affects vaccine uptake.

This effect can be seen in Evans et al.'s 2021 analysis of data collected in the Australian COVID-19 Pandemic Adjustment Survey that explored parents' COVID-19 vaccine intentions. They found that the media had played a key role in parents' risk perception and vaccine decisions for their children. When calculating the risk for their children, respondents often cited media reports suggesting that many medical professionals thought COVID-19 was less severe in children, with most being asymptomatic. For many parents, this tipped the balance as they perceived the vaccine risk to be greater than the disease risk (Evans et al., 2021). Their findings also described how many parents said that they had not typically used social media for vaccine information in the past. However, many felt that there had been a void in the COVID-19 vaccine information concerning children from official sources, so they turned to friends, family, and social media. Here, they may read about others' personal experiences and potential side effects and encounter misinformation (Evans et al., 2021).

The influence of the internet and social media on people's and parents' vaccination decisions pre-COVID has been the subject of research across Europe and Australia. Stahl et al. (2016) monitored and analysed web and social network content, search terms, search suggestions and results from the Vaccinoscopie study (an annual survey with responses from between 6000-10,000 French mothers gathering information about vaccine behaviours and attitudes) to assess influences on vaccine decision-making. They found that the internet fuels controversial vaccine-related issues and impacts public perception. They describe how parents are more likely to post about a bad vaccination experience than a good one, and something as simple as a localised reaction can be perceived as a worrying side effect by a parent and shared on social media, parenting blogs, and websites. They found that parents who are pro-vaccine may regularly engage on parent forums and see negative or worrying posts about other parents' experiences of vaccines and be discouraged by them. Or, seeing more negative than positive vaccine experiences, they start to think that most other parents do not vaccinate; therefore, maybe they should not (Stahl et al., 2016). They conclude that the role of the internet and social media is significant in the growth of vaccine hesitancy and resistance (Stahl et al., 2016). They argue that their quantitative data analysis, alongside

changes in the behaviours and attitudes toward vaccinations reflected in the Vaccinoscopie study, show a direct correlation between an increase in negative vaccination stories and an increase in vaccine hesitancy. This is particularly relevant concerning meningococcal and human papillomavirus (HPV) vaccines (Stahl et al., 2016).

Kata (2010) argues that encountering anti-vaccine information on the internet can play a pivotal role in parents' vaccination decisions, and the dispersal of misinformation across social media can lead to a "local vaccination culture" (p.1709). According to Kata (2010), the unregulated expanse of the internet is the perfect place for these groups to spread misinformation and influence parents to make vaccine decisions based on false information. Betsch et al.'s. (2010) findings from their study into the role of anti-vaccination information and vaccine intentions support Kata's (2010) and Dube et al.'s (2015) arguments. Analysis of their large-scale internet experiment found that just five to ten minutes of exposure to anti-vaccination information increased people's perception of risks associated with vaccines, decreased their perception of the risks related to vaccine-preventable diseases, and significantly decreased their intention to vaccinate (Betsch et al., 2010).

2.3 Science, Experts and Making Our Minds Up

Beck (1992) is critical of the view that people's perceptions of risks are based on ignorance and that people only need more information to change their perceptions. He argues that people's irrationality about risk is a reaction to the shortcomings of scientific rationality in late modernity (Beck, 1992). From this perspective, part of the inability of pro-vaccination information to sway those who are hesitant or resistant to vaccination may lie in a growing mistrust of science and experts. Lupton (2023) building on Beck's Risk Society theory, describes how, as governments and institutions become less able to recognise and calculate risk, they become more reliant on experts. This growing reliance on experts and the risks that emerge from their solutions to mitigate other manmade risks makes people sceptical of them.

According to Lupton, people are losing trust in scientists and experts because of the multitude of different perspectives, even though these experts are often the ones best equipped to explain the nature of risks, their likelihood, and ways to mitigate them (Lupton, 2023). The unknown and unpredictable nature of manufactured risks means that there is often a lack of consensus, leading to anxiety and mistrust. People also recognise that science and experts have played a role in creating risks they are concerned about and yet cannot fully understand and mitigate the issues they have contributed to (Lupton, 2023). The risks posed by both

COVID-19 and the vaccine are imperceptible to the senses, and people have and still are relying on experts and scientists to keep them informed of the evolving nature of the risks. Yet the varying expert views on how risky COVID-19 is and how safe and effective the vaccine is have led to mistrust in experts and polarising opinions (Ajana et al., 2023).

In the face of this conflicting information, people are forced to critically assess information and make their own decisions (Ajana et al., 2023). Beck (1999) contends that people do this through reflexivity. Reflexivity is a means of self-confrontation that allows people to reflect on and understand their reality to navigate new technologies' unintended and unknown consequences (Adams & van Loon, 2012; Bostrom et al., 2017). When faced with making vaccine decisions, parents look back on their experiences, the information they have absorbed and the conversations they have had (Lupton, 2023). Parents often feel that the risks relating to vaccination are individual to themselves and their children (Atwell et al., 2021). This individualisation is central to the concept of reflexivity (Lupton, 2023). Beck (1999) describes how the breakdown of traditional structures and norms in late modernity that once dictated many life choices has led to the emergence of individualisation and societies becoming more diverse.

Late modernity, mass media, mass education, and consumerism encourage people to create individual identities. Their personal feelings, beliefs and opinions are influenced more by the social groups they choose to be a part of or identify with than the traditional social structures of modernity (Rosa et al., 2014). The role of reflexivity and individualisation can be found in parents' vaccine decision-making literature, with studies highlighting parents questioning scientific and expert advice and seeking out their vaccination information from various sources. In their 2015 research, Wang et al. conducted in-depth interviews with 23 upper-middle-class parents in Philadelphia who described themselves as being vaccine-acceptors. Their study found that parents were often overwhelmed by the large amount of available information and often found its content ambiguous. Parents in the study felt they needed to rely on their instincts and judgements when deciding to vaccinate their children, with some parents delaying or spacing out their children's vaccines, due to fears about the safety of vaccines (Wang et al., 2015).

2.4 Experience and Vaccine Decision-Making

Despite the World Health Organisation recognising the role of experiences in people's vaccine decisions, the literature has seemingly neglected the role of personal or family and

friends' experiences in vaccine decision-making (World Health Organisation. Regional Office for Europe, 2017). I have been unable to find specific research into the influence of people's or parents' personal experiences on their COVID-19 vaccine decision-making. When the general vaccine literature discusses experience, it tends to be from the perspective of how other people's experiences can influence health and vaccine decisions rather than the effects of a personal experience (Forster et al., 2016; Taylor et al., 2018).

Shahrabani & Benzion (2012) explored the influence of individuals and their families' experiences with influenza and the influenza vaccine and their effects within Rosenstock, Strecher and Becker's (1988) Health Belief model. The Health Belief Model (HBM) is a systematic approach that explains preventive health behaviour based on specific belief patterns. It consists of four categories related to perceived threat and net benefits: perceived susceptibility (belief in the likelihood of contracting a condition), perceived severity (opinion on the seriousness of a condition and its consequences), perceived benefits (faith in the effectiveness of recommended actions), and perceived barriers (consideration of tangible and psychological costs associated with recommended actions) (Rosenstock et al., 1988).

Shahrabani and Benzion (2012) found that individuals who previously received a vaccine tended to perceive higher benefits and lower barriers to vaccination, and their subsequent vaccination decisions were impacted by positive vaccine experiences, such as avoiding infection or experiencing minimal side effects (Shahrabani & Benzion, 2012). Additionally, they found that contracting influenza within the previous two years made people believe they were more at risk of catching it again, but they were less concerned about its symptoms and less convinced about vaccine benefits (Shahrabani & Benzion, 2012). They found that a family member's experience of the vaccine or illness appeared to play no role in the participant's decision to vaccinate unless someone in their family had influenza and they did not catch it. In this instance, if they were vaccinated, they would be vaccinated again. People were less sure about vaccination if they had not been vaccinated and did not catch influenza, believing they were naturally less susceptible to the disease (Shahrabani & Benzion, 2012).

In contrast, Taylor et al.'s (2018) qualitative research into subjective decision-making with vaccinations amongst thirty-three university graduates in Australia found that a strong motivator for vaccination was observing another person suffering from a vaccine-preventable disease. However, they did not go into further detail about the influence of experiences, as their focus was mainly on where the participants sourced their vaccine information. Forster et

al.'s. 2016 review of factors that influence parents' vaccine decisions in the United Kingdom paid more attention to the role of experience. They found that other people's vaccine experiences significantly influenced parents' decision-making. Positive vaccination experiences of families known to the parents encouraged them to opt for vaccination (Forster et al., 2016).

Conversely, Forster et al. found that knowing others who had negative experiences with a vaccine heightened parents' perception of their own child's vulnerability. For instance, hearing about children who experienced no adverse effects from the MMR vaccine could positively influence some parents. However, knowledge of severe vaccine side effects, especially related to the MMR vaccine, caused anxiety among parents and could potentially negatively influence their decision-making (Forster et al., 2016). Parents who knew children with autism allegedly linked to the MMR vaccine were discouraged from vaccination, reflecting fear of a similar outcome for their child. Knowing healthy unvaccinated children who have not experienced a vaccine-preventable disease or who had but experienced mild illness sometimes led parents to perceive the disease as less dangerous and their child less vulnerable and, therefore, less in need of vaccination (Forster et al., 2016).

2.5 Defining Risk, Vaccine Safety and Efficacy Concerns

Parents most commonly cite concerns with the risk and safety of vaccines as the reason they are hesitant to or choose not to vaccinate their children (Atwell et al., 2017). Common concerns raised by parents about vaccines are that they can cause disease, overload a child's immune system and contain dangerous substances (Calnan & Douglas, 2020). Bell et al. (2020) found in their qualitative UK study that the main reasons people were concerned about the safety of the COVID-19 vaccine were its newness, rapid development, and the novel nature of the COVID-19 virus. Many people thought the pharmaceutical companies had rushed the development process and testing, and it was approved before manufacturers could confirm its efficacy and long-term safety (Bell et al., 2020). Many parents were happy to consider having the COVID-19 vaccine for themselves. However, they were reluctant to commit to vaccinating their children because they believed the vaccine to be safer for adults due to a mistaken belief that it was only tested on adults (Bell et al., 2020). Another factor for parents when considering the safety of the COVID-19 vaccine was the belief that COVID-19 is less severe in children than in adults, and most children who catch it will be asymptomatic (Goulding et al., 2022).

Perceptions of the low severity of a disease, such as in the case of COVID-19 for children and low numbers of vaccine-preventable diseases in the community, can lead parents to believe that there is no need to vaccinate or that the risk of having the vaccine outweighs the risk of catching the virus (McGregor & Goldman, 2021). Studies have found that where people perceive COVID-19 to pose a greater risk, they are more inclined to be vaccinated and follow advice to prevent the spread (Choi et al., 2022). Ritov and Baron (1995) deem resistance to vaccination due to parents considering the vaccine risk more significant than the disease it prevents as an 'omission bias'. They describe how people think an outcome is horrendous if it could have been avoided by doing nothing. However, they are less inclined to think of an outcome as horrendous if it could have been avoided by taking an action (Ritov & Baron, 1995). Thus, for vaccination, if a child suffers a vaccine injury or becomes sick after vaccination, to a parent, this outcome is worse than if the child became ill or sustained an injury from the disease due to their inaction.

In focus groups aiming to ascertain parental perceptions of the COVID-19 vaccine in the US, Goulding et al. (2022) found that parents who were hesitant to vaccinate their children against COVID-19 shared similar motivators and deterrents to those who had vaccinated their children. Reasons why parents believed they should vaccinate their children included protecting them and the vulnerable, safeguarding their mental health through a return to everyday life, and their children were afraid of COVID-19. The deterrents reflected those Bell (2020) found in his UK study, namely that the vaccine is new and experimental and had not been sufficiently tested (Goulding et al., 2022; Bell et al., 2020). Other concerns raised in Goulding et al.'s research were fears of reactions to the vaccine, effects on their children's developing immune system, fertility issues and myocarditis. The difference between those who were hesitant to vaccinate and those who had or were going to vaccinate reflects the omissions bias highlighted by Ritov and Baron (1995), in that the hesitant parents perceived the risks of having the vaccine worse than the risks of not having the vaccine, leading to ambivalence. Parents who did not intend to vaccinate their children against COVID-19 saw no value in vaccinating, and they expressed mistrust in, and fear of the vaccine's safety that far outweighed their fear of the virus (Goulding et al., 2022).

2.6 Trust (or Mistrust) in Medical Professionals and Health Systems

When science, official vaccination information, and medical professionals attest that vaccination is safe, why do some parents refuse to acknowledge this? Why do they believe in

unconventional information and pseudo-science? Bauman (2006) contends that the uncertainty of the future and the risks populations face can lead to narrow viewpoints, extremist ideologies, and fundamentalist thought. Belief in and dissemination of anti-vaccination rhetoric in some contexts could be considered extremist, and often, as we have seen during the COVID-19 pandemic, they can be linked to other conspiracy theories and are frequently targeted at people who already have a level of mistrust of government, mainstream media and science (Hannah et al., 2022). Following their qualitative study of twenty-seven parents in Australia who had refused some or all vaccines for their children, Atwell et al. (2017) conclude that mistrust and misalignment with scientific and medical information are the basis of these concerns. Specifically, they find that these parents mistrust big pharmaceutical companies, with vaccine-hesitant and refusing parents considering corporate drive for profit as conflicting with the interests of their children.

Blume (2006) describes how the medical profession has been reluctant to consider that the rise in anti-vaccination sentiment is due to the health system and medical practices, preferring to attribute it directly to anti-vaccination movements that are committed to spreading misinformation. This failure of the medical profession to review its systems and practices aligns with studies that have found that experts can lack reflexivity when it comes to their work. They often fail to acknowledge that non-experts also practice reflexivity, rejecting the relevance and validity of the public's concerns (Bostrom et al., 2017).

Westenra (2017) emphasises the importance of doctors and nurses taking parents' concerns seriously and being knowledgeable and confident when discussing childhood vaccines with hesitant parents. Most parents consider their healthcare provider one of their primary sources of information when weighing up the risks and benefits of vaccinations (Brunson, 2013; Westenra, 2017). Yaqub et al. (2014) reviewed European vaccine literature and found that 65% of people in Europe seek information from their doctor. However, a lack of trust in the relationship with a health care professional, an undermining of parents' concerns, a lack of vaccine knowledge, and time constraints to respond to parents' concerns adequately can amplify parents' doubts about vaccines and hesitancy can turn to rejection (Lee & Sibley, 2020).

Health professionals are not immune to vaccine hesitancy. In a 2018 study of confidence in standard vaccinations amongst health professionals in Aotearoa New Zealand, Lee, Duck, and Sibley (2018) found that only 61.5% of midwives and 13.5% of alternative health

practitioners have a high level of vaccine confidence. This low confidence level is concerning when considering Westenra's (2017) importance of trust in health professionals. Midwives are essential sources of information about children's vaccines, and a US study found that parents concerned about vaccines are eight times more likely to have started to think about or decided to vaccinate or not whilst pregnant (Glanz et al., 2013).

When deciding to vaccinate their children against COVID-19, parents' decisions are influenced by their trust in health professionals as well as official government information sources; however, the information from health professionals and governments did not always align, and advice changed rapidly as the virus evolved (Duman, 2023). This misaligned and changing information and advice has made parents' decision-making about whether to vaccinate their children against COVID-19 more complex (Shen et al., 2022). In their 2022 study into parents' COVID-19 vaccine decisions in the United States, Shen et al. (2022) ran semi-structured focus group interviews to explore parents' values, beliefs, and attitudes toward COVID-19 vaccines for their children. The parents were all attending the outpatient clinic of a children's hospital. Their study found that parents often talked to each other about the COVID-19 vaccine, hearing and sharing stories they did not hear in mainstream media (Shen et al., 2022). Some parents described how they generally seek information from their doctor or midwife for standard childhood vaccines. Although they trust their doctor or midwife, they are more likely to seek information from different sources for the COVID-19 vaccine (Shen et al., 2022).

Their findings align with a 2022 study into parents' vaccine barriers and motivations carried out by the Aotearoa New Zealand Ministry of Health, which found that 58% of parents felt that they were not sure if they were given all of the information they needed to make an informed decision whether to vaccinate their child against COVID-19 (Ministry of Health, 2022). However, in contrast to Shen et al.'s (2022) findings, when it came to deciding whether to vaccinate their child against COVID-19, respondents preferred to speak to their GP or a health professional and discuss it with their family rather than follow the information from official COVID-19-specific sources or find information elsewhere.

In their 2022 research into parents' intention to vaccinate their children against COVID-19 in the Macao region in China, Choi et al. (2022) found that most parents considered doctors the most reliable source for vaccine information. Turning to family doctors and trusted health professionals for advice about COVID-19 vaccines for children rather than relying on

mainstream or social media and the advice of your social circle contradicts Beck's theory that as novel risks emerge that are more complex and unpredictable in nature, people will become less reliant on experts (Nygren & Olofsson, 2020). However, people seeking information from family and friends demonstrates that people can deem others to be 'experts' due to their experience. These 'experts' may not be professionals, but people others consider experts. Beck would consider a move away from conventional experts to occur because as people become more individualised and views become more diverse, they become more critical of some experts and more accepting of others (Beck, 1999).

2.7 Complementary and Alternative Medicine

The experts that parents seek vaccination advice from are not always mainstream doctors or health professionals. Some parents will seek advice from practitioners of complementary or alternative medicine (CAM), and research shows that parents who use CAM have a higher rate of vaccine hesitancy or refusal (Hornsey et al., 2020). Ernst's 2002 review of CAM and vaccination found that many practitioners have negative views of vaccination, which they share with their clients. Their review found that common information shared by practitioners around the dangers of vaccination were: the vaccine causes the illness it is supposed to prevent; people who are vaccinated can spread the infection even if they are not sick; that vaccination in children is very dangerous and can damage their immunity making them more susceptible to chronic disease; there is no evidence that vaccination prevents disease; natural immunity is better than artificial immunity: and the complications from vaccination continue to impair or claim the lives of children (Ernst, 2002; Yaqub et al., 2014). These reasons are not dissimilar to those shared by people against the COVID-19 vaccine and are an example of the decline and resurgence of risk and the use of the same language in different contexts (Boddice, 2016).

The conclusion in many studies that look for causal links between vaccine hesitancy and resistance is that people who use CAM are more vaccine-hesitant than those who use conventional medicine due to the practitioner and their views (Blume, 2005). Hornsey et al.'s. (2020) analysis of data gathered for the Social Perception of Science and Technology survey in Spain found that users of CAM are more vaccine-hesitant than non-users. However, they also found that trust in CAM does not cause vaccine hesitancy. Instead, a mistrust of conventional medicine drives people to seek alternatives (Hornsey et al., 2020). Seeking out an alternative and being critical of conventional medicine is an example of how people

navigate risk through reflexivity. Politicians, experts, the media, and social media have consistently bombarded people with conflicting and changing “facts”, advice and opinions about what is good and bad during the pandemic. People must then reflect on their experiences, knowledge, and beliefs to interpret the information and make the best decisions for themselves and their children.

2.8 Social Networks

Parents may talk to their families, friends and colleagues when attempting to interpret the information they have encountered and make decisions. Brunson (2013) conducted an online survey of parents in the United States covering social networks and their role in vaccine decision-making. The survey asked participants to rank the top five important people and the top five sources of information consulted during their vaccine decision-making. Through social network analysis, their research found that the participants’ people networks were the most influential factor when considering vaccine attitudes. People with many people in their social circle who were vaccine-hesitant or resistant were more likely to delay or refuse vaccines for their children. However, Brunson (2013) does not discuss why the people network is more influential than other factors, and further research is needed to probe this. Brunson (2013) found that people networks were more influential than other sources. However, vaccine-hesitant or vaccine resistors were likelier to include more sources, including the internet and the media, than pro-vaccine people in their decision-making. Brunson’s (2013) findings contrast with the conclusions of both Stahl (2016) and Yaqub (2014), who determine the internet and health professionals as the most influential factors in a parent’s vaccine decision-making in France and Europe, respectively. In fact, Yaqub et al. (2014) found that only 25% of people sought their information mainly from family and friends.

Literature on the influence of social networks in vaccine decision-making reveals contradictory findings. The differing perspectives highlight the complexity of how parents interpret information within their social contexts and the need for further research to reconcile these contradictions. This disparity suggests that social networks' influence over other sources may vary by cultural and geographical contexts.

2.9 Freedom of Choice

Atwell et al. (2019) describe how people who refuse vaccines may source their information outside the mainstream. However, they are still subject to mainstream information and will

often find themselves having to answer questions and justify their decision not to vaccinate. Attwell et al. (2019) look deeply into the arguments given by vaccine refusers against social responsibility, describing this as a largely overlooked but critical element of vaccine refusal. Participants in their study justify their choice not to vaccinate by perceiving themselves as relatively powerless resistors to the state and conventional health systems, with a right to freedom of choice as their reason to resist (Atwell, 2019). The emphasis on an individual's freedom of choice has been an argument amongst the anti-vaccination community since its inception in the nineteenth century, and it continues to be a key argument against the COVID-19 vaccine (Dube et al., 2015). In their article examining attitudes and intention to vaccinate against COVID-19, Paul et al. (2020) establish a link between the failure to adhere to COVID-19 social distancing guidelines and lockdowns and negative attitudes toward the COVID-19 vaccine, complementing the findings of Attwell and reiterating vaccine refusers' rejection of social responsibility in favour of individual freedom of choice.

Discussions of freedom of choice and vaccine resistance, hesitancy and acceptance illustrate Beck's concept of individualisation and the expectation that people make their own decisions about vaccination based on their risk assessment. There is individual responsibility with this freedom of choice and individual decision-making about risk. If a person makes a decision about vaccination that is considered wrong, others consider it the result of poor decision-making by the individual rather than the outcome of social processes (Lupton, 2023).

2.10 Conclusion

The emergence of COVID-19 has led to increased research into vaccine standpoints, paying particular attention to hesitancy and resistance. Much of this research is focused, as it has been in the past, on why people are hesitant or resistant to vaccinate, often seeking to find causal relationships from the analysis of survey data. The findings of these surveys often conclude that there are links between demographics such as gender, race, economic status and education level and vaccine acceptance, hesitancy and resistance in addition to links with trust or mistrust in health professionals, vaccine information sources, belief in complementary and alternative medicines and the influence of social networks (Yaqub et al., 2014; Lee & Sibley, 2020; Kata, 2010; Prickett et al., 2021; Goldman et al., 2021; Ruiz & Bell, 2022; Bell et al., 2020; Thaker, 2021.). However, the focus on casual links misses the complexity of vaccine decisions and the role that individual experience, emotions, relationships, and social interactions play in these decisions.

