EXAMINING THE CUES TO ACTION OF CHRISTIAN PARENTS AND/OR GUARDIANS WHO ARE HESISTANT TO VACCINATE PEDIATRIC POPULATIONS

by

Marcia Salam Jackson

Liberty University

A Dissertation Presented in Fulfillment

Of the Requirements for the Degree

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ABSTRACT

As a result of skepticism related to vaccine administration, many newborns and children are without their standardized and recommended vaccinations due to parent and/or guardian beliefs. It is the parent and/or guardian who holds the power to vaccinate their children. Vaccine administration is one of the most successful achievements of public health intervention in the 20th century. The purpose of this study is to use a descriptive case study analysis approach to assess parents' and/or guardians' concerns, attitudes, beliefs, and intentions towards immunizations for their children (from birth to 18 years of age). Understanding the "why" and "how" concerns raised by the vaccine-skeptical community is the primary objective. Professionals in community health, decision-makers, and several population stakeholders could all benefit from this knowledge. Understanding why people choose not to take preventative measures has benefited greatly over time by the application of theory to examine the nature of vaccination reluctance. For vaccine behavior modification to be successful, approaches should be created with consideration for the individual and their social characteristics, beliefs, norms, and surroundings. One of the most widely utilized conceptual frameworks for health behavior is the Health Belief Model (HBM). In this way, it is intended to minimize the gap between parents and/or guardians and medical professionals.

Keywords: vaccine hesitancy, childhood vaccines, health communication, vaccine literacy, strategies, interventions

Dedication

The dissertation will be dedicated first to Jesus Christ and to my family.

Acknowledgments

Every day in this life is a gift to embrace wholeheartedly. William James, also known as the “Father of American Psychology,” once said, “The most important thing in life is to live your life for something more important than your life.” My desire to pursue my Doctorate of Health Sciences, is deeply rooted in this philosophy. I aspire to provide quality healthcare to every patient I encounter.

First and foremost, I must thank my dissertation committee, Dr. Lindsay Egli, Dr. Beth Sexton, and Dr. Laurel Glover. Without their assistance and dedicated involvement in every step throughout the process, this study would never be accomplished. Their wealth of knowledge and plentiful experience have encouraged me in all my academic research and daily life.

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List of Abbreviations

Health Belief Model (HBM)

Centers For Disease Control and Prevention (CDC)

World Health Organization (WHO)

Institutional Review Board (IRB)

Vaccine Adverse Event Reporting System (VAERS)

Federal Drug Administration (FDA)

Vaccines For Children Program (VFC)

Diphtheria, tetanus, pertussis (DTaP)

Measles, mumps, rubella (MMR)

Hepatitis B (Hep B)

Haemophilus influenzae type b (HIB)

Human papillomavirus (HPV)

CAM (Complementary and Alternative Medicine)

Deoxyribonucleic Acid (DNA)

Ribonucleic Acid (RNA)

Messenger Ribonucleic Acid (mRNA)

Social Cognitive Theory (SCT)

National Vaccine Advisory Committee (NVAC)

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CHAPTER ONE: INTRODUCTION

Overview

In the United States, vaccine skepticism still poses a risk to public health. Uncertainty regarding the safety and efficacy of vaccines as well as a lack of knowledge about the real risk of disease are the main causes of vaccine reluctance (Dube et al., 2013). Invasive *Haemophilus influenzae* type b disease, varicella, pneumococcal disease, measles, and pertussis outbreaks have all been linked to vaccine rejection (Phadke et al., 2016). It is undeniable that vaccines have helped humans successfully control many specific types of infectious diseases at a reasonable cost, either by eradication or elimination, especially those that are easily transmitted among children (Awadh et al., 2014; Elkalmi et al., 2021). The World Health Organization (WHO) advises using immunization as a preventive approach in both adults and children (Awadh et al., 2014; Elkalmi et al., 2021). Generally, vaccination is injecting a person with pathogens (such as bacteria and viruses) that have been eliminated, rendered inactive, or transformed into their toxoid form (Ocklitz, 1979). The immune system is stimulated to produce mediators by this pathogen's weaker form (or its antigen), which causes the host to develop acquired immunity to that infection (Taib et al., 2017).

Despite the success of vaccination as a public health measure, there has been a decrease in immunization compliance, which may be due to a variety of reasons, including religious motivations, safety concerns, mistrust in healthcare providers and medical staff, a lack of resources (logistics), erroneous contraindications, unfavorable attitudes, and ignorance of vaccinations and diseases (Phadke et al., 2016). Although vaccination services are available, the aforementioned hurdles could result in delayed acceptance or outright rejection of vaccination. Religiously opposed individuals may decide to use some immunizations while others may

choose to forego all vaccinations. Alternative views on vaccination are promoted by some faiths and belief systems. The percentage of Christians in America, including children, was predicted to be around 64% in 2020, per research projections (Pew Research Center, 2022). About 30% of Americans identify as having no religion, also known as religious "nones" (Pew Research Center, 2022). A total of roughly 6% of people identified as members of any other religion, which includes Jews, Muslims, Hindus, and Buddhists (Pew Research Center, 2022). Religious opposition to vaccines typically stems from two main points: (1) the moral quandaries surrounding the use of human tissue cells in vaccine production; and (2) the conviction that the body is sacred, shouldn't be exposed to certain chemicals or receive animal blood or tissues, and should only be treated by God or through natural means (*Cultural Perspectives on Vaccination*, 2022).

Many Christian parents and/or guardians have religious reservations about vaccinations (*Cultural Perspectives on Vaccination*, 2022). This descriptive case study aims to answer the following questions that is not clear between the phenomenon and the context: What impact does Christianity have on parental and/or guardian views toward the immunization of children? What causes a Christian parent or guardian to consider forgoing the vaccination of their child? How do parental and/or guardian socioeconomic characteristics (educational attainment, employment, and financial standing) affect child immunization? What can medical professionals do to help Christian parents and/or guardians feel more at ease about vaccinating their children? The analysis of attitudes about vaccinations, assessment of familiarity with the vaccination process, and investigation of the Christian parent's and/or guardians' perspectives on vaccines is essential. Medical professionals will be challenged to foster children and families' spiritual, emotional, and

physical well-being. Knowledge about vaccine hesitancy must be gained first to understand the hesitancy among Christian parents and/or guardians specifically.

The current state of medicine has been significantly impacted by the availability of vaccines. The delivery of vaccines is one of the public health initiatives that has had the greatest influence over the past 100 years (Centers for Disease Control and Prevention, 2011). The most economical strategy to lessen the burden of communicable diseases has been identified through numerous immunization initiatives around the nation. Certain vaccinations are required of kids in the United States expressly before they may enroll in the public education system. In consequence, a decrease in morbidity and death rates may result from the reduction of infectious disease and disease load. Resistance to vaccination is starting to jeopardize historical achievements to eliminate and lessen the burden of numerous infectious diseases that have plagued humanity for generations (Olson et al., 2020). However, recent outbreaks of vaccine-preventable diseases in the United States have spurred medical professionals, public health officials, lawmakers, the media, and the public to pay more attention to the growing phenomena of vaccine rejection and reluctance (Phadke et al., 2016). Several areas require investigation, including the familiarity, attitudes, and religious views (particularly Christian parents and/or guardians) of the general public and aspiring healthcare professionals.

Background

Historical Context of Vaccines

The development of vaccines is considered one of the most vital public health interventions in human history. The purpose of vaccines is to indirectly protect individuals who are vulnerable to disease. Dr. Edward Jenner created the world's first successful vaccine in the 1790s, by engaging himself to understand the immunity for smallpox (Malone & Hinman, 2003).

Smallpox ravaged humanity for many ages. Thanks to Edward Jenner's outstanding work and subsequent advancements resulting from his efforts, we do not have to worry about smallpox in the present era. The historical beginnings of vaccination are frequently overlooked due to the recent high pace of vaccine development. Jenner's research was the first systematic effort to prevent an infectious disease through immunization. In a strict sense, he did not discover vaccination, but he was the first to give the practice a scientific legitimacy and to pursue scientific research into it. Jenner tested a blister of someone infected with cowpox and attempted to identify any reaction to another person's skin through arm-to-arm inoculation (Malone & Hinman, 2003).

The pediatric population encounters routine well visits and are regularly exposed to injections. Current recommendations suggest healthy children should receive about 20-30 vaccines before they turn 18 years of age (Buscemi et al., 2008). The United States has seen a significant decrease in pediatric morbidity and mortality because of childhood vaccination (Ventola, 2017). The creation of novel vaccinations as well as the expansion of the use of existing vaccines for various subpopulations have been the main topics of recent research on pediatric and adolescent immunizations. National recommendations have been influenced by studies demonstrating the safety and immunogenicity of vaccinations in different groups of children. The significance of following these recommendations has also been reaffirmed by research on vaccine uptake, cost-effectiveness, and impact. Together, healthcare professionals and parents and/or guardians must fight to raise immunization rates to better protect children and teenagers from these dangerous illnesses.

Vaccine Hesitancy Defined

Over time, the term "anti-vax" or "anti-vaccine" has gained widespread acceptance. However, the term "vaccine reluctant" has been more popular in recent academic studies to classify the elements that affect an individual's decision to accept a vaccine (MacDonald, 2015). The frequent use of "hesitancy" in discussions on vaccine coverage has revealed a few unsettling trends: (1) When pragmatics, competing priorities, access, or the failure of services or policies are to blame, "vaccine reluctance" is wrongly cited as the reason for the under-vaccination of a population. (2) The term "vaccine hesitancy" is wrongly used to refer to refusal to vaccinate in general, although some refusals are adamant in their stance and may never have been reluctant (Dubé et al., 2014). Many parents and/or guardians have vaccinated their children according to the recommended childhood vaccine schedule, but several vaccine-related issues have led to caution and reluctance for Christian parents and/or guardians. As a result of hesitancy, many Christian parents and/or guardians more recently have chosen to delay or decline certain or all vaccines for their children (Ugale et al., 2021). There is an increase in the research literature and mainstream media surrounding parents' and/or guardians’ decisions about childhood vaccines today (Puri et al., 2020). The decision-making factors encompass the scientific evidence about the safety and effectiveness of vaccines, the role of trust amongst medical providers and staff, the influence of vaccine policies and mandates, the influence of the media, social groups, cultural norms, and belief systems (Brown et al., 2012; Brunson, 2013; Glanz et al., 2013; MacDonald, 2015; MacDonald et al. 2012).

Christian parental and/or guardian vaccine hesitancy can be addressed in primary care by beginning early, presenting vaccination as the default strategy. This can be done by cultivating trust, being open and honest about vaccine side effects, assuring Christian parents and/or

guardians of a strong vaccine safety system, focusing on the child's and the community's protection, telling stories, and addressing pain (Shen & Dubey, 2019). Also included are talking points that healthcare professionals can use when discussing vaccinations, as well as responses to frequently asked concerns about the advantages, risks, and immunologic effects of vaccines, as well as links to a variety of online resources for both Christian parents and/or guardians and healthcare professionals.

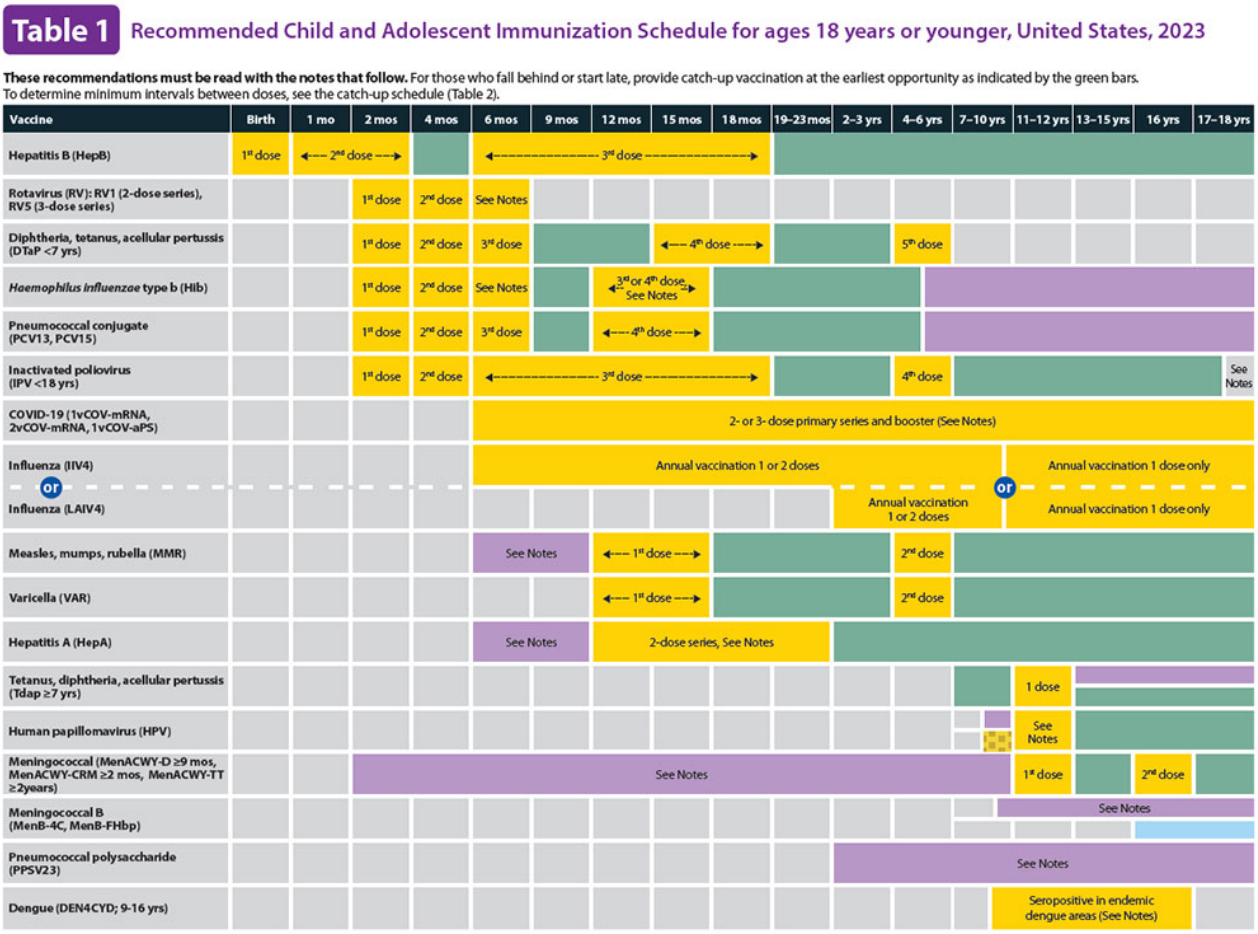
Prevalence of Vaccine Hesitancy in the United States

In the United States, non-medical vaccine exemptions have grown recently (Omer et al., 2012). Similar to this, researchers have observed a rise in children who are not fully immunized and in alternate (i.e., delayed) vaccination schedules (Glanz, et al., 2013). In a poll of parents in the United States, a sizable portion expressed worries about the possible link between vaccination and autism, worries about the components of vaccinations, and/or worries about the methods used for vaccine testing (Kennedy et al., 2011). There is evidence that a sizeable section of the American population has vaccine-related worries that could influence their decision to refuse or modify the advised immunization schedule, even though only 7% of those polled declined some or all vaccinations for their children.

Salmon et al. (2015) explored the influences of R0 (i.e., the basic reproduction number; to put it simply, this is the number of people who would contract the infection from each diseased person) on vaccine efficacy. The writers compare measles and mumps. A town needs almost 95% of its population to be immunized to prevent outbreaks of the measles because it has one of the highest R0 values (between 12 and 18) known. However, only 88% of those who receive the vaccine successfully develop immunity against the mumps, which has a substantially lower R0 value (between 4 and 7). To prevent a mumps outbreak, a population also must be

vaccinated at a rate of about 90% (Salmon et al., 2015). As a result, a community also must be vaccinated at a rate of about 90% to stop a mumps outbreak (Salmon et al., 2015). The relationship between R0 and the efficiency of the vaccines emphasizes the necessity of not just high, but frequently extremely high levels of immunization in order to protect a community (Jones, 2007).

Table 1. United States, 2023 Recommendations for Ages 18 Years or Younger



From "Child and adolescent immunization schedule by age" by Centers for Disease Control and Prevention, Copyright 2023, In the public domain

Children who are ill with either acute or chronic conditions also experience needle-related procedures that help providers determine their condition (Birnie et al., 2018). An example

of this is injections such as Rocephin or Dexamethasone that may be given because of illness. Individuals who are afraid might not discuss their anxieties with their doctors and could be reluctant to receive treatment that might entail a needle. As science and research continue to expand, so does the availability of vaccines. The total immunization rate in the United States has been rising. More than 5% of kindergarteners in various states were not inoculated, according to a 2013–2014 CDC study on immunization rates (Offit, 2015).

During the 2020–21 academic year, the percentage of kindergarten kids nationwide who received the state-required vaccinations fell from 95% to roughly 94% (Seither, 2023). The percentage of students who received all state-mandated vaccinations dropped to about 93% for the 2021–22 academic year (Seither, 2023). The exemption rate held steady at 2.6% (Seither, 2023). In addition, 4.4% of those without an exemption did not have the most recent dose of the measles, mumps, and rubella vaccine (Seither, 2023). Despite the extensive resumption to in-person instruction, disruptions caused by COVID-19 persisted in the 2021–22 school year and affected evaluation and vaccination coverage, preventing a recovery to pre-pandemic coverage (Seither, 2023). This increased the prevalence of diseases that should be mostly eradicated if everyone participated in herd immunity by receiving vaccinations (Offit, 2015). However, vaccination exemption rates have increased (Brown et al., 2012; Omer et al., 2006; Thompson et al., 2007).

Divergence from the recommended pediatric immunization schedule is growing the field of public health. Delayed or alternative vaccination schedules, in which parents pick and choose which immunizations to give their child, are becoming more popular among Christian parents and/or guardians (Ugale et al., 2021). More than one in 10 parents of young children are thought to employ delayed vaccination schedules (Dempsey et al., 2011). Pediatricians face difficulties in

explaining to parents the safety of their children's immunization schedule because these schedules vary and do not adhere to predictable patterns (Glanz et al., 2013 & Maglione et al., 2014). These difficulties include a dearth of scientific evidence on the safety of alternate schedules, worries about disease vulnerability because of postponing or skipping vaccinations, and unclear results when deviations occur (McKee & Bohannon, 2018). Christian parents and/or guardians must consider several crucial aspects when deciding whether to vaccinate their children. These variables include how people perceive the risks of immunization and infectious disease, as well as the informational influence of personal networks including family, the internet, and the media. The timing of when to introduce practice-based interventions that aim to increase immunization rates depends on this prospective decision-making process. By outlining the decision-making process both before and after the child's birth, information may be gathered to aid in optimal planning. Research related to this subject matter is crucial in developing intervention strategies for children that can effectively be applied in clinical practice guidelines today.

Theories and Frameworks for Health Decision Making

Health Belief Model

The use of theory to investigate the nature of vaccine hesitancy has had significant advantages over the years in understanding why individuals fail to engage in preventative measures. Methods should be developed with attention to the individual and their social features, beliefs, norms, and environment for vaccination behavior modification to occur effectively. The Health Belief Model (HBM) is one of the most extensively used conceptual frameworks for health behavior. It explains behavior change as well as behavior maintenance of health-related activities to direct health behavior treatments (Champion & Skinner, 2008). Social psychologists

in the United States Population Health Service created it in the 1950s to explain why the public did not participate as much in health promotion initiatives. Rosenstock and colleagues (1959) improved the factors by carrying out a thorough analysis of the elements that affected people's decision to accept or reject the polio vaccination.

HBM is suitable for correcting habits that lead to health risks because its primary focus is on health motivation. Each person can make their own decisions and act on them, according to HBM. The fundamental tenet of the model is that someone will act in a way that is relevant to their health if they believe and expect that by doing so, a harmful health state can be averted and the advised health activity can be carried out (Glanz et al., 2008). To anticipate why Christian parents and/or guardians, take action to avoid, screen for, or control illness, HBM relies on six constructs, which are listed in the table below. These include perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy.

Table 2. The Health Belief Model's Constructs, Definitions, and Application Examples.

Construct	**Definition**	**Application**
Perceived susceptibility	Belief regarding the likelihood of being exposed to a risk or developing a sickness or ailment.	Define populations at risk and individual risk based on behaviors.
Perceived severity	Belief in the severity of a situation and its effects.	Describe the dangers and effects.
Perceived benefits	Belief in the ability of the suggested action to minimize risk or the gravity of the impact.	Specify the course of action to pursue and the anticipated benefits.
Perceived barriers	Belief in the financial and emotional costs of the suggested course of action.	Determine perceived obstacles and eliminate them by correcting false information or providing incentives.

Cues to action	Techniques for triggering "readiness."	Promote awareness, give tips, and urge people to practice healthy habits.
Self-efficacy	Belief in one's capacity for action.	To relieve anxiety, reinforce advised behavior, and provide training for it.

Adapted from “Health behavior and health education: Theory, research, and practice” by Glanz et al., Copyright © 2015 by John Wiley & Sons, Inc. All rights reserved. Published by Jossey-Bass

The conceptual framework for examining Christian parent and/or guardian views on vaccination was supplied by the HBM. This methodology can be used to direct initiatives for illness prevention and health promotion. It is used to anticipate and explain changes in personal health practices. It is among the most frequently applied models for comprehending health behaviors. People's actions or behaviors connected to their health are influenced by their beliefs. A belief regarding the likelihood of developing a disorder is referred to as perceived susceptibility. In this study, Christian parents and/or guardian’s attitudes toward two situations—the sickness and the related vaccine—will be evaluated. To comprehend why some Christian parents and/or guardians choose not to have their child and/or children receive vaccination against a disease, the researcher will examine how Christian parents and/or guardians perceive vaccine side effects, whether the vaccine can shield against infection, and their own personal concerns. The term "perceived severity" refers to perceptions of how dangerous developing the disease is. In a broader sense, the researcher has considered severity in relation to monetary and social effects, such as decreased income, educational background, vaccine information that is open to the public, and constrained family and social relationships. Additionally, the construct of perceived barriers in this study is centered on technical issues that Christian parents and/or

guardians may encounter to get a vaccine, as information and access to vaccination clinics have been reported to be difficulties for certain people. Vaccine protection is one of the perceived benefits. The term "cues to action" describes a method or information source that encourages people to adopt a pattern of behavior.

Objective

This research represents the review of literature relative to the phenomenon of vaccine hesitancy and incorporates current research on the subject matter. Some studies may include data ranging from the newborn population and adolescent population (up to 18 years of age). The reasons for vaccine hesitancy and probable educational interventions will be researched. The compiled evidence will be further interpreted to formulate data related to parental/guardian immunization beliefs.

This chapter provides background history on vaccine decision-making, vaccine policy as it relates to public and community health, risk perception, and sources of influence in the context of vaccine administration. Vaccine concerns and hesitancy are described and there is a discussion about why prospective measures of concerns, attitudes, beliefs, and intentions regarding childhood immunization are necessary.

Situation to Self

A large portion of the epistemological assumption and constructivism paradigm is incorporated into my ideal research framework. This assumption is founded on an appreciation of the nature of knowledge, which enables me as a researcher to immerse myself in the subject. The sufficiency and legitimacy of knowledge merge to form a complex view, therefore, helpful in generating answers for me to understand the “why” behind vaccine hesitancy among Christian parents and/or guardians. The greatest obstacle to achieving ideal coverage in our nation is

vaccine skepticism. In this research, I argue that unfavorable attitudes regarding vaccinations reflect a more comprehensive and in-depth set of ideas about health and wellness. Instead of being impacted by the positivist epistemological framework, I propose that this alternative worldview is affected by ontological ambiguities and knowledge derived from personal experience and the advice of trusted peers. My motive for this research is supported by current social-psychological research, which shows high associations between vaccine skepticism and use of alternative health beliefs and conspiracy theories.

Problem Statement

Very little research in America has examined the attitudes, familiarity, and religious convictions of Christian parents and/or guardians regarding vaccination. The medical and public health communities, as well as their supporters, must quickly advance their understanding of the issue and the steps required to address it because the dimensions of reluctance are complicated and not fully understood. The issue is that people who are vaccine-hesitant themselves may decide to leave their newborn unvaccinated leaving the child susceptible to infectious diseases and disease complications. The combined seven-vaccine series offers defense against the following illnesses: *diphtheria, pertussis, tetanus*, *polio, measles, mumps, rubella, hepatitis B*, *Haemophilus influenzae type b*, *varicella*, and *pneumococcal* infections (CDC, 2022). The CDC currently recommends a 7-vaccine series for newborns that consists of at least 4 doses of DTaP, 3 doses of polio, 1 dose of MMR, 3 doses of Hep B, 3 doses of Hib, 1 dose of varicella antigens, and 4 doses of *Pneumococcal* conjugate vaccine (CDC, 2022). Recent data shows that only 68.3% of children in the United States receive the combined 7-vaccine series by the age of 24 months, compared to 79.6% of Hib (primary series + booster dose) recipients and 80.7% of newborns who receive the DTaP vaccination (CDC, 2019). Increasing these rate percentages

requires highlighting the value of these vaccinations from the newborn stage until the start of school.