Some recent research, such as Goulding et al.'s 2022 study into parents' COVID-19 vaccine intentions, emphasises the complexity of their decisions and how, despite having many of the same concerns, people intend to make different decisions. However, they do not delve into the individual circumstances, emotions, and experiences that may determine the outcome of their vaccine decisions. Gaps within the literature that my research aims to help mitigate include the relatively low number of qualitative studies, a focus on vaccine statuses and information, and a lack of literature that focuses on individuals, their stories, and the role their life experiences have played in their vaccine decisions.

Considering vaccine decisions from a Risk Society perspective allows us to view the role of individualisation and reflexivity. People's perceptions of the safety and risks associated with vaccinations are social constructions shaped by their relationships and experiences (Adam & van Loon, 2012). With late modernity, we have moved into a time of uncertainty and the emergence of extinction-level risks. These risks are brought to our attention in mainstream and social media by conflicting scientists, experts, and people who purport to be both, who influence our perceptions of the emerging risks, along with our beliefs, social networks and experiences. During COVID-19, an evolving novel situation saw different governments and experts take different approaches and provide conflicting advice to the public, leading to confusion and questions about the virus and how to counter it (Lupton, 2023). When pharmaceutical companies introduced their vaccines, their newness and the rapidness with which they were developed and approved led to concerns, and with governments, experts, influencers, and other parents across mainstream and social media disseminating copious amounts of conflicting information, people had to use their instincts and experience to interpret the information and make their decisions (Prickett et al., 2021; Goldman et al., 2021; Ruiz & Bell, 2022).

Chapter 3 Methodology

3.1 Introduction

This chapter outlines the research methods I employed to investigate factors that influenced parents' COVID-19 vaccine decision-making for their children in Aotearoa New Zealand. I will discuss my research's methodological approaches and data analysis process. When considering the methodological approaches, I had to be mindful that I was embarking on my research with some deep-seated feelings and assumptions about peoples' vaccination stances. Therefore, I needed to take an approach that would allow me to gather and analyse data while being aware of my own assumptions and biases as much as possible. The subject of vaccination had become emotive and divisive during the pandemic following the introduction of the vaccine mandates. Therefore, I had to be particularly mindful of the different ethical implications that emerged at different stages of my data collection methods and analysis. Consequently, I designed my research carefully to minimise risk for participants, and I went through an ethics peer review procedure at the start of my study and received low-risk notification from the University's human ethics committee (See appendix A). I also chose to take a process-based approach to ethics, reflecting on ethical issues throughout the research process (Guillemin & Gillam, 2004). The ethical implications and considerations will be discussed throughout the chapter.

As discussed in the introduction chapter, I have always adhered to vaccinations for myself and my children without question. Due to a measles outbreak in Samoa and Aotearoa New Zealand that was extensively reported in the Aotearoa New Zealand media, I became interested in why people developed differing vaccination stances prior to the COVID-19 pandemic. As the COVID-19 pandemic progressed, I became increasingly interested in why some people refused to vaccinate. Much of the literature in Aotearoa New Zealand focuses on demographics and vaccination rates, and there is a gap in understanding individual vaccine decisions. As the COVID-19 vaccine rollout in Aotearoa New Zealand progressed, particularly for children, statistics showed a significant drop in vaccination rates among younger age groups, indicating a more complex issue than the traditional vaccine stances of anti-, pro-, or hesitant. To explore this complexity, I decided to use narrative research within a social construction framework to capture parents' unique stories and the personal and social factors influencing their vaccination decisions. In order to determine how prevalent a

particular influence or view was amongst all of the participants' narratives, I also conducted a complementary thematic analysis.

3.2 Social Construction

Social construction depicts reality and knowledge as products of social interactions; how we think and describe the world affects how the world is (Elder-Vass, 2012). We construct meaning as we engage with the world we interpret (Crotty, 1998). The social constructionist framework allows for my focus on the role of social and cultural factors in shaping parents' vaccine knowledge and, therefore, their decisions through the collection and analysis of qualitative data through narrative interviews (Burr, 2015). The reflexivity encouraged by Burr (2015) in social construction recognises the researcher as an active participant rather than an objective observer. It places the researcher and participant on an equal footing whilst acknowledging the researcher's assumptions and biases in drafting the interview schedule and analysing the data (Burr, 2015; Bryman, 2016). This reflexivity allowed me to consider my beliefs about vaccination and attitudes toward other people's vaccination stances before commencing my data collection and the effects they may have in the interviews on my behaviour and language and the interviewees' responses. Acknowledging that I have these assumptions and biases led me to consider different ways of conducting interviews and analyses. I wanted to uncover the participants' stories with as little influence from those assumptions and biases as possible. Therefore, I determined that narrative research methods would be the best approach to gathering and analysing data.

3.3 Narrative Interviews and Analysis

Narrative interviews and analysis are complementary to social construction and offer the ideal methodology for my research as they are concerned with how interactions and life experiences shape a participant's story and recollection of events, focusing on how the participant makes sense of events (Mertova & Webster, 2019; Bryman, 2016). Narratives helped me recognise participants' emotions, attitudes, beliefs and interpretations of the vaccination rollout and how they made their vaccination decisions rather than their recollection of the 'facts' (Holstein & Gubrium, 2012). As with social construction, a narrative analysis recognises the role of the interviewer in constructing the analysis (Earthy & Cronin, 2008). I chose to conduct narrative interviews to limit the influence of my vaccination beliefs and assumptions. However, I also recognise my role in guiding the narrative through questions, prompts and non-verbal cues. I was also aware that the interview

environment could modify the participants' recollections to fit their interview perceptions and that a participant could also try to ascertain my views through rapport, body language, responses, and whether I agree with their views and structure their responses around this (Cortazzi, 1993). All the participants knew that I was vaccinated. However, I did not disclose my strong feelings about those who chose not to vaccinate with any of the participants.

Taking a narrative approach allowed me to better understand individuals' experiences of the vaccine rollout in Aotearoa New Zealand. I was able to examine the emotions and social interactions involved in their decision-making as well as broader themes that I had derived from the literature and discussed in the previous chapter. Themes that emerged from both the literature and my analysis are how parents perceive risks from vaccination and disease differently and try to protect their children from them, where parents source their vaccine information, the influence of social networks, the internet, mainstream media and social media on parents' vaccine decisions, use of complementary and alternative medicine, natural immunity and social responsibility.

3.4 Interview Recruitment

I aimed to recruit 8-10 participants for the interviews. The only criterion for participants was that they had to be parents or carers of a child, or children aged between 5 and 12 when vaccines became available for this age range. Older children are not included in the research, as those over 12 appear in the adult vaccine rate statistics. Therefore, I could not see a quantifiable difference between the vaccine rates of those 12 and over and their parents. Given the small number of participants and as my research is focused on the narratives of individual parents and the emotions and social influences involved in their vaccine decisions, there were no criteria around vaccine status. However, I was hoping to have a mix of vaccine statuses, including (1) all unvaccinated, (2) all vaccinated, (3) parents vaccinated and children not vaccinated, and (4) parents not vaccinated and children vaccinated. This was mainly so that I could see if there were differences in the social influences for parents who were or were not vaccinated, who chose to or not to vaccinate their children, and if the influencing factors involved in deciding to vaccinate their children were different to the influencing factors when deciding to vaccinate themselves.

Initially, I considered recruiting participants within my workplace. I work for a large corporation with offices across Aotearoa New Zealand, employing a diverse range of people with equally diverse cultures. I thought this would provide a wide range of potential

participants with varying views and vaccination positions. However, during an ethics peer review meeting I held with my supervisors and an external academic to discuss the research, we identified some ethical risks associated with recruiting in the workplace. COVID-19 vaccination was and still is, for many, a contentious issue that polarised society and workplaces, with many, including mine, deciding to introduce their own vaccine mandates for employees. Many perceived those who chose not to vaccinate as outliers and were openly hostile about their decision not to vaccinate. There was also high animosity among those who decided not to vaccinate for those who did, with many feeling excluded from society. Therefore, people who chose not to vaccinate may have been unwilling to come forward or speak honestly about their decisions to someone in the same company. Participants may have been unhappy with how they were represented in the thesis and may have retaliated by making life hard for me, or they may have been concerned that I would share their vaccination decisions with others at work. There was also the issue of a company hierarchy. Where I am on the company ladder could have influenced how participants responded and behaved in an interview, and where the participant was on the ladder could have affected how I conducted the interview.

Following the ethics review, I needed to rethink how I recruited for the interviews. Social media was another consideration, but as discussed in the previous chapter, it has been a divisive tool in the vaccination debate, providing a platform for people to spread disinformation and target others. Therefore, there was a risk of being targeted by people from anti-vaccination groups who may believe my views do not align with theirs or that my motivation for conducting this research is for something other than study. There was also the risk of my research being used for purposes it was not intended for, such as supporting vaccination arguments. It was considered too risky to seek participants through social media. Ultimately, I decided to advertise for participants across the university and other public spaces.

I created a recruitment advertisement that I could share by email and print to put up across my local area. The advertisement included my university email address, and I bought a cheap mobile phone so I did not have to use my private phone number and risk being repeatedly contacted by people who were suspicious of my research, anti-vaccination, or not interested in participating. The divisive nature of the COVID-19 vaccine mandates, and the approval of the vaccine for children meant that there were some instances of harassment and intimidation between people with different opinions. My supervisors posted my ad virtually across their

workplace and social networks, and I physically put up my ad across supermarkets, local shops and cafes. I also spoke to parents I knew and gave them copies of the ad, and they then asked friends or family if they would be interested in participating in the research. I received five responses from the university, one of which did not reply to my follow-up email or return the consent form (see appendix B for a copy of the consent form). I did not receive any interest from my public ads. However, I recruited another five participants through snowballing and word of mouth. Three of these were friends or relatives of friends or acquaintances I had talked to about my thesis. The other two were friends of people I had interviewed.

When I initially started the recruitment process, I assumed that people who were against the vaccine would be the most willing to participate as they had a message to deliver. They appeared to be the loudest in the media. This turned out not to be the case. I received an email from an unvaccinated couple who said they were interested in participating but were wary of academia and the media in Aotearoa New Zealand. I responded, explained the research aims, and forwarded the information sheet, but they did not reply. I did receive several calls from people who said they would be interested in participating and would go on to tell me about groups and research against vaccination, but they were not parents and did not meet the criteria. At the end of the recruitment process, I had 9 participants located in different areas, mainly from two cities in Aotearoa New Zealand, all of whom were mothers. The only interest I received from men was from the husband in the couple who did not respond once I sent the information sheet and the people who called to say they would participate but did not meet the criteria. Although I hoped for a spread of different vaccination statuses, I did not know the vaccination status of the participants or their children prior to the interviews.

3.5 Conducting the Interviews

The interviews took place in December 2022 and January 2023; by this time, the COVID-19 protection framework had ended, and vaccine mandates and mask requirements had been lifted (Department of the Prime Minister and Cabinet, 2024). All but two of the participants chose to conduct their interviews remotely. Zoom has become normalised due to the pandemic, and participants seemed to expect the interviews to be conducted remotely. They were comfortable doing so despite the offer of an in-person interview. Meeting remotely meant that we could be flexible with the days and times of the interviews, although I did have to conduct some from my workplace. To ensure I met the ethical requirements of the Massey

University Ethics Committee and the Code of Ethical Conduct when conducting the interviews from my workplace, I booked private rooms to protect the participant's anonymity and privacy so that nobody could overhear our conversation. Each interview was conducted over a secure private internet connection on my personal laptop. I immediately saved the recordings to the laptop and deleted them from the Zoom cloud platform. For confidentiality, I am using pseudonyms throughout the thesis, and the recordings were saved under these pseudonyms.

Conducting the interviews remotely over video call was challenging at times. There is little opportunity to connect and build rapport before the interview starts, with remote interviewing seeming more business-like and formal. During the interviews, it was difficult to read people's body language and see if the interviewees felt uncomfortable or upset. Although none of the participants were visibly upset, I was mindful to check in with their feelings, especially if there was a slightly longer silence with no verbal or non-verbal cues that they were thinking or reflecting. Interviewees becoming upset was a consideration in my ethics review, as COVID-19 vaccination has been an emotive subject for many. The interview information sheet and consent form (see appendix B) included useful numbers for the interviewees should they be affected by the interview. However, I was wary that there was a lack of immediate physical support should the interviewee become upset.

Of the two participants who chose not to be interviewed over video remotely, one (Kate) still chose to be interviewed remotely but by Zoom audio call for privacy, and the other (Tina) chose to be interviewed in person at her home. Tina's children were present during the interview and they were a slight distraction at the beginning of the interview as they wanted to show off to the stranger in their home, but they soon lost interest and went to play in their rooms. The interview with Tina was the longest. Due to being quite shy, I was nervous about going to someone's home and not being able to connect. However, I felt more comfortable and in control once the interview started than during the remote interviews. My comfort and confidence were partly due to the natural pleasantries and small talk before the interview but also because I could sense the atmosphere and read Tina's body language. I could tell that she was relaxed and comfortable with the conversation. Tina was referred to me by a friend, and bar my usual pre-interview nerves, I did not feel at risk going to her home. I would not have been so at ease and willing to interview in someone's home were they a stranger who had contacted me in response to my advertisement.

The Zoom audio call was the most challenging. Kate was initially unable to get Zoom to work on her mobile phone, so there was some emailing to and fro, and we were considering postponing the interview. She did get Zoom to work; however, the connection was sometimes patchy as she was interviewing while walking around a local park. The weather was also a little windy, meaning I could not hear some of her responses, she could not always hear my questions and responses, and the recording was not very good quality. I found it difficult to transcribe the interview and would have to play bits back numerous times to ascertain what a word or sentence was. It was difficult to gauge the atmosphere and Kate's feelings during the interview, although she did seem very open and candid with her responses.

3.6 The Interview Structure

I chose to conduct narrative research interviews rather than surveys or structured interviews as I was wary of my position on vaccination and of creating a narrative supporting my assumptions in my questions. A semi-structured narrative interview provides flexibility to deviate from the original plan and follow other points of interest not previously considered (Bold, 2012). They also allow the interviewee to tell their story without the restrictions of a set line of questioning and with less influence from my views or assumptions (Bold, 2012). My naturally shy, introverted personality means I often struggle to maintain naturally flowing conversations with people I am meeting for the first time. I also felt like I could easily lose control of the interview and conversation and not gather the information required to answer my research questions. The questions and prompts I developed were designed to allow me to answer my research questions and served as valuable reminders of what I wanted to gain from the interview. I wanted the interviewees to have the freedom to tell their vaccination stories. However, the focus needed to be on the decision-making for their children, the emotions and social factors imbued in their decisions, rather than an argument for their position on vaccination. The interview schedule consisted of a mix of eleven open questions and prompts (see appendix C) that I hoped would invite the interviewee to think about their overall decision-making process for vaccinating their children against COVID-19.

Given the contentious topic of the interview, I wanted to ensure the participant was as comfortable as possible. Following Morris (2015), I first introduced myself and my research, explaining that I was there to learn about their experiences and not to judge, and then I asked if they had any questions. As I did not know the vaccination status of the participants and their children before the interview, my first question related to their vaccination statuses and

how they came to be. “Firstly, can you tell me about your and your children’s COVID-19 vaccination status and how you got there?” This initial question opened the floor for the interviewees to tell their stories, and after disclosing their vaccination status, they immediately went into the ‘why’ without further prompting. Responses to this question provided an insight into the interviewee’s position on vaccination, COVID-19 as a whole and Aotearoa New Zealand’s approach to the pandemic. From this initial response, I was able to make mental and some physical notes (although I struggled more with this as I wanted to be 100% focused on the interviewee – I discuss this in more depth a little later) of points to go back to for more detail later in the interview. In particular, I wanted to dig deeper into the emotions they felt concerning what they were discussing or segue into one of the other points I wanted to cover.

In order to answer my research questions, I included three questions and prompts that focused on the emotions the interviewees experienced during their vaccine decision-making, starting with how they felt when vaccines against COVID-19 were initially introduced. I then wanted to delve into the emotions they experienced when deciding whether to vaccinate themselves and their children and if these emotions differed; then, thinking of vaccination as a whole, if they experienced different emotions when considering vaccinating their child against COVID-19 compared with vaccines for other diseases. Often, the interviewees would have already touched on something I wanted to cover, and asking, “How did you feel about that?” or “Tell me more about that” was enough to prompt them into describing their feelings or providing more detail. I also had five prompts in the interview schedule designed to understand how social factors influenced their decision-making. Firstly, I wanted to ascertain if they viewed themselves as being the primary vaccine decision-makers in their families. After this, I sought to establish if they discussed vaccinating their children’s vaccination with anyone or sought information about the vaccines and what role this played in their decision. Finally, did they feel pressured to make the decision they did? I chose to ask the question, “In hindsight, would you have done things differently?” at the end of every interview to see if knowing how the pandemic had played out led them to have regrets about their decision or if they are comfortable that they have made the right decision.

I did not offer to provide the interview schedule in advance, as I wanted the conversation to be organic, and none of the participants asked to see it. Barring the initial and final questions, I did not adhere to the sequence of the prompts in the interview schedule and tried to keep the interview free-flowing and conversational. Allowing the conversation to flow may create an

atmosphere where the interviewees feel heard, relaxed and open up (Morris, 2015). I wanted them to have the freedom to create their narrative by discussing what was important to them, and I tried to guide them into discussing how their emotions, past experiences and social factors influenced their decision to vaccinate their children. I became more confident as I progressed through the interviews after being very nervous for the first interview, in which it soon became evident that the interviewee, Alex, had very different views to my own toward vaccination. Due to this, I became worried about how much probing was okay and tried to be objective and uncritical. In this first interview, I became more focused on how I should respond and react than the content of the responses. I tried to consider the language I used in response or when asking her for more detail, being careful to sound curious (which I was) and empathetic, using phrases such as, "I hadn't thought about it from that perspective. That must have been tough. Can you tell me more about how that made you feel?"

Despite my shyness, introversion, and concerns about how I came across to the interviewees, the interviews were more free-flowing than I expected, and the interviewees did not need much prompting to tell their and their children's vaccination stories. The other difficulty I had after my nerves was listening and making notes throughout the interviews. I found this more manageable in the one face-to-face interview than in the remote interviews. In the in-person interview, Tina could see that I was making a note, and the break in eye contact was natural. When making notes in the remote interviews, I did not want to appear rude or uninterested by looking away from the camera, which can be interpreted as being distracted by something on the other screen or looking at my phone. From the third interview, I explained in the introduction that I may look away from the camera momentarily to make written notes, and I did become better at recognising key points and writing keywords on the interview schedule to follow up. However, I did see missed opportunities to probe deeper when writing up my interview summaries and transcribing the interviews.

3.7 Transcribing the Interviews

After each interview, I wrote a brief summary, including the interviewee's name and some personal information, such as marital status and the number of children they have. The summaries highlight significant points about their and their children's vaccination status and their primary emotions, concerns, and interactions when considering the vaccination. I also recorded how I thought the interview went, what questions triggered the best responses, how I performed in the interviews and how the respondent behaved. These summaries and the

reflection helped me modify and improve my interview approach and helped identify topics and themes as a starting point for coding when I started to analyse the data. Finally, after manually transcribing the interview, I added questions and other observations to these summaries.

As I conducted most of the interviews over Zoom, they were recorded as a video, audio and a transcript. I immediately deleted the video file and saved the audio and transcript to my computer. The Zoom transcripts had many inaccuracies; therefore, it still took me four to six hours to transcribe each interview. I did not use any software for the transcription as manually transcribing enabled me to familiarise myself with the content. Initially, I aimed to transcribe an interview from start to finish in one go, in a day. However, this soon became unsustainable, and after transcribing three interviews, I started to spend an hour or so a day transcribing. Breaking the transcription up in this way was much more manageable. For the Zoom transcription, I copied and pasted the saved Zoom files into Word and reformatted them before listening to the audio and amending the transcripts. I recorded the in-person interview using my mobile phone and had hoped to use an app on the iPhone to help with the transcription. However, the apps available were too costly for one interview and only offered limited word-free trials. Therefore, I saved the interview file to my computer and transcribed it manually using Word. Whilst transcribing, I made notes of key points, themes, and questions that surfaced as part of the analysis. When transcribing, I kept the text true to how it was spoken and added relevant observations, such as long pauses, eye rolls, and exaggerated movements, such as sitting right back or coming over the table toward the camera.

3.8 Narrative Analysis of Interview Data.

I used a narrative analysis approach following a holistic content analysis approach based on Lieblich, Tuval-Mashiach, and Zilber's work, as described by Wells (2011). I read through each transcript and drafted another interview summary. In this summary, I went into more detail about participant's responses, paying attention to the stories they told, the language they used, and the emotions displayed, noting any themes that ran through an interview. I repeated the process, adding to the interview summaries and familiarising myself with the interview data until I felt I had captured the interviewee's stories. While conducting the narrative analysis, I focused on the participant's personal stories and social interactions, paying attention to how parents described the emotions that drove their decisions, such as

fear, trust, or doubt. In order to build up a greater understanding of different influences on their COVID-19 vaccine decisions, such as the evolution of the pandemic and the changing social climate, I considered how their narratives and emotions evolved over time. By focusing on these areas of the participant's narratives, I hoped to uncover the social and emotional factors that shape vaccine decisions, offering a more nuanced understanding beyond typical vaccine status categories. By focusing on some areas and not others, I understood that I may miss things. However, I felt it was important to draw out what was most important to the participants and maintain their stories. I considered the repetition of moments, interactions or emotions throughout an interview to reflect pivotal influences on a participant's vaccine decision.

In addition to conducting the narrative analysis of the interview transcripts, I also returned to my interview summaries. I considered how they told their story and why they might have told it this way. Were they trying to justify their decisions? Was there a level of regret? Were they trying to convince me or others of their opinion or beliefs? Throughout this process, I had to be aware that many of the meanings I applied to their stories were from my assumptions and my interpretation of how they told them. I also thought about how the way I responded in the interviews may have potentially influenced the participant's responses. If I paused, would the participant think I was judging their response? If I smiled, did I agree? If I probed deeper, what did this mean? At times, I sensed that participants gave answers they believed I would view as 'correct.' It is difficult to pinpoint exactly why I felt this way. I felt that perhaps their responses fit the consensus within their social groups or networks, and they expected me to think the same.