To excuse a child from receiving all the recommended vaccinations, nonmedical (religious and personal) exemptions have grown in popularity in the United States. A decline in vaccination rates will cause an increase in infectious diseases that can be prevented by vaccination. For instance, according to Lo and Hotez (2017), an estimated three-fold increase in measles cases for children between the ages of 2 and 11 would result from a 5% drop in the rate of MMR vaccination (Lo & Hotez, 2017).

Parents exhibit a range of vaccination compliance within each of the categories mentioned above, including postponing vaccinations, only refusing specific vaccinations, or outright refusing immunizations. Most complete vaccination refusals are typically attributed to religious considerations, while parents who personally oppose immunization are typically more likely to make accommodations and at least partially vaccinate their children (Ugale et al., 2021). Hearing news of potential safety concerns or the notion that childhood diseases do not pose a significant threat can deter parents from vaccinating their children because they want to do what is best for their kids.

Statement of Purpose

This dissertation's objective is to assess parents' and/or guardians' worries, attitudes, beliefs, and intentions toward vaccinations for their children using a descriptive case study analysis method. The goal is to comprehend the "why" and "how" concerns that the vaccine-hesitant population raises. The purpose of this study is to determine factors leading to parental wariness of vaccination (from newborn to 18yrs of age) and to find out if medical therapies have

a higher success rate in reducing vaccination reluctance. This information would be useful to community health professionals, policymakers, and many stakeholders in the population.

Significance of the Study

Vaccine hesitancy has drawn a lot of attention from the public health and academic community, but little has been done to lessen its prevalence. For example, research has identified interventions that are intended to decrease hesitancy, increase vaccination rates, or increase intention to vaccinate have not provided any clear guidance regarding strategies that are and are not effective (Dubé et al., 2014; Sadaf et al., 2013; Omer et al., 2006). The growth in vaccine reluctance among Christian parents and/or guardians raises the possibility that current initiatives to promote vaccinations may be inefficient at doing so. There have been numerous attempts to lessen vaccination reluctance, but few of these have been proven to be successful. The way vaccination hesitancy is currently measured makes it impossible to improve our campaigns to combat it. It would be possible to analyze the effects—or lack thereof—of current communications in greater detail and create more precisely targeted messages with the help of an improved measure of the many prevalent beliefs that contribute to vaccine hesitation.

Research Questions

The research questions for the proposed study are as follows:

1. How does Christianity affect parent and/or guardian attitudes toward childhood vaccination?

Clinical encounters often include discussions about people's attitudes and behaviors regarding health and disease. Lifestyle, symptom presentation, access to care, interactions between patients and doctors, adherence to medical advice, and treatment response are all influenced by these factors. Studies demonstrate how a pervasive ideology—what we and others

refer to as Christian nationalism—that challenges scientific authority and promotes allegiance to conservative political figures is consistently one of the two strongest predictors of anti-vaccine attitudes, stronger than political or religious characteristics taken separately (Whitehead & Perry, 2020).

2. What prompts a Christian parent and/or guardian to consider refusal to vaccinate their child?

A growing percentage of Christian parents and/or guardians choose to postpone or forego immunizations for their children. This damages herd immunity, raises the danger of catching diseases that can be prevented by vaccination, and undermines public confidence in the ability of healthcare institutions to keep people safe (Whitehead & Perry, 2020). Some parents and/or guardians believe that exposing children to childhood diseases can strengthen their immune systems. Parents may also feel that immunizations are not "natural" enough and worry about injecting chemicals into their children's bodies.

3. How do parental and/or guardian socioeconomic factors (educational level, occupation, wealth status) influence childhood vaccination?

Family size, parents' forgetfulness, mistrust of immunization programs, limited human resources, poor infrastructure, and an insufficient supply of vaccines are some of the factors that affect vaccine non-utilization. Other factors include household poverty and financial hardship (Williams, 2014). Health equity is the condition in which everyone has an equal chance to achieve their optimum level of health. To do this, society must consistently seek to address historical and contemporary injustices, remove obstacles to health and healthcare that are social, economic, and other types of barriers that is helpful in reducing avoidable health inequities.

4. What can healthcare providers do to make Christian parents and/or guardians more comfortable with childhood vaccinations?

Christian parents and/or guardians' vaccine reluctance can be addressed in primary care in a number of ways, including starting early, making vaccination the default strategy, cultivating trust, being open and honest about side effects, assuring parents of a strong vaccine safety system, focusing on the protection of the child and the community, telling stories, and addressing pain. Additionally, there are talking points for healthcare professionals to use when addressing vaccinations, answers to frequently asked questions about the benefits, risks, and immunologic effects of vaccines, as well as links to several online resources for both parents and healthcare professionals (Shen et al, 2019). For parents and/or guardians, healthcare professionals are reliable sources of information. A family's decision to vaccinate their children can be aided by them.

Definitions

1. *Vaccine hesitancy* - Apprehension, skepticism, or resistance regarding the value and application of vaccines (Shen et al, 2019).
2. *Perceived susceptibility* - The conviction that a risk will be experienced or that a person will contract an illness or ailment (Glanz et al., 2008).
3. *Perceived severity* - An understanding of the gravity of a condition (Glanz et al., 2008).
4. *Perceived benefits* - Confidence in the effectiveness of the suggested action to lower risk or have an effect (Glanz et al., 2008).
5. *Perceived barriers* - An understanding of the financial and emotional expenses associated with following the advice (Glanz et al., 2008).
6. *Cues to action* - Techniques for triggering "readiness" (Glanz et al., 2008).

7. *Readiness*- The condition of being fully prepared for something.
8. *Self-efficacy* - Confidence in one's capacity to act (Glanz et al., 2008).
9. *Christian Nationalism* - A cultural framework that promotes and idealizes the blending of American political life and Christianity (Whitehead & Perry, 2020).
10. *Vaccine skepticism* - The reluctance or delay in receiving vaccines notwithstanding the availability of vaccine services and accompanying data (Ten et al., 2021).
11. *Inoculation* – A virus being injected subcutaneously into a non-immune person (Riedel, 2005).
12. *Effectiveness* - An evaluation of the practical efficacy of vaccinations (Lewnard & Cobey, 2018).

Summary

Due to immunization programs focused on children and newborns, the prevalence and risk factors for numerous communicable diseases have greatly decreased in Western nations (Ventola, 2017; Esposito et al., 2014; Temoka, 2013). The ability of vaccines to reduce morbidity and save lives has never been higher, but this ability can only be realized if parents, guardians, and patients follow the guidelines for immunization of children and adolescents (Oldfield & Stewart, 2016). To decrease morbidity and death in children from vaccine-preventable diseases, health care professionals must continue their efforts as well as community- and government-based programs to boost vaccine coverage (Kao et al., 2014).

To help parents, guardians, policymakers, doctors, and researchers address the wide range of potential causes of poor vaccination uptake, it is crucial to understand the practical meaning of vaccine reluctance. The need for more research into the primary research question's

solution regarding Christian parents and/or guardians and the urgency of vaccine reluctance remains. By educating through evidence-based procedures and addressing concerns about vaccination uptake and safety in their social contexts, future healthcare practitioners can play a crucial role in improving and distributing knowledge among all religious populations. Similarly, by fostering a feeling of community and effectively dispelling conspiracy theories, officials can quicken their efforts and increase the lay public's decision-making on immunization. Future recommendations for immunizations for children and adolescents are still being shaped by research. Through this investigation, we can discover how to best protect children of the Christian population from diseases that can be prevented by vaccination.

CHAPTER TWO

Overview

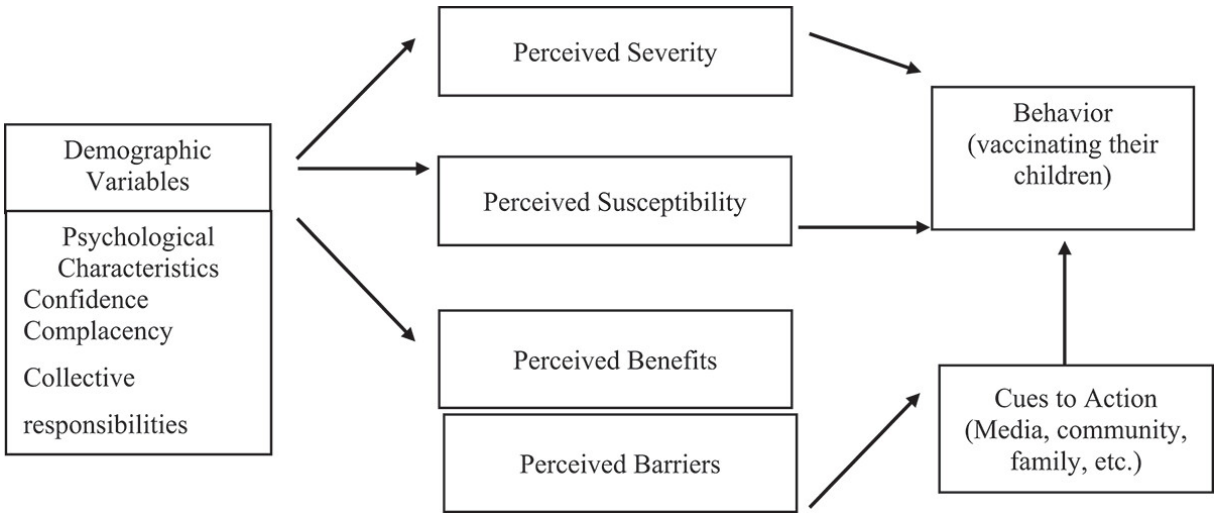
This literature review focuses on studies and facts that answer the following questions: How does Christianity impact parents' and/or guardians' views on immunizations for children? Why might a Christian parent or guardian consider forgoing the immunization of their child? How do socioeconomic factors such as parental and/or guardian education level, employment, and wealth status affect children's vaccinations? What can medical professionals do to help Christian parents and/or guardians feel more at ease with immunizations for children? Various search engines were used to locate pertinent research, books, articles, government websites, and other resources about vaccine reluctance worldwide. This review will address the background of vaccinations, the historical perspective of vaccine hesitancy, public health concerns resulting from decreased vaccination rates, and factors influencing vaccine refusal. These factors include religion, autism fear and media's influence, government and pharmaceutical mistrust, general practitioners' hesitation, complementary and alternative medicine (CAM) beliefs, and vaccine injuries. A thorough explanation of the investigation's theoretical underpinnings concludes the chapter.

Theoretical Framework

The conceptual framework for examining Christian parent and/or guardian views on vaccination was supplied by the Health Belief Model (HBM). Perceived vulnerability, perceived severity, perceived advantages, perceived barriers, and cues to action were the constructs of interest from the HBM (Becker, 1974; Glanz et al., 2015; Rosenstock, 1974). This methodology can be used to direct initiatives for illness prevention and health promotion (Jones et al., 2014). It is used to anticipate and explain changes in personal health practices. It is among the most

frequently applied models for comprehending health behaviors. People's actions or behaviors connected to their health are influenced by their beliefs (Laranjo, 2016). When faced with a personal threat or risk, people are likely to act, but only if the advantages of doing so outweigh the disadvantages, real or imagined. A person's perception of their sensitivity to the sickness is referred to as perceived susceptibility (Zampetakis & Melas, 2021). This may involve a person expressing concern about getting sick; as a result, they are aware that vaccinations protect against infectious diseases by triggering the production of antibodies by the immune system (Smatti et al., 2018). The concept of "perceived severity" refers to how different individuals view the significance of a certain health problem caused by immunization or vaccination (Zampetakis & Melas, 2021). Immunization will eventually be accepted when a person is motivated to behave by perceived benefits and challenges (Brewer et al., 2017). Then, a prompt to act is used. This happens when a variable—such as vaccination acceptance or resistance—acts as a cue or trigger, making the intended outcome seem to be required (Brewer et al., 2017; Kempe et al., 2015; Ong et al., 2023).

Figure 1. The Health Belief Model-supported factors that influence parents' and/or guardians' willingness to let their kids get immunizations.



From, “Are parents’ willing to vaccinate their children against covid-19? by Rajeh et al.,

Background of Vaccines

One of the most significant tools available to advance public health is vaccination (Stratton et al., 2011). Vaccines enhance the body's natural defense mechanisms to lower the probability and occurrence of harmful diseases brought on by infectious organisms. When the infectious organism is growing and attacking, it takes the body a few days to recognize and fight it on its own (Center for Disease Control and Prevention, 2013). The body's innate immune system may be powerful enough to fight off any infection on its own, but many infectious diseases have harmful side effects that differ from person to person. The danger of contracting potentially fatal and contagious infectious diseases is reduced with the use of vaccines (Center for Disease Control and Prevention, 2013).

The idea behind vaccinations is to mimic an infection so that the body can detect an individual’s immune response and begin to create defense mechanisms against the invader. Depending on the vaccination, it may take more than one dosage to fully develop the immune response against the infection it is intended to prevent (Center for Disease Control and Prevention, 2013). If the actual invader arrived after a specific period, the body might have some response to fight off the infection, but it would not be strong enough to stop the disease from spreading. As a result, booster shots are needed for many vaccines to ensure that the body is prepared to fight illness should a person become exposed to the disease (Center for Disease Control and Prevention, 2013).

Throughout history, there have been significant changes in vaccine development (Rappuoli & Medaglini, 2014). To combat smallpox, the first vaccination was created in England in 1796 (Stern & Markel, 2005). Rather than being the sole responsibility of a single scientist, the development of vaccines is now handled by a team of experts with skills in DNA technology, genomics, immunology, and business. Since these facilities are managed by the government and have the financial resources to invest in development, vaccines can no longer be created in academic settings (Rappuoli & Medaglini, 2014). To create a vaccine, researchers consider both the infection's unique mode of attack and the body's reaction to the invader (Center for Disease Control and Prevention, 2013).

To produce immunity while avoiding or, ideally, not inducing any symptoms in the recipient, early virus vaccines for humans relied on employing weakened or attenuated viruses (Plotkin et al., 2008). For instance, the smallpox vaccine used cowpox, a poxvirus that, while normally not causing serious illness, was like smallpox to offer protection from it (Plotkin et al., 2008). The rabies virus was the first to be laboratory-attenuated and used to create a human vaccine.

The methods utilized to make vaccinations differ (Makoschey, 2015). Segments of the pathogen, living viruses that have been killed or attenuated, inactivated or killed organisms or viruses, inactivated toxins (for bacterial diseases where toxins produced by the bacteria, and not the bacteria themselves, cause illness), live viruses that have been attenuated (weakened or altered to not cause illness), and attenuated or killed organisms or viruses may all be present (this includes both subunit and conjugate vaccines) (National Institute of Allergy and Infectious Diseases, 2012). As part of the U.S. childhood immunization schedule, the measles, mumps, and rubella (via the combination MMR vaccination), varicella (chickenpox), and influenza vaccines

are presently advised (in the nasal spray version of the seasonal flu vaccine) (Ventola, 2017). In addition to live, attenuated vaccines, the immunization schedule includes shots of all major categories. Each type of vaccination requires a distinct approach to development.

Types of Vaccines

There have been numerous approaches developed to make successful vaccinations ever since the first vaccine was made in 1796 to treat smallpox (Riedel, 2005 & Plotkin, 2014). Today's vaccine technologies are more sophisticated and make use of cutting-edge technology to help safeguard the world from diseases that can be prevented. Depending on the pathogen (a bacteria or virus) that is being targeted, various vaccination technologies are used to develop an effective vaccine (Brisse et al., 2020). Just as there are different ways to make a vaccine, they can be made in a variety of ways, from needle injections and nasal sprays to oral doses, a more recent innovation. A specific disease-causing organism is targeted by an immune response brought on by an antigen, which is the vaccine's active component (Ginglen & Doyle, 2019). The way the antigen(s) are manufactured can be used to categorize vaccines in general. Viral (live or inactivated) vaccines, viral vectors, subunits (protein or polysaccharide), or nucleic acids (DNA or RNA) are all possible types of vaccines (Ghattas et al., 2021 & Cid & Bolívar, 2021). Inactivated, protein-based, and/or protein-conjugated polysaccharide vaccine components can all be found in combination vaccinations (Cid & Bolívar, 2021).

Live Attenuated Vaccines

The pathogens in live vaccines, which are mostly viruses, have been weakened (attenuated) so that they can proliferate just enough to elicit an immune response without really causing disease. Live vaccinations frequently produce highly durable immunity (Pulendran &

Ahmed, 2011; Ghattas et al., 2021; Plotkin, 2014). Examples of these vaccines include the MMR, the varicella, and rotavirus.

Non-live Vaccines: Inactivated or Whole Killed

Vaccines with complete, dead microorganisms are available. Example of vaccination: the whole-cell pertussis vaccine. Viruses that are contained in inactivated vaccines have undergone some form of inactivation, rendering them incapable of reproducing or spreading illness (Sanders et al., 2014; Ghattas et al., 2021; Plotkin, 2014). Examples of vaccines include those for polio, hepatitis A, and influenza.

Subunit: Toxoid

Pieces of the pathogens they are designed to prevent are included in subunit vaccinations (Plotkin, 2014). There are numerous varieties of subunit vaccinations, including the word toxoid. To create a toxoid vaccination, a bacterial toxin must be harvested and chemically altered (often with formaldehyde) (Ghattas et al., 2021). Antibodies that counteract the toxic toxins emitted by these microorganisms are produced by toxoid vaccinations (Angsantikul et al., 2017). Tetanus and diphtheria vaccination are examples of toxoid vaccines.

Vaccinations with Polysaccharides and Conjugates

Strings of sugars are known as polysaccharides. Large amounts of polysaccharides are found on the surfaces of some bacteria, such as *Streptococcus pneumoniae*, which encase the bacterium (Larson & Yother, 2017). Due to the low immunogenicity of polysaccharide vaccines and their ability to only elicit a primary immune response, no immunological memory is formed for future protection (Maiden, 2013).

The carrier proteins in polysaccharide conjugate vaccines are chemically linked to the polysaccharide antigens (Pichichero, 2013). This addition induces a T-cell response, which can

be employed in babies and leads to the production of high-affinity antibodies against the polysaccharide antigens as well as immunological memory (Thanawastien et al., 2015 & Plotkin, 2014). Examples of these vaccines: are PCV13, MenACWY, and Hib-PRP.

Recombinant

Genes from the disease-causing pathogen are used to create recombinant vaccines. A cell system that can generate significant amounts of the desired protein is where the gene is placed (Nascimento & Leite, 2012 & Plotkin, 2014). A protective immune response can be elicited by the protein. Examples of vaccines are hepatitis B and HPV vaccines.

Nucleic Acid

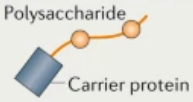
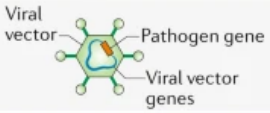
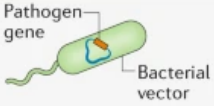
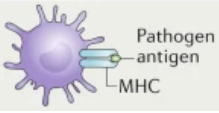
As a result of recent developments in vaccination science, human dendritic cells may now get the genetic instructions they require to generate viral proteins from messenger ribonucleic acid (mRNA) (Schlake et al., 2012; Plotkin, 2014; Mockey et al., 2006). Since typical ribonuclease enzymes swiftly break down mRNA, it is protected inside a lipid nanoparticle, which also makes it simpler for dendritic cells to take it in (Schlake et al., 2012 & Plotkin, 2014). To reach the T and B cells in the lymph nodes, the viral protein is first synthesized by ribosomes and vaccine mRNA inside the dendritic cell (Schlake et al., 2012 & Plotkin, 2014). Pfizer COVID-19 Vaccine (mRNA-CV) is an example of a vaccine in this form.

Viral Vector

For a protein to be produced in the body, viral vector vaccines also utilize mRNA (Mockey et al., 2006). However, the way that mRNA is transported into cells is different. A viral vector will deliver the protein to immune cells using a non-lethal adenovirus (Mockey et al., 2006 & Plotkin, 2014). After that, the immune cell makes the protein according to the mRNA's

instructions, which starts the immunological reaction (Schlake et al., 2012 & Plotkin, 2014). AstraZeneca COVID-19 vaccine (ChAd-CV) is one example of vaccination.

Figure 2. The primary vaccination varieties that exert various effects are as follows:

Type of vaccine		Licensed vaccines using this technology	First introduced
Live attenuated (weakened or inactivated)		Measles, mumps, rubella, yellow fever, influenza, oral polio, typhoid, Japanese encephalitis, rotavirus, BCG, varicella zoster	1798 (smallpox)
Killed whole organism		Whole-cell pertussis, polio, influenza, Japanese encephalitis, hepatitis A, rabies	1896 (typhoid)
Toxoid		Diphtheria, tetanus	1923 (diphtheria)
Subunit (purified protein, recombinant protein, polysaccharide, peptide)		Pertussis, influenza, hepatitis B, meningococcal, pneumococcal, typhoid, hepatitis A	1970 (anthrax)
Virus-like particle		Human papillomavirus	1986 (hepatitis B)
Outer membrane vesicle		Group B meningococcal	1987 (group B meningococcal)
Protein–polysaccharide conjugate		*Haemophilus influenzae* type B, pneumococcal, meningococcal, typhoid	1987 (*H. influenzae* type b)
Viral vectored		Ebola	2019 (Ebola)
Nucleic acid vaccine		SARS-CoV-2	2020 (SARS-CoV-2)
Bacterial vectored		Experimental	–
Antigen-presenting cell		Experimental	–

From, “A guide to vaccinology: from basic principles to new developments.” By Pollard & Bijker, Copyright © Springer Nature Limited 2020, corrected publication 2021, Open Access

Identifying the Barriers

The Vaccines for Children Program (VFC) was started in 1994 to ensure that everyone, including those without insurance, had access to immunizations. The initiative was put into place in response to a measles outbreak, which, according to a Centers for Disease Control and Prevention (CDC) assessment, was largely caused by widespread failure to vaccinate uninsured children at the recommended age of 12-15 months (Whitney et al., 2014). The obstinate persistence of vaccine inequities despite programs created explicitly to address financial obstacles implies that a lack of funds may not be the main reason why many families choose not to vaccinate their children. The disparities in childhood immunization rates are caused by a variety of factors, including inadequate access to healthcare (including unfavorable and constrained clinic hours), unreliable childcare and transportation, difficulty obtaining time off work for child immunizations, language barriers, and a lack of a system for reminding people to get immunized when they have missed a dose (Anderson, 2014; Kulkarni et al., 2021).

Vaccines are thought to have prevented disease, hospitalizations, and death between 1994 and 2013, saving society $1.38 trillion, including $295 billion in medical expenses (Whitney et al., 2014). It is vital to understand that vaccines can cause side effects including fever, convulsions, and, in rare cases, severe responses like anaphylaxis, although the risks are well outweighed by the benefits to public health (Stratton et al., 2011). Seither (2023) found that more than 5% of kindergarteners in several states were not immunized, according to a CDC study of immunization rates conducted in 2013–2014. This increased the prevalence of diseases that, if everyone in the population were to participate in herd immunity by receiving vaccinations, would be largely eradicated (Offit, 2015).

Vaccine Hesitancy - A Historical Perspective

Vaccine reluctance is not a recent occurrence. There has always been a reluctance to receive vaccinations, and the root of this reluctance is a complex debate involving science, the public, and public health policy (Schwartz, 2012). Hesitancy toward vaccines has been linked to two main causes. First, there is the belief that vaccine hazards outweigh the dangers of the diseases they are intended to prevent. Second, there is the perception that compelled vaccination laws violate people's rights (Schwartz, 2012).

Given that vaccines have greatly decreased the morbidity and mortality from a range of infectious diseases, people now identify their anxieties with vaccines rather than diseases (Dube et al., 2013). Berezin & Eads (2016) examined newspaper stories from January 1, 1955, to December 31, 2012, to investigate how public perception of vaccines has changed. When the polio vaccine became available in 1955, the public hailed it as a life-saving innovation because polio was the worst disease afflicting baby boomers. Following the polio vaccination came the MMR vaccine in 1971, the Hepatitis B vaccine in 1982, the combined pertussis and Hepatitis B vaccine in the 1990s, and the varicella vaccine in both cases. The newspaper data analyzed during these years reveals a shift in the perception of vaccinations from a source of protection to a potential cause of risk. More essays on the advantages of vaccinations while admitting potential drawbacks appeared in 1955. Between 1955 and 1990, this topic was less prevalent, and articles arguing that the dangers of vaccinations outweigh the risks of disease were more prevalent. After 2000, newspaper stories were reviewed by a topic of the hazards of vaccines, rather than the risks of disease. By 1990, a larger percentage of publications showed that vaccines were more harmful than the diseases they protected against (Berezin & Eads, 2016).

In the United States, people are currently choosing not to receive the required vaccinations (Dube et al., 2013). Individuals being excluded from vaccinations, however, is not a recent occurrence (Schwartz, 2012). In Boston in 1827, the smallpox vaccination became the first vaccination that was required for students to attend school. By the end of the 1800s, most of the United States required the smallpox vaccine for pupils to attend school. In 1879, anti-vaccine organizations started to emerge. The American Anti-Vaccination Society was one of the more prominent organizations. These organizations claimed vaccines were no longer necessary as the incidence of smallpox declined. Due to measles outbreaks and the introduction of new vaccines, most U.S. schools required children to receive childhood vaccinations to attend school by 1970. (Schwartz, 2012). "Government encroachment on religious beliefs, general mistrust of medical science, and invasion of personal liberty" were the three primary reasons given in 1969 as to why people objected to obligatory vaccinations (Schwartz, 2012, p. 52).

At the national level, today's vaccine-averse parents collaborate in structured networks. The 1982 television documentary on the risks of diphtheria-pertussis-tetanus (DPT): Vaccine Roulette, which featured heartbreaking accounts of kids whose parents believed they had suffered injury from the diphtheria-pertussis-tetanus vaccine, was a significant event that stoked the modern vaccine issue (Schwartz, 2012). Beginning with Barbara Loe Fisher, who co-founded the National Vaccine Information Center and launched the Dissatisfied Parents Together organization, this documentary marked the beginning of a period when prominent individuals started speaking out against vaccinations.

Regarding vaccination injuries, there were numerous widely reported court cases (Berezin & Eads, 2016). The National Childhood Vaccine Injury Act, which shields pharma corporations from lawsuits, was created by congress in reaction to the rise of vaccine skepticism

in the 1980s (Berezin & Eads, 2016). Vaccine injuries can now be tracked at the federal level because of the creation of the VAERS (Vaccine Adverse Events Reporting System) (Berezin & Eads, 2016).

Celebrities who assert vaccinations have had a detrimental impact on their children enjoy almost the same media exposure as medical and scientific experts who promote vaccine safety and efficacy (Schwartz, 2012). The Internet has further altered the landscape of vaccine reluctance as more parents join online organizations, blogs, and use social media platforms to express their opinions and experiences (Schwartz, 2012). Information that calls itself research could have a flawed methodology, hidden agendas, or insufficient peer review. The general population has trouble telling good research from bad research (Schwartz, 2012).

Impact of Public Health Policy on Vaccination (Pediatrics)

In Minnesota, a meningitis outbreak in February 2009 resulted in one child's death (Offitt, 2011). Twelve hundred children were infected with the mumps in 2009, and it was later discovered that this illness also caused pancreatitis, meningitis, facial paralysis, and infertility (Offitt, 2015). A significant measles outbreak in 2015 started in Disneyland in California and affected 125 kids (Offitt, 2015). Most of the children engaged in these outbreaks were not protected against these diseases by vaccination, which is the only factor that unites these outbreaks (Offitt, 2011). The main objective of vaccines is to increase herd immunity against infectious diseases many of which have no known treatments and can have major health repercussions. Since vaccination laws were implemented, many deadly infectious diseases have been eradicated from the United States. Due to the widespread use of vaccines against these diseases, infectious diseases like smallpox and polio no longer affect children in the United States. Some diseases have recently started to resurface in the United States. For instance,

measles has been spreading across the nation due to the high number of people who have not received the MMR vaccine (Pierik, 2017). Many parents think that immunizations are more dangerous than the illnesses they are meant to prevent (Offitt, 2015). Although some people mistakenly believe that whooping cough results in a severe cough alone, it also causes convulsions and pneumonia when the bacteria spreads to the lungs (Offit, 2015).

Many moms focus on their health and the health of their kids when making vaccine decisions, not recognizing that by vaccinating their kids, they are also protecting other kids. They are unaware of the full public health implications of herd immunity. Vaccinations provide advantages that extend beyond the individuals who receive them (Pierik, 2017). Infants, immunocompromised individuals, and those who have vaccine allergies, cannot receive vaccinations (Pierik, 2017). The disease cannot be passed to others who may be more seriously impacted by it as a result of vaccinations (Pierik, 2017). The government has made vaccinations mandatory to safeguard the weak. If exposed to the disease, those who have not received the measles vaccine have a 90% chance of getting it (Pierik, 2017). About 92-94% of the populace must receive the vaccination to develop herd immunity to the disease and put an end to an outbreak (Pierik, 2017). Herd immunity allows 6-8% of people to choose not to get vaccinated, which would account for the vulnerable group that cannot get vaccinated. However, most legal systems also provide a variety of religious and nonreligious exemptions, which are apart from any medical grounds for why someone cannot get immunized (Pierik, 2017).

Religion

Parents' religious convictions are one of the most frequently cited justifications for not vaccinating their kids (McKee & Bohannon, 2018). The fact that only four states do not grant exemptions to families for this reason presents a significant barrier to those trying to raise the

immunization rate for children (Center for Disease Control and Prevention, 2019; McKee & Bohannon, 2018). Religious objections to immunization differ from other commonly cited reasons in that they are frequently associated with the parents' underlying beliefs, and it is exceedingly challenging to persuade these people to change their minds. These decisions are not the result of ignorance, but rather are the result of deliberate thought coupled with a strong conviction (McKee & Bohannon, 2018). In addition, people motivated by religious claims frequently relate a full refusal of all immunizations, in contrast to other reported reasons for reluctance (Dubé et al., 2014 & McKee & Bohannon, 2018).

In New York State, a study by Imdad et al. (2013) found that between 2000 and 2011, there was a significant increase in the frequency of religiously based school vaccine exemptions. Politicians reacted to this by enacting laws requiring parents to demonstrate their "genuine and sincere religious belief" that opposes vaccination use before schools may grant religious exemptions (Imdad et al., 2013). As more parents attempt to use the nebulous protection of religious liberty to circumvent the social obligation to immunize children against preventable diseases, the popularity of these burdens of evidence is expected to increase (McKee & Bohannon, 2018). The authors Imdad et al. (2013), also found that there were more reported cases of pertussis in the counties with higher exemption rates, ≥ 1%, 33 per 100,000 as opposed to 20 per 100,000 in counties with lower exemption rates.

Certain religious groups have encouraged vaccination rejection since the first smallpox vaccines were developed. The Dutch Protestant Christians and followers of several other religions believe that vaccinations interfere with God's creation and modify human destiny in ways that He did not intend (Pelčić et al., 2016). Additionally, it is believed that God is delivering a sign to the parent who decided against giving their child the vaccine if their child

experienced an adverse effect after receiving a vaccination (Hussain et al., 2018). Christian Scientists, Mennonites, and Amish are some religious groups who oppose vaccinations (Pierik, 2017). Christian Scientists contend that vaccinations only help to perpetuate the erroneous belief that illness arises in the body and can only be eradicated from the body via prayer (Pierik, 2017; Swihart & Martin, 2022). The use of an aborted fetus in the creation of various vaccinations is prohibited by several religions, including Catholicism and other denominations of Christianity (Kibongani Volet et al., 2022; Pelcic et al., 2016). Developed in the 1960s, the WI-38 cell line, which is made up of cells from a three-month-old Caucasian female fetus, is used in the MMR, varicella, and adenovirus vaccinations, among others (Pelcic et al., 2016). In contrast to primary cell cultures, WI-38 is transmitted sequentially from one vessel to the next, unlike basic cell cultures (Olshansky & Hayflick, 2017). This enables the production of several human virus vaccines by enabling the production of virtually infinitely many cells from a single source (Olshansky & Hayflick, 2017). Numerous religions oppose the use of vaccines that might contain cells from aborted fetuses because they uphold the right to life (Kibongani Volet et al., 2022; Pelcic et al., 2016). Since the introduction of mandatory vaccination laws in our democratic nation in 1872, religious exemptions have been permitted because of the impossibility of mandating interventions that are at odds with religious convictions (Pelcic et al., 2016; Schwartz, 2012).

Even though many parents and/or guardians can choose not to vaccinate their children, children must still get all essential vaccinations before starting school. When immunizations were mandatory, the government first permitted exemptions for specific religious grounds from recognized religious groups (Pierik, 2017). There was debate over why the government had the right to decide which religions had the right to refuse vaccinations. Since vaccinations go against

their beliefs and first amendment rights, many people claimed that it was their right to refuse immunizations (Pierik, 2017). Many states broadened exemptions in 1971, stating that they should now apply to everyone and anyone who opposes vaccination based on an honestly held religious conviction (Pierik, 2017). This was challenged in court eight years later to add secular exemptions since it was unfair to individuals who do not practice a particular faith (Pierik, 2017). Since then, the exemptions have widened to include numerous religious and nonreligious justifications, which has increased the number of unvaccinated children. Currently, three states solely permit medical exemptions from vaccination requirements, 28 states permit both religious and medical exemptions, and 19 states permit both secular and religious exemptions (Pierik, 2017).

Fear of Autism and the Role of Media

Parents' worries about vaccine safety may be the main justification given for declining to vaccinate their children (McKee & Bohannon, 2018). Most of these worries are based on details that these parents have learned through friends or from the media. Parents are regularly subjected to news about other people's views on vaccinations, whether the reports come from television, the Internet, radio, or family and friends (Ashfield & Donelle, 2020). Some parents may find it difficult to go through all this information, which makes it challenging for them to come to their own well-informed conclusion. Many of the articles and viewpoints that inundate parents and create doubt focus on the safety of vaccines (McKee & Bohannon, 2018; Ashfield & Donelle, 2020). They cast doubt on the likelihood of both transient unfavorable effects and long-term negative effects.

Parents frequently express vaccine anxiety because they believe vaccines may be responsible for their children's development of autism (Dube et al., 2013). It has been established

that Andrew Wakefield's research, which was published in 1998 in London, is the source of this phobia. Twelve children were researched by Wakefield, who discovered that eight experienced severe intestinal inflammation six days after receiving the MMR vaccine and that nine of the kids had autism diagnoses two weeks after receiving the vaccine. In light of this, Wakefield proposed that the MMR vaccine causes dangerous proteins to seep out of the gut and cause autism once they reach the brain (Begley & Interlandi, 2009). Rapid media dissemination of these discoveries to the public sent many into a panic. Though the report text specifically stated, there is no proof of an association between the MMR vaccination and autism. British newspapers published a story under the headline that doctors link autism to MMR vaccine and provoked many new fears (Taylor et al., 1999 & Begley & Interlandi, 2009).

Wakefield's study's findings were widely disseminated in the United States, which increased vaccine reluctance. Parents were particularly concerned because the rates of autism were unexplainably growing and more immunizations were being advised for kids under two years old (Begley et al., 2009). The recommended dosage of immunizations increased from 15 to 24 between 1995 and 2015 (Salmon et al., 2015). Additionally, the CDC and the American Academy of Pediatrics mandated in 1999 that the vaccine preservative thimerosal, which includes ethyl mercury, be eliminated from all immunizations (Weber, 2008). Due to the name's closeness to methyl mercury, which has been demonstrated to have neurological side effects in high doses, ethyl mercury has become a source of public concern. Ethylmercury and methylmercury have extremely different chemical properties (Weber, 2008). According to a report published in the same year, 1999, by the California Department of Developmental Services, the number of cases of autism had climbed by 273% in California over the previous ten years (Gernsbacher et al., 2005). These two connected incidents gave rise to the hypothesis that

thimerosal causes autism (Weber, 2008). Although there are no scientific studies to back up this notion and that thimerosal was withdrawn from kid immunizations in 2001, people continue to hold the belief that thimerosal causes autism (Weber, 2008).

After Wakefield's paper was published and thimerosal was widely believed to be the cause of autism, the media significantly contributed to the spread of vaccine skepticism. A report on children who appeared to develop autism after receiving the MMR vaccine was broadcast on "60 Minutes" in November 2000, and an article supporting the thimerosal and autism theory was published in the New York Times Magazine in 2002 (Begley et al., 2009). Politicians and celebrities like Robert Kennedy Jr. and Jenny McCarthy started questioning the safety of vaccines in public (Berezin & Eads, 2016). The nation's belief system had changed from one centered on science-based medicine to one based on the media and celebrities (Poland & Spier, 2010). Misinformation about vaccines and autism has been and is still being disseminated online. Individuals use the Internet as a knowledge resource and a forum for discussing their own experiences with vaccinations. When researchers examined the vaccine-related information on the Internet, they found that information is of varying quality and that erroneous or negative content is predominate (Dube et al., 2013).

The theory that the MMR vaccine causes autism was contested after it was discovered that five of the children Wakefield studied were the clients of a lawyer who was working on a case against the MMR vaccine in 2004. A British organization that funded Wakefield's lawsuit-related research gave him 55,000 euros. Before the study started, the participant children also showed signs of intestinal inflammation and autism (Begley et al., 2009). On February 2, 2010, Wakefield's publication was retracted by the Lancet because of these findings. Wakefield had acted dishonestly, misleadingly, and irresponsibly in the conduct and report of this study,

according to the UK General Medical Council. He had also displayed "callous disregard" and "abused his position of trust" (Spier & Poland, 2010, p. 2361).

Although Wakefield was accused and his article was withdrawn in the early 2000s, other extensive studies that looked at millions of children concluded that there was no connection between the MMR vaccine and autism (Begley, et al., 2009). The Institute of Medicine (IOM) in the United States examined 200 studies in 2004 but failed to uncover any data proving a connection between vaccines and autism. Some children will exhibit symptoms of autism soon after receiving the MMR vaccine, according to the IOM's findings, but this association does not prove causation. When the MMR vaccine is given, autism frequently begins to manifest at the same age (Begley et al., 2009). The reluctance to receive the MMR vaccine has not gone away despite the removal of Wakefield's Lancet article and the extensive body of data showing there is no link between the MMR vaccine and autism (Begley et al., 2009). A rise in autism diagnoses over the past few decades may simply be the result of improved screening and increased knowledge of the condition. Anxiety about the MMR vaccine may persist because of people's propensity to believe anecdotes and feelings over factual evidence (Poland & Spier, 2010).

Desire for Additional Education

Parents and/or guardians are interested in learning more about immunizations. They want to be able to weigh the advantages and disadvantages of each vaccine to make an educated choice about their child's medical treatment (Saada et al., 2014; Harmsen et al., 2013; Gust et al., 2005). In research compiled by Gust et al. (2005), almost one-third of parents reported that they lacked access to enough information, and most of those parents felt that their child's provider was difficult to communicate with. To make an informed decision about whether to vaccinate

their kid, many parents would like more in-depth information about the risks and advantages of vaccines that is presented in a factual manner (Fredrickson et al., 2004; Harmsen et al., 2013).

Providing neutral, realistic information on vaccinations and having a conversation with the parents or guardians about this information are important roles that pharmacists and other healthcare professionals may play (Jarrett et al., 2015; McKee & Bohannon, 2018). The American Academy of Pediatrics and the Centers for Disease Control and Prevention both have websites that parents can access, along with a variety of other print materials. The ability to communicate openly with their child's healthcare professional without feeling attacked or criticized is something that parents and/or guardians desire to be able to accomplish (Dubé et al., 2014; Fredrickson et al., 2004; Saada et al., 2014). Parents and/or guardians want to be allowed to inquire freely and without fear of repercussion. For parents and/or guardians who are making decisions regarding their children's heath, providers are one of the most crucial sources of information (Dubé et al., 2014; Fredrickson et al., 2004; Harmsen et al., 2013). According to research by Kennedy et al. (2011), 81.7% of parents felt their child's doctor was one of the most crucial sources of information. When parents can't acquire the information they need from their providers, they turn to other sources, which may mislead and misinform them and lead them to make bad decisions for their children (Fredrickson et al., 2004 & Harmsen et al., 2013).

Government and Pharmaceutical Distrust

The average non-medical exemption rate for kindergarten students' school-required immunizations in 2014–2015 was 1.5% nationwide, and it went up to above 5% in some areas (Lee et al., 2016). In 2016, case-control research on themes like mistrust of government and medical personnel studied vaccine resistance (Lee et al., 2016). People with a low level of trust in the government were more likely to say that organizations like the CDC (Center for Disease

Control), Food and Drug Administration (FDA), and municipal and state health departments were unreliable information sources. The communities with a higher level of mistrust were more likely to believe that government regulations governing school vaccine mandates prevented parents from making an informed choice for their children (Lee, et al., 2016). The recommended vaccine schedule is becoming more complex as new vaccines are developed; one of the reasons why parents do not want to vaccinate their children is because of the growing number of vaccines that the government is mandating for kids (Lee et al., 2016). In the public health system, the number of vaccines that are advised and supported tripled between 1990 and 2012. (Dube et al., 2013). Compared to 73% of the population in 1958, the Pew Research Center concluded that only 19% of Americans in 2013 still have faith in their government (Lee et al., 2016). The vaccine's past and parents' lack of knowledge about the current ingredients of vaccines may be partly to blame for this government mistrust (Obaro & Palmer, 2003). For instance, the mercury-derived substance thimerosal, which was once employed as a preservative in some vaccines but has now been linked to neurological abnormalities in children, was once used as a preservative known as phenol (Baker, 2008). Existing preservatives, such as phenol, had the disadvantage of reducing the effectiveness of the biological products they were meant to protect. Thimerosal, on the other hand, not only suppressed bacterial growth in vaccinations and antisera at quantities as low as 1:10000 but also exhibited no adverse effects (Baker, 2008). Vaccinations no longer include thimerosal. The decision of a parent to not accept the government's endorsement of vaccines and advice that children should receive vaccinations may be influenced by this information and similar situations (Obaro & Palmer, 2003). Since some believe, the government is attempting to force parents to vaccinate their children, a portion of the population does not want to do so (Gostin, 2015). Whether or not it is accurate, every vaccine

dispute that is brought to the public's attention feeds suspicion of the government and ideas that it deliberately misleads the populace (Fairhead & Leach, 2012).

Politics also affects the public's opinion of vaccines, which parents may use to influence their decisions not to vaccinate their children (Sharfstein, 2017). Politicians that are reluctant to recommend vaccinations to the public can fuel growing public anxiety. Those who are in the public eye and have the power to attract more attention to conspiracies that may or may not be true can have a significant impact on public perception. The government must support research and initiatives that advance public health (Sharfstein, 2017). On the other side of the political debate, people may be reluctant to vaccinate their children because they have doubts about the intentions of the decision-makers who determine whether vaccination is necessary (MacDonald, 2015).

Another barrier to the public's acceptance of vaccines is the business side of vaccine development. The cost of funding research makes it difficult for small businesses to invest in the creation of vaccines (Rappuoli & Medaglini, 2014). Profit-driven firms are those that can afford to develop vaccines, which can make the public skeptical because they could think these companies are merely creating and promoting vaccines for their financial advantage (Obaro & Palmer, 2003). Parents' decisions to vaccinate their children are heavily influenced by their sense of trust. Pharmaceutical firms and the government are generally not trusted by parents since they are separate institutions with no established connections to the community (Dube et al., 2013). To boost public confidence in vaccinations, there must be a vaccine program that is neither politically nor commercially oriented (Obaro & Palmer, 2003).

General Practitioner Hesitancy

The advice that mothers receive from medical professionals when making medical decisions has an influence. Famous doctor Robert Sears, MD, published a book in 2007 that details an alternative vaccination schedule to the recommended schedule because he believes a child's immune system is not robust enough to resist receiving more than one vaccine at a time (Offitt, 2015). Mothers quickly trusted Dr. Sears' book because of his credentials and thought the recommended vaccination schedule was flawed. Mothers were scared into believing that children could not get a lot of shots at once, which gave them room to imagine they could change the advised vaccination schedule. Dr. Mehmet Oz, who is well known for his television program, has also made strong statements opposing vaccines, joining Dr. Sears as a significant individual. Dr. Oz has not only supported Dr. Sears' claims but has also stated openly that he will not vaccinate his children against influenza. Also, because of their negative effects, Dr. Oz has cautioned against getting the rotavirus and polio vaccines (Offitt, 2011).

Several healthcare professionals, in addition to the experts already mentioned, have similar reservations regarding vaccine recommendations. According to a poll conducted in 2015, 43% of general practitioners were reluctant to prescribe immunizations to their patients (MacDonald, 2014). Patients would not be persuaded to receive the vaccine by these physicians because they are not likely to be as knowledgeable about its advantages (Paterson, 2016). Parents' decisions about whether to vaccinate their children depend on how general practitioners address the subject of vaccines (Paterson, 2016). For instance, doctors who said, "Today we are vaccinating your child with..." rather than, "How do you feel about the vaccines?" increased the likelihood that parents would vaccinate their children. The latter strikes a more pessimistic note, giving the parent cause to think that their child might have mixed thoughts regarding vaccines

and have the option of forgoing them (Paterson, 2016). These family doctors contribute to the annual number of children who do not receive vaccinations. If the general practitioner does not believe in vaccines, they will not take the time to explain the benefits of vaccines to parents who have questions. Parents look to their general practitioner for assistance with medical decisions like vaccines (MacDonald, 2014).

Complementary and Alternative Medicine Beliefs

Complementary and Alternative Medicine describes medical treatments that aren't typically seen in Western medicine. The phrase's usage of the word complimentary suggested that these therapies are frequently utilized in conjunction with conventional medicine. Therapies that are employed in place of conventional treatment are referred to as alternative therapies (Tabish, 2008; National Center for Complementary and Integrative Health, 2021; Mayo Clinic, 2014). Popular complementary and alternative medicine (CAM) treatments include, but are not limited to, acupuncture, chiropractic adjustments, massage therapy, energy healing, homeopathy, naturopathy, natural goods, tai chi, yoga, and meditation (Barnes et al., 2008).

Those who visited a CAM provider have been highly linked to parents who decide against immunizing their children (Dube et al., 2013). Before the age of two, parents who have taken their kids to a CAM practitioner are less likely to have given their kids the required vaccinations (Downey et al., 2010). There is evidence that naturopathic treatment has a significant impact on patients' perceptions of how vaccines affect their intrinsic natural immunity (Cassell et al., 2006). Natural remedies are used in naturopathic medicine to support the body's ability to repair itself. Herbs, massage, acupuncture, exercise, and nutritional counseling are just a few of the therapies it supports. For those who might not find relief from their chronic illness through conventional medicine, it may be an alternative. Moreover, parents'

propensity for CAM has been connected to their increased worry about the negative effects of vaccinations (Gellin et al., 2000). According to a 2003 study of CAM students in Canada, 74.4% of respondents would advocate partial vaccinations to patients, while only 12.8% would suggest following the entire government-recommended vaccination regimen (Shen & Dubey, 2019). Ernst (2001) discovered that CAM practitioners frequently discourage patients from getting vaccinations and have been a crucial part of the anti-vaccine campaign. Several excerpts from chiropractic literature are cited by Ernst to argue against the safety and efficacy of vaccination (Ernst, 2001). According to one piece of chiropractic literature included in Ernst's essay from the Foundations of Chiropractic and Management textbook, it cannot be argued that the program has been demonstrated to be successful. Vaccine-related complications continue to take children's lives by causing disabilities or death (Ernst, 2001).

According to the moms' claims that they don't buy food with specific genetic changes stated in the ingredients, Cassell et al. (2006) found that 87% of mothers who chose not to vaccinate their children also tended toward natural diets. About 43% of the moms in this same group who did not vaccinate their children said they thought natural immunity would be better for them than vaccination (Cassell et al., 2006). Individuals who want to live a natural lifestyle with their family, avoiding additional chemicals and preservatives, will typically avoid immunizations (Pierik, 2017). When questioned in Washington in 1983, naturopaths said they opposed vaccinations because they thought the procedure was superfluous and unnatural. During the British Naturopathic Association meeting in 2001, there were twice as many naturopaths who said they opposed vaccinations (Ernst, 2001).

People frequently employ complementary and alternative medicine (CAM) in place of traditional medicine and favor natural goods and supplements including fish oil, flaxseed,

ginseng, ginkgo, and garlic (Barnes et al., 2008). A CAM system called naturopathy contends that to achieve and sustain health, one must tap the body's intrinsic healing capacity (Barnes et al., 2008). Patients are helped by naturopathic doctors to find natural remedies by adjusting their lifestyles, taking dietary supplements, and using medicinal plants (Barnes et al., 2008).

Some individuals do not think children should get immunized due to their excessive vigor; they overload their immune systems (Pierik, 2017). Parents who lack professional immunology expertise may base their decisions about vaccines on popular literature representations of the immune system and the immunity that vaccines trigger (Cassell et al., 2006). According to a 2012 survey conducted in Oregon, 61.6% of parents who decided not to vaccinate their children thought that allowing them to contract a disease naturally rather than immunizing them would improve their immunity (Guadino & Robinson, 2012). Nearly 25% of respondents to a national telephone study conducted in 2000 thought the immune system could be harmed by receiving too many vaccines as a child (Gellin et al., 2000). The belief that vaccines do not build immunity and instead make people sick after receiving them is a similar myth that encourages vaccine resistance (Downey et al., 2010).