3.9 Thematic Analysis of the Interview Data

Thematic analysis is a valuable tool in qualitative research. It can be used to identify the repetition of opinions, beliefs, and experiences within interview data, similarities and differences in how participants discuss the same subject, and what is missing from data that you might expect to find as it is in the literature (Bryman, 2016). Thematic analysis can help you identify information relevant to research questions and demonstrate how your findings are similar or contribute to the current literature (Bryman, 2016). Although I wanted to ensure I captured the participants' personal narratives, the thematic analysis allowed me to capture common topics and themes that emerged from the interview data. These themes are important for considering the broader impact of social influences on parents' vaccination decisions. As

with the narrative interviews and analysis, from an ethical perspective, I needed not to let my preconceptions influence my identifying topics or themes (Naeem et al., 2023). After reading the interview transcripts several times and coding important topics within the participants' narratives, I then re-coded the transcripts using common topics and views. I then drew out common themes and how participants discussed them within their COVID-19 vaccine experiences.

I used NVivo software to analyse the interview transcript thematically. The software was new to me, and initially, I was not confident in using it. I coded inductively as I analysed each transcript and initially ended up with almost two hundred primary and sub-codes. After recoding and recoding again, I eventually ended up with 32 primary codes and 78 sub-codes, which I grouped into the following themes: risk, emotions, autonomy, trust, information, social influences and relationships, experience, and overall approach to health. The themes are relevant to my research question, and the data under each reflects the wide variation in beliefs.

During the coding, to avoid interpreting the data based on my assumptions and bias, I tried to identify themes from the interview data rather than have themes in mind before embarking on the analysis. However, the themes I have identified do feature widely in the existing vaccine decision literature, and my knowledge may have influenced my thematic analysis, meaning I may have missed other themes or not picked up on different perspectives and nuances in the data. Maintaining the interviewee's story and experience through the narrative analysis allows me to plug this gap in my thematic analysis. Despite these difficulties and potential limitations in my data analysis, the richness and diversity of the interview data provide a unique and valuable insight into the role social relationships, life experiences, and emotions play in parents'/carers' decisions to vaccinate children against COVID-19, showing the complexity of these decisions and that people are not necessarily pro, hesitant or anti-vaccination

3.10 Conclusion

This chapter has outlined my methodology for exploring factors that influenced parents' COVID-19 vaccine decisions for their children in Aotearoa New Zealand. I sought to capture the complexities of parental vaccine decision-making through a narrative research approach within a social construction framework. This approach and the complementary thematic analysis allowed me to delve into the emotions, social interactions, and life experiences that

shaped participants' COVID-19 vaccination perspectives while identifying broader patterns and themes across the interview data.

Throughout the research process, I remained mindful of the ethical considerations and potential biases, ensuring that participants' narratives were heard with minimal influence from my preconceptions. The semi-structured interviews offered the flexibility needed to explore personal vaccine stories while keeping the focus on my key research questions. The methodology enabled a deeper exploration of the factors shaping vaccine decisions in the context of a risk society. It provided a nuanced understanding of the social and emotional influences on vaccine decision-making that challenge the simplistic categorisation of parents as pro-, anti-, or vaccine-hesitant.

Chapter 4 Defining Vaccine Identities: Understanding Participants and Their Diverse Decision-Making Processes

4.1 Introduction

This chapter uses a narrative approach to introduce the research participants and explore how they made COVID-19 vaccine decisions for their children. I have captured the participant's vaccination statuses and relevant demographics in a table (Table 1), which I explain in more detail in the first section. In the second section, I introduce the participants and the key factors and influences in their COVID-19 vaccine decision-making for their children through a summary of their narratives. The title of each narrative is a descriptive moniker I have assigned to each mother. These monikers reflect the complexity of their vaccination decisions, their vaccination stances, decision-making, and how they discuss vaccination. My analysis of the research participants' narratives reveals that while parents often share similar concerns and beliefs about their children's health, they may reach different vaccination decisions. This chapter demonstrates that the existing labels used in the literature—anti-vaxxer, vaccine-hesitant, and vaccine acceptor—are overly simplistic and do not adequately capture parents' complex decision-making processes regarding COVID-19 vaccinations for their children.

4.2 Table 1: Participants' Backgrounds and Vaccination Choices

I undertook nine in-depth interviews for this research. Table one summarises information about the participants. The table offers an easy reference for each research participant and shows valuable information for understanding their vaccination decision-making.

Table 1 shows the various COVID-19 vaccination statuses of the participants and their children, as well as other relevant information. Going from left to right, the participant column on the left shows the pseudonyms I gave each participant to protect their anonymity. The moniker is a descriptive name that I gave the participant and reflects the overall picture of the participants' COVID-19 vaccine beliefs and decision-making that I developed through my analysis. The table also includes other information that can help to understand the participants' stories, including the number of children they have aged 5-11. I recorded the participant's country of birth. Having contacts outside of Aotearoa New Zealand was relevant when participants discussed their perception of the seriousness of the COVID-19 virus. I recorded the participants' occupations to show the vaccination statuses across employment

types. I have presented the children's childhood vaccination statuses and other relevant information, such as delays or variations for certain vaccines or children. The parents' COVID-19 status column records the participant's COVID-19 vaccination status. The status in this column applies to both parents unless stated. All the participants are in a relationship with the other parent, bar Ruth. However, she and her children's father are still close, and she referenced his vaccination status during her interview. Comparison across the vaccination status columns demonstrates that vaccine decision-making is not as certain as being anti, hesitant, or pro-vaccination. Decision-making for some is organic, changing over time, per vaccine or person.

Table 1

Participant	Moniker	Number of children aged between 5 and 11	Country of Birth	Occupation	Children's Childhood vaccination status	COVID-19 Vaccination status parents	COVID-19 Vaccination status eligible children
Bella	The rational vaccinator	1	New Zealand	Academic	Fully vaccinated	Fully Vaccinated plus one booster	Fully Vaccinated
Kate	The conflicted vaccinator	3	New Zealand	Academic	Fully vaccinated	Mother Fully vaccinated plus one booster. Father unvaccinated	Fully Vaccinated
Sarah	The grateful vaccinator	2	South Africa	Academic	Fully Vaccinated	Fully Vaccinated one booster	Fully Vaccinated
Rebecca	The disinterested vaccinator	2	New Zealand	Banking Specialist	Fully vaccinated	Fully Vaccinated plus one booster	Partially vaccinated
Tina	The contradictory vaccinator	2	England	Connections Specialist	Fully vaccinated	Fully Vaccinated plus one booster	Partially vaccinated
Ruth	The only if I have to vaccinator	2	New Zealand	Team Leader	Fully vaccinated delayed youngest two childrens childhood vaccines	Fully Vaccinated no booster	Partially vaccinated
Pia	The protective vaccinator	1	India	Administrator	Fully vaccinated	Fully Vaccinated plus one booster	Unvaccinated
Alex	The moderate vaccine resister	2	USA	Academic	Oldest child vaccinated Youngest Child unvaccinated	Unvaccinated	Unvaccinated
Catherine	The stigmatised un-vaxxed	1	Scotland	Administrator	Vaccinated but delayed MMR vaccine and no HPV	Unvaccinated	Unvaccinated

4.3 Research Participant Narratives: Introducing Key Factors and Influences in Participants' Vaccine Decision-Making

4.3.1 Alex - The Moderate Vaccine Resister

I gave Alex the moniker of 'The moderate vaccine resister.' The term reflects her COVID-19 vaccination stance but also her opposition to being labelled anti-vax, a label she describes as "awful and discriminatory". The moniker reflects the care she takes during the interview to portray herself as less extreme than others who choose not to vaccinate. For example, she does not claim that childhood vaccines do not prevent disease or severe illness from a disease as is common in the literature (Blume, 2005). Instead, she believes that fit and healthy children should build natural immunity and that vaccines can harm a child's immune system. Nor did she refer to common themes across anti-vax online communities that the COVID-19 vaccine alters our DNA or contains a tracking device so Bill Gates can track us (Pertwee et al., 2022). She does, however, believe that Pfizer and governments have knowingly deceived the public about the safety and efficacy of their mRNA vaccine.

Alex describes herself as suspicious of vaccines rather than wholly opposed to them. Her suspicion of vaccination arose when her daughter had her first MMR vaccine, aged about 12 months. Soon after having the vaccine, her previously "very healthy" daughter developed severe eczema and asthma. At this point, Alex began reading about vaccines and what she found led her to believe that vaccination was responsible for her daughter developing eczema and asthma. Her decision not to vaccinate her son reinforced this belief. She describes him as having the "constitution of an ox" compared to her daughter. An example of this was when both children caught chickenpox. Her son experienced a very mild case whilst her daughter was quite ill. For Alex, the different experiences of her children with illnesses are due to childhood vaccinations compromising her daughter's immunity.

Describing herself as a bit of a witch, one of the ways that Alex manages her perceived risk of vaccination and the diseases they prevent is through naturopathy and homoeopathy. When governments refused to discuss natural immunity, prevention, and treatments of the COVID-19 virus at the height of the pandemic, Alex became angry and disappointed. "Sunlight, eating well, exercise and … vitamin C packs" are ways she believes serious illness from COVID-19 can be prevented or treated. Alex tells how she used black seed oil, amongst other supplements, to prevent her daughter from developing complications from COVID-19, saying

how she was done and dusted with it in a day. She and her husband were sick for about three days and wiped out for two weeks. She believes the experience was no different from that of vaccinated people, although she does say that they had the Omicron variant, not the original or Delta, which is considered worse. For Alex, the decision not to vaccinate her children was easy because "I know that I've got a million and one things up my own sleeve that I can help them with".

Initially open to vaccination as a way to return to normalcy during the early days of the pandemic. Alex's suspicion of it grew as the government's drive to vaccinate increased, supported by mainstream media and medical professionals. When she was considering vaccination, she made direct contact with Pfizer. Their response to her questions only deepened her uncertainty, especially regarding the safety of the vaccine for people who suffer from autoimmune disorders as she does. Her uncertainty morphed into conspiracy theories, alleging cover-ups of vaccine injuries by Pfizer, governments, medical professionals and the mainstream media. Alex depicted the COVID-19 response as being "co-ordinated by a billionaire with a vaccine fetish… who has control over the media discourse, contracts and everything". She expressed a belief that the Aotearoa New Zealand government were using the pandemic as a means to control the people, creating a police state, using communication strategies first employed by Lenin and Stalin. Alex believes many people lived under a spell at the height of the pandemic and vaccine roll-out in Aotearoa New Zealand. A spell that mainstream media cast at the behest of the government through their portrayal of people who refused to vaccinate as "ignorant trump supporter anti-vaxxer(s)".

Alex spoke most passionately about body autonomy and the mandates. She found the mandate incredibly difficult, and many of the emotions she described were around this experience. She explained how the harder the government pushed, the more determined she became not to vaccinate. "…that just made me dig my heels in even harder with the whole mandate". For her, having the freedom to decide what goes into your body is more important than the common good and social responsibility. Her opinion about vaccination is similar to the parents interviewed in Atwell et al.'s 2019 and 2021 research, "if your child's vaccinated, why do you care about mine?

> And then all this guilt about Granny. You know you're gonna kill your granny if you don't get vaccinated… If Granny has the sense to get herself vaccinated… We don't

> need our grandchildren to to get vaccinated. We, you know, if we're vaccinated, we should be all right. (Alex, 22/11/2022)

The coercive language that the government and the media used to encourage vaccination, along with other methods such as the mandates and rewards for vaccinating, left Alex furious. Experiencing discrimination for the first time, she became progressively more anxious, eventually developing agoraphobia. Despite the discrimination and exclusion Alex felt, she was able to develop friendships with other mothers at her children's school, who shared uncertainty and fear of the vaccine. Although some were vaccinated themselves, the mothers she became friendly with all refused to vaccinate their children "because because it's uncertain, because it was an unknown... You know they didn't want to risk their children's lives because they felt more for their children's lives than their own".

4.3.2 Rebecca – The Disinterested Vaccinator

I assigned Rebecca the moniker "disinterested vaccinator" due to her antipathy and procrastination toward the COVID-19 vaccine. Having always conformed to vaccination, Rebecca did not anticipate a vaccine against COVID-19 to be any different "because I've gone through all the other vaccinations through my lifetime, and never questioned that, it was just another one that I was adding to the list." This assertion implies that Rebecca was always going to have the vaccine. However, there are some contradictions throughout her interview that indicate indecisiveness.

In some instances, Rebecca says she was not concerned about side effects from the vaccine for herself, as she has never experienced any reactions or ill effects from past vaccines. On the other hand, Rebecca and her husband did not rush out to get the vaccine once the roll-out started, believing it was still in the trial phase. Their concerns were mainly about how new the vaccine was and the speed of its development, reasoning that this novelty and speed brought unknown risks. Many interviewees said the vaccines were still undergoing trials or that pharmaceutical companies had not conducted comprehensive testing. These concerns align with Bell et al.'s 2020 study that found that the novel nature of the vaccine and the COVID-19 virus was the main reason people were wary of the vaccine. However, like much of the published literature, Bell et al.'s (2020) research focuses on people's COVID-19 vaccine intentions, not their actions, and was published before the conception of vaccine mandates.

Spurred on by the prospect of being unable to access bars and cafés without a vaccination pass, the introduction of the vaccine mandates and passes eventually compelled Rebecca and her husband to vaccinate. On reflection, she describes this reason as "juvenile", and although she does not regret her decision, she feels embarrassed that she did not read any information before vaccinating. Rebecca's husband was her foremost source of information about the vaccine and was the primary influence for her initial delay in getting it. When they eventually did have the vaccine, however, she booked hers before him, making him book his when it became apparent that not having it would affect them in other ways. "So maybe I pushed him into it in the end". Throughout our conversation, there appears to be an underlying doubt about the vaccine or how she came to have it; the more we talk, the more this doubt arises. Rebecca admits that this is the first time she has reflected on her decision, and now that I am asking her questions, she thinks, "There is more I could have asked". Rebecca shares that her disinterest was probably due to what she and her family were going through during the vaccine roll-out and mandates; her grandmother was sick and passed away, and they were also due to get married.

The disinterest did not continue when their children became eligible for the vaccine. Before taking her children to be vaccinated, Rebecca did seek out information about the vaccine for children. Mistrustful of her doctor due to her experience with diagnoses for the children and a feeling that they are not always acting in their best interest, she sought information on the internet. She avoided social media because she believed everyone was pushing an agenda. Instead, medical papers that discussed the testing for efficacy and safety for children were a focal source. Other parents' experiences were also important to her, although she was still confused about who and what to trust.

> I I don't think that it was easy to find everything that I needed, and the scale, or the range of opinions that you're looking at, is so broad, um that it was hard to decide what was good and what was bad… There is an agenda. I feel like there's an agenda behind it and pushing an opinion. And you don't really know who to trust. (Rebecca, 1/12/2022)

Emotion played a much more significant role in Rebecca's decision to vaccinate her children. Feeling fearful of her children experiencing short and long-term side effects from the vaccine, she anticipated the guilt she would feel if something did go wrong.

Despite him having a localised reaction to a vaccine in the past, after much consideration, it was her son's health that led her and her husband to decide to vaccinate him. He suffers from respiratory issues, which caused Rebecca to fear her son experiencing severe COVID-19 symptoms more than vaccine side effects. Soon after the children's first vaccine dose, the family caught COVID-19, and her son suffered a more severe illness than the rest of the family. This experience validated Rebecca's decision to vaccinate them, as she believed he would have been worse had he not had a dose of the vaccine. However, she decided not to take the children for the second dose after having the virus as their experience had not been too bad, and she felt they would now have some natural immunity.

Rebecca maintains that she made the right decision to get the vaccine and will continue to get more vaccines as required. When considering vaccinating the children, there was less certainty. Despite Rebecca's assertion that she made the right decision and none of her family or friends suffered adverse effects, she conveys regret and doubt. These feelings seem to stem from her husband taking the lead in finding information and her lack of concern about the vaccination. Literature on vaccination decisions does not focus on why parents choose to vaccinate their children. Rebecca's narrative provides insight into why parents do vaccinate and shows that she shares many fears and anxieties with parents who refuse to vaccinate.

4.3.3 Bella – The Rational Vaccinator

Bella's monicker reflects her advocacy for vaccines and her firm belief in the scientific consensus. Bella has a medical background, having trained and worked as a doctor for many years. Bella is a logical thinker who pays attention to the figures rather than the narratives and considers the risk from the virus to be greater than the risk from the vaccine. Despite her trust in vaccines, Bella was not as comfortable getting the COVID-19 vaccine and subsequent boosters as getting other vaccines. Bella explained that she did not feel the same about this vaccine as others. She felt a "small amount of hesitancy" and "was a little nervous", especially regarding her children having it. However, the hesitancy and nerves were insufficient to prevent her from having the vaccine.

Like many parents interviewed for this research, Bella was initially unnerved by the rapid development and roll-out of the COVID-19 vaccine. "Yeah, the speed. I think it's the first time that we've had to have something, um, so quickly without a cohort sort of experiencing it beforehand." However, having lived and practised in the US for several years, she understood the FDA approval process, which allayed some nerves. She acknowledges that

people can experience adverse effects from vaccines but does not let anecdotal stories detract from the statistics. Even when somebody she knows told her about a "really terrible reaction" they had suffered after having the vaccine, she was willing to take the risk as she considers it to be "a numbers game". For her, the vaccine was necessary for the greater good and to protect the vulnerable. She was further motivated to vaccinate because of the "inexplicable and extreme" views of friends who chose not to vaccinate. Some had medical backgrounds and lost their businesses and incomes rather than being vaccinated during the mandates. Although concerned by what she considered their extreme and invalid views, she tried not to discriminate and did not see the value in persuading resistors of the vaccine's benefits.

She believes that a factor in people refusing to vaccinate in Aotearoa New Zealand is our minimal exposure to the virus. Many of her friends live in New York, and they had a terrible time with COVID-19. She felt little emotion when the vaccine was rolled out in Aotearoa New Zealand, having shared her friend's' excitement when the US rolled it out. The vaccine marked a significant turning point for them in the fight against COVID-19. Aotearoa New Zealand, meanwhile, had never really experienced the level of illness and deaths experienced overseas, and the vaccine felt less vital. Within the literature, the lack of experience or "seeing" vaccine-preventable diseases is one reason for declining childhood vaccinations (Forster et al., 2016; McGregor & Goldman, 2021).

4.3.4 Catherine – The Stigmatised Un-vaxxed

Catherine's monicker of "the stigmatised un-vaxxed" reflects the societal pressure and stigmatisation she felt regarding her and her children's COVID-19 vaccination status outside of her close friendship group during the mandates. Throughout the interview, there were moments when Catherine would justify her decision and others when she questioned it. Married with three children, she has concerns about the safety and efficacy of the vaccine, especially because she has a leaky valve in her heart and a heart murmur.

In the early days of the pandemic, Catherine and her family intended to have a vaccine if and when scientists could develop one. They were afraid of how dangerous the virus could be, especially for Catherine with her heart condition. As the pandemic progressed, hearing stories from elderly relatives in Scotland who recovered from COVID-19 without medical intervention led them to believe the virus may not be as severe as initially feared. By the time other countries started rolling out the vaccine, Catherine's primary source of fear was the vaccine,

> …we were reading all this stuff that was coming out it, like, you know, because everybody, you just read everything. And and there was all that stuff about the heart inflammation… (Catherine, 22/12/2022)

Her fears about the vaccine's safety led her to delay having it. However, as it became clear that the government would introduce mandates, Catherine consulted her cardiologist. He explained that the vaccine's potential impact on her heart was difficult to assess, and the risk of having the vaccine was about the same as the risk of having COVID-19. He suggested delaying the vaccination as long as possible if it was unnecessary for her work position. The cardiologist then mentioned that the demographic most at risk for adverse reactions to the vaccine was similar to her sons' age group. The visit to the cardiologist left Catherine with significant doubts about the vaccine's safety for her and her children. Her doubts, coupled with statistics from the World Health Organization indicating that children rarely experience severe illness from COVID-19, led her to believe that receiving the vaccine had become riskier than contracting the virus.

Undoubtedly, Catherine's cardiologist influenced her decision not to vaccinate her children. However, her COVID-19 vaccine decision-making is much more complex. Doubts about other vaccines emerge through the interview, indicating that she is not as accepting of vaccines as she initially stated or that her views have changed over time. She describes having "a feeling of unease..." when the government went with the Pfizer vaccine—questioning the vaccine's safety and necessity and defending the role of natural immunity. The COVID-19 vaccine is not the first one she has had doubts about. Her children have not had the HPV vaccine, a vaccine which courts controversy amongst anti-vaccination groups online (Stahl et al., 2016). When questioned about this choice, Catherine would say, "Well, back to the COVID one." She also delayed her children's MMR vaccine as she believed that the triple vaccine would overload her children's immunity as they were premature.

Catherine was not alone in her close friendship group when she chose not to vaccinate. She said at least five of her friends acquired fake vaccine passports. Five unvaccinated people in a friendship group is significant, especially considering that as of March 2024, 86.6% of those over twelve were fully vaccinated, and this sat at around 94% during the vaccine mandates (Unite Against COVID-19, 2024). The many unvaccinated friends within her social group indicate some social influence on and acceptance of each other's decisions. Catherine does not feel that her friends have influenced her decision. However, in an online survey

conducted to research the role of social networks in parents' vaccine decision-making, Brunson found that their people network is the most influential factor when considering parents' vaccine attitudes. Parents with many in their social circle who do not vaccinate are more likely to refuse or delay vaccines for their children. Having many friends who did not vaccinate perhaps made it easier for her to stand by her choice, especially when facing criticism from other sections of society, including her family. Another social influence on Catherine's decision is her husband. Catherine describes how he "hated" Prime Minister Jacinda Ardern and was very anti-government. He had no underlying health issues or concerns about the vaccine's safety. He refused to vaccinate because the government said he had to.

Catherine's social relationships during the pandemic were not exclusively with the un-vaccinated. Catherine felt isolated and stigmatised outside of her close friendship group, particularly in work environments. She experienced workplace bullying, which intensified during the vaccine mandates. She eventually lost her job after her employer unexpectedly said she had to be vaccinated to keep her position. She lost friends and had altercations with people who had been "taking my biscuits and drinking my tea one day, and refusing to sit near me without a mask the next". Her children's social relationships also suffered, and they faced restrictions on the sports they could play. However, rather than pressuring her into vaccinating, her experiences of mounting pressure from the government, work, and her extended family increased her determination not to vaccinate. Catherine questioned why the vaccinated were so bothered that she was not vaccinated if they were protected. To her, the people most at risk from COVID-19 are the unvaccinated, who she believes pose no danger to the vaccinated. Therefore, she cannot understand why the vaccinated in society vilified the unvaccinated so much during the mandates.