Vaccine Injuries and Misinformation

Other than autism, vaccination injuries or side effects also lead to vaccine reluctance (Salmon et al., 2015). Anaphylaxis, febrile seizures, encephalopathy, encephalitis, and less serious side effects, include local responses and fever (Miller et al., 2014). Mothers who are anti-vaccine typically think that vaccines cause many childhood health problems that manifest around the time that kids get their childhood vaccinations. As a result, moms frequently mistake correlation for causation, attributing the unfavorable health event to immunization (Salmon et al., 2015).

The Internet makes it possible for reports of vaccination harm to spread rapidly (Salmon et al., 2015). Medical facts are rarely used to refute the claims made by parents since doing so could be seen as inappropriate in the wake of a health crisis that is being blamed on vaccines (Shelby & Ernst, 2013). Parents can post their accounts of vaccination injuries on a variety of anti-vaccine websites and discussion boards. Any comments disputing the link between the condition and the vaccine may receive a response labeling them as disrespectful and may be removed from the post (Shelby & Ernst, 2013). According to Shelby & Ernst (2013), anti-vaccine online communities are motivated by emotion rather than logic or veracity checks, therefore the information disseminated tends to further people's misconceptions of the science underlying vaccines. Consequently, parents might be persuaded to hold vaccine-skeptical ideas (Shelby & Ernst, 2013). Providers must record adverse reactions after administering a vaccine under the National Childhood Vaccine Injury Act of 1986. (Miller et al., 2014). The National Childhood Vaccination Injury Act included a provision to create the Vaccine Injury Compensation Program, addresses vaccine harm claims (Center for Disease Control and Prevention, 2017). The court evaluates claims of suspected vaccination harm or death to decide if compensation is appropriate (Center for Disease Control and Prevention, 2017). Moreover, the CDC and FDA fund what is known as the Vaccine Adverse Event Reporting System (VAERS), which was founded in 1990 by the Department of Health and Human Services. It is used to compile and examine cases of vaccination harm. Vaccines can nonetheless have common side effects including fever, local responses, and uncommon but serious anaphylaxis or febrile seizures while being held to a higher level of safety than any other type of treatment (Miller et al., 2014). Other than healthcare professionals, anybody can report occurrences to VAERS (Miller et al., 2014).

The data gathered by VAERS demonstrates that vaccination effects are rare. In the United States, 220 million vaccinations are administered annually, but only 28,000 incidents are recorded by VAERS. According to reports from 2006 to 2010, 0.6% of incidents were deadly, 7.7% were serious but nonfatal, and 91.7% were not serious (Miller et al., 2014). Nevertheless, only 33 incidences of vaccine-related anaphylaxis were discovered after a meta-analysis of 25 million vaccine doses (McNeil et al., 2016).

Vaccine reluctance is not a direct result of vaccination ignorance. Contrarily, research has found that parents who vaccinate their children often know less about vaccines than vaccine reluctant parents. According to studies, parents who are reluctant to vaccinate their children typically research the matter thoroughly and are interested in health-related issues (Dube et al., 2013). Berezin and Eads (2016) discovered that parents who were vaccination cautious were highly educated and well-off, while people with lower education and money did not vaccinate their children because they lacked access to care. The next issue is where these knowledgeable but vaccine-skeptical parents get their information. The Internet makes it possible for people to investigate vaccines, but they might be unable to distinguish between reliable sources and unreliable sources. Research favoring vaccine hesitancy is frequently found in works regarded as flawed by the scientific community (Schwartz, 2012).

Vaccine Decision-making

Due to the growing trend of parents and/or guardians delaying some or all vaccinations for their children, research has focused on how parents approach this decision and what factors relate to delay (Omer, et al., 2006; Robison et al., 2012; Omer, et al., 2012). These parents and/or guardians frequently worry that their children are getting too many shots in a short period (Salmon et al., 2005). As a result, parents request vaccination schedules that promote longer

intervals between shots while simultaneously reducing the number of vaccine doses given at a single doctor appointment. According to studies, children who receive their vaccinations later than other children could apply the healthcare system differently. Children of parents who denied immunizations were 50% less likely than fully vaccinated children to see a doctor for an upper respiratory illness (Glanz et al., 2013).

Parents and/or guardians exhibit a spectrum of vaccination compliance within each of the aforementioned categories, ranging from postponing vaccinations to only rejecting specific vaccinations to outright rejecting immunizations (McKee & Bohannon, 2018). Most people who completely refuse vaccinations do so for religious reasons, although parents and/or guardians who personally oppose immunization are typically more willing to make accommodations and at least partially vaccinate their children (McKee & Bohannon, 2018). Parents and/or guardians want to do the best for their kids, so learning that there might be safety concerns or that certain illnesses do not pose a serious threat to public health can make them reluctant to vaccinate their kids (McKee & Bohannon, 2018).

Parents' and/or guardians’ religious convictions are one of the most frequently cited justifications for not vaccinating their children. The fact that only four states do not grant exemptions to families for this reason presents a significant barrier to those trying to raise the immunization rate for children (Center for Disease Control and Prevention, 2019). Religious objections to immunization differ from other commonly cited reasons in that they are frequently associated with the parents' underlying beliefs, and it is exceedingly challenging to persuade these people to change their minds. These decisions are not the result of ignorance, but rather are the result of deliberate thought coupled with a strong conviction. In addition, people motivated

by religious claims frequently relate a full refusal of all immunizations, in contrast to other reported reasons for reluctance (Dubé et al., 2014).

Socioeconomic Factors and Vaccination

Access to immunizations may be impacted by a variety of reasons, but how do these factors interact with socioeconomic (SE) disparities? It is widely accepted that SE factors have an impact on healthcare access globally (Moscelli et al., 2018; Gordon et al., 2020; Walters & Suhrcke, 2005). People who are more in need of healthcare services typically encounter more difficulties, they are more prone to put off seeking medical care, and they must wait longer for necessary treatments (Walters & Suhrcke, 2005; Gordon et al., 2020; Moscelli et al.). Socioeconomic status, or SES, is commonly used when analyzing how many individuals use healthcare services since it serves as an indication of a person's socioeconomic standing in society. SES can be operationalized in several ways at both the individual and regional levels. A socially constructed concept that encompasses a person's hierarchical place in society (such as socioeconomic status), annual income, job categorization, amount of education, deprivation, and others are some frequent measures (Graham, 2007). In the United States, poor health-related quality of life outcomes are significantly correlated with lower SES, which may be due to inadequate healthcare access among poorer older persons (McMaughan et al., 2020).

In the UK, a national healthcare system supported by public taxation provides vaccinations (Sacre et al., 2022). There is therefore no immediate economic impact of usage. Contrarily, the American healthcare system is essentially market-driven, and access to vaccination is heavily dependent on insurance (Sacre et al., 2022; Sun, 2019). According to Fisher et al. (2013), American women without health insurance had lower rates of HPV vaccination. Either employers or income sources are used to pay for health insurance. Unless

they qualify for government aid, those without insurance must pay for vaccinations out of pocket (*Glossary: Out-of-Pocket Expenditure on Healthcare*, n.d.) Designing successful interventions to boost vaccination uptake requires a thorough understanding of the causes and processes of SE disparities (Sacre et al., 2022).

The newly created COVID-19 vaccinations have gained widespread acceptance in the US as being successful in reducing the coronavirus illness, hospitalization, and even fatalities (Lee & Huang, 2022). Following the Pfizer-BioNTech vaccine's complete approval by the U.S. Food and Drug Administration (FDA) in August 2021, vaccination rates skyrocketed across the country (Cohen, 2021). Even still, by the end of 2021, no more than 60% of the U.S. population had received the COVID-19 immunization, despite its availability and extensively known advantages (Hamel et al., 2021; Lee & Huang, 2022). Experts in public health and decision-makers alike have struggled to come up with ways to reduce COVID-19 vaccination hesitancy, which is defined as the delaying or refusal of the service (Soares et al., 2021; Lee & Huang, 2022). Parents' greatest worries about immunizing their younger children, ages 5 to 11, revolve around the vaccine's potentially harmful side effects and long-term effects (Hamel et al., 2021). Two-thirds of parents worry that the vaccine may have an impact on their child's future fertility (Hamel et al., 2021). Over half (53%) of parents are concerned that their child may be forced to receive the COVID-19 vaccination even though they do not want them to due to mention of potential school vaccine mandates (Hamel et al., 2021).

Human papillomavirus (HPV) vaccination programs have raised concerns that they may encourage risky sexual behavior through processes such risk compensation, behavioral disinhibition, or perceived support of sexual activity (Leidner et al., 2019). HPV has been linked to cancer in several anatomic sites, including the anal and oropharyngeal cavities in both sexes as

well as the cervical, vaginal, and vulvar cancers in women. According to Petrosky et al. (2015), HPV can also result in recurrent respiratory papillomatosis, anogenital warts, and cervical precancers. Despite the positive effects of HPV vaccination on health, coverage rates fall short of the Healthy People 2020 target of 80% coverage for three or more HPV vaccine doses (Stokley et al., 2014). According to Stokley et al. (2014), coverage rates for the HPV vaccine are also lower than those for other adolescent immunizations. According to Reagan-Steiner et al. (2016), 37% of female 13- to 15-year-olds in the US have received three doses of the HPV vaccine as of 2015, while 27% of male 13- to 15-year-olds had received the vaccine. Strong provider recommendations, parent preferences, and child preferences are all factors that affect whether individuals choose to receive the HPV vaccine (Rosenthal et al., 2011; Brown et al., 2010; Freed et al., 2010).

Summary

Vaccine reluctance is a complex phenomenon with numerous underlying causes. Established literature points to religion, fear, and media's influence, government and pharmaceutical mistrust, naturopathic views, and vaccination harm as the main contributing reasons for vaccine reluctance/refusal. Pharmacists and other healthcare providers will be better equipped to engage informative conversations regarding vaccines if they can pinpoint the main concerns parents and/or guardians have about immunizing their children (McKee & Bohannon, 2018). In addition, they will be able to provide parents and/or guardians with the information they need to make the best decisions for their children. Like any parent and/or guardian, those who are reluctant to vaccinate their children or who refuse vaccinations are worried about their children and want to do everything in their ability to protect them. Practitioners must be honest and forthright with their patients and their families for them to understand the benefits of

immunizations and to avoid making them feel attacked or shamed for worrying about their child's health (McKee & Bohannon, 2018). Individual and social interventions are required to address vaccine reluctance and refusal. To increase vaccination uptake, it is critical to fulfill each individual's systemic and personal needs. Healthcare practitioners are critical in resolving vaccination gaps and providing vaccine education. Conversations about vaccine recommendations vary greatly, and a lack of urgency about vaccination can lead to immunization deferral. Chapter three discusses the methods used to better understand vaccine hesitancy and the information sources that Christian parents and/or guardians who are wary of getting immunized rely on. Parents' and/or guardians' attitudes toward immunization have been proven to improve modestly in response to education and patient time, but the precise messages or techniques that medical professionals should employ have not yet been fully uncovered (McKee & Bohannon, 2018 & Williams et al., 2013). Pharmacists, doctors, nurses, and other healthcare professionals can better relate to patients and address the topics that matter to parents and/or guardians by being aware of the questions they are asking. It is important for all healthcare professionals to remain knowledgeable about the recommended vaccine schedule and to comprehend the rationale behind those recommendations (McKee & Bohannon, 2018). This material will give patients direct access to trustworthy information that will assist them in choosing the best course of action for their families.

CHAPTER THREE: METHODS

Overview

The goal of this study was to gain a better understanding in the reluctance of Christian parents and/or guardians, between the ages 24-48, who have a child or children between the ages of 0 and 18 who are hesitant to get vaccinated, as well as the origins of these causes. The following study topics were addressed:

- What are the reasons why Christian parents and/or guardians (between the ages of 24-48) are hesitant for their children to get immunized?
- What are the information sources that support these reasons?

The study design, study population, experimental methodology, data collection, and study restrictions and delimitations are all covered in this chapter.

Design

The proposed qualitative research study used a descriptive case study design. When participant behavior cannot be controlled and there are ambiguous boundaries between phenomena and context, researchers should employ qualitative case study approaches (Crowe et al., 2011). When there is limited information available about a subject or phenomenon, descriptive case studies are helpful designs.

The primary data collector was a solitary researcher. Christian parents and/or guardians (between the ages of 24-48) that met the criteria, completed the requirements, and agreed to participate in the study were interviewed in semi-structured in-person interviews. In an instance where an intriguing or unusual topic was revealed during the semi-structured interviews, the researcher refocused the questions or prompted for more information (Adeoye-Olatunde & Olenik, 2021). Moreover, a series of semi-structured interview questions were posed to 12

Christian parents who fit the established criteria (parents and/or guardian identify as Christians, are between the ages 24-48, attend church every week, and have a child or children aged 0 to 18).

Based on causes for vaccine reluctance discovered in the literature, open-ended interview questions were developed to help address the study's questions. Open-ended questions did not offer participants a prepared list of response options, but rather allowed them to respond in their own words (Krueger, 2005). In exploratory investigations and qualitative research approaches, open-ended questions are frequently employed (Allen, 2018). In the findings section, a summary of the interview responses is provided. The research aimed to learn more about the question, "What factors contribute to vaccine hesitancy among Christian parents and/or guardians (between the ages of 24-48)?" This kind of design enabled us to successfully respond to the question, "What information sources contribute to these aspects?"

Interviews did not start until the researcher received IRB approval. For the semi-structured interview questions to yield accurate results, the following guidelines were followed: Before the development of interview questions, the researcher conducted a thorough literature review. Participants were informed of the confidentiality agreement, received confirmation that the interview will be recorded for future use, and were guided through the process with general questions to help them feel comfortable. Participants were given a report of the interview to give them a sense of ownership and accountability for the researcher.

Research Limitations

The researcher's bias during the interview placed constraints on the study. Interviews may be corrupted and produce incorrect results because the researcher was aware of the benefits of vaccinations. The debate over whether to vaccinate children continues even though adults

generally have a high level of vaccination acceptance (Patwary et al., 2021). The opinions of Christian parents and/or guardians on this subject have not yet been thoroughly investigated in qualitative studies. A key component of this study's design was the gatekeeper, who ensured that the researcher had access to potential participants and the research locations throughout the process. These are individuals who oversee granting or denying access to individuals or circumstances during organizational study (Andoh-Arthur, 2020). In addition, gatekeepers can refer to any person or group of people who could be extremely helpful in acquiring access because of their expertise, interpersonal relationships, or membership in a research population (Andoh-Arthur, 2020). By ensuring that research activities are carried out without incident, the gatekeeper provided a constructive influence that was extremely beneficial to the research process. A youth pastor of a sizable church in Greenville, South Carolina, acted as the study's gatekeeper for this investigation. The researcher provided the pastor with the eligibility requirements for participation and let the pastor construct a pool of individuals (without disclosing the study's subject matter).

Twelve distinct Christian parents and/or guardians (between the ages of 24-48) in Greenville, South Carolina were the subject of one-on-one semi-structured interviews as part of a qualitative descriptive study design. The development of the interview guide followed the Health Belief Model (HBM) as the theoretical framework. The HBM's constructs were connected to each inquiry. The researcher used the NVivo software, which was developed by Australian social scientist, Lyn Richards, and computer scientist, Tom Richards, at La Trobe University during the 1980s (Richards 2002; Dhakal, 2022). NVivo is a computer-assisted qualitative data analysis software (CAQDAS) tool (Røddesnes et al., 2019). For the purposes of this study, NVivo was

used to thematically examine the transcripts with the help of interpretation by the researcher. To reduce bias, the interviewer encouraged the participants to be as honest as possible.

Another restriction could have resulted from participants' refusal to respond to certain questions or have dishonest responses. Participants were told the interviews are solely done to learn more about vaccination resistance in Christian parents and/or guardians (between the ages of 24-48) and the researcher was not trying to counteract bias by expressing their own opinions on vaccines. To protect participant security and privacy, every practical measure was used. By omitting participant names and other identifying information from the final report, the researcher took precautions to guarantee anonymity. The researcher informed participants that all comments and information are kept private and used exclusively to further the goals of the study. Participants received information on the study's requirements and privacy protections, such as, password protection, software securities, etc., before the interviews started and were given the opportunity to ask questions.

Research Questions

For the proposed study, the following research questions were addressed:

1. How does Christianity affect parent and/or guardian (between the ages of 24-48) attitudes toward childhood vaccination?
2. What prompts a Christian parent and/or guardian (between the ages of 24-48) to consider refusal to vaccinate their child?
3. How do parental and/or guardian socioeconomic factors (educational level, occupation, wealth status) influence childhood vaccination?
4. What can healthcare providers do to make Christian parents and/or guardians more comfortable with childhood vaccinations?

Setting

One of the most important requirements for qualitative research is access to individuals. Gatekeepers give researchers access to study locations and associated communities of stakeholders, the opportunity to share information about their studies with potential participants, and advice on where to hold meetings and conduct interviews (Dahlke & Stahlke, 2020). Before beginning any investigation and frequently throughout the study, researchers must have a discussion with possible participants and gatekeepers about ethical problems, such as confidentiality, anonymity, and the right to join or leave the inquiry (Dahlke & Stahlke, 2020). By presenting the foundations of research ethics to gatekeepers, they can prevent accidentally inducing Christian parents and/or guardians to feel forced to participate (Dahlke & Stahlke, 2020). Providing adequate information about their rights and ensuring that participation in the study is voluntary will increase the possibility that prospective participants will comply with research requirements.

For this study, the semi-structured interviews took place in an office at Brushy Creek Baptist Church in Greenville, South Carolina, where the researcher worked with the youth minister. While not disclosing the study's subject matter, the researcher gave the pastor the eligibility requirements for participation and let him build a pool of participants. The researcher later approached the possible participants, outlining the objectives of the study, and solicited their cooperation. This technique is known as voluntary response sampling. In this method, participants are given the option to participate in the sample by responding to a request for participation made by the researcher (Murairwa, 2015). To lessen bias, the researcher selected the pool and made the request using a pastor who is unfamiliar with the study's subject but let the

parents and/or guardians decide whether to join. The pastor also came from a church that is not a research collaborator.

Participants

Eligible participants included 12 Christian parents and/or guardians (between the ages of 24-48) of children newborn to 18 years of age, who resided in the Greenville area. In this context, a parent and/or guardian is someone with legal custody over a minor who may or may not be related to them. An individual who embodies the traits and disposition of Jesus Christ is a Christian. For clarification, "Christian" refers to any individual, whether a man, woman, or child, who accepts Jesus Christ as Savior and Lord and seeks to follow Him in all areas of life. The purpose of the wide age gap was to determine whether immunization at lower ages differs from vaccination at adolescence. It is crucial to remember that children from birth to age 18 are still in their parents' care in terms of their health, even though it is unclear what makes younger age immunization different from adolescent vaccination in this case. A youth minister from Brushy Creek Baptist Church acted as the gatekeeper, supporting the study's objectives, and authorized the initial access required for each of these participants. Participants were to be well-positioned to reflect the study topic since the "depth" of the data, rather than the frequencies, is an important factor in sample size (O'Reilly & Parker, 2012). A minimum sample size of between 5 and 25 is needed for in-depth interviews with semi-structured questions, whereas between 25 and 30 are needed for interviews with a heterogeneous population. (Cresswell, 2007; Kuzel, 1992; Saunders, 2012). Saunders (2012) also notes that there has only been a limited amount of research on the idea of saturation point and tries to guide the researchers through a tabulation of this data. For qualitative researchers working in an organizational setting, important repercussions follow. Gatekeepers are those who decide who can or should have access to a

resource, controlling access to it directly (Pereira et al., 2021). Data from 12 Christian parents and/or guardians (between the ages of 24-48) was sufficient without being repetitious or overly informational, given that the researcher used semi-structured interviews to go deeper into the subject and acquire a better understanding.

Procedures

The study is a descriptive case study, which thoroughly examined a phenomenon that establishes theories before they are developed and stated (Mills et al. 2010). Interviews did not begin until the researcher obtained the required regulatory compliance, as is required for any study involving human subjects. The Institutional Review Board (IRB) and the Research Review Committee approved the study. The pertinent paperwork and any requested additional information were provided to get IRB approval. Federal regulations (45 CFR 46.116) outlined the framework for the types of information (i.e., the "components") that must be delivered as part of the consent procedure (University of Michigan, 2018). The church's permission to conduct the semi-structured interviews on its property was not subject to any paperwork requirements. However, the researcher did gather a signed document to show the church administration is allowing research to proceed.

The researcher collaborated with a youth pastor of a church in Greenville, South Carolina. The researcher provided the criteria for participants, without disclosing any of the study's content. There was a total of 12 Christian parents and/or guardians (between the ages of 24-48) who were selected, using a voluntary response sample technique. The semi-structured interviews took place in an office space at Brushy Creek Baptist Church in Greenville, South Carolina. A virtual meeting software, Microsoft Teams, was used to conduct the interviews, allowing for the recording and automatic transcription of the conversation within a secure

network. Network communications in Teams are by default encrypted with a password (Microsoft, 2021). Teams enforces two-factor authentication across the team and the organization, single sign-on via Active Directory, and encryption of data in transit and at rest (Microsoft, 2021). SharePoint encryption was used to support the storage of files there (Microsoft, 2021).

During the one-on-one interview, the interviewer was allowed to ask follow-up questions to clarify comments and determine the truthfulness of the response. While each candidate was questioned independently, the response of one candidate had no bearing on the reaction of another candidate. The outcome was independent of the performance of the other candidates, leading to the sharing of additional information.

The researcher's key concerns were related to the following four questions: What impact does Christianity have on parental and/or guardian views toward the immunization of children? What might cause a Christian parent or guardian to be reluctant to vaccinate their child? How do parental and/or guardian socioeconomic characteristics (educational attainment, employment, and wealth status) affect child immunization? What can medical professionals do to help Christian parents and/or guardians feel more at ease with immunizing their children?

The Researcher's Role

Significant participant-specific data was collected for the researcher to fully understand the participant's situation (Creswell, 2013; Riessman, 1993; Huberman & Miles, 2002). As a result, the analysis will be slow and extremely meticulous (Creswell, 2013). There are some participants that found it difficult to maintain anonymity since they prefer to share their experiences rather than have them kept private (Butler & Kisber, 2010). To provide an appropriate measurement of vaccine-hesitant attitudes in this pool of people, the first step was to

be elicit with a wide range of beliefs from 12 Christian parents and/or guardians (between the ages of 24-48) who are or have been reluctant to vaccinate their child or children. It is assumed that most researchers in this field of public health have a bias in favor of childhood immunization. The researcher may already have preconceived notions about vaccine-hesitant parents, such as that they are uninformed, have been deceived, or do not understand the science behind vaccination. Hence, confirmation bias, attention bias, or other validity issues could affect earlier studies in which researchers viewed websites or message boards to uncover vaccine-hesitant opinions. In favor of the most radical or scientifically unsound views, a researcher who has had a predisposition towards vaccine reluctance may have disregarded more palatable or moderate theories (e.g., beliefs related to healthy feeding practices). Also, the prejudice in favor of vaccination created using websites and message boards would have removed less outspoken opponents who could have had other beliefs or concerns. The conclusion is that current research is likely biased in favor of parents and/or guardians who support vaccines while underrepresenting Christian parents and/or guardians (between the ages of 24-48) who lean toward the middle of the spectrum. The researcher declined to respond if a question about their personal behavior or beliefs was posed. The researcher hoped to increase awareness to address vaccine reluctancy in Christian parents and/or guardians and attempted to encourage vaccine adoption and aid in closing the gaps on vaccine hesitancy.

Data Collection

The primary approach for gathering data for this study was through interviews. By asking insightful questions during the interview, the researcher employed a semi-structured interviewing process. Before moving on to more in-depth inquiries, each interview began with a set of questions that participants responded to. There were 12 Christian parents and/or guardians in this

study, between the ages of 24-48. As a requirement for this study, both parents and/or guardians had to be Christians. They also were asked to have children between the ages of 0 and 18 years and attend church on a weekly basis.

Interviews

The three primary techniques for acquiring qualitative data from open-ended interviews, according to Patton (2002), are the general interview guide approach, standardized open-ended interviews, and informal conversational interviews. Hyman et al. (1954) asserts that conducting interviews is a typical research strategy in the social sciences. Magaldi & Berler (2020) refer to the semi-structured interview as an exploratory interview. They continue by saying that the semi-structured interview is frequently based on a guide and is usually focused on the main problem that offers a wide pattern. In addition, Megaldi & Berler (2020) state that the semi-structured interview enables a researcher to delve deeply into discovery while having thematic paths provided in advance. In contrast to the structured interview, the semi-structured interview is flexible and allows for the inclusion of new questions in response to the interviewees' responses. There are formalized, predetermined questions in the structured interview.

A framework of themes that the interviewer is expected to explore is often present in a semi-structured interview. According to Rubin and Rubin (2005), effective interviews often include a balance of leading questions, follow-up inquiries, and probing questions. A well-prepared interviewer will have a certain topic (or topics) in mind that they want to address throughout the conversation. Many academics assert that it is typically beneficial for interviewers to draft an interview guide, which is a collection of questions and themes that an interviewer could ask different participants in different ways (Lindlof & Taylor, 2002). The reference book enables researchers to concentrate on the most recent issues without being

constrained by a predetermined framework. Semi-structured interviews can be a helpful technique for discovering people's beliefs, perspectives, and life experiences. Semi-structured interviews can be used for this purpose by family physicians, primary care providers, and other researchers in the field of health services (DeJonckheere & Vaughn, 2019). The following framework can be used to get ready for open-ended interview questions:

Thank you for agreeing to participate in this research. The focus is to find out what common views, worries, and assumptions Christian parents and/or guardians have about the immunization of children. Answering honestly is appreciated. No personally identifiable information will be requested from you.

1. Do you feel your employment is a factor in your choice to vaccinate?
2. How many children do you have? Are your children fully vaccinated, partially vaccinated, or not vaccinated at all?
3. Are you immunized for yearly vaccines, if so, what led to that decision?
4. What do you know about public health and vaccines?
5. What is public health's role with vaccines?
6. What kind of insurance do you and your children have?
7. What do you know about vaccines?
8. What do you believe about immunizations for children?
9. Do you have reservations about immunizations?
10. Do you believe there are any benefits with immunizing your child or children?
11. What drawbacks of immunizing your child or children do you see?
12. Do you have any fears or concerns about vaccines?
13. What further concerns do you have about immunizing your child or children?

14. What do you know about vaccine safety?
15. Have you come across misinformation regarding vaccines on social media that you knew to be false?
16. Do you typically consider the person who posted the material when you come across vaccine health information on social media?
17. Was it difficult to decide whether to immunize your child/children?
18. How easy is it for you to obtain immunization services for your child/children?
19. How worried are you that a vaccination could result in an adverse reaction for your child/children?
20. How much do you trust the [healthcare professionals] administering your child's vaccinations?
21. What, if any, barriers prevent your child/children from getting the vaccinations they need?

It has been demonstrated that sociodemographic factors can influence vaccine reluctance. There are not enough studies, though, looking at connections between vaccine reluctance and access to healthcare. Questions 1-7 seeks to identify whether the number of children, education level and wealth, or access to insurance could affect vaccination hesitancy.

Questions 8-11 set out to create and assess a theory-driven survey tool to gauge parents' concerns, attitudes, beliefs, and plans regarding childhood vaccinations. Although many single-study surveys collect data on attitudes and views about vaccines, few measures can be applied over time and across various interventions. The expert panel and cognitive interviews with Christian parents and/or guardians (between the ages of 24-48) will help direct the refinement and further elimination of the research focus, which took a long time to develop. The large age

gap is being used to test if vaccination at younger ages differs from vaccination throughout adolescence. Although it is unclear what differentiates younger age immunization from adolescent vaccination in this case, it is important to remember that children from birth to age 18 are still under the responsibility of their parents regarding their health.

To encourage more intuitive and natural conversations between the participants and the researcher, questions 12 through 21 are specifically tailored to the tone of responses. The researcher will continue conducting the interviews with new individuals in this population until enough information is attained to sufficiently analyze the following topics: vaccine hesitancy, faith in leaders and health professionals, and confidence in public health organizations. The quantity of participants thus relies on the quality of the data. Regarding vaccination intentions, The Health Belief Model (HBM) and its components had a substantial impact. Two-way interactions between severity and susceptibility views as well as interactions between perceived benefits and perceived susceptibility are likely to be outlined within questions 12-21. It is also crucial to recognize the danger presented by social media anti-vaccine campaigns. In addition, to understand the impact of social media and online foreign disinformation campaigns on vaccination rates and attitudes toward vaccine safety, the questions aid in assessing the level of confidence that parents and/or guardians may have in healthcare professionals. Overall, the influence of beliefs on vaccination intention could be moderated by a critical event, in accordance with the events systems theory. The research questions focused on how the HBM components interact with one another as well as how critical incidents can affect the power of beliefs.

Misinformation and vaccine reluctance have a tangled relationship. There are many kinds of false information, each of which is connected to a particular mindset regarding vaccine

reluctance. The attitudes about vaccination that are of particular importance are personal freedom and denial, which constitute significant but under researched phenomena. Public health officials may benefit from working with specialists in other sectors to address harmful misinformation that is causing vaccine reluctance. Medical and scientific techniques may not be adequate to counteract disinformation based on religion, media, or politics. Each question aims to assist and establish rapport between the subject and researcher by being simple and non-threatening. Depending on the information on each participant's unique chronology, the questions will be modified as necessary.

Recording and Text Analysis

Understanding the words, symbols, and/or images present in texts is part of the methodology of textual analysis, which aims to learn more about how people interpret and express their daily experiences (Allen, 2018). Cues to how communication may be received are provided by visual, written, or spoken messages. The messages are frequently interpreted as being shaped by and reflective of broader social structures. Messages, for instance, can both reflect and/or challenge the historical, cultural, political, and ethical settings in which they were produced (Allen, 2018). Thus, the analyst must be aware of the broader social structures that influence the messages in the text being studied.

Microsoft Teams will be used for recording and transcribing each of the in-person interviews among the 12 Christian parents and/or guardians. A MacBook Air will be used for the semi-structured conversations, where all the data will be saved and password-protected for privacy. The research will be further reviewed and modified utilizing the NVivo software system to detect themes over the course of numerous iterations. One author will independently code the

interview transcripts using Microsoft Teams and the NVivo software will be an essential part of the qualitative thematic analysis.

The analyses evaluate three critical variables: vaccine hesitancy, faith in various leaders and health professionals, and confidence in public health organizations. The initial codes that will direct this iterative assessment will come from participants' intents, both good and negative, toward vaccines. The collected codes will be examined for trends and the growth of overarching themes. To verify the accuracy, the themes will be examined and contrasted with the data. The characteristics that encourage vaccine acceptance are less understood because research on the vaccine issue tends to focus on individuals who oppose vaccinations, thus subthemes for positive attitudes will be defined inductively.

Data Analysis

The researcher used a reflective analytic strategy to examine the information gathered. Reflection is a crucial research technique. This research was predicated on the idea that researchers should possess the capacity for in-depth reflection to be more than just technical experts in their field (Dahlberg et al., 2008; Steier, 1992). This implies provoking thoughts about both the mental experience that shapes the meaning of practice as well as the actual practical acts of inquiry (Mortari, 2015). Reflexivity in the interviewing required being open-minded and aware of the dynamics of the situation since both the interviewer and the interviewee were actively involved in the information-generation process (Hsiung, 2010). According to Gall (2015), the researcher used their judgment and intuition to evaluate the data when doing a reflective analysis. It is crucial to develop the skill of reflection because it enables one to participate in a deliberate interaction with life and develop an awake perspective on one's own experiences (Mortari, 2015). In the world of research, reflection is a critical cognitive technique.

Qualitative research makes extensive use of reflexivity, which is utilized to justify and validate research methods. The transcripts were separately coded by the researcher, who then utilized NVivo to examine them. Following the coding of the interviews, themes were developed to describe the respondents' perspectives. Deductive, iterative coding was applied to the final data, revealing certain sub-themes as a result. To ensure achievement of maximum uniformity and to obviate any chance of bias, the final data is presented. To avoid bias and address reflexivity, the research design is explicitly included, displaying a wide range of different opinions. The information reflecting 12 Christian parents and/or guardians from each of the interviews was transcribed using Microsoft Teams with adequate substance and context for interpretation.

Data Analysis Steps

Twelve separate interviews with Christian parents and/or guardians (between the ages of 24-48) took place. With additional probing questions, the interviews were set up as semi-structured in-depth interviews. The interviews were videotaped with the subjects using a MacBook Air laptop, with passcode privacy, and the transcriptions were handled by the researcher. The recordings were available for participants to review and provide their approval before the data is assessed. The transcripts were included in the observational notes from the interview. Important phrases and terms were underlined by the researcher.

The NVivo software system is useful in mixed-methods and qualitative research. NVivo served as a guide for classifying, arranging, and analyzing qualitative data because of its ability to import and handle a variety of formats and data types. It is specifically utilized for the analysis of unstructured text, audio, video, and image data, including (but not restricted to) focus groups, interviews, surveys, social media, and journal articles (Richards 2002; Dhakal, 2022). NVivo supported the import of several document file types, including Microsoft Office documents,

PDFs, and text and statistical data files (Dhakal, 2022). It also had the capability to import movies and images that have been generated or scanned digitally. Additionally, there is the choice to use the NCapture tool to import social media data as well as files from another NVivo project (Dhakal, 2022). It is simpler to prepare data for analysis, display, and reporting in the researcher's analytical process when it was organized and temporarily stored in NVivo.

The data was thematically examined and then interpreted using this software. In NVivo, thematic coding was simple to achieve by choosing a text passage from a source document, such as an interview transcript, an image, or another sort of source document, and then labeling it with a node (Dhakal, 2022). The node allowed the option to be built immediately or in advance. As a user of NVivo, we were free to build as many nodes as needed and could even double code a text or image portion as sought suitable (Dhakal, 2022). In NVivo, codes were allowed to be colored-coded. In other words, there was the ability to assign colors to codes, observe the colors coded, and then identify gaps or color-related themes (Dhakal, 2022). Two further NVivo tools for categorizing and data analysis are Sentiments and Relationship Types (Dhakal, 2022). With the capability to categorize the data as positive or bad, it gave the option to annotate it in a way that is helpful to the research. The Relationship Types tool allowed identification of whether two points or data chunks were related in various ways (Dhakal, 2022). The capacity to color-code, leverage relationships and feelings, and organize meaningful data by codes, cases, and classification best exemplifies NVivo's worth.

Based on how frequently each subject appears in the data being studied, NVivo prioritized some themes over others when determining their significance. Giving distinct data items and short names during coding was necessary for analysis (Butina, 2015). The data was

categorized by the researcher after the codes were produced. By using the pre-established categories and structured data, the researcher was able to isolate themes.

To ensure the data obtained was sufficient, the researcher repeated each procedure more than once. The researcher used theory triangulation once some preliminary findings from the data were reached. Providing the transcripts to authorities outside the researcher's expertise is one type of triangulation (Carter et al., 2014; Guion et al., 2011). A local pastor and a health expert received copies of the transcripts from the researcher to review the information and make their inferences. The local pastor and the medical expert both obtained full instructions. Before coming to any official conclusions or making any recommendations, the researcher assessed the results from the data that was collected. According to Streefland et al., 1999, "local vaccination cultures" emerge from "shared beliefs about disease etiology, potency, efficacy and safety of modern medicine as well as vaccines and views related to preventive measures" in addition to "local health services experiences and vaccination settings." Each of these factors affects a person's decision to get immunized. Journaling helped the researcher become more introspective and self-aware.

Trustworthiness

Credibility

Most of the current research on vaccination resistance has been on data acquired locally and on websites run or frequented by vaccine-reluctant people. As many children grow and encounter routine vaccine visits, they are regularly exposed to injections and pain. Current recommendations in the field suggest that healthy children should receive about 20-30 vaccines before they turn 18 years of age (Buscemi et al., 2008). Because of the emphasis on websites and message boards, there can be biases in favor of the vehemently anti-vaccine parents. It is crucial

to understand the perspectives of Christian parents and/or guardians (between the ages of 24-48) who lie more in the middle of the vaccine hesitancy continuum to ease their worries. Also, past evaluations noted in the literature review relied on how vaccine-skeptical researchers conceptualized their arguments; study methods that permit vaccine-skeptical parents to freely communicate their thoughts and uncertainties would contribute to a better understanding of the issue.

The Institutional Review Board authorized the research procedure. Before obtaining consent, participants were given a thorough explanation of the study's research goals, procedures, objectives, anticipated affects, expected outcomes, and participants' rights and obligations. Participants in this study were free to leave the interviews at any time if they found them uncomfortable. Personal information was not requested or recorded. The respondents were coded, which helped with the transcription of the interviews. Credibility was attained in this study by sustaining participation and persistent observations to understand the phenomenon's embedded context and to reduce distortions that might infiltrate the data that was collected.

Dependability and Confirmability

During the interview process, a single researcher served as the principal data collector. The researcher adhered to a set of rules while selecting the questions to ask each participant utilizing the semi-structured interviewing technique. As a result, posing questions were more in-depth. The data analysis is useful of both the prepared participant scripts and the recorded interviews. The transcribed material was assessed using the NVivo software system to validate the themes and descriptors found. By maintaining reflexivity throughout the research process to acquire confirmability, this helped to assure the dependability of the study.

Transferability

To better understand Christian parent and/or guardian vaccine hesitancy, further investigation of the fundamental study subject is critical. Given how many people are still wary about vaccines, the report suggested a few potential remedies, but those only touch the surface of the problem. The nation should conduct greater studies and investigations to better understand the causes of vaccine mistrust. This research is essential to reducing vaccine fear and raising immunization rates across the country. By employing a purposive sampling strategy and giving a thorough and accurate description of the participants, transferability was enhanced. Few studies have attempted to summarize past and present health communication interventions and strategies that have been successful or unsuccessful in addressing this expanding phenomenon; instead, many studies have focused on understanding and defining the new socio-medical term, vaccine hesitancy, rather than a focus on a target population, such as Christian parents and/or guardians (Olson et al., 2020).

Ethical Considerations

Reflexivity is crucial for enhancing one's ethical perspective on research. It is only through the capacity to radically reflect on the experience as it occurs that one may recognize unexpectedly dire circumstances and respond to them in an ethically responsible manner (Guillemin & Gillam, 2004). Reflectivity, according to McGraw et al. (2000), is a process wherein researchers place themselves and their actions under scrutiny, recognizing the ethical issues that permeate the research process. The first and most important ethical requirement is reflective practice because an ethical self-forming activity implies reflectivity. If ensuring the ethic of research is not merely a regulatory activity, which implies only applying rules and codes,

it allows the researcher to shape oneself as an ethical instrument to uphold to what is true (Cannella & Lincoln, 2007).

Institutional Review Board (IRB) permission was required for the planned study. IRB approval was required because participants were questioned about sensitive topics related to vaccine resistance. There were no interviews with children; rather, only adults (between the ages of 24-48) who are active in their kids' health. To guarantee that children were not included in the study to help with exclusion criteria, the researcher asked that they refrain from entering the interview room. Although sensitive, the questions were used to assess Christian parents' and/or guardians' health attitudes on vaccine hesitancy. Questions focused on parents' and/or guardians' level of confidence and opinions regarding where they obtain their health information; this poses a danger to participants because it could make parents feel ashamed. Although bearing in mind the delicate nature of the subject matter, the researcher made every effort to maintain a comfortable atmosphere throughout the interviews.

Every effort has been made to safeguard the safety and privacy of participants (Roberts, 2019). The researcher ensured anonymity by removing participant names and other identifiable information from the final report. Participants were informed by the researcher that all feedback and information was treated in the strictest confidence and used only to advance the objectives of the study. Prior to the interviewing process, participants were given information on the study's requirements and privacy protections, as well as the chance to ask questions.

Summary

The study aim was to understand the factors that influence Christian parents and/or guardians of children between the ages of 0 and 18 years who are hesitant to get vaccinated and to pinpoint the information sources contributing. To address the concerns of parents and/or

guardians who are vaccine-hesitant more effectively, the study's findings aid healthcare providers in addressing parental concerns relating to vaccine hesitancy. Also, identifying the information sources used by parents and/or guardians who are anti-vaccine can help healthcare professionals get to know those sources and talk to parents and/or guardians who are anti-vaccine about the veracity of those sources.

This chapter is followed by the results section, which includes a summary of the interviewees' responses and demographic data. The results are reviewed and related to the literature review in the discussion chapter. The discussion portion of this research reviews the study's limits and delimitations, which may have impacted the findings, as well as how healthcare professionals might use the study's findings.

CHAPTER FOUR: FINDINGS

Overview

This research evaluates, using a descriptive case study analysis approach, the worries, thoughts, feelings, and intentions of parents and guardians toward immunizations for their children. The objective of the present study is to comprehend the "why" and "how" concerns raised by the vaccine-hesitant population. The study aims to identify the factors that impact vaccine resistance among parents (with children aged 0-18 years of age) and whether medical interventions are more successful in reducing this reluctance. To create a conceptual model/measurement of vaccine hesitancy, the responses from Christian parents and/or guardians from the elicitation research were reviewed using a process called reflective analysis. First, vaccine-hesitant beliefs were examined to identify which vaccine-hesitant beliefs were most pertinent regarding vaccinating one's child. Factor analysis was used as an exploratory tool to reduce these vaccine-hesitant beliefs that were highly correlated with one another down to a vaccine-hesitant concept. The reliability of the generated metric was then evaluated. The findings of this study offer crucial insights for public health strategies to lessen vaccine hesitancy, which has been identified as a significant barrier to the success of even the recent COVID-19 immunization efforts. Yet, vaccine hesitancy is a complex and diverse phenomenon constituted by several networks of influence, meaning, and logic. Therefore, we assume that cultural, sociodemographic, psychological, and cognitive factors co-exist that may influence vaccine hesitancy. This chapter will discuss the findings of the study. Models, tables, and narrative elements will all be used to communicate this information to the reader(s). In summary form, the study's importance and purpose will be restated in the conclusion.

Research Questions

Central question

Why are Christian parents and/or guardians hesitant to vaccinate pediatric populations and how can current medical professionals bridge that gap?

5. How does Christianity affect parent and/or guardian attitudes toward childhood vaccination?
6. What prompts a Christian parent and/or guardian to consider refusal to vaccinate their child?
7. How do parental and/or guardian socioeconomic factors (educational level, occupation, wealth status) influence childhood vaccination?
8. What can healthcare providers do to make Christian parents and/or guardians more comfortable with childhood vaccinations?

Participants

Eligible participants included twelve Christian parents and/or guardians (ages 24-48) from Brushy Creek Baptist Church, residing in the Greenville area, with children ranging in age from birth to eighteen. A parent or guardian, in this context, is a person who has legal custody over a minor, who may or may not be related to them. A Christian is a person who possesses the qualities and character of Jesus Christ. To be clear, a "Christian" is any person who accepts Jesus Christ as Savior and Lord and makes an effort to follow Him in every aspect of life, regardless of gender or age. The researcher conducted one-on-one semi-structured interviews with each participant. Microsoft Teams was used for all the recording and transcription of the interviews, with an average duration of 43.5 minutes. Throughout the interviews, it was determined that ten out of twelve participants were female, identified as Christian, and attended church on a weekly

basis. The remaining two participants were males, identified as Christians, and attended church on a weekly basis. To ascertain whether immunizations administered at younger ages of parents and/or guardians varied from those administered at older ages, a significant age difference for said participants was utilized. The participants were each assigned pseudonyms from the alphabet using the letters A through L and each participant will be revealed below. In addition, Table 3 below exposes the demographic data collected from the enrolled people. Each participant was older than 24. The ethnic background and race of study participants will be disclosed, along with each participant's gender. The employment and education status of the participants will also be displayed below.

Semi-structured qualitative interviews were conducted within an hour for each research participant. Every participant was asked the same set of 22 questions **(See Appendix F)** for a semi-structured interview. Many of these questions were asked to the participants to obtain a more comprehensive understanding of the participants' general vaccination knowledge. Eight of the participants recognized that, as two of the participants explained, a vaccination works by exposing the body to a “small amount” or an “immune response” of the disease to strengthen its immune system. Among the participants, five talked about the formation of antibodies as an immunological response to vaccinations. Participant D explained:

> Vaccines, I know, are injections that are given to people with a little dose of certain diseases or immunity that helps build your immune system for the big diseases that once would wipe out masses of infants and children. Like, rotavirus, that most infants that got it would die from, which all it is, is a little oral solution that my child can slurp up and it helps their body fight that if it ever comes to contact with that. I know that partly you do get a little sick with any vaccine that you get. That's part of your immune response.

Another participant expressed:

> I think is to expose your body to it so that it by itself a small amount and then builds your immune system so that you're basically immune to the virus. That's my understanding of it **(Participant L)**.

Each participant understood that the purpose of immunizations is to prevent disease.

Participant A

Participant A is a mother of three children who works part-time as a registered nurse in an outpatient setting. Each of her children is partially vaccinated, and this participant voiced much concern related to the vaccine schedule and the wish to spread out the number of vaccines given at each well visit for her children. Participant A also mentions being in a more "unique" situation since she works in a medical setting, despite her children being partially vaccinated. She stated that while many of her colleagues may not agree with her views on vaccines, it does not sway her beliefs regardless. This participant emphasizes that she does not lose any sleep over what they think of her at her office, and she notes that she does not feel like her colleagues think she is any less of a nurse because of that.

Participant B

Participant B is a mother of one child and is a practicing Physician's Assistant for an internal medicine office in Greenville, South Carolina. While she does not specifically work in pediatrics, she talked a lot about how she was familiar with the recommendations for vaccines. This participant was deeply knowledgeable in the field of medicine and had a strong view of the benefits of vaccines. Her two-year-old child is fully vaccinated, except for the COVID-19 vaccine. This mother mentioned that the decision to not vaccinate her child for the COVID-19 vaccine was because it was still very new and the unknowns of the new vaccine in children

outweigh the potential benefit of the vaccine. Overall, she provided great insight into her experience working in the field and her own personal views on immunization benefits.

Participant C

Participant C is a mother of three with a bachelor's degree in psychology, but currently is a homemaker. This participant states that two of their children are not vaccinated at all and one is partially vaccinated. The two that are not vaccinated are their oldest two children, and the youngest child was adopted, hence why he has received a few vaccines in his previous encounter as a foster child. Participant C vocalizes much concern for hearing many negative stories about the risks of vaccines and says she feels like the things that we are required to get back-to-back vaccines for are not necessary due to diseases (like polio and chickenpox) not being around anymore. In addition, this participant reports that she believes vaccines are driven by money. Another concern voiced by this participant is the intimidation she feels when having an encounter with a medical provider, stating she feels "pressure" and would rather just avoid the topic of vaccines entirely.

Participant D

Participant D is a mother of two children and is currently working PRN as a registered nurse at a local private practice. This participant grew up in the Middle East, attended international school, and was also a missionary kid. This participant shows an optimistic approach to the field of medicine and the topic of vaccines. She mentions that while growing up in the Middle East and later moving to the United States, it has been interesting to see people's autonomy and just freedom of choice and freedom of speech that she believes does not exist in a lot of other parts of the world. This participant was vaccinated as a child and was always told that vaccines help prevent illnesses. This participant shared an interesting story about how their

mother had a friend in Lebanon who died of polio. She connects that to the importance of vaccines. While she believes that medicine is not perfect, she argues that the severity of diseases and illnesses taking place all over the world should be an indication of the advantages and benefits of immunizations.

Participant E

Participant E is a part-time registered nurse working for Prisma Health, with one child that is not vaccinated at all. This participant spent quite some time overseas in Australia as well, mentioning the differences in the government and healthcare system there versus here in the United States. Although attending nursing school for four years, the treatment provided by medical professionals related to an autoimmune disorder is what affected the decision related to their child's vaccination status. This participant tried several steroids and medications to help with the autoimmune disorder. However, after much research done on their own, they have concluded that much of the autoimmune disorder diagnosis could be affected by stress, inflammation, and food choices. This participant has communicated much distrust between medical professionals, and although knowledgeable in the field as a nurse, they take a more holistic approach to medicine. There was also mention of the Amish community and how there are never stories about those in the Amish community who have genetic dispositions, which they then correlate to their thought process regarding vaccine administration today. The highly pushed COVID-19 vaccine also plays a huge factor in their decision to decline vaccines.

Participant F

Participant F is a mother of two twins and is a full-time employee who works as a surgical technician in the hospital. Both twins are fully vaccinated and the decision that led to this was because the twins were born 12 weeks (about 3 months) premature, and providers highly

suggested that the parent vaccinated them even at a month old when they were still in the hospital. This participant mentioned that she was fearful of the twins because they were both premature, and she and her husband wanted to do everything they could to protect them and keep them safe. Participant F also stated that she received the COVID-19 vaccine while she was pregnant because her pregnancy was extremely high-risk. She mentioned that her healthcare provider advised her that it was probably a clever idea to receive this vaccine while pregnant to lessen the risk of contracting the virus and the possibility of having her babies separated from her after delivery. She believed the risks of having COVID-19 are just riskier than the side effects of the vaccine. Lastly, this participant is grateful for her twin's pediatrician and mentions how appreciative she is of the medical professionals who took care of them while in the NICU, as well as even at their yearly well-visits.

Participant G

Participant G is a homemaker with a background in elementary education. Participant G mentioned that she has one child who is vaccinated fully to what their age would allow. Participant G raised many concerns related to vaccines and autism. In addition, this participant voiced many questions related to the vaccine schedule and whether it is appropriate to group some vaccines with others and administer more than one at the same time. She stated her background in elementary education causes her to feel there is a correlation between autism and vaccines, and she does not want to ignore these signs that she has seen in her own classroom in the past. This participant's biggest reluctance is reactions or signs related to autism. She also feels pressure from medical professionals when she was in the hospital, and even points out that she did not have a "clear mind" after delivering her baby to then make sound decisions of administering vaccines or Vitamin K. However, she did state although her child missed this in

the hospital, she was able to follow up with her child's pediatrician during the two-week well visit and the one month well check. This allowed her to ask more questions and have a thorough response from her child's pediatrician, rather than with providers or staff in the hospital after giving birth to her child. Participant G also mentions that there seems to be a negative connotation that comes with choosing not to vaccinate at this point. She states that the healthcare system and culture of our day have shifted, where "back in the day," these things were never really questioned.