4.3.5 Kate – The Conflicted Vaccinator

Kate's monicker of the "conflicted vaccinator" stems from her unique position among the research participants during the COVID-19 vaccine roll-out. Despite routinely vaccinating their four children without question, her husband refused to vaccinate against COVID-19. This refusal led to tension within their household and hardship for Kate, with her husband unable to help with their four children outside the home during the mandates. Her husband's family also chose not to vaccinate, and her relationship with them became strained.

Kate has a scientific background, and many of her colleagues were involved in real-time statistical health research for the pandemic. She never had any concerns about the vaccine, believing from the beginning of the pandemic that a vaccine would be the only way to prevent continuous lockdowns. This belief and her trust in the government, the Director of Health and her colleagues meant that she firmly believed the vaccine was the necessary next step to end the pandemic. When deciding to vaccinate, she did not consider the scientific side of it very much. Rather, she recognised that she would be in a high-risk environment as a university lecturer and felt the vaccine was necessary to protect her husband and son, who were unvaccinated at home. Her husband as he chose not to be, and their son as he was under five.

Kate describes how she read about vaccines when her eldest was little, especially the link between the MMR and autism. Her findings from this reading led her to have confidence in the safety of vaccines. She recognises that vaccines have risks, but the risks from the diseases they prevent are greater than those from a vaccine. Many of the arguments she heard against the COVID-19 vaccine she had heard and disregarded before when researching other vaccines. Boddice (2016) considers the decline and resurgence of risks in his research, describing how people often use the same language in different contexts. Although her past reading meant that Kate had no concerns about the safety and efficacy of the vaccine, she did stress about it due to tension at home.

Her husband's unease stemmed from potential side effects, particularly on the heart. In the two years before the pandemic, he had suffered a stroke caused by a hole in his heart and underwent surgery to repair the hole. His immediate reaction to the vaccine was that something bad had happened. The government had made a mistake and moved too fast, and he didn't trust the vaccine. Her husband and his family became vocally mistrusting of science and anti-expert. This mistrust was very hurtful to Kate, as she is a scientist, and although not in a relevant field, she felt that the family's attacks on science and experts were an attack on her. Kate became increasingly worried about her husband's mental health but was also very angry that he had chosen an obscure mathematical risk over their family. Her husband was bombarded with conflicting information from all quarters and eventually decided to talk to his cardiologist. Unfortunately, the conversation left her husband patronised, with the cardiologist telling him "To stop being so stupid. It's people like you that are clogging up the health system". Kate argues that this was the opposite of what he needed to hear. He needed to have the risks and benefits laid out empathetically.

Kate tried to provide her children with relevant information so that they could make an informed decision about the COVID-19 vaccine. She wanted them to make their own decisions and not feel pressured to take sides. Where they had heard something that is considered misinformation from their father or extended family, rather than describe it as such, she would provide a counterargument. Kate found it difficult to openly disagree with her husband, as she doesn't like conflict and generally avoids it. However, she did not want his side of the story to be the only side that their children heard. Their feeling safe was paramount, so Kate tried very hard to be calm and have the facts on hand. By the time the children were eligible for the vaccine, her husband's beliefs did not resonate with them, and they all chose to vaccinate. Kate did not get consent from their father to vaccinate the children against COVID-19, as he was so anxious that she thought he wasn't making clear decisions.

Despite her anger and frustration with her husband's decision not to vaccinate, Kate was not wholly supportive of the vaccine mandates. The university where she was employed was late implementing vaccine mandates for staff and students. Kate was against their implementation, contending that there are powerful arguments in health that no one should force people to do anything to their bodies as there is "a strong ethical principle which is informed consent over your body." However, she believes there is a place for vaccine mandates in areas where they already exist to protect the vulnerable, such as in the public health sector. For her, the vaccine mandates caused unnecessary stress, and she saw the anger and resentment that emerged when people who did not want the vaccine had to have it to keep their jobs and homes.

4.3.6 Tina – The Contradictory Vaccinator

Tina's monicker of the "contradictory vaccinator" reflects her mixed views on vaccination, particularly when discussing vaccines for herself or her children. When discussing the decision to vaccinate herself, Tina's arguments are more rational than when discussing the COVID-19 vaccination for her children. Tina's narrative demonstrates the different emotions and social influences involved in deciding to vaccinate your children as opposed to yourself.

Tina suffers from Rheumatoid Arthritis, an autoimmune disease which may leave her more susceptible to complications from COVID-19. This susceptibility meant she was self-isolating before the government announced the first lockdown and continued to isolate until a vaccine was available. Despite isolating for an extended period and being among the first

groups eligible for the vaccine, Tina delayed getting it for a short time, primarily because of its newness and fears of side effects. When she was eleven, Tina suffered a rare side effect of the MMR vaccine, which meant she had difficulty walking for a month after it. Then, when pregnant with her second child, a reaction to a drug administered by her consultant left her in the intensive care unit with Stevens-Johnson syndrome. These severe and rare reactions meant she was wary of receiving the vaccine. After a week or so of deliberation, reading and quite a bit of pressure from her mum and stepdad, who had concerns about what might happen if she caught COVID-19, she determined that the risk from COVID-19 did outweigh the risk of the vaccine.

Tina received all of her vaccine shots without experiencing any side effects, although she did express slight concerns that there may be longer-term effects that have not yet emerged. Tina read about the COVID-19 vaccine for herself and her children online. She briefly read about the vaccine's safety for people with autoimmune disorders for herself but read much more when considering the vaccine for her children. Tina emphasised that she did not believe anything she saw or read on social media. Describing how much of this content is mis or disinformation created to push an agenda, generally conspiracy theories and anti-vaccination sentiment. When contemplating the vaccine for herself, Tina takes a rational approach—recounting how she would avoid narratives and opinions, preferring to analyse and interpret statistics and graphs. However, she does refer to disproven interpretations of statistics from the Pfizer papers circulating across social media and YouTube from anti-vaccination groups.

Her rationality wanes further, and emotions emerge when she discusses her vaccine decision-making for her children. She had already taken them for their first shot without consequence when she started to come across worrying content online. A member of medical cannabis and alternative medicine groups on social media, she relays harrowing stories that doctors or specialists have posted about vaccine injuries and people being unable to obtain a medical exemption from vaccination. On reflection, Tina says, "or at least they have names that reflect this status. I mean, they could be bogus, but they were heart-wrenching horrendous stories." She said she "had to turn off social media in the end as my algorithms are now making me one of these people."

When vaccinating her children, she could not shrug off the guilt she would feel if something went wrong. Especially as she is the primary vaccine decision-maker, and her partner provides no input. She describes having similar fears when taking them for their childhood

vaccines after her own experiences and reading that some of the ingredients are not safe. For the childhood vaccines, she used alternative medicines to reduce their risk of side effects and illness. She explained that the difference between the two is that childhood vaccines prevent children from catching the disease, whereas the COVID-19 vaccine does not. Due to this, the risks she associated with it and the mildness of children's infections when they caught COVID-19, she felt that her children did not need the second dose. Instead, her focus has been on building their immunity naturally through high doses of vitamin C and their diet: "Because of my health journey, my focus is more on building up your own immune system."

4.3.7 Pia – The Protective Vaccinator

Pia's moniker of the "protective vaccinator" reflects her willingness to vaccinate herself and her apprehension about vaccinating her daughter. She describes taking a scientific and logical approach to vaccination. However, her approach changes when considering vaccinating her daughter and rumours about the vaccine's safety influence Pia's decision.

When discussing her decision to vaccinate herself, Pia emphasises her trust in science and experts. Growing up in India, she believes her parents didn't consider vaccination a choice. Vaccination is what you do to keep your children safe and healthy. Her view of vaccination is similar to this, believing that scientists are working for everyone's benefit, not for themselves and their status, and they do not want to hurt people. Pia believed that a vaccine was the best approach to ending the pandemic. Pia's husband researched the vaccine, and Pia trusted his advice. She describes him as rational and numbers-orientated, not swayed by rumours and conspiracy theories and wanting the best for his family. Pia is positive about the vaccine when talking about it for herself. She describes how she believes manufacturers have conducted the necessary testing for the vaccine as the mRNA technology has been around for a long time. Scientists developed the COVID-19 vaccine quickly because they threw all available resources at it, and everyone involved knew the importance of developing it quickly.

Pia's positivity about the vaccine dissipates when discussing vaccinating her daughter. It is almost an internal argument, and Pia cannot extend her confidence in the vaccine to her daughter due to an emotional block. She is unsure why, describing how perhaps you are more protective of your kids. Primarily, she was concerned that her daughter would be unable to communicate her symptoms if she had side effects from the vaccine. On reflection, Pia raises

feelings of ‘mum guilt’, and despite continuing to say that she trusts the science, she begins to raise doubts about the vaccine.

In contradiction to influences on her decision to vaccinate herself, other people in their social group and rumours she has heard online have raised doubts about the vaccine for her daughter. The influence of exposure to negative information about vaccines on people’s decision-making is well-represented in the general vaccine literature (Dube et al., 2015; Stahl et al., 2016). However, the literature fails to distinguish between its effects when deciding for yourself or your child and the COVID-19 and Aotearoa New Zealand perspectives are underrepresented. Two of her close friends have chosen not to vaccinate. Predominantly because the vaccine is new, and people have no way of knowing the long-term effects of the vaccine. Pia was able to shrug off their opinions when considering vaccinating herself. But, when it came to her daughter, she thought, “What if they are right? What if that 1% chance they are correct and there is something wrong with the vaccine?”

Pia’s discourse then changes to reflect some of the rumours she has heard that raised her concerns. Rather than express her confidence that manufacturers and drug approval agencies have thoroughly tested the vaccine, she discloses that maybe the vaccine is an experiment and is still in its trial stage. “After all, it takes years to develop a vaccine, and we know nothing about long-term effects.” If something were to emerge in five or ten years, she would never forgive herself if her daughter were affected. If Pia is unaffected by the vaccine after a few years, she will feel better taking her daughter for it. “If I can, if I have to taste the poison, I will taste myself before my daughter.”

Another aspect of her vaccine decision that may have been influential was her family’s experience in India. Her parents in India delayed having the Indian version for a period as Pia’s brother was against it. Not because of the vaccine itself but because of rumours that corruption amongst the medical staff in India was rife. Rumours such as doctors receiving a payment for each dose gave people water shots instead of the COVID-19 vaccine. She also described how doctors were submitting fraudulent COVID-19 results for funding. She believes the situation in India was never as bad as portrayed by the Western media. Although not as far-fetched as some conspiracy theories, these kinds of rumours circulated about multiple countries on conspiracy websites.

Pia describes herself as an overthinker and worrier, always thinking the worst of everything, being a mum. She feels it is harder for women to reason, as they are more emotional than

men, especially regarding their children. Despite believing that her husband, "being the only other person that I know completely, would never do anything bad for my daughter." The reading he has done is not enough to put her mind at rest when faced with the what-ifs that emerge from the stories she has heard. Stories about people dying after having the vaccine, children potentially becoming infertile or having their growth stunted. What if these stories that she quickly disregarded for herself were true, and the vaccine did harm her daughter in some way? Differences in how risks are perceived when applied to oneself as opposed to one's children are an area of discourse that the current vaccination literature neglects.

4.3.8 Ruth – The Rather Not Vaccinator

I gave Ruth the moniker of the "rather not vaccinator", as it reflects her on-the-fence attitude towards vaccination and leanings toward natural immunity. Vaccination has its place in Ruth and her children's lives. However, she will only be vaccinated and take her children when necessary. Generally, she gets vaccines because she thinks it is the right thing to do.

Ruth was hesitant when the vaccine roll-out began in Aotearoa New Zealand. In her mind, COVID-19 was nothing more than a cold or flu. It had never really been a big thing here and is not something she would usually vaccinate against. She felt that her good health and robust immune system had protected her against COVID-19 when she could have caught it and would continue to do so. Ruth felt that governments had pushed the vaccine out too quickly. Items about side effects she had seen in Aotearoa New Zealand and overseas media, along with the experiences of some of her colleagues who experienced prolonged headaches after the vaccine, made her apprehensive. The big push across the country and the potential effects of not vaccinating on her job security induced her to vaccinate.

The pressure was good from her perspective. When she had the vaccine, she felt better about herself and that she had done a good thing. Ruth's concerns about the vaccine were amplified for her children. She considered herself a guinea pig and, therefore, wouldn't be vaccinated simultaneously with her children. "If I went into this and had some kind of reaction, I was an adult and could handle it". That she and her former partner suffered no ill effects from the vaccine significantly influenced their decision to vaccinate the children. Ultimately, she had to take the emotion out of it and weigh the risks logically. At this point, it made sense to her to vaccinate the children because there was a higher chance of them getting sick from COVID-19 than from the vaccine. "If they got COVID-19 and it didn't end well, that just isn't an ending I could live with. Knowing that I hadn't done that for them."

Besides her former partner, Ruth did not talk to anyone about vaccinating the children. She spoke to others about getting her own done but talking about the children felt different. Articles and posts she saw when scrolling through social media gave her the impression that there was controversy around the children's vaccine. The online controversy made her uncomfortable discussing her children's vaccination with others. Sometimes, the online conversations she saw gave her pause for thought. Other times, she found them utterly irrational. A lot of the posts Ruth saw appeared to be from anti-vaxxers, and she could not see a logical explanation in most of what they were saying.

Another factor that delayed Ruth's decision to vaccinate herself and her children was her belief that natural immunity is best. "I guess ideally… I do prefer natural immunity if I can. But I'm not a complete, like a hippy as such like I do understand medicine like when it's needed." Ruth decided not to have her two youngest children vaccinated against childhood illnesses, mainly due to what influencers on Instagram and other social media platforms said about why they weren't vaccinating their children. A measles outbreak where she lived made her see that she was being stupid. These people were not doctors, and what they said didn't make sense, so she got the children vaccinated. Her preference for natural immunity influenced her COVID-19 vaccine decisions after her eldest and youngest child caught COVID-19, and Ruth and her other two children did not contract it. She believed this was due to their healthy immune systems and exposure to the virus, which offered the family immunity. Therefore, she felt there was no need for the children to have their second dose, and she did not have the booster.

4.3.9 Sarah – The Grateful Vaccinator

I gave Sarah the moniker of the "grateful vaccinator", as it reflects her appreciation for Aotearoa New Zealand and living in a time and place where we have the medical and scientific abilities to create a vaccine. She completely trusts science and medicine, believing that vaccines should be considered the same as every other medicine.

Sarah emigrated from South Africa in 2019, and when the pandemic struck, she felt very grateful to be in Aotearoa New Zealand. The people were warm and welcoming, and they gave her an entirely new life. Therefore, she "bought into the whole Team Aotearoa New Zealand thing". When the government announced that the vaccine was being rolled out and needed the entire country to pull together and have it, she was one hundred per cent behind them. For her, medicine is logical, so why wouldn't she protect herself if she could? Sarah

understands how vaccines work and had spoken to a friend who works at MFAT, who told her a bit about how Medsafe was approving the COVID-19 vaccine. Sarah was happy that Pfizer and other agencies had conducted all necessary testing. She did not think for a second that anything would happen to her daughters following the vaccine.

Sarah was much more afraid of COVID-19 than of the vaccine and did not want her or her daughters to get seriously ill. She was hearing stories coming out of South Africa from friends and family about the horrors in hospitals, with overcrowding in private hospitals. Doctors and nurses worked incredibly long hours in terrible conditions, putting themselves at risk, caring for people who chose not to be vaccinated in war-like conditions. Terrified of what would happen if COVID-19 spread through Aotearoa New Zealand communities as elsewhere, her fears meant she began to lose patience with people refusing to vaccinate, questioning, "How selfish are they?" She also held a lot of anger and contempt toward the anti-mandate and anti-vaccine pass protestors who compared their situation to apartheid.

> To think they believe their minor inconvenience because of an irrational choice is anything similar to the suffering of black people in South Africa or the Jews. So insulting to people who struggled because of something they had no control over. So insulting (Sarah 29/11/2022).

Sarah never thought twice about getting vaccinated, considering it a civic duty and necessary to protect her family. She is highly critical of those prioritising personal freedom over the greater societal good, particularly in the context of vaccine refusal. Although Sarah could understand people's genuine fear surrounding the vaccine, she lost patience with conspiracy theorists. She could not fathom how they could believe and disseminate some information that she considered ridiculous. To her, people who do not vaccinate are entirely selfish. She gets frustrated by people who do not take measures to prevent illness, such as vaccination because of side effects, but expect treatment when they need it, even when the risks are higher than preventive treatments. "They won't vaccinate them, but they are okay to have them put in a coma and pulled back out when they need an operation. Are they in or they out?"

4.4 Discussion. Beyond the Ternary: Unpacking the Complexity of COVID-19 Vaccine Decision-Making for Parents

As discussed in Chapter 2, the current literature aggregates people into three vaccination positions: vaccine-accepting, vaccine-hesitant, and vaccine-resistant, focusing on how governments and health services can increase their vaccination rates (Blume, 2005; Yaqub et al., 2014; Ledford et al., 2022; Atwell, 2017; Dube et al., 2015; Glanz et al., 2013; Kata, 2009; Ruiz & Bell, 2022;). In doing this, it generally focuses on the vaccine-resistant and one aspect of the vaccination decision process, for example, sourcing vaccine information on social media or practising CAM. There is a mix of qualitative and quantitative data collection within the current literature. However, it tends to be more quantitative, taking the form of surveys which aim to link vaccine resistance to specific demographics. Although we can glean valuable information about vaccine positions from the current literature, its specificity and quantitative nature mean it misses the complexity and nuances involved in vaccine decision-making. The literature also fails to consider the differences that emerge when deciding whether to vaccinate yourself or your children, with the implication being, although not necessarily stated, that a position is the same for parents and their children.

The introduction of the COVID-19 vaccine provided an opportunity to understand whether and how parents' vaccine decision-making is different for themselves than for their children. The vaccination data in Aotearoa New Zealand indicated this was the case, with over 90% of people aged 12 and over fully vaccinated for COVID-19 compared to just over 20% of five to twelve-year-olds. In my study, the participants' narratives show that they considered different factors when deciding whether to vaccinate their children compared to decisions they made about vaccinations for themselves, with some discussing how the social interactions and commentary felt different for their children. Emotions played a much more significant part when making their decision to vaccinate their children, with some discussing guilt should something happen, as they felt they had not paid attention to the warnings of potential side effects. They were willing to ignore the warnings of risks for themselves but not for their children. The current literature neglects that vaccine decision-making for parents may be different and involve different factors and social interactions than a personal decision.

Through the narrative nature of my interviews and the open questions I asked, I could learn what was important to each participant in their vaccine decision-making rather than focus on a specific area that I believed was important. Through my data analysis, I found a spectrum of

COVID-19 vaccine positions across the nine participants, and although some fall into the categories of vaccine resistors and acceptors as found in the current literature, multiple positions lay outside of these categories. Some parents were vaccinated but chose not to vaccinate their children; some had most other vaccines but decided against COVID-19; some parents were fully vaccinated but elected for their children to receive only one dose; and some parents opted for full vaccination themselves and their children but did not want to have boosters. These various positions are far more complex than the generalisations made in the current literature. Instead, it is a culmination of experience, social relationships, and emotions, influencing how people interpret the information or misinformation they encounter.

Regardless of the participant's position, their vaccine decision-making is individual but always set within a social context. Their decisions are not based solely on information but on their life experiences, social relationships and interactions, beliefs, principles, and emotions. How these factors merge, and influence vaccine decision-making is unique to the individual. Although common themes emerge from the participant's narratives, they are experienced differently and hold different weight in each story. The narrow categories of acceptant, hesitant and resistant vaccine positions limit our understanding of these positions, polarising people across the vaccine debate. The pandemic, vaccine roll-out and subsequent vaccine mandates brought this polarisation to a head. Many people who chose to be vaccinated could not understand the reasons of those who decided not to, and those who were not vaccinated felt ostracised by those who were, especially during the mandates. Before conducting the interviews and analysing the data gathered, I found it hard to understand why people would not be vaccinated. I often considered them ignorant and selfish, believing they had succumbed to conspiracies online and just needed to use their common sense. Although I remain a staunch supporter of vaccination, now that I have gained a greater understanding of the various influences and machinations involved in people's vaccine decision-making, I have a greater empathy for the vast array of vaccine positions.

4.5 Conclusion

In this chapter, I have introduced each research participant and described how I came to assign them each a different moniker. In their introductions, I captured what was important to them when they reflected on their COVID-19 vaccine decisions and captured some of the emotions they expressed. The current literature is focused either on quantitative data or specific areas of vaccine resistance that the researcher considers important. Therefore, it

misses the nuances and complexities of vaccine decisions that I have captured in the participant's narratives. These narratives and complexities offer a deeper understanding of the factors involved in vaccine positions than the acceptor, hesitator and resistor positions represented in the literature. My analysis shows no defining reason why people are vaccinated or not. Instead, many factors interplay, including social relationships and interactions, trust in social institutions and health professionals, experience, and existing principles that influence where they access and how they interpret the vast array of information available about vaccination. The next chapter will discuss key themes that emerged from the participants' narratives, demonstrating how their narratives may align with the same theme but have a different meaning. This discussion aims to create a deeper understanding of vaccine decision-making, which is essential to improve vaccination rates and prevent the polarisation that generated such angst during the COVID-19 vaccine roll-out.

Chapter 5 Navigating Parental Vaccine Decisions: The Complex Interplay of Social Influences and Personal Experiences

5.1 Introduction.

In this chapter, I discuss key themes that emerged from my thematic analysis of the research interviews. Through the discussion, I will reveal how common influencing factors shaped the participants' decision-making regarding the COVID-19 vaccine in different ways. To illustrate the common factors across the participants' various vaccine statuses, I have created a chart displaying how many participants discussed each factor in their interview. I first explore the most common factors that emerged from my research interviews and how they influenced participants' vaccine decisions. I then discuss themes that emerged across the spectrum of vaccine statuses relative to the current literature.

In the discussion section, I argue that asserting a causal link between specific factors in decision-making and vaccine statuses is too simplistic. Rather, common factors may play a role in people's vaccine decisions, but how they interpret and react to these factors is intertwined with who they are deciding for, their personal experiences, social interactions and social norms. This fusion of factors, experience, and social interactions shows that participants can consider the same factors important but make different vaccine decisions.