Participant H

Participant H is a mother of four and a homeschooling, stay-at-home mother. This participant mentioned that two of her four children are fully vaccinated, and the other two children are partially vaccinated. This participant is one of twelve children, and growing up, vaccines were not administered in her household. Participant H mentioned her mother would "pick and choose" which vaccines she and her siblings would receive growing up. She mentioned there was a mission trip she was attending growing up, so she was forced to catch up on all the necessary vaccines herself. Participant H had a strong bias towards medicine and vaccines and stated that parents should have the choice to make the decisions they feel are best for their children's health, and she does not believe that vaccines should be mandatory. This participant talked a lot about having a holistic approach and mentioned God's sovereignty, and how "a lot of medicine is us trying to play God."

Participant I

Participant I has a bachelor's degree in business and is employed full-time. This participant is a male and has one child that is fully vaccinated to their age. This participant also mentions that they and their child receive their yearly flu vaccine. According to Participant I,

their child was first in foster care, and they later intended to adopt. Participant I stated that as a foster parent, an emergency placement takes place within 48 hours (about 2 days), and they must go to the doctor for a foster check. If there are any vaccines or things deemed necessary by the medical provider, then whatever the child is missing, they must get. In addition, as a foster parent, they are required to be up to date on their vaccines as well, with tetanus and flu being mentioned as examples. Overall, participant I seemed very in tune with public health and its role. This participant voiced some fears related to the COVID-19 vaccine and how quickly this was rolled out. They also mentioned how they had strong feelings that the COVID-19 vaccine mandates were a political dilemma.

Participant J

Participant J is a part-time employee who works as a school nurse at an elementary school. This participant holds a bachelor's degree in health promotion and wellness and an associate's degree in nursing. Participant J has two children. The oldest child is 4 years old and is vaccinated up until two years old. The other child is vaccinated up until two months old. Participant J mentions that a lot of factors led to that decision; the COVID pandemic and a medical event that occurred to the participant that caused her to question the medical community and what she refers to as, "big pharma." As a result of the medical event that occurred, there is a huge distrust between this participant and medical providers. In addition, Participant J voices concerns about the lack of research that has gone into the schedule of vaccines and learning about all the ingredients each vaccine contains. She mentions that she plans to homeschool her two children rather than enroll them in public school. When it comes time for the children to attend college, this participant states, "I hope there will still be religious exemptions at that

point." She wants to utilize her story to help others who have gone through traumatic medical experiences and offer some hope to them.

Participant K

Participant K carries a master's degree in professional counseling, with a concentration in mental health. Before becoming a stay-at-home mother, this participant worked as a full-time therapist. Participant K has four children who are fully vaccinated for their yearly vaccines, including their annual flu vaccine. Regarding the COVID-19 vaccine, three out of four children received the COVID vaccine. This participant voiced that she trusts her medical provider very well and believes that their immense training and understanding leads them to recommend these vaccines.

Participant L

Participant L is a female who holds a Bachelor of Arts degree in general studio art. Participant L works full-time, remotely, and has five fully vaccinated children. This participant mentions that while all five of their children are fully vaccinated, their opinions have changed since each of them was at an age to be vaccinated. Participant L voices much concern for "messing with God's design" and does not like a "genetic modification of anything." While overall, this participant's thoughts on healthcare and providers seem to be positive, there is still a lot of hesitancy and an "agenda" behind people receiving vaccinations. There were a lot of comments made reflecting ideas related to "big pharma" and how "evil" the healthcare system seems to be, as this participant questions, "What is the ulterior motive?" As she has an older son preparing for his first year at college, she urges him to stand firm, withholding from feeling pressured to receive the COVID-19 vaccine. Overall, she reiterates how she would do things differently now, if any of her children were young enough to be undergoing vaccinations.

Table 3

Participant Demographics

Characteristic	Age	Race/Ethnicity	Gender	Education	Status
Participant A	48	White or Caucasian	Female	Associate's Degree	Part-Time
Participant B	31	White or Caucasian	Female	Master's Degree	Part-Time
Participant C	48	White or Caucasian	Female	Bachelor's Degree	Homemaker
Participant D	27	Other	Female	Bachelor's Degree	PRN
Participant E	32	White or Caucasian	Female	Bachelor's Degree	Full-Time
Participant F	26	White or Caucasian	Female	Bachelor's Degree	Full-Time
Participant G	26	White or Caucasian	Female	Bachelor's Degree	Homemaker
Participant H	36	White or Caucasian	Female	Some College	Homemaker
Participant I	33	White or Caucasian	Male	Bachelor's Degree	Full-Time
Participant J	33	White or Caucasian	Female	Bachelor's Degree	Part-Time
Participant K	39	White or Caucasian	Female	Master's Degree	Homemaker
Participant L	43	White or Caucasian	Female	Bachelor's Degree	Full-Time

Data Collection Procedure

The researcher requested permission via email to perform research at Brushy Creek Baptist Church. The email contained a letter stating the purpose of the study, the eligibility requirements, and the study's objectives. The study's goals were supported by the gatekeeper, a minister from Brushy Creek Baptist Church, who also granted each participant's initial access. The minister pooled the participants by utilizing the inclusion criteria (A parent and/or guardian between the ages of 24-48 that had a child/children between the ages 0-18 and attended church on a weekly basis) provided by the researcher. The gatekeeper provided the researcher with a total number of 15 possible participants. However, only twelve participants were selected for this study. To schedule an interview time that worked for the researcher and the participant, participants interested in participating made contact by phone. Scheduling of the interview was conducted by the researcher to accommodate the participant's schedules. The researcher was responsible for carrying out all the face-to-face semi-structured interviews at each participant's home or via a meeting in a private office within the church. All the interviews were conducted at various times of the day, from July 2023 to September 2023. The researcher used Microsoft Teams (a virtual meeting software), which has automatic transcription and recording capabilities. This securely recorded the interview conversations within a safe network. All the individual interviews were recorded with the help of a video setting on a MacBook Air laptop (required a personal passcode for privacy), and the transcriptions were carried out by the researcher. The researcher went over the rights of study participants and gave the participants a copy of the informed consent before each interview. With each participant's consent, both written and verbal, an audio recording of the interview was made using Microsoft Teams. Participants' non-cues, which are specific to qualitative research, were noted, including body language, eye contact, and

facial expressions. Analysis of the final interview revealed no unique information that was pertinent to the study. Following the analysis of the tenth interview, saturation was satisfied to have all factors of vaccine hesitancy represented within this study.

Data Analysis

After every interview, the audio recording was played back, verbatim transcribed, and edited as necessary to reflect the interviewees' statements more accurately. The implementation of analytical memoing by the researcher was helpful in creating codes based on concepts, ideas, and even feelings. The participants were contacted afterward to check the accuracy of the transcription of their interview, but none of them were obligated to schedule a follow-up session. The NVivo software system helped to arrange and store the data.

After arriving at certain preliminary conclusions from the data, the researcher employed theory triangulation. Theory triangulation incorporates multiple perspectives to review and interpret the results of the study. The researcher provided copies of the transcripts to a local pastor and a health professional so they could examine the data and draw conclusions. Both the health professional and the local pastor received comprehensive instructions (**See Appendix I**). The local pastor and health professional were asked to formulate all descriptive reasoning on the righthand side of the transcription document. The purpose of descriptive reasoning is to ensure remarkable conclusions that capture the viewpoint and experiences of each of the participants to display accuracy. The manual codes and themes were to be listed on the left hand side of the transcription document. The purpose of coding incorporates a method for arranging information to discern the various connections among words. Manual coding includes labeling each comment made on the transcript that indicates significant or recurrent themes in participant feedback during the coding process. Other notes and references were made when necessary. The

application of triangulation among the local pastor and health professional allowed different findings, comprehension, and interpretation of patterns within the data through thematic analysis.

By comparing results from the medical professional and the local pastor, themes were compared and strengthened to provide a complete explanation of the phenomenon. The data collection outcomes were evaluated by the researcher prior to any formal conclusions or suggestions. The NVivo software was used to analyze and interpret the data thematically. Based on how frequently each subject appears in the data under consideration, NVivo gave some themes greater weight than others when assessing their relevance. The analysis required unique data pieces and short names during coding. After the codes were created, the researcher classified the data. The researcher identified themes by utilizing organized data and pre-established categories. All the participants' exact quotes served as useful information for creating themes. Every theme and sub-theme was found to be either strongly associated with the experiences or opinions of the participants on childhood vaccines or provided valuable details about how the COVID-19 pandemic influenced the participants' perspectives. It was also discovered that there were anomalous results concerning spiritual well-being. Consequently, data analysis steps included interview transcription, coding, theme development, textural and structural descriptions, and implications in the conclusion.

Results

Results from all components of the descriptive case study design, including interview and theme analyses, were reviewed and combined by a solitary researcher, a local pastor, and a medical expert to draw conclusions. These recommendations covered the content of information, delivery mode, and contextual factors helpful to theme development. Each of the themes, sub-themes, and outlier results are displayed in Table 2. Themes and sub-themes will be further

discussed. Additionally, the multiple perspectives using triangulation will uncover the necessary perspectives related to vaccine decision-making.

Themes

The design of the interview was semi-structured in-depth interviews with some further probing questions. The interview scripts included the transcription (observational notes) and crucial words/phrases marked by the researcher afterward. Themes were created to explain the perspectives of the respondents after the interviews were coded. The resulting data was subjected to deductive, iterative coding, which revealed certain sub-themes. The final data is supplied to maximize accuracy and minimize any possibility of bias. The research design is explicitly presented, demonstrating a wide range of distinct perspectives to identify bias and address reflexivity. Each interview's material, which represented 12 Christian parents and/or guardians, was typed out using Microsoft Teams with sufficient detail and context for interpretation.

Next, all interview transcripts were uploaded in NVivo and saved under the “files” tab in the data section. The researcher went through the steps of extracting meaning from the data. Data reduction and simplification took place. Coding procedures involved creating coding nodes, or categories, to which one could link seemingly relevant data that all in some way related to similar concepts or categories of phenomena in NVivo. In NVivo, these nodes were organized into matrices for matrix coding searches. Nodes were then utilized for text queries as well (such as word or phrase frequency counts, text searches, and so forth). NVivo made assigning a Node to a fragment of a transcript easy to accomplish as it appeared on the screen. This process is called thematic coding.

The results in the table below were exported from NVivo to Excel and created in Microsoft Word. Table 2 reflects how many responses correlated to the theme or sub-theme.

Each topic will be thoroughly explained to provoke a deeper understanding of the topic of vaccine hesitancy in this context.

Table 4

Common Themes, Sub-Themes, and Outliers after Triangulation

Theme or Outlier	Sub-theme	Sub-theme Responses	Theme Responses
1. Personal Relationships and Belief in God	Level of Faith	6	5
	The COVID-19 Pandemic	9	
2. Adjusting to Changes in Medicine Over Time	Fear of Autism	4	11
	Vaccine Safety	6	
	Vaccine Ingredients	4	
	Vaccine Schedule	5	
3. Homemaker	Alternative Medicine	5	4
	Homeschooling	3	
4. Suffered a Personal Loss or Hospitalization	Medical Injury	3	2
	Traumatic Health Experience	2	
5. Mistrust in the Healthcare System	Health Insurance	3	6
	Notions of Conspiracy	7	
	Impact of Social Media	5	

6.	Support of Spiritual Well-Being	Supportive Healthcare Professionals	5	4
		Awareness of Medical Services	8	
	Outlier: Findings pertaining to spiritual well-being	Impact of Covid-19	11	6
		Motivators for Vaccine Uptake	3	
7.	Barriers to Vaccinations	Low Confidence	7	9
		Elevated Complacency as an Obstacle	6	

Personal Relationships and Belief in God

The local health professional proposed the theme of Personal Relationships, while the local pastor developed the theme of Belief in God. Nearly all respondents disclosed a private association with God and wrote about their personal experience of God in the category of Personal Relationships and Belief in God. There were a handful of participants whose response of their personal relationship with God being displayed as a guiding coping mechanism.

Level of Faith

The significance of the participant's level of faith, even after the impact of the COVID-19 pandemic as an example, were some of the sub-themes that helped this theme to be developed. Six out of 12 participants referenced how God designed our bodies and how we are to maintain our bodies. Participant J alluded,

> In general, I'm going to take it back to God. And I think God made our bodies. And when they are in a healthy state, they can heal themselves.

The local pastor formulates that as Christians, there is an understanding that when trials and tribulations come, it is the individual's level of faith that will ultimately be tested. The pastor finds that Participant J stood out to him, as he rephrased the importance of relying on God even through illness. Further comments and analysis by the local pastor point to a strong sense of spiritual well-being and the connections to maintaining good health through one's own belief in God. The pastor connected this idea behind illness as a way for participants to overcome those illnesses through the power of prayer and, overall, their level of faith.

Impact of the Covid-19 Pandemic

Likewise, insight related to how spiritual well-being affects participants and the challenges that came with the COVID-19 pandemic can be gained from their accounts of religious practices as coping strategies. Despite the many unknowns and fears that came with the COVID-19 pandemic, nine participants affirmed their belief in God throughout the pandemic regardless of those fears. In the reflexive notes, the local pastor made a distinction between the participant's comments and their own religious convictions. For instance, the following was prompted by Participant K's remarks:

> Just as a believer, I will tell you like the kind of conviction we felt through COVID was like from a verse in Philippians that talks about like consider others better than yourselves. Look not only to your own interests, but also to the interests of others, and I think, like we are all very, you know, blessed to be very healthy. But I just like, have compassion for people that are not in that situation and whatever you feel about vaccinations. Just even like saying believers just absolutely disregard any kind of basic, I do not know, I feel like common courtesy—like with a mask, for example, like it does

not really cost you much, maybe like a little discomfort, but that even that became so heated, you know?

This participant persuasively argues that it can be beneficial for healthcare professionals to support Christian parents and/or guardian's understanding of their religious practices as coping mechanisms for stress, anxiety, and fear in this regard. Consequently, it is important to keep using these tactics even as medicine and science continue to grow and become more and more innovative. The medical professional recognized the importance of building a rapport with patients who may feel very strongly in their faith, to better help them grow in their health and wellness journey. The local pastor highlights how the descriptions of religious practices (prayer and spiritual well-being) impacted parents' and/or guardians' ability to endure any hardships they faced, specifically during the COVID-19 pandemic. Lastly, he marked the word "GRACE" by expressing the urge for medical professionals to show more empathy towards spiritual ideas that may impact Christian parents and/or guardians, to strengthen trust.

Adjusting to Changes in Medicine Over Time

The COVID-19 pandemic caused a rapid transformation in the world of modern medicine. This specific disease outbreak caused a lot of adjustment for people all over the world. Eleven of the participants alluded to the impact that the COVID-19 pandemic had on them over the past few years, making this theme important. One example to describe this transformation involved the swift change for young kids to transition from in-person learning to e-learning. In addition to this, many workplaces shut down to cope with the pandemic. Some participants voiced such concerns and expressed fear and intimidation that came with vaccine mandates. One participant mentioned their employment as a factor in their choice to vaccinate. Participant I stated,

> I did apply for a job recently that said you had to be COVID vaccinated. Yeah, that was interesting to me. I hadn't seen that before and now we are seeing it more and more.

Other participant comments were noted by the researcher and medical professional, as it pertained to the rapid creation of the COVID-19 vaccine. Participant B commented,

> So, we didn't think it was necessary for our son at that point. He was only just over a year old and then since that time, it seems like with COVID, the severity of illness has just become less and less, and it's, you know, typically not life threatening, particularly for young, healthy children. So, I still just haven't gotten that for him just because it is so new.

Fear of Autism

From four participants' responses, the fear of autism was discovered to be a common sub-theme among the researcher, the local pastor, and even the healthcare professional. Although a small number of participants vocalized that they believed vaccines play some sort of role in an autism diagnosis, it is a much relevant sub-theme to note of. Participant G, a former teacher, showed some fear by mentioning,

> I am skeptical of it. I'm slightly nervous about it because I have seen it first-hand where a child has no autism signs, and then suddenly, at two years old, they show many autism signs and regress. Some were talking, and then they got their shots, and now they're nonverbal. So, I have seen it first-hand. And it is something I keep in mind when my son gets to that age. My husband and I have talked about not doing them all grouped at once and doing a delayed schedule with those because they usually shoot them all at once. I do not want to say completely that there is a correlation, but it is hard to not ignore what I have seen.

Other participants argued that people in our world today make several claims that attempt to justify the idea of vaccines causing autism. However, they mention the ignorance behind these claims. Participant H shares,

> Oh yeah, there's a lot of stuff out there that is not true. People make lots of claims about "Oh vaccinations are really, you know, they can lead to autism," or "they can lead to this, and they can lead to that..." And there is not proof. I know some parents will say, you know, there are a lot of, like I have said, I have read hundreds, if not, 1,000 vaccine injury stories from parents whose kids were three years old, perfectly happy four-year-old and then they "stopped talking" and "never talked again," and the parents believe it is vaccines. I know there's no proof of that yet.

Both the researcher and the medical professional noted these concerns similarly. It appears there were about four participants who indicated some sort of fear related to vaccines and an autism diagnosis. Others vocalized this frustration behind those who make this claim, as there is no direct proof. Participant I remarked,

> Yeah, there's been different things that I've thought about or looked into. I have the two cousins that are autistic and their mother claims that this is because they were vaccinated. I don't believe in that.

Social media seemed to play a huge factor in misinformation related to vaccines and autism. Additionally, vaccine safety and vaccine ingredients were labeled as additional sub-themes by both the researcher and medical professional, as participants voiced concern for the number of vaccines administered at one visit, as well as the concern for how vaccines are made and what they consist of. The local pastor mentioned the impact social media has and how it may

be advantageous for healthcare professionals to encourage the recognition of faith-based practices to better assist with any fear or anxiety related to vaccine ingredients and safety.

Vaccine Safety

Participants cited government corruption and a lack of vaccine expertise as they relate to vaccine safety as obstacles to vaccination acceptance. Participant D shares,

> So, I guess it's not public knowledge. It's just kind of how to safely administer an injection in the way it's injected into my child and what muscle and how some vaccines need to go in the fat and not the muscle, and that can cause a local reaction if it's administered wrong.

The main factor for the lack of confidence is strongly negative sentiments toward immunizations. Six out of 12 participants voiced several concerns related to belonging to anti-vaccine groups, receiving misleading information about the risks of vaccinations, or having legitimate concerns about the effectiveness and safety of vaccines. Participant H boldly stated,

> I think each parent should have the freedom to make the best decision for their kids. No one loves my kid more than me. No one cares more about their health than me, so I think I do not believe vaccines should be mandatory. I think each parent should make the decision they feel as best, which is going to depend on your own history where you live. You are different kids. I think all of that will play a part, but there is some good ones and I think there is some that are unnecessary.

Similarly, Participant L shares,

> Well, I think there are a lot more vaccines now. And it feels like I think when I was growing up, it was just kind of like here they are and not many people questioned it because they trusted the health care system to be safe.

Without regard to age or vaccination status, the majority of those who participated stated that worries about vaccine safety were a significant obstacle. Aside from the fact that some vaccines (COVID-19 vaccines) were still in the clinical trial stage, other safety issues included worries about expiration dates, the biochemical makeup of vaccines, their effectiveness, and all the side effects.

Vaccine Ingredients

Roughly 4 out of 12 participants mentioned some sort of safety-related problem with vaccines and their ingredients. It appears many parents and/or guardians made references to things that raise a lot of concern for what's being injected into their child's body. The local pastor noted that if parents and/or guardians felt they could trust their healthcare professionals, then it would be easier to make vaccine-related decisions for their child's health. A few participant statements below confirm this concept. Participant H voiced,

> I know they do a lot of research, and I do not think it always what they consider safe and what I consider safe do not always line up with each other. I know there is a site online about vaccine inserts where you can see all the different inserts, and I know that they are considered safe because the percentage of vaccine injuries is so small based off the whole population. In my opinion, when you look at a lot of these vaccines, what they are for the percentage of death is so small. I do not understand why a vaccine is necessary.

Participant A admits,

> Umm, like where the manufacturer, that kind of thing I probably don't know a lot?

The medical professional made respective inferences for the parents and/or guardians who made comments that were related to vaccine ingredients, mentioning that they have forgotten about the deadly diseases that led to the development of vaccines. There is a huge need

from medical providers and other healthcare professionals to include the risks and benefits of vaccine side effects while also informing parents and/or guardians about the diseases each vaccine works to prevent. The topic of vaccines should be a lengthy discussion with parents and/or guardians rather than an expectation from providers. The researcher, local pastor, and healthcare professional all noticed that along the lines of vaccine hesitancy, the majority of the participants showed much uncertainty rather than flat refusal. The local pastor mentioned that communication seems to be the best way to overcome those fears. He also noted that allowing parents and/or guardians to "feel heard" could change perspective when it comes to the topic of vaccines. Providing parents with large amounts of detail related to good practices recommended by medical professionals can make a significant impact on vaccine uptake.

Vaccine Schedule

The medical expert highlighted several comments related to the current CDC recommended schedule for immunizations for children. Roughly five out of 12 participants had an opinion related to the current CDC recommended schedule. Participant A indicates,

> I think it is a lot initially for the vaccine schedule, but I did it with my kids. But you know, I can see both sides, so you do want your children to be healthy, just as parents and in general, and you know, they are not going to remember it, so I do think it is okay.

As previously mentioned, the foundation of the Health Belief Model (HBM) is the idea that a person does not change his or her behavior because of effective knowledge. The HBM evaluates vaccination behaviors through the lens of an individual and their judgement about a disease and the vaccine associated with it. Therefore, the HBM gives us further insight into the decision-making process surrounding vaccines. As to the Health Belief Model (HBM), an individual's health behaviors are influenced by their beliefs regarding the severity and

susceptibility to the disease, as well as the advantages and hazards of the vaccine. These four constructs are greatly predictive of vaccination intentions, which may be a reason why some guardians and/or parents are overwhelmed about the vaccine schedule and have different beliefs that some vaccines are more important than others.

Homemaker

Although described with different terminology, the homemaker theme was deemed important by the healthcare professional, local pastor, and researcher. There were four homemakers identified in Table 1. This category includes subthemes like alternative medicine and homeschooling. According to the local pastor, all four homemakers who identified themselves brought a heavy interest in natural remedies to deal with sickness, and illness or for general health concerns. The local health professional found that the homeworkers who reported they had children generally homeschooled their children or did not have school-aged children yet to be enrolled in school, which could be historically significant. Both the local pastor and the local health professional conclude that when it comes to medical decisions, most parents are following the advice given by medical professionals. The local health professional documented the book published in 2007 by Robert Sears, M.D., who opposed the recommended vaccine regimen and how this correlated to how a few of the participants trusted this book due to Robert Sears' credentials. It is concluded that the participants who fell into this category are interested in learning ways to create a holistic approach to their child's health. Furthermore, while four participants were listed as homemakers, they were not completely opposed to their child receiving vaccines. Some feared the recommended vaccine schedule and preferred homeschooling to giving their child all the recommended vaccine doses at once.

Alternative Medicine

Vaccines are subject to much controversy among many people in our world today. Five out of 12 participants fell into this category of alternative medicine, making it a worthy sub-theme. Vaccine hesitancy is a complex phenomenon that requires much more research to gain a better understanding of negative attitudes and behaviors. Complementary and Alternative Medicine (CAM) is positively correlated to the vaccine hesitancy idea. Participant G communicated,

> I think at times, I guess just with the some of the circles that I'm connected with, where they want to be as natural as possible and those kind of things. I kind of find myself on the fence with some of that. I think there are definitely natural remedies and natural way of handing handling things, but I think social media has definitely swayed at times my view, in my opinion on things.

It is evident that those who are vaccine skeptics have a much lower trust in medical professionals and are more likely to use alternative medicine to promote their own health and wellness.

Homeschooling and Immunization Policies for Schools

The topic of pediatric immunizations came up in multiple interviews with subject matter experts, according to interview notes. However, the researcher did not correlate any literature review papers that addressed South Carolina's vaccine exemption policy. According to South Carolina state law, medical contraindications as established by a certified healthcare provider may qualify as exemptions from vaccination requirements. For example, Participant C mentions,

> It is funny that people always say, and I try not to tell anybody that my kids are not vaccinated. But let us say you have to have those to go to school, and I am like, like, I

> think people think they do not have any other option, you know, with your own children. It is like, I mean, we got them that religious exemption, which I do not really like to say really, because that's religion is not the reason, we do not do it, but it has not been a problem at all. You just feel like it is personal more than religious.

Likewise, Participant J expressed,

> I plan to homeschool them. So, they will not be going to public school, at least not right now. I know some colleges require them and I hope they will still be religious exemptions at that point. Uh, that is only issue I see with it right now.

The medical professional strongly believed that religious exemptions are becoming more and more popular today, however, the need for one is not always correlated to an actual religious reason. She would argue that it is more one's own personal belief for the benefits of medicine and other health-related topics.

Suffered a Personal Loss or Hospitalization

Two out of the twelve participants provided details of the loss or hospitalization of a family member that affected them emotionally. These two participants all relived the painful memories involving a traumatic health event as a major component of their lived experience regarding their attitudes toward childhood vaccinations. The participants both shared how the protective measures associated with their own personal health diagnosis or experience caused many negative feelings and emotions. These experiences exhibited the sub-themes: Medical Injury and Traumatic Health Experience.

Medical Injury and Traumatic Health Experience

In healthcare settings, a history of trauma can diminish trust. The cause for reluctance can be developed over time. Past trauma could make individuals feel less confident and trusting of

medical professionals. Many people may not trust ongoing medical advice or the mechanisms to support it due to feeling ignored by public health or healthcare professionals. Participant J was a little upset explaining,

> I had a big medical event. I don't know if you want me to go into detail, but that led me to just question the medical community and "Big Pharma" and all that.

All in agreement, the local pastor, the health professional, and the researcher documented this to be of relevance. Patient outcomes can play a huge role in a person's health decision-making. The medical expert expressed the importance of why providers must communicate complex medical issues and concerns to enable patients to make informed decisions.

Mistrust in the Healthcare System

Outside of a medical experience, bad experiences leave larger scars. Following traumatic experiences there is a progression to worsening health outcomes. It can be concluded that many parents and/or guardians today are turning to social media more than their own health professionals to seek advice related to their child's health. The negative bias present in social media platforms causes people to truly believe what they are reading. An example of this was previously mentioned, as a fear of autism was a notable sub-theme. The medical professional hypothesized in their notes that due to patient capacity and adequate care, many parents have a shattered view of providers and healthcare due to the lack of face-to-face communication and reassurance. As a result, parents and/or guardians are trying to avoid in-person visits by managing symptoms on their own. Participant J reports,

> In general, I am going to take it back to God. I think God made our bodies and when they are in a healthy state, they can heal themselves. I think you are having symptoms if you are sick or something is not right in your body. And I also feel like if you have a healthy

> lifestyle, a nicely balanced diet, you are getting sunshine, you know, you are doing all the things I do not feel like they are necessary.

Health Insurance

The healthcare professional highlighted that for three participants, health insurance was of slight concern. Specifically, the following quote was coded from Participant G,

> So, we have Christian Healthcare Ministries and then my husband's employment, they have a reimbursement program. So, anything that CHM does not cover, his employment covers with reimbursement.

With this, this participant goes on to mention that they have had a few "bumps" regarding insurance, as Christian Healthcare Ministries does not always accommodate preventative measures of care. In addition, a quote from participant F was also documented,

> I have Blue Cross Blue Shield through my job, and my twins have Medicaid. They got Medicaid because they were born so premature.

Lastly, Participant L voiced,

> We have private insurance, my husband and me. Our older kids, unfortunately, and I do mean, unfortunately, our children are on Medicaid because we have a lot of kids, and with Ministerial tax breakdown, it looks like he makes less money than he actually makes, and so I wish we could opt out of it. I really, really hate it. My kids are on Medicaid, and I do not like that at all.

The healthcare professional made comments related to these few participants feeling a little uneasy about their coverage for their families. The researcher remarked that it seems as though health insurance could play a role in the types of coverage offered and which vaccine status they may qualify for, whether private vaccines or ones through the Vaccines for Children

(VFC) program that is offered to those with Medicaid plans, state insurance plans, as well as those who are listed as self-pay (uninsured).

Notions of Conspiracy

The study participants, who were primarily unvaccinated, frequently ascribed to conspiracy theories, which could be attributed to worries over the unusually quick development of vaccinations. It was noted that seven out of 12 participants asserted that to lower the population, the government, sponsors, pharmaceutical corporations, and powerful, wealthy individuals had produced the vaccines. Participant L reports,

> Honestly, within the health care system, I think there was maybe more honesty back then. I do not know if that is true, but the further this big pharma has gone, the more corrupt it becomes because it is a moneymaker. And if people are not sick, they do not need drugs. So, they do not need to pay for the drugs, the "Big Pharma" does not do very well. I see the benefit of sick people, which is why I do not think I like doctors, do not focus on like root cause they do not focus on diet. That is why most Americans are overweight. Because they want us to be. I really believe that they want us to be sick. I do not think doctors want us to be sick. I think they are ignorant and not fully informed.

Overall, there were about seven out of twelve participants with this concern who suggested there is a "huge push" for a "big money market," which causes them to have distrust in the healthcare system today. Mistrust in vaccines was indicated by immunizations being provided by or encouraged by pharmaceutical corporations and stories circulating in the community regarding the motivations behind vaccine development. Participant B mentioned,

> I think maybe our parents were a little bit, I don't know, more trusting of like the CDC, and there probably obviously wasn't as much social media and you know, news with the new "anti-vaccination movement."

Comparably, Participant C states,

> Yeah, I guess I don't trust that they would really say this is something you really need. Because of this, you know or even look at my child's history or their, you know, their medical history and say it just seems like this is what you need because it is there. And yeah, it seems like they are pushing that so that everyone will just get the vaccines. Seems like it is marketing to me, and like all this one, all this stuff was going on with covid early. You know, at the beginning, I used to hear all these stories about, you know, "There are so many dead people..." And then I think about in my life, who do I know that has died? I mean, I do know some people who have gotten it and died. You know, none of my personal friends or family, but I do feel like some of it seems like some of that is not accurate, too. Like they are dying of other things, and they want you to believe this from covid, so I just don't trust that what a medical professional would say is actually the truth. I feel like they are biased because they have to push vaccines, you know, they're so part of that's part of their job.

Impact of Social Media

There has been little research done to truly examine the anti-vaccination group specifically; rather, they have mostly tried to comprehend and investigate the historical evolution of anti-vaccination movements. The history of anti-vaccination sentiment includes several arguments about the efficacy and safety of vaccines, the assertions that vaccinations violate people's autonomy, and the belief that vaccinations are immoral. Unfortunately, many of these

themes are widely presented across social media platforms, creating a space for misinformation and falsification of truth. Five participants said that they use it to feel informed and share news with each other. Both the researcher and medical expert would agree, as sometimes the information that parents and/or guardians are reading is not always accurate or evidence-based.

Support of Spiritual Well-Being

A resounding conclusion suggests that every research participant expressed a relationship with God. During hardships or times of illness, participants demonstrated the ability to endure such times with their faith. The local pastor, the medical professional, and the researcher's findings in this regard are consistent in showing that participants having strong personal relationships and belief in God are very closely related to the experience of spiritual well-being.

Supportive Healthcare Professionals

Given the challenges posed by the COVID-19 pandemic and the frustrations parents and/or guardians identify as it related to vaccines, five participants focused on what they would like to see from the healthcare professionals that play a part in their child's health. After several of the interviews, the reflexive notes highlighted the words "holistic care" and "taking the time with their patients." Such comments from participants indicate that the support and encouragement of healthcare professionals could be what is lacking in motivating parents and/or guardians to feel supported in their decisions related to their child's health. The lack of understanding from medical professionals causes parents and/or guardians to have a wall up when it comes to important health topics. Participant C said,

> I don't feel pressured, no, but when the doctor who is educated tells me this is good and then I have a differing opinion, it is a little intimidating. Like they're gonna pressure me into doing something and I just don't really want to deal with it.

It can be concluded that there is this fear of shame or guilt if a provider discloses their suggestion for vaccines and a parent disagrees.

Awareness of Medical Services

The COVID-19 pandemic caused a lot of excess stress and anxiety as it relates to the health of individuals today. Seven participants acknowledged that since the pandemic, there has been a decreased utilization of medical services, citing that they would prefer to stay healthy at home to cope rather than go to see a doctor and expose themselves to more germs. Given the participants' misgivings about their governments and their beliefs that officials were forcing COVID-19 vaccinations on them, conspiracy theories around the vaccination are not surprising. There were about eight out of 10 participants who displayed fear of side effects that may have also been influenced by their doubts over the safety of the COVID-19 vaccination and how quickly it became available. In addition, these doubts and fears caused a few participants to doubt the medical services provided at their primary care office. They also did not feel comfortable discussing medical services as a result. Participant D mentions,

> Just because I got violently sick with the second dose of the COVID vaccine, and I know that it takes time and research for things to become safer and more effective with medicine and that just evolves over time. I guess I just don't feel comfortable kind of being the guinea pig in this instance and being part of that mask that does, and I know there are people that do, and I think that's they're doing good for the future for us, but that's why I haven't decided to further do my yearly vaccines or for COVID. And with the COVID vaccine and obviously hearing about it a lot more and the studying that is going into that, my view is changing.

Outlier: Findings pertaining to spiritual well-being

Six participants provided details on outlier findings that shared their lived experience of spiritual well-being during the COVID-19 pandemic. Two sub-themes emerged from the data. The sub-themes were the impact of the COVID-19 pandemic and motivators for vaccine uptake.

The Impact of the COVID-19 Pandemic

Four participants recall that the ongoing COVID-19 pandemic during the year 2020 affected one's spiritual well-being, making life around them much more difficult. An example from Participant K detailed,

> I mean, it sounds funny, but like maybe Christians are making their decisions more on like Fox News than biblical conviction. You know what I mean? Like, I don't know, I got really disheartened during 2020 to see some believers like just to me- unloving. Maybe they would feel differently. Maybe they felt like they were really standing up for their beliefs, but I mean, Christ shows like sacrificial love. Like when it was so hard, you know what? Well, I'm gonna do what He's asking me to do. Obviously, other people don't have that conviction, like getting vaccinated, wearing a mask, or staying home if I feel sick. Those are pretty easy compared to you know, what He did.

It can be concluded that during the raging strong pandemic, many believers felt strongly about their biblical convictions, which, in turn, could be a factor that impact several of their decisions, even those important for one's own health. Some Christians did not feel "as convicted" as others to get the COVID-19 vaccine, while others may have felt that their spiritual well-being was important to make those types of decisions. The local pastor identified that not everyone's spiritual convictions will be the same, so reasons for hesitancy can be hard to explain in depth.

Motivators for Vaccine Uptake

The result of the study shows that the majority of participants who made a conscious decision for their child to receive vaccines stated they trusted in science and their medical professionals. In contrast, three participants who chose not to fully vaccinate their child/children stated they did not trust science or healthcare systems. Some of the reasons given for not vaccinating overlapped with others. The following were among the motivators listed by the local pastor, the medical professional, and the researcher: (1) The idea that vaccines lower the risk of illness and disease; (2) The significance of adverse reactions; (3) Vaccines as a requirement/obtaining exemptions; (4) The health of others; (5) Belief in the science underlying the invention of vaccines; (6) Public health guidelines and information; (7) Spiritual well-being and convictions.

Barriers to Vaccinations

Nine participants identified several barriers to vaccination uptake, such as perceived minimal risk, a lack of recommendations or information, and low confidence concerns. For example, seven out of 12 participants vocalized concerns related to vaccine side effects, worry, and the speed at which COVID-19 vaccines are being developed as reasons for whether they wanted their child/children to continue to receive yearly immunizations completely. Each of these concerns affects patient care and the administration of childhood vaccinations. For instance, Participant C reports,

> I have not ever met anyone, and we do not go to the doctor for every little sniffle. I mean, we are kind of relaxed about that. We, you know, if something was really wrong or something was going on, I do not go for every virus that is going around. But I have

never met anyone that has been, you know, not for vaccines. I try to avoid the topic, and I definitely feel like there would be a barrier because of this.

Low Confidence

The government's credibility, the capability to access immunization sites, children's prior immunization history, and the opinion that immunizations do contribute to lesser illness or symptoms were identified by seven of twelve participants. Secondly, under confidence and complacency regarding vaccine uptake is the fear of dying from a disease and knowing someone who died or became sick. The final motive related to confidence identifies factors related to ease of access and scheduling processes of the vaccine schedule. Participant D states,

> The only thing I really can think of that I think would be barriers for us is just like the business of life sometimes, like especially the first two years of life, they get so many vaccines every two or three months. So just all the visits to pediatrician and now we have two kids. It's just like figuring out and kind of making sure we are meeting all those milestones to make sure that they're staying up to date. I'll get behind and also during sick season in the wintertime, my son got really sick when he turned 12 months, and he didn't get his 12 months vaccines for probably closer to when he was fourteen months, just with how much we got delayed with getting sick and traveling and all this stuff about the time we realized he was starting to get a little behind. Thankfully, he is caught up now, but that would probably be the biggest barrier that I would see would be an issue.

Elevated Complacency as an Obstacle

Complacency levels were high across the board and for all age groups. Those who have not been vaccinated for COVID-19 and believe the illness is made up or not existent showed a great deal of complacency. Due to their extremely high level of complacency, participants often

downplayed the severity of and the chance of death from COVID-19. Misunderstandings may exist in some places that COVID-19 never happened, partly due to the spread of misinformation and conspiracy theories. This kind of narrative only emerged in conversations with participants who had not been vaccinated yet. Overall, six out of 12 participants felt strongly in this regard. For instance, Participant E shared,

> I am not vaccinated at all. So, I obviously went to nursing school was kind of just on like I just learned about vaccines like because that was what I was taught in school. I worked in the ER. I gave vaccines, and then I was diagnosed with an autoimmune disorder when I was 26 and the way that I was treated by medical professionals trying to figure out what was going on just opened my eyes to man, this system's very broken cause I just threw like a 90 day (about 3 months) course of antibiotics and they wanted me to do a 30 day (about 4 and a half weeks) course of steroids and all of this medication stuff. I started doing my own research and learned that much of it was like stress, inflammation, and food choices.

Summary

This chapter presented the details related to the methods used to gather the data, the in-depth analysis of the collected data, and disclosed information about the characteristics of each of the participants. The aim of this phenomenological research study was to explore the lived experiences of Christian parents and/or guardians related to childhood immunizations. This study employed semi-structured, in-depth interviews to collect the data. The findings identified seven central themes which presented the participants' opinions and experiences related to personal relationships and belief in God, adjusting to the changes in medicine over time, the identification of those listed as a "homemaker," a personal loss or being hospitalized, mistrust in the healthcare

system, support of spiritual well-being, and barriers to vaccinations. Moreover, the findings for each theme allowed the development of each of the related sub-themes. The direct quotes from the participants were recorded on the NVivo software to assist in the organization of each theme and sub-theme. Additionally, outliers that were the contributory factors to spiritual well-being but unrelated to the COVID-19 pandemic directly were examined. The analysis of data would demonstrate that the phenomenon of spiritual well-being and the COVID-19 pandemic was captured by these respondents.

CHAPTER FIVE: CONCLUSION

Overview

To understand Christian parents' and/or guardians' attitudes, beliefs, and intentions regarding the vaccination of their children, a phenomenological investigation utilizing a descriptive case study was employed. As a result of these findings, a synthesis containing main themes and sub-themes was assembled. Additionally, main perspectives were discussed, and a summary of each research topic's thematic findings was written. Implications are shared for practice, policy, and theory. The study further included suggestions for future research, delimitations, and limitations. Finally, the research includes valuable information related to Christian parents' and/or guardians' spiritual well-being as it relates to medical decisions and the significance of those decisions. Pediatric providers, community health workers, and a variety of demographic stakeholders, such as Christian leaders, would all benefit from this knowledge.

Summary of Findings

For the proposed study, four research questions were posed: (1) How does Christianity affect parent and/or guardian (between the ages of 24 and 48) attitudes toward childhood vaccination? (2) What prompts a Christian parent and/or guardian (between the ages of 24 and 48) to consider refusal to vaccinate their child? (3) How do parental and/or guardian socioeconomic factors (educational level, occupation, wealth status) influence childhood vaccination? (4) What can healthcare providers do to make Christian parents and/or guardians more comfortable with childhood vaccinations? As for the first question, the age range was selected to accommodate various Christian guardians and/or parents. The reason for choosing this age gap was to reflect the most prevalent age at which individuals would either be starting families or already have them (Pew Research Center, 2015). The findings demonstrated a

possible explanation of how the participants endured the chaos from the COVID-19 pandemic and how that confirmed their lack of interest in vaccines. Another interpretation can be made by looking at how the participants kept their unyielding faith in God, continuing to "pray" through difficult circumstances or for guidance through tough medical decisions. Secondly, participant dialogue in response to question two affirmed many different reasons for Christian parents and/or guardian's choice to vaccinate. Several participants voiced their opinions, experiences, and beliefs about vaccines. Some participants stated they have been adapting to changes in medicine over the years, others have been through a medical emergency and have been hospitalized, some do not trust the medical system, and for others, hindrances have been presented to them regarding their child's immunization status. Additionally, the third question was designed to gather information about participants' educational and professional background. The study showed that those who had current or prior experience working within the healthcare field reacted more positively to vaccinations. A more holistic approach to healing was adopted by those labeled as homemakers, a small group that was identified among the study's participants. The findings suggest that individuals employed or knowledgeable within the healthcare sector exhibited a greater appreciation for vaccinations, as opposed to individuals who were not employed in the field or those who opted for homeschooling, who demonstrated fear or hesitancy as it related to advancements in the medical field. Lastly, question four helped identify key implications for policy and practice that must be stressed by healthcare professionals and policymakers to help Christian parents and/or guardians develop their spiritual health during a pandemic or any other kind of tragedy in the future. The components of this descriptive case study sought to answer the following central question, "Why are Christian parents and/or guardians hesitant to vaccinate pediatric populations and how can current medical professionals

bridge that gap?" Understanding information within this specific population can encourage vaccine uptake and find methods to approach Christian parents and/or guardians who are hesitant to vaccinate pediatric populations.

Discussion

Vaccines have been incredibly effective in reducing and even eradicating some illnesses that had once been a threat to global populations (Greenwood, 2014). Nevertheless, many people have grown hesitant about getting vaccinated over the last few years. Vaccine policy has sparked a variety of provocative and often polarizing discussions in recent decades. To gratify shareholders' requests, comprehending both extremes of the vaccine controversy and influencing vaccination rates by producing policy, vaccine policymakers must keep a steady balance to protect the common well-being of the public. Collaborating researchers are looking into treatments that could reduce parents' vaccine fears and increase vaccination rates in communities (Kaufman et al., 2018). However, policymakers would benefit from precise data about specific parents' vaccine concerns to create more effective policies. Identifying Christian parents and/or guardians' immunization concerns and how they may change over time would be useful for policymakers and healthcare professionals.

This research found that most participants relied on estimated risk of illness, translating that risk to compromised health conditions and the ability to bypass constraints for their vaccination decisions. Exclusively, to bridge childhood vaccination delays in Christian communities around the United States, research must employ additional tailored interventions, which also incorporate various theoretical and empirical literature discussions. Identifying additional theories can provide extensive insight into individuals' choices or refusal to handle their health. Increased emphasis on health behavioral models will boost the uptake of vaccines

and eventually nurture an acute and robust American community. Additionally, this research makes a significant contribution toward bridging the vaccination divide observed among Christian families and their perspectives on health and wellness.

Application of Theoretical Framework Discussion

Consistent with recent investigations (Sherman et al., 2020; Wong et al., 2020) the findings reveal that all components of the HBM have a substantial direct influence on the formation of intentions. The present study identified three relationships among the HBM components. When people assess the probability of getting a disease after receiving a vaccine as low (i.e., perceived susceptibility), then the impact of their perception of the disease's seriousness (i.e., perceived severity) of the disease on intent is much greater. Secondly, it was demonstrated that personal opinions about the benefits of getting the COVID-19 vaccine have an additional impact on the vaccine. If individuals perceive a lower chance of contracting the virus, their reaction to the perceived severity of COVID-19 is more intense when the perceived benefits are high rather than low. This data reaffirms individuals' convictions about the benefits of vaccination and the safety of a new vaccine (Karafillakis & Larson, 2017; Karlsson et al., 2020; Sherman et al., 2020). Additionally, it is established that a beneficial interaction exists among the perceived benefits and severity. It is concluded that through contrasting health beliefs, these findings expand the HBM by examining a specific group: Christian parents and/or guardians.

The study emphasizes the immediate practical effects of bringing the HBM into intervention efforts. Plans are more likely to work well in practice when the perceived obstacles to receiving vaccines are minimal. An alternative to making barriers smaller is to underscore the alleged benefits that might come from getting vaccines and limit the spread of disease. This is useful for people who believe that certain diseases or viruses are serious illnesses and that they

may be at risk when receiving any new vaccine. As an illustration, the study's results demonstrated that Christianity did influence health actions. Respondents felt that God preordained scientific healthcare achievements. Other respondents believed that, because of their trust in God, their children had no requirement for vaccinations. Understanding such responses through theoretical frameworks adds value to the discipline. The application of theory is unique in determining how health behaviors are identified. Recognizing theory in health promotion and intervention can help lead the process of identifying why people do or do not practice health promoting behaviors. In 2019, The Rural Health Information Hub provided an example of a theory application called The Social Cognitive Theory (SCT). The SCT outlines the influence of personal experiences, contextual factors, and individual's health behaviors (LaMorte, 2022 & Boston University School of Public Health, 2019). The idea of self-efficacy was also introduced, as it has been helpful to public health professionals when learning fundamental health behaviors. What is unique about these theories is that they because they enable a social reinforcement tool that can either encourage or discourage health behaviors. In both behavior change theories (The HBM and SCT), it is evident that the acceptance of vaccines is heavily influenced by self-efficacy. The use of theories, like the ones previously mentioned, lays out a pathway to understanding why phenomena occur and supports the design and evaluation of interventions.

Application of Empirical Discussion

Through the experiences of those who are vaccine-hesitant, it is easier to identify moments and processes that lead to a loss of trust in vaccines than it is to understand the feeling of trust as faith in vaccines. Previous studies founded on observation have understood that disbelief in vaccines is regularly read as a narrative about a lack of trust in medical professionals and authority that is typical of late modern, high-income societies (Nurmi & Jaakola, 2023 &

Nuwarda et al., 2022). To manage an increase in ‘reactive’ reluctance and to control the ‘baseline’ level of vaccine hesitancy, one crucial developmental step is to identify the spread of misinformation where ‘outbreaks’ are involved. A broad empirical study is needed to assess and refine these thoughts. The most effective steps to take would be enacting programs with the sole purpose of improving individuals' opinions of vaccines, as self-efficacy is believed to be instrumental in their acceptance in behavior change theories (LaMorte, 2022). Such strategies could encompass a variety of activities, from organizing lectures and workshops aimed at educating the public about vaccines to creating events designed to improve the collective belief in one’s own abilities to make decisions about our health. The implementation of behavior-changing activities in health would focus solely on the way in which individuals view themselves and their views about vaccines. In relation to that, self-efficacy should be thoughtfully crafted to be the single most effective strategy in promoting vaccination rates for the benefit of public health. Viewed from this perspective, it is easier to address the skepticism and resistance that many people, especially Christian parents and/or guardians, have about vaccines. Rather than just seeing it as a public health challenge, this stance looks at vaccine hesitancy as indicative of this group of people’s interaction with knowledge and science.

Implications

Despite people’s negative experiences during the COVID-19 pandemic, the participants showcased their inner fortitude and faith in God even when their spirituality was at its lowest point and vulnerable to fragmentation. The usefulness of spiritual well-being in the lives of Christian parents and/or guardians, as well as the challenges that surface when religious needs are not nurtured, are affirmed in this research. For example, among the themes that developed after the collection and analysis of the data was related to fear and uncertainty about the future. It

is correlated to the bewilderment or emotions towards the Christian parent(s) or guardian(s) during the COVID-19 pandemic. A synthesis of the thematic findings and their implications is offered in this scope.

Summary of Thematic Findings

Seven main themes emerged from the data. The significance of God in their life during the COVID-19 pandemic was represented by Theme 1: "Personal Relationship and Belief in God." Their beliefs were further supported by the second theme, which described their perspectives about vaccines and how their perspectives were developed due to medical advances over time. Within this theme, participants often expressed their worries, whereas, during the third theme, "Homemaker," participants directly addressed their family's health and happiness during the COVID-19 outbreak, as many places were "shut down" during the pandemic. Although their worries varied, most participants were worried due to the lack of facts surrounding the virus. Theme four represents the hospitalization and/or trauma experiences that many participants faced. Additionally, theme five is titled "Mistrust in the Healthcare System." Throughout this theme, participants address the various beliefs and concepts many of them witnessed over time. Finally, themes six and seven addressed the support of spiritual well-being and any barriers to vaccinations. These themes were essential in shaping the meaning of participants' experiences and feelings toward childhood immunizations.