5.2 Factors in vaccine decision-making that the research participants raised.

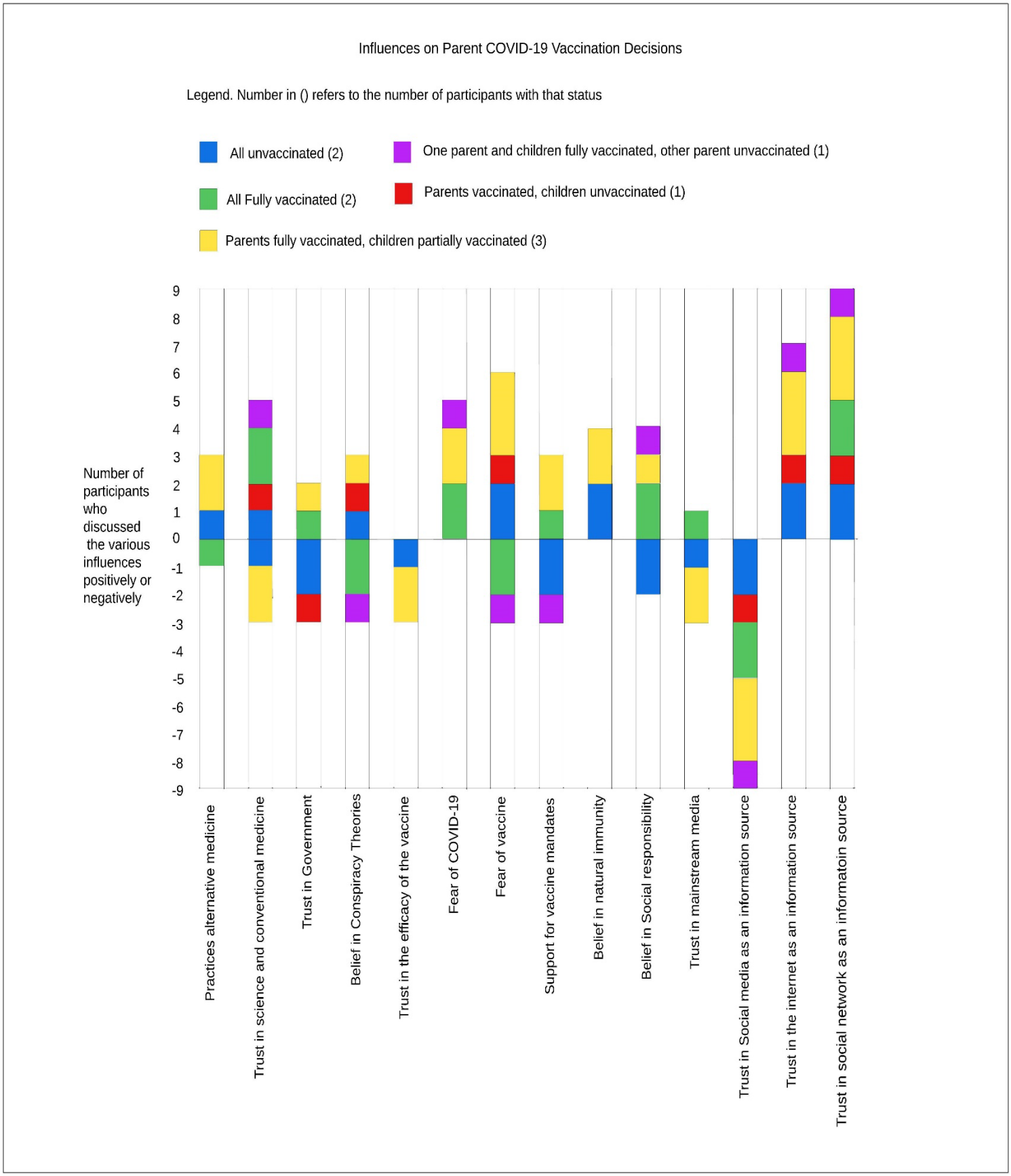
Figure 1 below is a visual representation of factors raised by the participants in my research interviews. The chart's purpose is to visually represent the complexity of parents' COVID-19 vaccine decisions by dispersing different factors across various vaccination statuses. The chart demonstrates that people experience the same influences and factors in their vaccine decision-making but make diverse decisions. Therefore, it is challenging to define causal relationships in vaccine decision-making. For example, a factor considered in the literature to cause vaccine resistance and hesitancy is social media as an information source. Yet, the chart shows that all participants, from all fully vaccinated to all unvaccinated, consider social media an untrustworthy source of vaccine information.

The chart legend's colours represent the parent's and children's COVID-19 vaccination status. The numbers after the description show the number of research participants with that

vaccination status. Blue and green each represent two participants, purple and red each represent one participant, and yellow represents 3 participants. The horizontal axis shows each of the factors. I discuss each of the factors represented in the chart in the chapter. However, not everything discussed in the chapter is represented in the chart, e.g. pre-existing health conditions, "omission bias" (Ritov & Baron, 1995), and the subsection titles do not align with the chart. The chart is a more granular representation of what I discuss within the subsections. For example, I discuss trust in social media, trust in the internet, and trust in social networks as information sources in the subsection Navigating Vaccine Decisions: Trust, Mistrust, and Information Sources.

The vertical axis labelled -9 to 9 represents the number of participants who discussed the factor, positively or negatively. For the purposes of the chart, "positive" means that they talk about a factor as something they believe in or trust and do not feel negatively influences their or others' vaccine decisions. "Negative" means they do not believe in or trust the factor and feel it may negatively influence their or others' vaccine decisions. For example, if we look at the first factor, 'practices alternative medicine', the values on the vertical axis show that four participants out of the nine mentioned alternative medicine. One 'all fully vaccinated participant' spoke negatively about it, and one 'all unvaccinated' and two 'parents fully vaccinated children partially vaccinated' participants spoke positively about it. When considering the 'fear of COVID-19' or 'fear of the vaccine', if a participant discussed them as an influencing factor, I have recorded them as a positive in the chart. If they discussed but disregarded them as an influence, I have recorded them in the chart as a negative. If they did not discuss them, there is no record. Positive recordings in the belief in conspiracy theories column mean the participants demonstrated a belief in information deemed untrue and part of a conspiracy theory, which played a role in their decision. Negative means that the participants spoke of conspiracy theories negatively, and they did not play a role in their decision.

Figure 1. Chart showing the instances of different influences on parents' COVID-19 vaccination decisions.



5.3 Common Factors in Parental Vaccination Decisions: Insights from thematic analysis of interviews

The following subsections will explore common themes from my interview analysis and how factors influenced the participants' vaccine decisions for themselves and their children. The section highlights how, although the participants may have discussed similar factors, they did not have the same influence on their decisions.

5.3.1 The Influence of Personal Experience and Belief in Natural Immunity on Parental Vaccine Decisions

Participants' willingness to vaccinate their children against other diseases and their experiences with other vaccines provided a background to their overall feelings toward vaccines. This information also reveals how parent's attitudes toward the COVID-19 vaccine were similar or different to other childhood vaccines. The introductions to the mothers show that all of them had received vaccines in the past. However, some participants' attitudes to vaccination have changed over time. Alex's daughter had her childhood vaccines, but after she developed asthma and eczema shortly after her first MMR vaccine, Alex decided not to vaccinate her son.

Alex, Catherine, Tina and Ruth describe a preference for children to build natural immunity over vaccination to fight disease. Alex and Catherine also believe that vaccines can potentially damage children's immune systems. Alex believes that vaccine damage has caused her daughter's asthma and eczema and causes her to have worse symptoms than her unvaccinated brother when they are sick. Catherine chose to delay her children's first MMR vaccines as she believed they would overload and damage their developing immune system, especially as they were all born prematurely. Ruth delayed her two youngest children's childhood vaccines as points influencers on social media were making about pumping children full of toxins and the damage they can cause to the immune system resonated with her. Tina also expressed a preference for natural immunity. However, she believed her children needed to have all of their childhood vaccines to prevent severe illness.

That vaccination can overload or damage children's immunity and make them more susceptible to disease is a reason often given by parents who choose not to vaccinate their children (Calnan & Douglas, 2020; Goulding et al., 2022). The influence of Alex's vaccination experience and how she interpreted it are areas that the current and past literature often overlooks. It recognises that parents believe their children experience side effects from

childhood vaccines (Dube et al., 2015; Motta & Stecula, 2021). However, the focus is often on how reading about other parents and children's experiences of vaccine side effects can influence how parents interpret their child's vaccine experience (Dube et al., 2015; Evans et al., 2021).

5.3.2 Parental Use of Complementary and Alternative Medicines and Vaccine Decisions

The literature often considers people's use of alternative and complementary medicines as a causal factor in vaccine resistance and hesitancy (Yaqub et al., 2014; Lee & Sibley, 2020; Kata, 2010; Ruiz & Bell, 2022; Bell et al., 2020; Thaker, 2021; Dube et al., 2015; Blume, 2005; Atwell et al., 2019). However, recent research is beginning to question the influence of complementary and alternative medicine in vaccine decisions (Hornsey et al., 2020). Alex and Tina both discussed using complementary and alternative medicines. However, Alex discusses using them as an alternative to vaccination, whilst Tina uses them alongside vaccination. Although Tina's children have had all their childhood vaccines, she described how nervous she was about taking them to get the COVID-19 vaccination as she had read that some of the ingredients were unsafe. To reduce the risk of side effects and illness from them, she gave her children alternative medicines. Alex's experience aligns more closely with Hornsey et al.'s (2020) research. They found that rather than practitioners persuading people not to vaccinate, people seek complementary and alternative medicines because they have already lost trust in conventional medicine due to other experiences (Blume, 2005; Hornsey et al., 2020).

Tina's experience also aligns with Hornsey's (2020). Although fully vaccinated against COVID-19, she uses complementary and alternative medicines due to a breakdown of trust in conventional medicine. Tina suffers from Rheumatoid Arthritis, an autoimmune disease. When pregnant with her second child, a reaction to a drug administered by her consultant to treat her left her in the intensive care unit with Stevens-Johnson syndrome. Her experiences suffering from the unintended consequences of medical advancement have meant that she has lost trust in medical professionals and experts, "you know, like I'm quite mistrusting… of the medical world because of my experiences". She also expresses a mistrust in pharmaceutical companies, believing that her consultant prescribed the drug he did, despite knowing that she was allergic to it because of a deal Pharmac has with the pharmaceutical company that manufactures it. She further claims that the hospital then covered up her severe reaction to protect both the consultant and the agreement.

5.3.3 The Consideration of Pre-existing Health Conditions in People's Vaccine Decisions

Research into COVID-19 vaccine decisions in Aotearoa New Zealand fails to examine the role of pre-existing health conditions on people's willingness to vaccinate. Yet, the interview data from this research shows that it can be a key determinant in hesitancy or acceptance. Alex was potentially already pre-disposed to thinking that her and her daughter's health conditions left them at greater risk from the vaccine because she already held suspicions about vaccines. However, Kate's husband had always had vaccines and never expressed concerns. His parents did raise concerns about the vaccine, which, together with his ongoing recovery from a stroke and heart surgery, may have heightened his fears. His decision made me curious why his concern was around the minimal risk of the vaccine rather than the virus, which had already claimed millions of lives, many of whom suffered from heart conditions.

Catherine, despite stating that she has all other vaccines, also did not vaccinate due to a pre-existing heart condition. Both Alex and Rebecca have children who suffer from a respiratory illness. Alex refused to vaccinate her daughter, believing that it would make her worse, and Rebecca vaccinated her son because she thought his illness left him at greater risk from COVID-19. Alex also suffers from an autoimmune disease, which she believed placed her at a higher risk from the vaccine than those who do not have a pre-existing health condition. However, it was Tina's suffering from Rheumatoid Arthritis that drove her to be vaccinated, as she believed COVID-19 posed a greater risk than the vaccine to those with pre-existing health conditions.

5.3.4 Concerns Over Speed and Safety: Parental Hesitations and Actions Regarding the COVID-19 Vaccine

Participants' concerns align with Bell et al.'s 2020 study that found that the novel nature of the vaccine and the COVID-19 virus were the main reasons people were wary of the vaccine and would refuse it. However, like much of the published literature, Bell et al.'s (2020) research focused on people's COVID-19 vaccine intentions, not their actions, and was published before the conception of vaccine mandates. Five mothers voiced concerns over the vaccine's rapid development and introduction or believed it may still be in its experimental and testing phase. All of them are fully vaccinated. Bella's children are also all fully vaccinated. Tina, Ruth, and Rebecca's children are partially vaccinated, and Pia's daughter is not vaccinated.

In some instances, Rebecca says she was not concerned about side effects from the vaccine for herself, as she has never experienced any reactions or ill effects from past vaccines. On the other hand, Rebecca and her husband did not rush out to get the vaccine once the roll-out started, believing it was too new and still in the trial phase. Instead, they waited until the introduction of vaccine mandates and passes before, they went to get vaccinated. As did Ruth, who thought governments had pushed it out too quickly. Tina also delayed having the vaccine for a short time due to its novelty despite being in a self-imposed lockdown throughout the pandemic. Bella was initially unnerved by the rapid development and roll-out of the COVID-19 vaccine, "Yeah, the speed. I think it's the first time that we've had to have something, um, so quickly without a cohort sort of experiencing it beforehand". However, having lived and practised medicine in the US for several years, she understood the FDA approval process, which allayed some nerves. Despite Kate having no concerns about the vaccine's safety, her husband's initial reaction to the roll-out in Aotearoa New Zealand was that "something terrible had happened, it was too quick, and they had made a mistake."

Pia voiced concerns about the vaccine's novelty. However, only when discussing her daughter's vaccination. Pia was vaccinated as soon as possible, and when discussing her decision to vaccinate herself, she emphasised her trust in science and experts. She explains how she believes manufacturers have conducted the necessary testing for the vaccine as the mRNA technology has been around for a long time. Scientists developed the COVID-19 vaccine quickly because they threw all available resources at it, and everyone involved knew the importance of developing it quickly. In contradiction to influences on her decision to vaccinate herself, other people in their social group and rumours she has heard online have raised doubts about the vaccine for her daughter. Some of her close friends have chosen not to vaccinate. Predominantly because the vaccine is new, and people have no way of knowing the long-term effects of the vaccine. These friends explain how other vaccines have undergone much greater testing and have proven use over many years. Rather than continue to express her confidence that manufacturers and drug approval agencies have thoroughly tested the vaccine, she discloses that maybe the vaccine is an experiment and is still in its trial stage. "After all, it takes years to develop a vaccine, and we know nothing about long-term effects."

5.3.5 The Impact of Misinformation and Differing Perceptions for Self and Child

The influence of exposure to negative information about vaccines on people's decision-making is well-represented in the general vaccine literature (Dube et al., 2015). However, the literature fails to distinguish between its effects when deciding for yourself or your child and the COVID-19 and Aotearoa New Zealand perspectives are underrepresented. My analysis shows that parents can interpret information differently when applying it to themselves and their children. Five of the seven fully vaccinated participants did not fully vaccinate their children. Bauman (2006) argues that uncertainty and emerging risks can lead to a belief in extremist ideologies, such as those disseminated by some anti-vaccination and anti-mandate groups online. De Vries et al.'s (2022) survey in the Netherlands found that vaccine-hesitant people are dismissive of mainstream media and source and share information via messaging platforms such as WhatsApp. The literature often argues that mis and disinformation spread online is a causal factor in vaccine hesitancy (Stahl, 2016). However, it fails to explain why some people are affected by it, and others aren't. The interview data for this study suggests that people already have doubts and questions generated by experiences and seek information supporting their viewpoints.

Tina and Pia's narratives were similar, as both had positive views toward vaccination and took a rational approach when discussing how they decided to vaccinate themselves. Their positivity and rationality waned when it came to discussing their vaccination decisions for their children. Frequent pauses and phrases such as "What if?" and "It could be" replaced Pia's previous confidence and declarations of trust in science. Her discourse changed as she began to recount some of the rumours she had heard about the vaccine, including stories of people dying after having the vaccine, children potentially becoming infertile or having their growth stunted. She worried; what if these stories that she quickly disregarded for herself were true, and the vaccine did harm her daughter somehow? As Pia's narrative illustrates, differences in how risks are perceived when applied to oneself as opposed to one's children are important to consider. However, this is an area of discourse that the current vaccination literature neglects.

When considering the vaccine for herself, Tina takes a rational approach—recounting how she would avoid narratives and opinions, preferring to analyse and interpret statistics and graphs. Although portraying herself as rational, she does refer, as Alex does, to disproven interpretations of statistics from the Pfizer papers circulating across social media and

YouTube from anti-vaccination groups. In addition to the Pfizer paper statistics, Tina and Alex both also convey a belief that there is a much higher rate of vaccine injuries than is being reported, and pharmaceutical companies and governments are covering them up. She quoted statistics from the NHS website (she thinks) that people's immunity is better from catching it than from being vaccinated, and there is no evidence of a higher mortality rate from COVID-19 than for unvaccinated people. These views are prevalent within anti-vaccine rhetoric but are not represented on the NHS website or in other independent research.

Although Tina maintains that she does not believe anything on social media, in addition to statistical misinformation, there are references to content from social media throughout the interview. A particularly triggering post that she refers to and comes back to often is a video of a child in a wheelchair at the 2022 Wellington anti-mandate protests whose mother is holding up a sign, "I want justice for my vaccine-damaged child." Tina described how the video showed them fit and healthy, running around before vaccination. Although unable to clarify the video's origin or authenticity, it resonated with Tina, becoming a focal point when considering her children's COVID-19 vaccination.

> …especially when you see someone sitting there with their son in a wheelchair that's just debilitated… Yeah. That's gonna sway me. Yeah, it's a child, and you know, that's gonna tug your heartstrings. (Tina, 11/01/2023,)

Alex's suspicion of the vaccine grew as the government's drive to vaccinate increased, supported by mainstream media and medical professionals. A conspiracy theme ran through many of her arguments. Depicting the COVID-19 response as being "co-ordinated by a billionaire with a vaccine fetish… who has control over the media discourse, contracts and everything". Alex's distrust of mainstream and social media and their perceived positive biases toward vaccination led to her avoiding both. Her social media experience is interesting as it is often considered a key source of vaccine misinformation (Kata, 2010; Betsch et al., 2010; Dube). Instead, she gravitated toward YouTube personality Dr. John Campbell. However, his views on the vaccine, COVID-19-related deaths and interpretation of data in the "Pfizer Papers" have been deemed nonfactual, controversial and misleading (Harford, 2023). Her agreement with Dr John Campbell that the Pfizer papers show that Pfizer is aware that the vaccine is ineffective and dangerous demonstrates her mistrust of corporate pharmaceutical companies. This mistrust is also apparent when she discusses how the entire

world has become a lab for Pfizer due to the unsubstantiated claim that health authorities must share the details of everyone who gets the vaccine with them.

Kate's husband and his family's views of the vaccine became more extreme as the pandemic progressed. She described how he would sit at his computer for hours looking at statistics from unreputable sources, claiming that many thousands of people had died since the introduction of the vaccine. Therefore, the vaccine must be killing them. She recounted how his parents started by saying they were worried about the vaccine and would see how it went, then "ended up staying the night in Wellington being sprinkled on by Trevor Mallard" at the anti-vaccine mandate protests. They went from "some doubts to fully swallowing the cool aid of government conspiracy." Throughout this time, they and his siblings were sharing misinformation they were receiving from their Evangelical Christian network in the US in their family WhatsApp chat, causing her husband further anxiety.

5.3.6 Navigating Vaccine Decisions: Trust, Mistrust, and Information Sources

Boddice (2016) considers the decline and resurgence of risks in his research, describing how people often use the same language to describe risk in different contexts. Kate tells how she read about vaccines when her eldest child was a baby, especially the link between the MMR and autism. Her findings from this reading led her to have confidence in the safety of vaccines. She recognises that vaccines have risks, but the risks from the diseases they prevent are more significant than those from a vaccine. Many of the arguments she heard against the COVID-19 vaccine she had heard and disregarded before when reading about other vaccines. Where people source vaccine information and the types of information they source are frequent themes in vaccine decision-making literature. The literature often concludes that accessible, easy-to-understand information from trusted and official sources can help to ease parents' doubts about vaccines (Yaqub et al., 2014; Lee & Sibley, 2020; Kata, 2010; Ruiz & Bell, 2022; Bell et al., 2020; Thaker, 2021; Dube et al., 2015; Blume, 2005; Atwell et al., 2019). However, during the COVID-19 pandemic, participants without medical or scientific backgrounds expressed reservations about information from health services, the government, and other official sources. Especially when considering the vaccination for their children, decision-making became less about information and more about hearing other people's stories and lived experiences of COVID-19.

During the interviews, all of the mothers disclosed that they came across different types of information across various mediums, such as mainstream media, the internet, social media, or

in conversation with friends, family and colleagues. Bella relayed somebody she knows telling her about having a nasty reaction to the COVID-19 vaccine and encountering other narratives of the potential side effects of the vaccine from various sources. However, Bella has a medical and scientific background, and although she knows that all vaccines have possible side effects, she navigates risk through statistics and expert evidence rather than narratives and opinions. The same was true for Sarah and Kate, who also have scientific backgrounds. They both had friends and colleagues who were involved in real-time research into COVID-19, and they all had or were able to gain knowledge about the approval process for new vaccines in Aotearoa New Zealand. Pia discussed being told negative information about the vaccine by a friend. Information that she only allowed to influence her thoughts about the vaccine when considering it for her daughter.

Of all the interview participants, only Catherine and Kate's husband sought information from a medical professional; both had underlying health conditions and were already wary of the vaccine. According to Catherine, her cardiologist was unable or unwilling to give a definitive answer as to the safety of the vaccine for her due to her heart condition. He then unwittingly raised her fears for her teenage sons when he said that their age range is most at risk from side effects. Kate's husband waited until his regular cardiologist appointment to discuss the vaccine with them. This conversation only served to increase his resistance to the vaccine after being left feeling undermined and foolish for raising his fears about the vaccine. This disregard for Kate's husband's genuine vaccine concerns ties in with Westenra's (2017) and Lee and Sibley's (2020) findings that a lack of trust and people's encounters with medical professionals can negatively influence their vaccine decisions. Tina and Rebecca describe how they would not speak to their doctor about vaccination as they have lost confidence in medical professionals. Tina, because of her experiences with the treatment for her rheumatoid arthritis and Rebecca, because she feels like they are not always acting in the patient's best interests.

Rebecca paid little attention to information circling about the vaccine when considering vaccinating herself; her husband was her primary source of information, and she was happy to go along with what he said. However, before taking her children to be vaccinated, Rebecca did seek out information mainly on the internet. She read medical papers that discussed the vaccine for children and was also interested in other parents' experiences, although she was confused about the reliability of the various sources and different information.

Some of the other participants shared Rebecca's confusion and mistrust of information. Alex refused to engage with most forms of media as she felt that they were pushing a pro-vaccine agenda. Tina emphasised that she did not believe anything she saw or read on social media despite citing information from social media throughout our interview. Although she also expressed mistrust in information on social media, Ruth was affected by articles and posts that gave the impression that the COVID-19 vaccine for children was controversial. The online controversy made her uncomfortable discussing her children's vaccination with others. She googled a couple of things, but there was so much information that she never felt comfortable with what she saw. Information was either "super pro, like the government website, or super anti from conspiracy theorists". In her opinion, facts were hard to come by, and narratives comprised much of the information.

5.3.7 How Personal COVID-19 Experiences Shaped Parental Vaccine Decisions

The personal experiences of COVID-19, whether direct or indirect, played a role in seven of the participant's vaccine decisions for their children. The experiences included participants' conversations with family and friends overseas and parents and children contracting and recovering from COVID-19. Bella and Sarah had friends and family living overseas during the height of the pandemic, which gave them a different perspective on COVID-19 from that of many people in Aotearoa New Zealand. Bella had worked and lived in New York for many years. She described how they had a terrible time with COVID-19, facing daily horrors that Aotearoa New Zealanders could not imagine. The vaccine proved to be a real turning point for her friends in the US. Sarah had friends and family in South Africa. She was privy to stories from friends and family of the terrible toll that COVID-19 was taking in their communities. Sarah was terrified of what would happen in Aotearoa New Zealand if COVID-19 became widespread and felt that vaccination was safe and the only way to prevent it.

Bella and Sarah feel that Aotearoa New Zealand's moderate experience of COVID-19 gave people the luxury of deciding whether or not to take it seriously and is a factor in people refusing to vaccinate. Within the literature, the lack of experience or "seeing" vaccine-preventable diseases is one reason for declining childhood vaccinations (Forster et al., 2016; McGregor & Goldman, 2021). People do not realise that the diseases are not around due to vaccination, and vaccination rates must remain high to maintain that. Instead, they think they need not risk getting their child vaccinated because the disease is not around, and most other people will still be vaccinated (Attwell et al., 2019).

Rebecca, Ruth (two under twelve), and Tina's children have all had one dose of the COVID-19 vaccine. Between their first and second doses, they or members of their immediate families caught COVID-19, and despite none of them having ill effects from the vaccine, none returned for their second dose. Regardless of Rebecca believing that her son would have suffered worse COVID-19 symptoms had he not had a dose of the vaccine, she decided not to take the children for their second dose after having the virus. This decision aligns with Shahrabani & Benzion's (2012) study, which found that when people contracted what they believed to be influenza, they were less likely to have the flu vaccine—becoming less concerned about the symptoms and less confident about the vaccine's benefits.

Ruth's and Tina's families also experienced COVID-19 in the six weeks following their children's first COVID-19 vaccine doses. Two of Ruth's children became infected and experienced mild symptoms. Despite living in the same household, Ruth and two other children did not become infected. Their exposure to COVID-19 reinforced her belief that it was similar to a bad cold or flu and her preference for natural immunity. Tina's children also experienced mild symptoms whilst she was bedridden for a few days. This experience made her question the vaccine's efficacy, and together with the risks she associated with it and the mildness of her children's infections, she felt that her children did not need a second dose.

5.3.8 Vaccine Mandates: A Catalyst for Compliance and Resistance Among Parents

Three of the participants were negatively affected by the Aotearoa New Zealand government's vaccine mandates, whilst three of the participants described being positively influenced by the mandates. The right to freedom of choice continues to be an argument amongst the anti-vaccination community, with many refusers stating it as their reason to resist. (Dube et al., 2015; Atwell, 2019). Although some refusers cite bodily autonomy as a reason not to vaccinate, outside of Atwell's (2019) research, compulsory vaccination as an influence on vaccine decision-making is overlooked in the literature. Instead, researchers focus on the demographics of those who oppose compulsory vaccination (Blume, 2005).

The Aotearoa New Zealand government implemented vaccine mandates and passes to urge the hesitant to be vaccinated. For Sarah, it was necessary to ensure high protection against COVID-19 in the population. Rebecca and Ruth found them to be the welcome push they needed to get vaccinated. For Alex and Catherine, they were challenging, inducing anger, anxiety and loneliness. Rebecca says she always intended to get the vaccine because she and her family have always had vaccines and never experienced any ill effects. However, she

delayed having the vaccine initially, only going to have it when it became clear that not having it would have a detrimental impact on her life. Ruth was unsure about getting the vaccine but chose to get it when she thought her job might be affected. Neither thinks negatively about the mandates, and both say they gave them the push they needed to go and do it.

The vaccine mandates affected Alex and Catherine negatively due to their refusal to vaccinate. Both found the mandate incredibly difficult and described feeling discriminated against due to the restrictions they faced and other people's treatment of them. Unlike Ruth and Rebecca, the mandates and the difficulties they encountered did not persuade them to be vaccinated. Instead, they became more steadfast in their refusal. They describe how the more the government applied pressure to vaccinate, the more they dug their heels in and refused to vaccinate. This pushback at pressure was the same for Catherine's husband. She disclosed how her husband hated Jacinda Ardern, and his refusal to vaccinate was in opposition to her and her government.

Kate's life became much more difficult when she had to take over responsibilities for the care of their children when her husband refused to be vaccinated. Despite her anger and frustration with her husband's decision not to vaccinate, Kate was not wholly supportive of the vaccine mandates. She believes there is a place for mandates in roles where you interact with vulnerable people. However, outside of this, no one should be forced to do anything to their bodies. Kate shares this sentiment with Alex and Catherine. Although Sarah expressed some doubts about the ethics of mandates, she believed they had their place during COVID-19 and would have positively influenced some people to vaccinate.

5.3.9 Balancing Fear and Responsibility: The Role of Omission Bias in Parental Vaccine Decisions

Omission bias is when the fear of doing something is greater than the fear of doing nothing, even though doing nothing is potentially riskier than doing something (Ritov & Baron, 1995). Ritov and Baron (1995) also describe how doing something implies more responsibility if there are negative consequences. Examples of the role of omission bias are present in four of the mothers' COVID-19 vaccine decisions and in Kate's husband's refusal to vaccinate. Although Kate was often angry with her husband, she regrets not being more empathetic to his genuine vaccine fears. His fear of the vaccine affecting his heart more than the fear of COVID-19 is an example of omission bias (Ritov & Baron, 1995). Catherine's doubts,

coupled with statistics from the World Health Organisation indicating that children rarely experience severe illness from COVID-19, led her to believe that receiving the vaccine had become riskier than contracting the virus. For Catherine, the risk of a bad outcome from vaccinating her children was a far worse prospect than if there was a bad outcome from the virus.

Tina bore the sole responsibility of deciding whether to vaccinate her children, and the fear of making the wrong decision played heavily on her mind. Already mistrusting of the medical profession and pharmaceutical companies, the pre-emptive guilt and fear of making the wrong decision for her children led to them not receiving their second dose. Pia also expresses the weight of the responsibility she feels should she later find that she made the wrong decision to get her daughter vaccinated. Despite stating that she thinks the "worst of everything," at no point does Pia mention fears of her daughter becoming seriously ill with COVID-19 or developing long-Covid. This lack of fear reflects Ritov and Baron's (1995) notion that the potential emotions of dealing with the negative consequences of doing something outweigh the negative consequences of doing nothing.

Ruth's experience was different. She initially preferred to do nothing (not have the vaccine) as she did not want to become sick for two weeks, as some of her colleagues had, after being entirely well before vaccinating. However, she could have been ill for two weeks if she caught COVID-19. After getting the vaccine without ill effects, she determined it was better for her children than contracting COVID-19 and becoming very sick. Ruth was the only participant who called out the fear of them getting seriously ill from COVID-19 as greater than her fear of them reacting to the vaccine. Here, we see an example of the opposite of Ritov & Baron's (1995) omission bias and the fear of negative consequences if she did not do something. The current literature does not focus on the fear of not acting, perhaps because it falls into the realm of vaccine conformity, which is under-researched.

5.4 Discussion: Social Dynamics in Parental Vaccine Decisions.

This chapter builds on Chapter 4, further revealing the complexity of parents' vaccine decisions and the redundant role of the three vaccine stances that dominate the current literature: vaccine-resistant, vaccine-hesitant and vaccine-accepting. My findings show that common factors often influence parents' vaccine decisions. However, the influence of these factors may change depending on people's social networks, preconceived beliefs and experiences and whether they are deciding to vaccinate themselves or their children.

Therefore, vaccine decisions always have a social aspect. The differing impacts of the same factors on people's vaccine decisions demonstrate that social interactions and experiences affect how people interpret factors in decision-making. The current literature often focuses on causal links between factors and vaccine statuses for people as individuals. It fails to distinguish between their various social roles, such as parents, and researchers frequently base their conclusions on survey data, particularly in the context of Aotearoa New Zealand. My research shows that common factors are important to parents when making vaccine decisions. However, how and why these are important varies from participant to participant. Failure to recognise the nuances that arise through the amalgamation of factors with other experiences and social interactions means that the current literature oversimplifies vaccine decision-making and places too much emphasis on certain factors.

Previous experiences and attitudes toward other vaccines influenced the participant's views on the COVID-19 vaccine for their children. Although the World Health Organisation recognises the role of personal experiences in vaccine decisions, the current literature focuses on how people are influenced by other people's experiences rather than their own (World Health Organisation. Regional Office for Europe, 2017; Forster et al., 2016). My analysis found that while all the mothers had had childhood vaccinations themselves, some had changed their attitudes over time. For example, Alex's daughter's asthma and eczema, which developed after her first MMR vaccine, led her to avoid vaccinating her son. Catherine's views on vaccination have also changed over time, although she appears to have always been wary. She delayed the MMR vaccine for her children, and despite her saying that she had all the "daft vaccines" for travel, her older sons have not had the HPV vaccine. It is not clear why her attitudes have changed. However, she, Alex, Tina, and Ruth preferred natural immunity above vaccination, with concerns that vaccines might damage their children's immune systems. These concerns are consistent with reasons often cited by parents who choose not to vaccinate their children (Yaqub et al., 2014).

While the literature often views the use of CAM as a cause of vaccine resistance, recent research suggests that people may turn to CAM due to a loss of trust in conventional medicine rather than CAM practitioners persuading them not to vaccinate (Blume, 2005; Ernst, 2002; Hornsey et al., 2020). The experiences of Alex and Tina support this idea. Alex uses CAM as an alternative to vaccination to boost immunity, following her daughter's vaccine experience. Alex does not discuss a wariness of all conventional medicine, only vaccination. Tina, however, discusses her scepticism of conventional medicine due to past

negative experiences. She uses CAM alongside vaccines as she trusts the protection vaccines provide but believes CAM will limit potential side effects from harmful ingredients. Her experience reflects how a breakdown in trust in conventional medicine can lead to a reliance on CAM, even among those who continue to vaccinate.

An example of how all of the participants experienced a common factor differently can be seen in their discussion of fear of the vaccine. Although fear was featured in Sarah and Bella's interviews when they considered their children having the vaccine, it was minimal and did not influence their decision to vaccinate their children. For others, it was enough to raise significant doubts and lead them not to vaccinate or only partially to vaccinate their children. A social bearing on the influence of fear on Sarah and Bella's decisions is their scientific backgrounds. Kate, who describes having no fears about the vaccine, also has a scientific background. They interact with other scientists and medical professionals at work and know people directly involved in COVID-19 research. Their experience and social interactions, when compared to other participants who were picking up snippets in the media and did not have scientific or medical training, meant that they were more likely to be able to quash any vaccine fears.

Information is considered one of the vaccine literature's most influential determinants in decision-making. Baxter (2020), Kata (2010) and Betsch et al. (2010) argue that encountering anti-vaccination information can play a pivotal role in decreasing parents' vaccine decisions. Studies and health authorities often conclude that disseminating positive vaccination information is the best way to increase vaccine uptake (Blume, 2005; Yaqub et al., 2014). My analysis demonstrates that this view of information is far too narrow, as is the conclusion that people who choose not to vaccinate or delay vaccination do so because they have encountered negative information about vaccines. In fact, all of the participants in my study encountered negative information about the COVID-19 vaccine, but how they interpreted this information was affected by their experience and social interactions and for whom they were making the decisions. Kate read about vaccination before vaccinating her eldest child and, despite encountering negative information, became convinced that the benefits outweigh the risks, and nothing has happened since to change this belief. Alex's experience of her previously healthy child becoming sick after her first childhood immunisations led her to interpret the information differently.

Alex's narrative revealed confirmation bias and the role of preconceived beliefs when searching for and interpreting vaccine information. Although it may have been present, the information other participants chose to believe was not as conspicuous as it was for Alex. Her refusal to vaccinate her son and anti-COVID-19 vaccine stance align with Meppelink et al.'s 2019 study into health literacy and confirmation bias. They found that people with a high health literacy and negative beliefs toward vaccination are most likely to be convinced by negative vaccine information and discard positive information. They were also more likely to seek information from unconventional sources (Meppelink et al., 2019). Her belief that her daughter developed asthma and eczema due to vaccination led Alex to seek out other forms of medicine and protection, and when the pandemic emerged, Alex sought information that supported her narrative and would be unlikely to be persuaded by information that did not align.

Misinformation played a role in Tina and Pia's decision not to vaccinate their children. However, it was different to the role it played in Alex's. They disregarded the same misinformation for themselves and are both fully vaccinated and have had boosters. The doubts they had aligned with the findings of Bell et al.'s (2020) study, the vaccine's novelty and the speed of its development. However, they were also concerned that no other generation of children had had the vaccine; Vaccinologists had not used mRNA technology before, and rumoured medium and long-term side effects could not be proven or disproven in real-time. Negative information and misinformation they encountered about the vaccine led them to make different vaccine decisions for their children. The unknowns of the virus and the vaccine meant some of the participants did not feel able to trust vaccine information from any source. Instead of relying on information, they trusted their experiences and those of their friends and family when deciding whether to vaccinate their child against COVID-19. This interpretation of and reaction to information differently when applied to children is an example of the social aspect of vaccine decision-making that is missing from the literature.

All of the participants trusted information that came from people in their social circles. This aligns with Brunson (2013), who found that people networks are the most influential factor in people's vaccine decision-making. Pia and Rebecca trusted their husbands to research the vaccine and followed their advice. However, Kate did not change her decision or views based on information from her husband and his family. In fact, each participant disregarded the opinions and beliefs of members of their social circles, which did not align with their beliefs. Catherine's husband chose not to vaccinate, as did many of her friends. However, her

extended family all chose to vaccinate and tried to persuade her to. This shows confirmation bias when deciding on what information to trust within our social circles. that despite being discussed as an influence by all of the participants, it may actually be that we choose who in our social circle to listen to, depending on whether their beliefs align with our own. Regarding vaccinating her daughter, Pia went against her husband's advice to vaccinate her as soon as possible due to pre-existing doubts. Doubts that were affirmed by claims from a couple of friends who did not vaccinate. Therefore, she was still influenced by her social circle, but who influenced her changed in her role as a mother.

The current literature discusses social networks and the role of social media and people networks on vaccine decisions (Baxter, 2020; Kata, 2010; Brunson, 2013). However, when making vaccine decisions, it does not consider the decision-maker as a social actor who changes from self to friend or parent to employee and how different roles affect their decision-making. My analysis shows that the circumstances in which they are making the decision and who they are deciding for influence their decision. During the pandemic, society expected people to do the right thing to protect each other and help their lives return to normal. Socially, there was an expectation that adults would be vaccinated against COVID-19. However, the expectation was not the same for children. I reason that the parents' friends and family did not want to be responsible for a bad outcome and, therefore, did not push for children's COVID-19 vaccinations. Ruth touched on this when she described how the vaccine for children felt controversial, and people were not really talking about it with each other.

Omission bias (Ritov & Baron, 1995) played a more significant role in Pia and Tina's vaccine decisions as parents than as partners, employees or friends. What if, as a parent, they had read the information about the vaccine and were aware of the risks, real or otherwise, and something happened to their children because of the vaccine? Parents feel solely responsible for their children's outcomes and fear being judged by others for making the wrong decision. Doing something often incurs more responsibility than doing nothing, even if the consequences of doing nothing are comparable or greater than the consequences of doing something (Ritov & Baron, 1995).

5.5 Conclusion

Through the thematic analysis of the participants' narratives, this chapter has revealed the complexity of parents' vaccine decision-making, demonstrating how individual choices

entwine with social influences and interpretations of important factors in the participants' vaccine decisions. The similar factors that feature across the varied spectrum of vaccination statuses in the participants' stories demonstrate that they do not make vaccine decisions in isolation. Instead, personal experiences, social interactions and social expectations shape their decisions. In using the three categories of vaccine-resistant, vaccine-hesitant, and vaccine-acceptor, the existing literature on vaccine decision-making oversimplifies a complex social process. By recognising this complexity and considering the social aspects of vaccine decision-making, we can be more tolerant of other's views and concerns. In the next chapter, I will discuss themes from the narratives from the perspective of the risk society. This discussion will reveal another level of complexity in parents' COVID-19 vaccine decisions.

Chapter 6 COVID-19 and Parents' COVID-19 Vaccine Decision-Making from a Risk Society Perspective.

6.1 Introduction

In this chapter, I consider parents' COVID-19 vaccination decisions within the broader context of Aotearoa New Zealand's pandemic response, using Ulrich Beck's (1992) Risk Society theory. I discuss how the risk society can help us understand how Aotearoa New Zealand's COVID-19 experience transitioned from a "team of 5 million" to an increasingly divided country. I then consider how Beck's (1992) concepts of reflexivity and individualisation help us to understand how mistrust of experts, the government and the media fermented as the COVID-19 pandemic progressed and influenced some participants' COVID-19 vaccination decisions for their children. I pay particular attention to the vast amount of contradictory information available in the mainstream media, on the internet, and on social media, and some participants' confusion over what information to trust. I contend that this expanse of information contributed to a growing mistrust in conventional experts like epidemiologists and vaccinologists while increasing reliance on self-proclaimed internet and social media experts and the experiences of friends and family. This finding challenges the simplistic view in much of the current literature that negative information drives vaccine hesitancy and that more positive vaccine information alone will raise vaccination rates. Although Beck's (1992) Risk Society theory is an effective framework for understanding the pandemic and parents' vaccine decision-making, I argue it has limitations. One factor Beck overlooks is the role of emotion in how people navigate risk. My research found a relationship between emotion and risk, a relationship that Lupton (2013) contends social theorists have overlooked. Emotions such as fear, worry and doubt were prominent in my interviews, especially when parents discussed vaccinating their children against COVID-19.

6.2 From a "Team of 5 Million" to a Divided Society: Aotearoa New Zealand's COVID-19 Experience Within a Risk Society

The COVID-19 pandemic illustrates the types of threat discussed by Ulrich Beck in Risk Society (1992), due to the invisibility and uncertainty of the threat it posed, together with its emergence due to human activity and its global nature. Covid-19 is an invisible threat. We are not able to establish who is infected or where traces of the virus may linger. The virus's various mutations and variants meant that it was challenging to develop a one-size-fits-all response, and advice would change frequently. The lack of effective treatments and vaccines

during the first year of the pandemic meant it was difficult to see an end to it, and the threat it posed was uncertain and incalculable (Lupton, 2022).

Although the origins of COVID-19 are still being investigated, the World Health Organisation (2021) is considering two possible pathways of emergence. Both pathways indicate that the pandemic is what Beck (1992) would consider a manufactured risk. The first possible pathway is zoonotic transmission, from people purchasing and consuming infected meat from a wet market. The second possible pathway is a laboratory incident where scientists were studying bat coronaviruses (CoVs) and were infected with the SARS-CoV-2 virus before unwittingly spreading it in the community (World Health Organisation, 2021). Irrespective of how COVID-19 originated, it was due to human activity through encroachment on habitats and interaction with wildlife. Once the virus emerged in late November 2019 in China, it spread rapidly due to intensive global travel and trade. It was designated a "Public Health Emergency of International Concern" by the World Health Organisation on January 30th, 2020, before being classed as a pandemic on March 11th, 2020.

Despite COVID-19 being a pandemic, countries have not participated in a global response. Instead, countries have reverted to nationalistic responses that varied from country to country, with many, like Aotearoa New Zealand, choosing to close their borders (UN Tourism, 2020). Ulrich Beck (1999) discusses the reduction of nationalism and the growth of what he terms cosmopolitanism in World Risk Society. He determines that people will operate between nationalism and cosmopolitanism depending on the context; during the COVID-19 pandemic, governments and people reverted to nationalism. In Aotearoa New Zealand, many people living abroad attempted to return home after our early elimination strategy left us largely unaffected compared to the rest of the world.

How people experience risk influences how they interpret and measure risk (Adam & Van Loon, 2012). Aotearoa New Zealand's early elimination strategy meant that most Aotearoa New Zealanders did not experience the pandemic the same way as people in many other countries. We did not experience the high mortality rates and health service overwhelm that some countries did. However, we did experience lockdowns and border closures and their associated risks, such as loneliness, mental health problems, family violence, and loss of employment (Officer et al., 2022). The implementation of lockdowns and border closures and their associated risks exemplify Beck's (1992) assertion that attempts to mitigate a threat can

generate new risks. For Aotearoa New Zealand, the development and rollout of the COVID-19 vaccine was the only way to move from an elimination strategy and the harm that lockdowns and border closures cause to a mitigation strategy (Blair et al., 2022).

Although the health impacts of COVID-19 were less severe in Aotearoa New Zealand than in other countries, some of my research participants had friends and family abroad whose narratives influenced how they perceived the risk of COVID-19. When considering vaccination, Taylor et al. (2018) found that seeing another person suffer from a vaccine-preventable disease is a strong motivator to vaccinate. Sarah and Bella had friends and family in South Africa and New York, respectively, and their perception of the risk of COVID-19 was influenced by stories they heard from them in addition to stories in the media. For them, the "horror stories" they heard meant the risk of COVID-19, should it be allowed to take hold, was extensive.

> …So, I really got a glimpse of what Delta could do… I was scared of that, so I wanted to protect myself and my family from that, and as well as protecting other people… (Sarah, 29/11/2024)

Sarah, Bella and their families are fully vaccinated, and they both talked about how the vaccine was the only way to keep communities safe from COVID-19. Catherine's understanding of the risk was influenced by stories she heard from her family in Scotland. She described how elderly relatives were infected and survived, which led her to believe the virus was not as severe as first thought. Catherine described how she became less and less afraid of the virus as the pandemic progressed after speaking to friends and family and became more afraid of the vaccine. The stories they heard from families and friends overseas appear to have influenced these participants' vaccine decisions.

Although Aotearoa New Zealand was widely united during the lockdowns, cracks formed with the vaccine rollout. By the time Aotearoa New Zealand began to roll out the vaccine, many countries were already well advanced in their vaccination programmes. Just as news of other countries' horrifying experiences of the virus had reached Aotearoa New Zealand shores, so had stories of vaccine harm. "so yeah, I think just a little bit of what I'd seen about the vaccine what you kind of like heard on the news and in the media about overseas and that sort of thing" (Rebecca, 22/12/2022, p.3) Catherine describes how, by the time the rollout started in Aotearoa New Zealand, her fear of the effects of COVID-19 had been replaced by a fear of the effects of the vaccine, particularly on the heart.

The scale and novelty of perceived risks in a risk society are such that governments cannot plan for and mitigate them effectively. Therefore, they become increasingly reliant on experts (Beck, 1992). Meanwhile, the public has become increasingly aware that many experts and institutions assigned to managing risks are the same ones who created them. The novel nature of risks in second modernity also means a lack of consensus among experts and institutions (Beck, 1992). Although Beck (1992) considers the growing reliance of governments on experts amidst increasing mistrust amongst the public, he does not discuss the role of trust in people's perceptions of risk. In a discussion about risk and trust, Lupton (2022) describes how Anthony Giddens emphasises trust as essential in late modernity due to reliance on global expert systems rather than local knowledge. According to Giddens (1994), lay people must show a degree of trust to acknowledge the existence of an invisible manufactured risk, as often we do not know or have access to the people raising its existence.

Governments are increasingly placed in situations where they are expected to ease concern and implement mitigation measures even when they do not fully understand the threat (Beck, 1992). This can lead to instances where threats are overstated, mitigation measures are unnecessary or understated, and a lack of effective mitigation leads to tragedy. Both instances contribute to a growing mistrust in experts and governments' abilities to successfully predict and mitigate risk. With the rise of social media and 24-hour media on the internet, debates around risk are often carried out in public forums, leading the public to become confused about whom to trust and believe. As governments become more reliant on experts, the public becomes more sceptical of them. The evolving nature of the COVID-19 virus and changing advice about how it spreads, symptoms and how best to protect yourself meant people began to lose trust in traditional information sources (Lupton, 2022).

Antonilli (2022) describes how, in reflexive modernity, what was once considered reliable knowledge fragments into a collection of loosely related opinions. Established truths become debatable hypotheses, and firm beliefs evolve into subjective preferences. Science and technology no longer assert dominance over people's perception of risk. Instead, the risk blends emotions, interests, and values (Antonelli, 2022). Examples of this can be seen in Pia and Tina’s vaccine decisions for their children. Although fully vaccinated themselves, their trust in the government and science did not hold out when considering the vaccine for their children. Pia describes how she thought Jacinda Ardern would sometimes “ruffle up” answers about the vaccine, giving the impression that she was unsure, which would sow doubt about its safety for her daughter. Tina believes that the government handled COVID-19

“brilliantly”. However, she became mistrustful of the information she was hearing about the vaccine, especially for her children. She would avoid government websites and seek information from other sources, choosing to use the UK’s National Health Service website rather than Aotearoa New Zealand’s Ministry of Health website.

The refusal of Alex and Catherine to vaccinate and the various vaccination decisions of Ruth, Rebecca, Tina and Pia compared to their children reflects a lack of trust in the companies responsible for developing the vaccine. This mistrust then extended to those responsible for rolling the vaccine out, i.e. the Aotearoa New Zealand government and the Ministry of Health. Jacinda Ardern had been a trusted source of information throughout the pandemic's early days. There was already a high public trust in her going into the pandemic due to her management of previous crises (Beattie & Priestly, 2021). She and Director-General of Health Ashley Bloomfield garnered public trust because of their open and honest communication, distinctive and motivational language, and empathy (Beattie & Priestly, 2021). However, this trust began to wane following the introduction of the mandates and questions of government overreach (Patterson, 2021).

Alaszewski (2023) argues that perceptions of the source of the message shape trust in a message. Most vaccinated participants talked about having trust in the government or science. In her interview, Sarah describes how, coming from Africa, she knows “what it is like not to trust a government”, and she trusted the Aotearoa New Zealand government. Her trust in the government and the vaccine meant she was eager to follow all public health messages and measures. She described how Jacinda Ardern was “very trustworthy” and communicated well constantly, showing empathy and transparency. Kate also described how she felt the government was “really good”, and the communication from Ashley Bloomfield was always “very clear”. She felt like she knew what was happening, what was expected of her and what the next step in the process was. She reiterated how she “trusts those people”. Sarah, Kate, Benita, Ruth, and Pia talked about their trust in science and medicine, while Rebecca described how she trusted that the people developing and recommending the measures to be taken were “making the right decisions”.

Conversely, the unvaccinated participants expressed mistrust of the government. Alex strongly mistrusted the government. “I wouldn’t trust this government as far as I can throw it.” She described how she felt we were lied to about the vaccine's efficacy and was critical of the Aotearoa New Zealand government's lockdown policy. She says how she felt “isolated

and abused" by the government and "can't stand the sight of Ardern". Rather than find their communication style trustworthy, empathetic, and transparent, she found it to be "Pavlovian", comparing it to the same techniques used by Lenin and Stalin to instigate groupthink. Catherine and Alex believe Jacinda Ardern politicised COVID-19 very quickly and felt that the vaccine mandates were implemented to feed her ego.

Although Catherine believes Jacinda Ardern handled COVID-19 "really well", when considering the vaccination, she believes Ardern wanted to be the best and have the country with the highest vaccination rates.

> It was that Jacinda Ardern wanted us, and this is me got off on a tangent. But it was that she wanted to be the best, you know. She'd handled Covid so well that she wanted to then be the first country with the highest vaccination rates… (Catherine, 22/12/2022)

Alex echoed this sentiment. Alaszewski (2023) describes how decisions about what message and what messengers to trust and accept are not made in isolation. People build up trust or distrust in sources of risk information based on experience and the perceived effectiveness of recommendations to mitigate the risk. People are less likely to trust those they believe have a vested interest in a technology or proposed means to mitigate a risk (Alaszewski, 2023). For Catherine and Alex, it was not that Jacinda Ardern had a vested interest in profits from the vaccine but that she stood to gain reputationally from a high percentage of the population being vaccinated.

> I also believe that for Ardern, it was reputational. She was known as the Prime Minister that kept Covid out, and the whole world was singing her praises, and I think my impression was that that was important for her to be the number one vaccinated… (Alex, 22/11/2022, p3)

An erosion of trust can be seen in the public's response to Aotearoa New Zealand's COVID-19 measures. During the first eighteen months of the pandemic, Jacinda Ardern stood out from many other global leaders with her communication around the pandemic and her willingness to act early and keep the virus out. This going against the trend could be considered local expertise, and people were willing to trust her, given other countries' experiences and failures. The information she delivered about the vaccine came from global expert systems. Alex and Kate's husband considered Jacinda Ardern's implementation of

vaccine mandates and passes as her placing too much trust in international pharmaceutical companies (global experts) at the expense of Aotearoa New Zealand citizens.

> So, it became a combination of, at first, it was a health concern, and then I just dug my heels in, and I was. I'm not being pushed around by this ridiculousness that, you know this, this dominant narrative that they bought in their Pfizer contracts (Alex, 22/11/2022).

Adverse reactions can be understood as an example of individualisation and reflexivity when considering the government's vaccine mandates from a risk society perspective (Beck, 1992). In the context of COVID-19, it can be argued that the government's decision to implement mandates was reflexive to navigate multiple risks, including premature deaths from COVID-19, hospitals being overwhelmed, and the effects of more pro-longed lockdowns on people's mental health and the economy. However, in a risk society, people are conditioned to make decisions based on their acquired knowledge and beliefs (Lupton, 2023). The mandates withdrew people's ability to decide based on their interpretation of available information, generating mistrust in the government and experts and their COVID-19 policies (Bardosh, 2022). These reactions to the mandates reflect a broader trend towards individualisation and reflexivity, wherein people seek to assert control over their bodies and decisions in the face of uncertain and evolving risks.

When considering risk in a risk society, Beck (1992) asserted that the risks we now face are equitable and ignorant of wealth and stature. The COVID-19 pandemic demonstrates that this is not the case; both globally and locally, lower-income people and minorities were disproportionately negatively affected (Vasquez Reyes, 2020). The efforts to develop a vaccine against the virus were multinational. However, the distribution and rollout favoured higher-income over lower-income countries (Pilkington et al., 2022). This was also seen in the urgent quest for respirators and personal protective equipment in the early days of the pandemic (WHO, 2021). Locally in Aotearoa New Zealand, there was inequity in vaccine decision-making. The COVID-19 vaccines became mandatory for about 40% of the workforce, and private companies could implement their own vaccine policies. These mandates and vaccine policies meant those who chose not to vaccinate could have their employment terminated or be moved into different roles.

People who did not work in public-facing roles or could work from home and chose not to vaccinate were in a much stronger position than those who did work in public-facing roles

and could not work from home. People in certain occupations and those with lower incomes were forced into being vaccinated, whilst those in other occupations or who were financially comfortable could refuse to be vaccinated. Catherine, Alex and Kate were unduly affected by the mandates. Catherine lost her employment after refusing to vaccinate, Alex described coming close to losing her job, and Kate's life was severely disrupted after her husband refused to vaccinate. The mandates were reinforced with the introduction of vaccine passes, meaning that activities outside the home for those who did not vaccinate were heavily restricted. The introduction of the passes meant that many people who chose not to vaccinate became visible to their friends and colleagues, and some were ostracised and vilified by those around them and the public at large.

Research into the effects of the mandates on people who chose not to vaccinate against COVID-19 during the mandates is limited. My research shows that the risk of loneliness, mental health problems and family break up increased for the participants who chose not to vaccinate. Kate describes how her husband's anti-vaccination views, refusal to vaccinate, and increased stress made her doubt their relationship,

> I felt very frightened at the time that my husband would become someone who I didn't recognise, and so it was much less about the vaccination. It was more about. Oh, my God! Will we have to get a divorce (Kate, 6/12/2022).

Alex described how being labelled as anti-vaxxers by parents in the school community made her feel isolated and discriminated against.

> Our children weren't allowed to go to birthday parties… So, this was all in November, and everything just turned into this horrible bundle of horribleness, and I couldn't meet with friends. There was discrimination. I couldn't go out for a coffee. I couldn't. I couldn't do anything. I couldn't take my kids to the museum over summer. We couldn't do anything apart from go to the beach and hang out at home and do our own thing... Looking at that amount of social division that was created. I mean, it was just so hurtful (Alex, 22/11/2022).

Catherine wanted to move back to her native Scotland because of the changes and divisions she encountered in society and the impact the mandates and use of vaccine passes had on her family.

> I don't want to live in this country because it's become something that it never was when I arrived. There was so much hate and so much like ehm, there was segregation, I guess, like there was so many, and we probably felt it because we had months where we couldn't go to the shops, and we couldn't go to we couldn't go anywhere (Catherine, 22/12/2021).

Catherine and Alex described feeling isolated and anxious when the mandates were in place. Catherine was dismissed from a role where she had been subject to bullying due to her vaccination status. Following this, she worked for her husband, who owned his own business, for the duration of the mandates. Therefore, unlike many, she had a safety net and was in a position where she did not have to be vaccinated to keep her job. Alex's husband left a job and started a new role because the owner said he had to be vaccinated, and Alex was only a few weeks from losing her job. She found this very stressful, and like Catherine, she thought about leaving Aotearoa New Zealand permanently.

The effects of the mandates, although very stressful and hurtful, were not all detrimental. Alex describes forming new friendships and networks with people with similar views. She also had the support of her extended family, who chose not to vaccinate. Catherine disclosed that many people in her friend group were not vaccinated, with some going as far as acquiring fake vaccine passes. The introduction of the mandates and vaccine passes was positive for some research participants. For Rebecca and Ruth, who were not actively refusing to vaccinate but wanted to wait as they felt they were the "testing" and "guinea pigs", the introduction of the vaccine mandates and passes was the "push" they needed to go and be vaccinated. Ruth was concerned about the effects of not being vaccinated on her employment. Rebecca was worried about not being able to socialise with friends, and she was going away to get married and wanted to be able to travel and have a large reception when they got back.

6.3 From Lockdowns to Vaccines: The Evolving Information Landscape and its Role in Risk Perception in Aotearoa New Zealand

Although they are all fully vaccinated, Rebecca, Ruth, Tina, and Pia discussed their confusion about vaccine information, particularly for their children. They conveyed how when they were trying to find information about the vaccine for their children, so much was circulating, and much of it was conflicting. They found official information to be too pro-vaccine and other information to be too anti-vaccine. They felt it was difficult to judge what

information to trust as everyone seemed to be pushing an agenda. That there was a lack of trust and belief that the vaccine was as safe for children as stated in the official information demonstrates the growing scepticism around experts and science that Beck (1992) discusses. This scepticism leads the participants to practice reflexivity and demonstrates how Beck's concept of individualisation is occurring in parents' vaccine decision-making.

Concerned about the perceived risk of the vaccine for their children fuelled by the rapid development and rollout of the vaccine, media reports of rare side effects, anti-vaccination sentiment on social media and growing backlash against the vaccine mandates, some of the participants questioned the validity of vaccine information they encountered. In a risk society, people feel increasingly responsible for making decisions that negatively impact their health and well-being and that of their families. Judgement and exclusion are examples of broader society holding people responsible for individual decisions. Therefore, they seek to find and validate as much information as possible to enable them and their families to avoid the negative consequences of a perceived risk.

Rebecca, Ruth, Tina, and Pia expressed feelings I consider to be anticipated guilt. The term anticipated guilt stems from Ritov and Baron's (1995) concept of omission bias and their description of feeling anticipated regret when choosing whether to act (see discussion of omission bias in chapter 5.3.9). However, I have made the distinction between the anticipated emotions of guilt and regret because, in this instance, the parents feel like they will have injured their child by making a choice to vaccinate when the information describing potential harm was available. Whereas regret refers to when you would not have made the decision had you known the potential consequences of your actions or inaction. What if they vaccinated their child and something happened? What if the information provided by those against the vaccine is correct?

> But when it comes to my daughter, I am, I feel like, what if that 1% chance they are correct. You know I don't wanna do something wrong with my child (Pia, 16/12/2022).

The anticipated guilt exemplifies Beck's (1992, 1999) individualisation and reflexivity. Despite medical experts' advice that the vaccine was safe for children, they would feel responsible for the decision if anything went wrong. It demonstrates how, in a risk society, people can be unwilling to accept advice from one source, irrespective of their expertise, needing to seek more information and opinions before deciding (Lupton, 2023).

All forms of media are instrumental in disseminating and amplifying risk in the risk society. When considering risk, distinguishing between it being real or not is unimportant. What matters is the emergence of risk; risk is the state of a hazard becoming real (Adam & van Loon, 2012). Therefore, the media significantly affects our risk evaluation and tendency to amplify certain risks over others. We often only become aware of risks when we encounter them on the news or our news feeds (Duman, 2023). Many parents are more concerned about amplified risks, such as vaccine harm than more common dangers, such as car accidents, even though the likelihood of vaccine harm occurring is much lower (Duman, 2023). Risk cannot exist if people are not aware of it. When considering vaccination, how media reports vaccines and vaccine harm can help cultivate people's perception of their risk.

Gasteiger et al. (2022) conducted a mixed methods study into the characteristics associated with people's willingness to have the COVID-19 vaccine and their perceptions in Aotearoa New Zealand. They found that 19% of participants believed that the Aotearoa New Zealand mainstream media portrayed the vaccine in a sensationalist, unbalanced way, whether reporting positive or negative stories. Positive vaccine reporting ignored evidence of side effects, whilst adverse reporting emphasised side effects, quality, safety and expiry dates of the vaccines. The unbalanced nature of the reporting led to doubt in participants' minds, as it did for many of the participants in my research (Gasteiger et al., 2022).

Unable to ascertain what information they could trust, Rebecca and Ruth chose to reflect on their and their friends and family's experiences when considering vaccinating their children. This reflects Alaszewski's (2023) argument that when determining which information to trust, people often find it easier to trust information from friends and family as they have an established relationship. When the information comes from the media or official sources, people must evaluate the source and consider whether it fits with their personal experience or observations (Alaszewski, 2023). Ultimately, the main factor for Rebecca and Ruth in deciding to give their children the first dose was that neither they nor anybody they knew experienced anything other than mild side effects from the vaccine. Their experience of having COVID-19 and a belief that their children will now be naturally protected against the virus prevented them from taking their children for their second doses. Tina relied on the internet for information about the vaccine for children before taking hers for their first dose. However, despite reading medical journals and trusted statistics, the content she encountered on social media, which showed the COVID-19 vaccine's harm, eventually influenced her decision not to take them for their second dose.

Neither Catherine nor Alex trusted the official information about the vaccine emanating from traditional media sources and health agencies. Catherine did not discuss her sources of information other than saying that she did not "watch the news or anything like that" and discussed the vaccine with her cardiologist. Alex, however, relayed how she stopped watching and accessing the news from sources she had previously trusted, such as Radio Aotearoa New Zealand and the BBC.

> But you know… they're pretty much PR people. Mouthpieces for the government, you know, RNZ, Stuff, all of them, really. They're not to be trusted. Tell me when hurricanes come in, you know, something like that. I'll believe it, but the rest is like. And what agenda is on this, you know, for this week? I mean, I really just think they're awful. I used to like the BBC. But then, but then, um! (Alex, 22/11/2022)

She withdrew from social media and sought information from alternative sources. In her interview, she referenced the Great Barrington Declaration (an open letter opposed to lockdowns) and Dr John Campbell, a YouTube personality. Taylor (2018) describes how using "experts" to deliver an argument about a perceived risk can be highly persuasive, particularly when pitched against another expert. Alex described Dr Campbell as an expert and "an old man who used to train nurses… the most inoffensive, lovely person". She was swayed by his arguments that the vaccine was responsible for inflated death figures and his claims of discrepancies in Pfizer trial figures despite him not being a statistician, medical doctor, epidemiologist or vaccinologist. Perhaps because his friendly and non-authoritative delivery made him appear more trustworthy and less confrontational than the experts advocating for the vaccine.

In a risk society, the invisible and inexplicable nature of manufactured risks means that many scientists, social theorists, journalists, business leaders and politicians are in a similar position of ignorance concerning risk. However, some people have much better access to information than others (Adam & van Loon, 2012). Sarah, Bella, and Kate, who all vaccinated themselves and their children, had access to information from their colleagues in the scientific community, which the other participants did not have. Doubts about experts can arise when people with access to information are found to have diverted and displaced risks to other groups while protecting themselves (Adam & van Loon, 2012). Alex believed that Pfizer and world governments were aware of severe problems and side effects from the vaccine that they were not sharing with the general population. However, those who propagate anti-vaccination

rhetoric often do so with the premise that they know something that the rest of the population does not know. An example of this was Alex's belief that she knew things about COVID-19 and vaccines that others did not know because Jacinda Ardern and the Aotearoa New Zealand media had placed the population 'under a spell'. A spell that she 'could see through'.

Although Beck (1992) considers the role of the media in propagating risk, it is worth noting that he is referring to traditional mainstream media, such as newspapers and television news. As he was writing when the internet was in its infancy and social media was non-existent in societies, he could not have known the impact these new global mediums would have on defining and raising awareness of risk. Before the rise of the internet and social media, people were made aware of risks that mainstream media thought were important or that governments and other agencies wanted us to be aware of. The rise of the internet and social media means that people are no longer dependent on traditional media to raise their awareness of risk. Instead, people can share their experiences and those of others they connect with in person or online with people worldwide.

Therefore, people are now both consumers and producers of news. They seek information from orthodox news websites, alternative news websites, and social media, and they also share their opinions, experiences, or images for others to access (Lupton, 2023). In my research interviews, all participants described social media platforms such as Facebook as the most untrustworthy source for vaccine information (see Chapter 5, Figure 2 and Chapter 5.3.5). However, most described searching for vaccine information on the internet or YouTube, seeking a different perspective to that broadcast across mainstream media. Evident within the participants' responses was a need to seek information from multiple sources of different types rather than rely on mainstream media. Although this could be considered a representation of Beck's (1992) individualisation and the practice of reflexivity, a growing body of research, particularly around digital media and health risks, has found that people have become less able to recognise and evaluate risk as scepticism of mainstream media has increased and the internet and social media have evolved (Gesser-Edelsburg & Shir-Raz, 2016; Schneider-Kamp & Takhar, 2023; Laor & Lissitsa, 2022). However, more research is needed into the role of digital media on people's ability to recognise and evaluate risk.

Of all the participants, only Tina described something she encountered on social media as influencing her decision-making to vaccinate her children. Although Alex mentioned Dr Campbell and his YouTube podcasts, her past vaccine experience and rejection of other

vaccines indicate that she already had significant doubts about the COVID-19 vaccine before it was rolled out. Therefore, it had little influence on her decision not to vaccinate herself or her children. Lupton (2016) describes how online algorithms can offer possibilities to protect people against risk but expose them to uncertainties and potential harm. Tina explains how she "had to turn off social media in the end… my algorithms are now making me one of these people" when discussing the COVID-19 vaccine content she had encountered on Facebook. Perhaps, then, one of the most profound influences the internet has on risk is its ability to reinforce what a person is already thinking.

Alatawi et al. (2021) assert that algorithms and echo chambers promoted conspiracy theories in the first two years of the pandemic, which were linked with vaccine hesitancy, less compliance with mask mandates, and social distancing rules. They describe an echo chamber as a

> network of users in which users only interact with opinions that support their pre-existing beliefs and opinions, and they exclude and discredit other viewpoints (Alatawi et al., 2021).

Irrespective of your belief about risk, the internet has content that will support that view, and its algorithms can ensure that the content you see predominantly comes from that perspective. Perhaps rather than increase our ability to practice reflexivity, the internet suppresses it. The internet ensures no single narrative exists, even for the most mundane events.

6.4 The Role of Emotions in Participants' COVID-19 Vaccine Decision for Their Children in Aotearoa New Zealand.

Beck (1992) neglects the role of emotion and feelings in how we create and perceive risks. Instead, he emphasises people's ability to critique and evaluate information rationally to navigate risk (1992). However, emotions factored greatly in my research interviews, with fear, worry and doubt being the most featured, especially when discussing the COVID-19 vaccine for children. These doubts often arose because the participants could not draw on experience as no other generation of children has received the COVID-19 vaccine. Catherine describes how it "just didn't feel right," a sentiment echoed by Kate's husband, who felt that "they had made a mistake, something bad was going to happen." Bella felt differently about having the COVID-19 vaccine and taking her children for it than other vaccines, "No, I didn't feel the same. I would say I felt a little nervous, particularly with the kids".

Pia's feeling that it is her responsibility should anything go wrong for her daughter when she has the vaccine is an example of individualisation. She believed that she was deciding as an informed individual and that there would be no external recompense if it turned out to be the wrong decision (Lupton, 2023). Her hesitation to vaccinate her daughter reflects the role of emotional and social influences on vaccine decisions, particularly those of children. The weight of the responsibility that she would feel should she later find that she has made the wrong decision in getting her daughter vaccinated aligns with the concept of individualisation and omission bias (Beck, 1992; Ritov & Baron, 1995). Pia has made her vaccination decisions based on the information she has. She is responsible for deciding what information is accurate and what is false. Taking her daughter for the vaccine would be an active decision; she must do something, whereas not taking her requires no action and appears to incur less responsibility. In a time when corporations and governments are increasingly unwilling to accept responsibility for unfavourable outcomes, there will be nobody else to blame but herself.

Despite its spread through human actions, the virus itself could be considered natural, and catching it considered bad luck or inevitable. However, the vaccine was manufactured, and there had to be an agreement before receiving it. Therefore, a parent would acknowledge responsibility, especially as during the vaccine rollout, the expectation to vaccinate your child was not there as it was for adults. Ruth describes how she felt uncomfortable talking about her children's vaccinations, depicting how it felt "controversial" to vaccinate your child.

> But I felt like it was very different to talk about the kids getting done… I just think that there was quite a big uproar, and again just stuff you see in the media and social media. Probably, you know, lots of like little articles… or you'd see comments about people saying, you know, stop forcing the kids to have it, and all of this sort of thing (Ruth, 22/12/2022).

From a risk society perspective, the decision-making responsibilities imposed on Tina and Pia led them to encounter an intense flow of information, which, despite their lack of expertise, they had to critique and process (Duman, 2023). Their COVID-19 vaccine decisions for their children were complex and emotional. They placed much more emphasis on information they encountered when deciding for their children than for themselves. Information they considered misinformation and statistical risks that were minute for themselves held significant weight when deciding whether to vaccinate their children.

Most participants were concerned about the potential of the vaccine's long and short-term side effects on their children. Even after they were fully vaccinated and their children had one dose without issue, they found it hard to overcome their doubts. Once those parents who had significant fear and doubts about the vaccine experienced and recovered from COVID-19, their fear and doubts about the vaccine overcame those of the virus. Despite some saying their experience of COVID-19 was relatively severe compared to other illnesses and they had experienced no side effects from the vaccine. In this instance, the parents' emotions of fear, worry and doubt determined that the vaccine was a risk. Lupton (2013) refers to the process of emotion creating risks and risks creating emotions in what she terms the emotion-risk assemblage. How we encounter and interact with places, people, ideas, and objects shapes our perception of risk and vice-versa (Lupton, 2013).

An emotional or affective reaction can be positive or negative, defining how we perceive something as a risk. Such reactions are subconsciously formed by experience, social norms and networks and happen almost instantly (Tomljenovic et al., 2020; Lupton, 2013). Although people's perceptions of risk could change if the emotions experienced around them are intensely negative, they rarely change, even when faced with strong evidence contrary to their beliefs (Tomljenovic et al., 2020). Therefore, when considering the role of emotion in participants' vaccine decision-making, the prevailing notion in much of the current literature that providing information to those who refuse, or delay vaccinations will change their minds is ineffective. Tina took her children for their first dose of the vaccine with no issue. However, this vaccine experience, along with all the information and statistics she accessed on the internet deeming the vaccine safe, could not outweigh the emotion she felt when she saw the child who was proclaimed to have been confined to a wheelchair following their COVID-19 vaccine.

> And then I saw someone protesting down in Wellington that had a child in a wheelchair that had been perfectly normal. And then they were in a wheelchair after the vaccination, and I was just like, they've had one, and they can get their immunity from catching it, and that's why they've only had one… It's a massive emotional drawcard. It's seeing someone else's child, and they would've only had their child's best interests at heart, and then seeing the outcome. I mean, it was heart-wrenching when I saw that video (Tina, 11/01/2023).

Although Beck is critical of the view that experts providing information is enough to influence people's perception of risk, he does argue that people will practice reflexivity and consistently critically evaluate information to reach rational conclusions about risk. Tina's reliance on emotion when deciding to vaccinate her children demonstrates the limitations of Beck's concept of reflexivity and the need to consider emotion when researching how we navigate risk.

6.5 Conclusion

In conclusion, the COVID-19 pandemic highlighted the complexities and inequities inherent in a risk society. Although most people were affected, how different people globally and locally were affected varied depending on several socio-demographic factors. The inequity in the COVID-19 experience contradicted Beck's (1992) argument that risk would be equitable, with everybody experiencing risk and catastrophes equally. Existing social, economic, and political structures profoundly influenced responses to the pandemic, and many countries, including Aotearoa New Zealand, reverted to nationalism. This reversion aligns with Beck's (1999) concept of cosmopolitanism, where nations act globally before reverting to nationalism when needed for protection against risk. The evolving nature of COVID-19 and changing health advice emphasised the need for transparent, empathetic communication and the challenges of maintaining public trust in the face of evolving global threats. Navigating information online during the COVID-19 vaccine rollout highlighted the challenges of practising reflexivity and evaluating information in a risk society. The internet and social media have redefined how risks are communicated and perceived, presenting opportunities and challenges. The emotional component of risk was neglected by Beck (1992) in his concept of the risk society. However, my research shows that emotional perception of risk plays a crucial role in decision-making, often outweighing rational evaluations of information.

Chapter 7 Conclusion

My thesis set out to explore how and why parents reached their COVID-19 vaccination decisions for their children. I became interested in parents' vaccine decision-making due to the significant disparity in vaccination rates during Aotearoa New Zealand's COVID-19 vaccine rollout from 2021 to 2022. While more than 90% of individuals over the age of twelve were vaccinated, fewer than 30% of children under twelve received the vaccine (Te Whatu Ora, 2023). This disparity prompted me to question what factors were influencing parents' decisions. Why had so many chosen not to vaccinate their children against COVID-19? Were parents influenced by different factors when considering vaccinating their children than themselves, and if so, what were these factors? I wanted to know how parents' life experiences and social relationships influence their COVID-19 vaccine decisions for their children and how their COVID-19 vaccination decisions for their children were influenced in a risk society.

Personally, this research has been a journey, not just of discovery about parents' COVID-19 vaccine decisions but also of personal growth for me as a researcher. Through practising the components of reflexive modernisation in Ulrich Becks' (1992) Risk Society, I have learned to approach vaccine hesitancy with greater empathy, recognising that emotions, particularly fear, whether of the vaccine or the virus, are a real and powerful influence in decision-making. This shift in my own emotions and understanding mirrors the broader challenge facing researchers in a risk society: how to make sense of emotions that complicate rational decision-making. I believe that by acknowledging the centrality of emotion, we can move closer to understanding how people navigate the uncertainties of the modern world. It is my hope that this research contributes to a deeper understanding of the complexities of vaccine decision-making and helps inform more empathetic and effective public health strategies in the future.

Reflecting on my journey throughout this research, I realised how much my perspective on COVID-19 vaccine decisions has evolved. When I embarked on my research, I struggled to comprehend why anyone would refuse a vaccine that, to me, represented a way out of the pandemic and a way to protect not only ourselves but the most vulnerable people within our communities. I experienced moments of frustration and even anger at what I perceived as the irrationality of vaccine refusal. However, as I delved deeper into the narratives of the parents I interviewed, through practising reflexivity, my opinions began to change. Listening to their

stories, it became increasingly clear to me that their fears, although different from mine, were real. Their decisions were often driven by deeply held beliefs and complex emotional responses. My stance moved from one of judgment to one of empathy, understanding that fear of either the COVID-19 virus or vaccine can greatly influence vaccine decisions.

Before conducting this research, I might not have been willing to listen fully to their opinions and beliefs. I was confident in my own convictions and might have dismissed or argued against differing viewpoints without listening. Having to be aware of my own emotions and beliefs and trying not to let them influence the interviews and analysis forced me to listen to my participants. Through listening, I became more aware of the participant's journeys and the confusion, anxiety and sometimes anger that they had to navigate when deciding to vaccinate their children. This change in my thinking is representative of a shift that can be made by researchers in future vaccination attitudes studies: recognising that emotion, like facts, plays a critical role in how people navigate uncertainty and risk.

My methodological approach of narrative interviews and analysis differentiates my study from existing vaccine decision-making research. By allowing participants to share their stories in their own words, this approach uncovered the social and emotional layers of vaccine decision-making often obscured in quantitative research. The semi-structured format enabled a deep exploration of participants' lived experiences, revealing how shared factors, such as information sources or social relationships, were interpreted differently based on individual contexts. My narrative approach allowed me to facilitate a reflexive engagement with the research process. By actively listening to participants' stories and setting aside my biases, I was able to approach their decisions with empathy and understanding. This shift mirrors a broader methodological challenge: how to balance objectivity with the recognition of emotion and subjectivity in qualitative research. While narrative interviews can be time-intensive and may not capture a broad range of experiences, their depth provides invaluable insights into the complexity of vaccine attitudes, offering a counterbalance to the often reductive nature of survey-based studies.

A significant contribution of my research is its challenge to traditional categories of vaccine attitudes—acceptor, hesitator, and resistor. These categories fail to capture the changeable and context-dependent nature of parents' decisions about vaccinating their children. While some participants fit neatly into these categories, many did not. For example, several parents who vaccinated themselves were hesitant or refused to vaccinate their children, indicating a

clear divergence in how risk was perceived for different family members. These decisions were influenced by a range of factors, from past experiences with vaccines to the influence of family and social networks. My research, therefore, contributes to the literature by highlighting the importance of context and personal narrative in vaccine decision-making, showing that individuals' stances can shift based on their evolving understanding of risk and their emotional responses to it.

Defining people's vaccine attitudes in such narrow categories contributes to polarisation and discord in society, which was evident during the vaccine rollout and mandates in Aotearoa New Zealand. By using a narrative approach, I was able to reveal the different interpretations the participants had of the same information or experiences. My analysis showed that many of the same factors featured in the participant's decision-making but in different ways. Through my approach, I was able to move beyond my assumptions and biases, engaging with the participants' fears and concerns as they navigated COVID-19 and the vaccine rollout.

Moreover, my findings underscore the significant role of emotions in shaping decisions about risk in a modern context. In a risk society, as described by Ulrich Beck, individuals are tasked with navigating a world of manufactured risks—risks that are invisible and often beyond our control, such as a global pandemic. In such a world, trust in expert knowledge systems is critical. Yet, as my research shows, emotions such as fear, anxiety, and doubt often disrupt this trust. For many parents, concerns about the novelty of the COVID-19 vaccine, the speed of its development, and potential side effects for their children created a sense of uncertainty that outweighed their confidence in official health recommendations. This highlights a broader issue within the risk society: that emotions, rather than being peripheral to rational decision-making, are central to how individuals interpret and respond to risks. For parents, the emotional responsibility of protecting their children heightened their caution, often leading to greater hesitancy or refusal compared to decisions about their own vaccinations. This finding challenges the rationalist assumptions underlying much public health messaging and highlights the need to address emotional concerns more explicitly in vaccination campaigns.

The employment of Ulrich Beck's (1992) risk society as a framework further enriches the understanding of vaccine decision-making. Beck's theory highlights the reflexivity and scepticism that individuals adopt in navigating risks in late modernity, particularly as trust in expert systems and institutions erodes. While this framework provides valuable insights, my

research expands on it by incorporating the emotional dimensions of vaccine decision-making, which Beck largely neglects. In the context of the COVID-19 pandemic, the novelty and rapidly evolving nature of the situation amplified uncertainty and mistrust. Participants in this study often relied on social networks, alternative information sources, and personal experiences to navigate conflicting messages from official channels. This shift aligns with Beck's notion of reflexivity but also reveals the deeply emotional undercurrents driving these decisions. For many parents, fear and anxiety regarding the vaccine's potential effects on their children outweighed trust in health authorities, underscoring the limitations of purely rational frameworks in capturing the complexity of risk navigation.

The findings of this study carry important implications for public health policy. Current approaches to promoting vaccination often focus on disseminating factual information and countering misinformation. However, my research demonstrates that these strategies may be insufficient, as they overlook the emotional and social dimensions of decision-making. Public health messaging must adopt a more empathetic approach that acknowledges individuals' legitimate concerns and fears, offering spaces for dialogue rather than assuming that more information will lead to better compliance. For parents, particularly, the decision to vaccinate their children is not just a matter of logic; it is a deeply emotional process, one shaped by their sense of responsibility for their child's well-being. Addressing these emotional dimensions in public health campaigns could be key to increasing vaccine uptake. The significance of these findings lies in their potential to reshape public health strategies, making them more effective and empathetic and ultimately increasing vaccine uptake.

Looking ahead, there are several directions for future research that could build on the insights gained from this study. From a vaccine perspective, there are three areas worth exploring: 1) the role of emotions in vaccine decision-making and how emotions are linked to people's own experiences and those of their extended social networks. 2) How people's social relationships influence their vaccine decisions. Why are people more inclined to listen to some people over others? 3) How do social roles such as parent, friend, employee, and partner influence vaccine decision-making? My research touched on these areas, but a more detailed exploration of their impact could reveal further complexities in how people navigate health information and advice. Additionally, as early signs show that overall vaccine uptake in Aotearoa New Zealand has been declining since the COVID-19 pandemic (Charania et al., 2024), it will be important to study the impact the pandemic has on overall vaccine uptake.

My thesis provides critical insights into the complexities of parents' COVID-19 vaccine decision-making, challenging oversimplified categorisations and emphasising the central role of emotions, social dynamics, and contextual influences. By employing narrative methodologies and engaging with Beck's risk society framework, this study reveals how parents navigate uncertainty and risk through deeply personal and relational processes. Reflexivity played a pivotal role in my research journey, enabling me to set aside preconceived judgments and approach participants' decisions with empathy and openness. This process not only deepened my understanding of their experiences but also transformed my perspective, highlighting the importance of emotions in both decision-making and research. These findings not only enhance our understanding of vaccine attitudes but also underscore the conclusion of previous studies that providing information will increase vaccine rates. Rather, there is a need for empathetic, dialogue-centred approaches in public health strategies. As vaccine attitudes continue to evolve in the wake of the COVID-19 pandemic, this research offers a foundation for more nuanced, effective, and inclusive interventions. It is my hope that this work inspires further exploration of the social and emotional dimensions of health decision-making, fostering a greater understanding of the human experience in times of uncertainty.

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Appendices

Appendix A – Ethics Low-Risk Notification

MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

3/09/2022

Dear: Emma Brownless

Re: Low Risk Notification - 4000026631 - The Social Construction of Parents and Carers COVID-19 Vaccine Decisions

Thank you for submitting a low risk notification for your research/teaching/evaluation.

This email is to acknowledge receipt of the low risk notification and to inform you that the details of your project have been recorded in our database for inclusion in the annual reports to the Health Research Council Ethics Committee (HRCEC) and the Massey University Research Committee (URC).

You may proceed with your research, though it is advisable to provide a couple of weeks before commencing, as all low risk notifications are checked for completeness and clarity by a Research Ethics Advisor. You may be contacted if your application is incomplete and/or further clarification is required.

The low risk notification for this project is valid for a maximum of three years.

Please notify me if situations subsequently occur which cause you to reconsider your initial ethical analysis.

If a sponsoring organisation, funding authority (e.g., the Health Research Council) or a journal require evidence of ethical approval from a Human Ethics Committee (with an approval number), you need to complete a full Massey University Human Ethics application to be reviewed and approved by one of our Human Ethics Committees. Applications must be submitted and approved prior to the commencement of the research.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University's Insurance Officer.

If you have any concerns about the conduct of this research that you want to raise with someone other than the researcher(s), please contact the Research Ethics Office, email humanethics@massey.ac.nz. "

Please include the following statement on all public documents (e.g., information sheet, consent form) related to your project:

> ***This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research.***
>
> ***If you have any concerns about the ethical conduct of this research that you want to raise with someone other than the researcher(s), please contact Massey University Human Ethics by email: humanethics@massey.ac.nz.***

I wish you all the best in your research, teaching or evaluation activities and appreciate your thoughtful consideration of ethics principles and practices.

Ngā mihi nui,

Professor Craig Johnson
Chair, Human Ethics Chairs' Committee and Director (Research Ethics)

Research Ethics Office, Research and Enterprise
Massey University, Private Bag 11 222, Palmerston North, 4442, New Zealand T 06 951 6841; 06 951 6840
E humanethics@massey.ac.nz; animalethics@massey.ac.nz; gtc@massey.ac.nz

Appendix B – Participant Information Sheet and Consent Form.

The Social Considerations and Emotions of Parents and Carers in their COVID-19 Vaccine Decisions.

Introduction

Thank you for expressing your interest in participating in this research project. My name is Emma Brownless, and this research project forms part of my master's degree in Sociology at Massey University. This information sheet describes the research and how you would participate should you choose to.

Research Description

The research project aims to understand the complexity of parents' and carers' vaccine decisions. I am interested in the role that social relationships, life experiences and emotions play in parents'/carers' decisions to vaccinate children in their care against COVID-19 and how they relate to parents'/carers' decisions to vaccinate themselves. I will conduct interviews with people who have chosen to vaccinate and those who have chosen not to vaccinate themselves and/or their children. I invite you to be interviewed by me at a mutually convenient location (face-to-face or online) and time -within the next four weeks. The interview will last approximately one hour and will be audio-recorded. All participants will receive a $40 Visa Pressy card as a thank you for your time and willingness to share your experience.

Available Support for Participants

Interviews can sometimes be emotional, especially when discussing topics that have been in the public eye and have been polarising within families and society as COVID-19 vaccination has. The interview will be a safe space for us to discuss how you came to make the decision you did regarding the COVID-19 vaccination, and we will be able to stop at any point should you feel uncomfortable. I have provided contact details for support helplines at the end of this information sheet should you need to speak to someone following our interview.

Data Management

All participant interviews will be audio-recorded, transcribed, and analysed. Some data, including themes and direct quotes, may form part of my published thesis and any subsequent journal articles. To protect participants' identities, all references to the interview data will be

confidential, and I will not include participants' names in my thesis. The interview audio files, transcriptions, notes, and thesis drafts will be stored in a password and pin-protected Dropbox folder. The interview data will not be shared or used outside of the purposes of this research. I will store the interview data for approximately 5 years after the publication of my thesis, after which I will delete or archive all of the interview files. You can contact me to request your data, a summary of the research findings and a copy of the completed thesis.

Participant Rights

You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- decline to answer any question;
- withdraw from the study (specify timeframe);
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher.
- be given access to a summary of the project findings when it is concluded.
- ask for the recorder to be turned off at any time during the interview.

Research project contacts

Please contact me or one of my supervisors if you have any questions about the research project.

Researcher: Emma Brownless,
Email: [redacted]
Contact Number: [redacted]
Supervisor: Vicky Walters
Email: V.Walters@massey.ac.nz
Supervisor: Alice Beban
Email: A.Beban@massey.ac.nz

This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher named above is responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher, please contact Prof Craig Johnson, Director, Research Ethics, telephone 06 356 9099 x 85271, email humanethics@massey.ac.nz".

Support Helplines
https://mentalhealth.org.nz/resources/resource/helplines-and-local-mental-health-services
Need to talk? Free call or text 1737
Lifeline 0800 543 354 or free text 4357
Healthline 0800 611 116
Samaritans 0800 726 666
Are You Ok 0800 456 450
Anxiety NZ 0800 269 4389
The Social Considerations and Emotions of Parents' and Carers' in their COVID-19 Vaccination Decisions

PARTICIPANT CONSENT FORM - INDIVIDUAL

I have read and understood the attached information sheet. I have been explained the details of the study and any questions I had have been answered to my satisfaction. I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study. I understand participation is voluntary, and I may withdraw from the study up to four weeks after the interview.

1. I agree to participate in this study under the conditions set out in the Information Sheet.
2. I agree/do not agree to the interview being sound recorded.
3. I wish/do not wish to have my recordings returned to me.

Declaration by Participant:

I _____hereby consent to take part in this study.

Signature:_____ Date: _____

Appendix C Interview Schedule.

Intro:

Thank you for agreeing to be interviewed. Today, we are going to discuss how you reached your vaccination decisions for yourself and your child/ren. My main areas of interest are the emotions and social interactions involved in your decision rather than the decision itself. The interview is unstructured, so it is more of a conversation, and we can stop at any time and decline to answer a question if we feel uncomfortable. Do you have any questions before we start?

Firstly, can you tell me about your and your children's COVID-19 vaccination statuses and how you got there?

Emotions:

What kinds of emotions did you experience around the covid19 vaccination? (If vaccinated, did these vary when you were able to vaccinate your children)

If you have followed the childhood vaccination schedule, did your experience with the COVID-19 vaccine differ from that of other vaccines?

Were there different emotions or influences involved in making the decision for you and your child to have the COVID-19 vaccine compared to other vaccines?

Decision making:

Do you consider yourself the main decision-maker in your family regarding vaccinations?

Did you discuss vaccinating your child/ren with anyone? Have your feelings changed along the way? In what way?

Who do you feel comfortable discussing vaccination with? Whose opinion or knowledge do you trust the most when considering vaccination?

Where do you source information about vaccines? What sources influence your decisions the most, do you think? Can you tell me why?

Did you feel pressured to make decisions about the vaccine? What role did your family, friends, colleagues, legislation, media, social media, and the internet play in your decision?

Hindsight:

In hindsight, would you have done things differently?

Is there anything else you would like to tell me about in relation to vaccination?