Four distinct implications can be made from the research findings. The first inference is that spiritual health is improved through having a relationship with God. Study participants relationship with God led to their resilience to various hardships, especially through the COVID-19 pandemic. Second, healthcare workers can use this information to create techniques for the public using positive internet-based instruction and educational recommendations. These

techniques will be directed toward the identified barriers. The third inference is that in the event of any other future catastrophes, management and instruction skills should be developed and conducted to equip Christian parents and or guardians appropriately. The fourth and final inference is that schools and healthcare professionals must find ways and venues to support Christian parents and guardians' spiritual health and well-being throughout any fears or uncertainty they may face regarding health.

Developing a Relationship with God Enhances Spiritual Health

A resounding conclusion suggests that each research participant had a relationship with God. A few individuals admitted their level of faith during the pandemic was not where they wanted it. As a result, this demonstrated the participant's determination in the face of the hardships associated with the COVID-19 pandemic. Also, those participant's discontent during the pandemic indicated a spiritual relationship and a desire to strengthen it. The investigation's conclusions are supported by other studies that reveal a close personal relationship with God and belief in God do relate to the experience of spiritual well-being (DiGregorio et al., 2022 & Barna, 2021). Lastly, Barna found educational tenacity, success, and spiritual well-being to correlate highly. Comparatively, the study participants demonstrated a great deal of resilience in the way they emphasized their spiritual well-being despite the tremendous difficulties they faced amid the COVID-19 pandemic.

The impacts of the COVID-19 pandemic made it tougher for one study participant, who also said that her connection with God was not as strong as she had hoped. DiGregorio et al. (2022) discovered a strong, negative correlation between the belief in God or a higher power's influence and the likelihood of receiving or wanting to receive the COVID-19 vaccine. Gall et al. (2005) employed the transactional model of stress and coping in developing a framework for

spirituality. This approach is a responsive, interactive process, triggered by a stressor involving spiritual assessment, individual factors, spiritual coping behavior, and impact of well-being. Therefore, with the help of the spirituality of the individuals for understanding the COVID-19 pandemic situation, it was possible to decrease moral and spiritual pain. In addition to this, how they handled the stress of the outbreak was using their faith in God. It can be concluded that the barriers of the pandemic are related to the spiritual well-being of individuals. After complete analysis of this content, it is easier to understand why Christian parents/guardians have felt so strongly against vaccines. Not only did their opinions grow more negative as time went on, but they started to become even more intense once the pandemic hit. The proof that a person's connection to God enhances their spiritual well-being is further strengthened by the fact that many of the interviewees' responses included their own ideas about their spiritual well-being. This led to the creation of Figure 1 below. Although there are many interpretations of what spiritual well-being, they are all connected in some way, as the figure illustrates. Peace was a common term. Several participants expressed that they found contentment in their spiritual well-being.

Figure 3

Participants' Definition of Spiritual Well-Being

Impact of Clinical Medicine and Vaccine Safety Research

As science and medicine continue to be innovative, the field of clinical medicine, as it relates to healthcare providers, must grow in terms of their understanding and communication regarding vaccines. Many participants voiced concerns related to vaccine safety and their makeup, noting that they did not feel support from their medical professionals when the topic was brought up. In fact, many of them voiced that they struggled to talk through their thoughts honestly because they felt pressured only to do what the provider suggested to them. However, those who disapproved of vaccine safety through provider support were still able to acknowledge some benefits of vaccination. The vaccine safety system in the United States is rigorously

monitored for safety and will continue to get better as vaccine research progresses, and there is more data. For many years, healthcare professionals have been valuable partners in ensuring that vaccines are administered safely. They oversee safety as soon as vaccines are delivered to a site until patients are injected. Healthcare providers assess whether more vaccines are needed for patients based on their age or current health conditions to ensure patients receive all recommended vaccines. They also provide patients with important information about vaccine risks, benefits, and common safety concerns. In addition to screening for precautions and contraindications to vaccination – such as a history of severe allergic reaction – healthcare providers help determine whether a specific person should receive a recommended vaccine. Severe or life-threatening vaccine-related reactions are rare, but healthcare providers should be prepared to handle such reactions if they happen (Center for Disease Control and Prevention, 2019). Healthcare providers frequently top the list of trusted sources parents and patients consult for vaccine information. Immunization providers should be ready to discuss the benefits and risks of vaccines with concerned parents and to address common misconceptions, rather than making Christian parents and/or guardians feel defeated at their children's well visits due to not knowing all the inclusive details that surface from vaccine conversations amongst provider and parents and/or guardians. A recent recommendation from the National Vaccine Advisory Committee (NVAC) has caused a great number of parents to worry about the number of immunizations given simultaneously and in the first two years of life and what is in those vaccines, even though the scientific community is very confident in the regimen (Salmon et al., 2015). Considering the common concerns of parents, vaccine safety research should be implemented and communicated effectively by healthcare professionals.

The Development of Educational and Operational Strategies for Potential Traumatic Circumstances

Throughout many of the developed themes, fear and uncertainty of the unknown seemed to highlight how all participants shared the variety of worries and fears they had during the COVID-19 outbreak. In addition, there was evidence regarding how many of them turned to their faith for comfort. Since it was a long-lasting pandemic, it is important for public health programs to evaluate the efficacy of their current emergency plans to ascertain if they are adequately meeting the needs of all people. An emergency preparedness plan includes having all the necessary resources to disseminate information such as viral variations, treatment options, testing kits, safety measures, treatment plans, and even critical elements such as masks and economic and educational shutdowns. Studying the success of the plan in the long term is important. To ensure of minimal issues, healthcare providers should develop a comprehensive emergency plan that sets forth a smooth switch from normal operations to pandemic response protocols is essential. Emphasizing minor dangers and the importance of mask mandates amidst a pandemic is critical. Identifying any hazards and procedures will allow stakeholders and healthcare professionals to elaborate on facts related to a pandemic or emergency. The hope is that citizens can understand in depth the dangers and ask questions when deemed necessary. Such details are very important to consider ensuring that everyone is on the same page at a local and state level. It is worth noting from the outlier results that six people discussed their experiences with the COVID-19 pandemic and with personal illness due to contracting the virus. Those included felt that this sickness also impacted their spiritual health. While the pandemic surfaced very abruptly, the campaign for vaccine and mask mandates caused many to feel uneasy. Given the closure of places of employment, educational institutions, and other public areas, many citizens throughout

the United States encountered significant challenges compounded by the ensuing economic and healthcare crises. Different strategies for surviving tragedy would be employed if a better-designed plan existed that encouraged rather than coerced participation of the entire population.

Identify the Optimal Strategies for Christian Parents and/or Guardians to Enhance Spiritual Well-being

When considering immunizations, spiritual health is an important factor. Many of the respondents mentioned things that immunization providers and healthcare professionals do to provide support as it relates to vaccines; however, not even one said anything about supporting spiritual well-being. Spiritual well-being, as defined by Abbasi et al. (2014), is the state of mind concerning different realms of interactions, such as God, the environment, the community, and oneself. Hu et al. (2019) similarly indicate that an individual's ability to connect with others, find purpose in their life, assert the value of themselves and others, to empower themselves, and resilience to counter hardships are aspects of spiritual health. However, the COVID-19 pandemic indicates the lack of research on spiritual well-being among Christian parents and/or guardians. The research gap exists in exploring the experiences of Christian parents and/or guardians with spiritual well-being, spiritual distress, and moral distress during the pandemic, as well as the uncertainty of when the pandemic could be resolved.

Implications for Policy, Practice, and Theory

Recognizing when to launch interventions intended to increase vaccine confidence and increase vaccine vaccinations is important. However, there is little known about how and when to intervene (Sadaf et al., 2013). Because considerable labor and funding are invested into preparing our public health infrastructures for pandemics, enhanced comprehension of the decision-making and risk perceptions of vaccination carry immense public health significance

(Miller et al., 2009). Interventions targeted toward parents are necessary for boosting vaccination rates and alleviating vaccine skepticism. However, to evaluate the impact of interventions, there is a concomitant need for robust, theory-driven, and valid assessment instruments.

Implications for Policy

According to Abassi et al. (2014), the healthcare industry is now immersed in spirituality, spiritual well-being, and the provision of spiritual care. Therefore, healthcare providers need to be more competent in giving spiritual care due to the increasing complexity of healthcare and in assessing and providing the spiritual needs of their patients. The idea of spiritual well-being is the focus and theme or commonality of the subjects in our investigation; this agrees with those mentioned in different investigations (Barna, 2020; Heydari et al., 2020; Jacob et al., 2020; Turi et al., 2020). Creating policies is the best strategy to implement change.

According to the World Health Organization, spirituality represents the fourth dimension of health, but it is rarely discussed by healthcare providers. The WHO released a webinar called Spirituality and Nursing, WHO Cares? in response to the increased emotional and spiritual toll of the COVID-19 pandemic (ANA, 2022). Setting the standard for better healthcare, the American Nurses Association (ANA) is the premier organization that represents registered nurses throughout the United States. By providing a written code, the ANA not only enables nurses to deliver safe, ethical, and moral care, but it can further help other healthcare professionals in the field. Additionally, the project included access to mental health assistance and other resources. With the help of this text, healthcare professionals can better prepare themselves to administer comprehensive care amid hardship.

Implications for Practice

Stinchfield (2008) found a connection between higher vaccination rates and increased time spent discussing vaccinations with healthcare providers, as well as visual exposure to vaccination information through clinic materials or video content. Unfortunately, Stinchfield (2008) states that only 32% of healthcare professionals speak to hesitant parents about vaccinations for 10 to 15 minutes. Reducing the vaccination gap may require increased exposure to accurate vaccination information via discussions with healthcare providers, brochures, or videos. In making medical decisions such as vaccinating their children, patients rely on healthcare providers. These critical conversations can improve public health by increasing the uptake of childhood vaccinations and, consequently, reducing the incidence of disease outbreaks. It is essential to stress the significance of effective and trustworthy communication between parents and/or guardians and the earnest delivery of inclusive information related to vaccinations. If a parent expresses hesitancy, the provider should be open to such discussions. The possibility of spreading out vaccines rather than simply providing consultation and education addressing parental fears and concerns can eventually lead to complete vaccination rather than just discussing their worries and concerns.

Further considerations include the emphasis on trauma-informed care. Participants from this study mentioned they faced a trauma or medical event that caused them to view the field of science and medicine a lot differently. Encouraging counseling for those who have experienced trauma in the past because of a medical event would be helpful in improving patient care and satisfaction. Healthcare providers, among other healthcare professionals, must expand their ability to meet the growing needs of patients as medicine evolves fluidly. A trauma-informed program, organization, or system recognizes that trauma impacts every aspect of the patient,

family, and staff members' system and understands potential paths to recovery. Trauma-informed providers realize that the signs and symptoms of trauma may manifest in patient behaviors and acknowledge the role the workplace environment and the policies, procedures, and practices may have in either preventing or re-enacting the client's trauma.

Implications for Theory

In the United States, having to experience deadly infectious diseases that once took a toll on many lives is positively impacted by vaccination laws. Vaccination laws in the United States differ from state to state, however, specific vaccines are required for children to enroll in public school. Because vaccination rates for infectious diseases like smallpox and polio were once so high, these diseases no longer affect children in the United States. Measles continues to grow in the United States because of a sizable portion of persons not having received the MMR vaccination (Pierik, 2017). Many parents believe that vaccines are far more harmful than the diseases they prevent (Offitt, 2015).

Based on the results obtained, it has been suggested that the HBM (Health Belief Model) can be useful when predicting and explaining the factors that are responsible for vaccine hesitancy, which is a multifactorial phenomenon which creates a lot of obstacles. Therefore, with the help of HBM-based interventions and educational campaigns, public health researchers can decrease the incidence of vaccine hesitancy or increase immunization rates. Five characteristic features of HBM, such as perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and cues to action, are advised to be included in such programs. Perceived barriers and perceived benefits, two of the most robust HBM categories, were significantly correlated with vaccine reluctance. Perceived barriers were positively correlated with vaccine reluctance and perceived benefits were negatively correlated with vaccine reluctance. In general,

the HBM indicates that individuals are less likely to comply with a recommended health behavior if they do not perceive susceptibility to a negative health condition, do not perceive the behavior as beneficial in preventing that condition, or perceive barriers to performing the behavior. Therefore, vaccine communication efforts are needed to decrease the perceived risk of side effects from vaccines, such as the COVID-19 vaccine, and increase the perceived benefits of the vaccine. Additionally, evidence suggests vaccine hesitancy is inversely related to cues to action. Among cue-to-action variables, family members being ill, information from social media and online news portals, suggestions from medical professionals, and counseling from friends or family members were the top four triggers. These findings underscore the significance of social media, medical professionals, family, and friends, in informing and encouraging people to get vaccinated for vaccines, such as the COVID-19 vaccine. This study presents the theoretical basis for the Health Belief Model, suggesting that it may be able to explain the psychology of vaccine hesitancy in Christian parents/guardians.

Delimitations and Limitations

The present study had several delimitations and limitations. The study was delimited to Christian parents and/or guardians between the ages of 24 and 48 with children aged 18 or younger. The age-restricted delimitation was to assure that participants were already married and of a common to have either one child or more. The second delimitation includes Christian parents and/or guardians from one local church in Greenville, South Carolina. The researcher chose this specific church due to its accessibility. One limitation of the study involved the researcher’s personal bias during the interview. The researchers' knowledge about the benefits of immunizations may have influenced their interviews, producing untrustworthy results. The interviewer did their best to reduce this bias by offering a neutral tone while prompting the

participants to answer the questions as honestly as possible. A second limitation might have been the participants' refusal or dishonesty in answering some questions. To limit any potential bias, participants were informed that the interview was purely for the researcher to gain a deeper understanding of why some people were hesitant to get vaccines; furthermore, the researcher would refrain from attempting to ascertain the participants' opinions on vaccinations. Additionally, interviews continued until no new information was provided, and the researcher was confident, by reaching saturation, that they had captured the relevant vaccine reluctance factors. Another limitation is that out of the twelve participants involved in this specific study, more participants were female than male. This could indicate some sort of gender bias, as there is a lack of equal involvement from both genders. Those interviewed constituted the boundaries of the study's sampling frame. The population of individuals interviewed became the perimeters of the study. Only Christian parents and/or guardians (between the ages of 24-48) of children in the age range of 0-18 who regularly attend church were interviewed. The final limitation could be related to the small sample size, although the study generated very rich data. Participants were chosen based on who responded to the researcher’s email invitation and met the inclusion criteria; therefore, it is reasonable to consider that those who responded first were most motivated.

Recommendations for Future Research

Countless studies have been carried out, specifically showing how the COVID-19 outbreak has affected people internationally (Karlsson et al., 2020 & Naseer et al., 2023). The research has uncovered various shortcomings, challenges, and gaps as a result. Research on the effects of the COVID-19 pandemic has been abundant, but few qualitative studies exploring the phenomenon of spiritual well-being in individuals have been conducted within the United States

(DiGregorio et al., 2022; Barna, 2021; Abbasi et al., 2014). Moreover, spiritual well-being was not the primary focus of American studies. Therefore, this study helps to fill the gap in the literature.

The purpose of this study was to learn more about the factors that contribute to vaccine hesitancy in Christian parents and/or guardians and the information sources that fuel those factors. The data consisted of twelve interviews wherein individuals shared a wide range of reasons behind vaccine hesitancy or refusal. Many rationales for why people are skeptical of vaccines were uncovered when participants were probed about specific aspects of their biographies and how those aspects may have contributed to their hesitancy. Additional reasons were found as to why the subjects interviewed were against vaccines, citing the influence of the COVID-19 pandemic on their opinions. Furthermore, there were a few specific sources of information that emerged as causes of this lack of faith in vaccines. The findings help healthcare professionals understand a greater range of concerns parents may have about vaccines. It also helps health professionals evaluate the credibility of specific information sources with their patients and understand various health behaviors.

According to the findings of this study, medical professionals need to understand their Christian patient's vaccine worries and properly address their concerns to reduce them. Participant's potential vaccine fears have received significant understanding from this research so far. However, more research is needed to determine how healthcare professionals can best explain to participants why vaccines are needed. To positively apply change, healthcare providers should accommodate those who may not always have similar medical views. In this instance, if a medical provider offered vaccines and holistic options for the worried Christian parent and/or guardian, this could help get Christian parents and/or guardians involved with

spacing out vaccines, rather than fully opposing them. Many Christian parents and/or guardians may be bringing up a worry that was not covered in this study. If follow-up research were executed to precisely address every worry that Christian parents and/or guardians might have, it would be beneficial to medical professionals to help inform change. It can be challenging to have an educated and legitimate conversation with parents and/or guardians who ardently refuse or hesitate with vaccines in the middle of a 20–30-minute appointment.

Lastly, the impact of the local health department can play a critical role in connecting people and communities through various services and counseling. Suggestions can be made to patients without disrespecting individuals who have chosen not to be vaccinated in the past, highlighting recent advancements in specific communities or data that can be used to justify changing one's vaccination status. In addition, filtering through any misleading "information" linked to public trust in vaccines is also notable. Hearing from local health departments or even the public health community in a specific area may draw more Christian parents and/or guardians' interest and even allow them the opportunity to learn and grow in their understanding of vaccines and health. Many of the participants in this study voiced notions of conspiracy that surface through the topic of vaccines. If the local health professionals, the health department, and even the public health community focus on meeting people where they are rather than overlooking them, it could be critical to the Christian population in America.

Summary

For a long time, the most notable leap in public health was immunization (Glanz et al., 2017). Vaccines have stopped disease outbreaks, vaccinated the population, and eliminated contaminations. Due to vaccine hesitancy, parents have decided not to immunize their children within the last decade (Glanz et al., 2017). As a result, more children are not completely

immunized, increasing the number of susceptible disease outbreaks. This research aimed to gain a deeper understanding of the components that contribute to vaccine hesitancy among Christian parents and/or guardians of children between the ages of 0 and 18 and to identify the information resources that support those components. Based on the findings of this research, healthcare professionals will have a greater capacity to answer any types of doubt expressed by Christian parents and/or guardians regarding vaccination. Moreover, discerning the information sources utilized by Christian parents and/or guardians who are reluctant about vaccinating will allow healthcare professionals to gain a better understanding of their values, and passage of the findings may facilitate a discussion with Christian parents and/or guardians about the sources' reliability. The literature review identified several common factors for Christian parents and/or guardians' opposition to vaccination for their children. The following factors had the most influence on the participants' vaccine hesitancy: fear of vaccine side effects or injuries; distrust of the government; fear of autism; notions of conspiracy; experience with complementary and alternative medicine; opinions of healthcare providers; the media; and the impact of their spiritual well-being. Each participant admitted being reluctant to vaccinate due to at least one of the main concerns identified in the literature review. Nevertheless, every participant offered a different explanation for how or why that specific issue affected them in answering each question. The participants were also asked about where they found information about vaccinations. Several other sources were stated; these included the internet, social media, and friends. Some parents also expressed that they feared being judged by the medical professionals if they disagreed with their point of view on the vaccine issue. The research aimed to contribute to medical providers' knowledge of the reasons behind their patients' hesitancies with

vaccinations to better address Christian parent's and/or guardians' concerns and provide them with more reliable sources of vaccine information, in-person and via the web.

Appendix A

Permission Request

May 1, 2023

Pastor Mark Gregory
Brushy Creek Baptist Church
4999 Old Spartanburg Rd, Taylors, SC 29687

Dear Pastor Mark Gregory,

As a graduate student in the School of Health Sciences at Liberty University, I am conducting research as part of the requirements for a doctoral degree. I am conducting research to better understand vaccine hesitancy in Christian parents and/or guardians. The title of my research project is EXAMINING THE CUES TO ACTION OF CHRISTIAN PARENTS AND/OR GUARDIANS WHO ARE HESISTANT TO VACCINATE PEDIATRIC POPULATIONS and the purpose of my research is to determine factors leading to parental wariness of vaccination (from newborn to 18yrs of age) and to find out if medical therapies have a higher success rate in reducing vaccination reluctance. This information would be useful to community health professionals, policymakers, and many stakeholders in the population.

I am writing to request your permission to conduct my research at Brushy Creek Baptist Church. The student pastor will act as the study's gatekeeper for this investigation. The researcher will provide the eligibility requirements for participation and let the student pastor construct a pool of individuals (without disclosing the study's subject matter).

Participants will be asked to complete the attached consent form. Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time.

Thank you for considering my request. If you choose to grant permission, please respond by email to [redacted]

Sincerely,

Marcia Abbo
PhD Candidate, Liberty University

Appendix B

Letter of Cooperation

To: Marcia Abbo

To Whom It May Concern,

We agree to have Marcia Abbo conduct research in the form of semi-structured interviews with multiple members of our congregation. We will also serve as the gatekeepers for the study by creating a pool from our congregation based on the study's inclusion criteria.

Mark Gregory
Student Pastor

Mark Gregory
Student Pastor

Brushy Creek Baptist Church
4999 Old Spartanburg Road Taylors, SC 29687
[redacted]

Appendix C

Recruitment Letter

Hello Potential Participant,

As a graduate student in the School of Health Sciences at Liberty University, I am conducting research as part of the requirements for a doctoral degree. I am conducting research to better understand vaccine hesitancy in Christian parents and/or guardians. The purpose of my research is to determine factors leading to parental wariness of vaccination (from newborn to 18yrs of age). If you meet my participant criteria and are interested, I would like to invite you to join my study.

Participants must identify as Christians, are between the ages 24-48, attend church every week, and have a child or children aged 0 to 18. Taking part in this research project is voluntary. The primary assessment tool for the proposed case study is semi-structured interviews. A semi-structured interview will be conducted with those who agree to participate. The researcher will be able to pose incisive questions to the interviewees through the semi-structured interviewing method. During each interview, a set of questions with mandatory responses for all participants will be asked, with follow-up probing questions. The interviewing process should take approximately 45 minutes to an hour to complete. Participation will be completely anonymous, and no personal, identifying information will be collected. Names and other identifying information will be requested as part of this study, but the information will remain confidential.

A consent document is provided to you prior to starting the interviewing process. The consent document contains additional information about my research. If you choose to participate, you will need to sign the consent document and return it to me at the time of the interview. Doing so will indicate that you have read the consent information and would like to take part in the study.

Please feel free to reach me at my contact information below, should you have additional questions and/or concerns.

Thank you for your time.

Marcia Abbo, Doctoral Candidate, Liberty University
[redacted]

Appendix D

Consent for Participation in Research

Title of the Project: EXAMINING THE CUES TO ACTION OF CHRISTIAN PARENTS AND/OR GUARDIANS WHO ARE HESISTANT TO VACCINATE PEDIATRIC POPULATIONS

Principal Investigator: Marcia Salam Abbo, Doctoral Candidate, PhD: Health Sciences: General, Liberty University.

Title of Investigator: Doctoral Candidate – Doctor of Health Sciences

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, parents and/or guardian identify as Christians, are between the ages 24-48, attend church every week, and have a child or children aged 0 to 18. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

This dissertation's objective is to assess parents' and/or guardians' worries, attitudes, beliefs, and intentions toward vaccinations for their children using a descriptive case study analysis method. The goal is to comprehend the "why" and "how" concerns that the vaccine-hesitant population raises. The purpose of this study is to determine factors leading to parental wariness of vaccination (from newborn to 18yrs of age) and to find out if medical therapies have a higher success rate in reducing vaccination reluctance. This information would be useful to community health professionals, policymakers, and many stakeholders in the population.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following:

Your involvement will entail an around 45–1-hour semi-structured interview with your spouse and the researcher. A series of open-ended inquiries will be posed, and when necessary, the researcher will answer with incisive queries. The interviews will be taped, and all participants will receive interview scripts that have been developed. None of the feedback or information will be shared with anyone else; it will only be utilized for the purposes of the study.

How could you or others benefit from this study?

You are aware that one of the potential gains from your involvement in the study is a better understanding of vaccine reluctance in Christian parents and/or guardians, which fills one of the

known research gaps. Future research on preventative health measures focused on Christian parents and/or guardians may be influenced by the findings of this study.

What risks might you experience from being in this study?

You are aware that if you take part in the study, there could be risks to you. It is necessary to convey all potential risks or discomforts, including the effects of inadequate treatment. Risks should also be considered for confidentiality breaches, embarrassment, loss of privacy, etc. You accept that Marcia Abbo will endeavor to minimize any adverse effects or discomforts if they do happen by keeping in mind the delicate nature of the subject matter and attempting to create a comfortable atmosphere throughout the interviews. The researcher will take measures to keep participant identities and information secret in the final report to increase confidentiality.

How will personal information be protected?

You are aware that while the research study's findings might be disclosed, your name, identification, and the contents of your information will remain private. Marcia Abbo will take steps to ensure that participant names and information are hidden in the final report to preserve anonymity. All comments and information will be kept totally confidential and used only for the purposes of the study, the researcher will assure participants. Before the interviews begin, participants will get information on the study's requirements and privacy protections, as well as a chance to ask questions. Codes will be used as IDs instead of names to ensure confidentiality. Transcripts of this information will be written down and documented, and they will need to be approved by the participants. The document storage for the researcher will be a secure server. In order to triangulate the data during the transcript analysis, a pastor and a health expert will analyze the transcripts; however, all names will be removed from the records.

What are the costs to you to be part of the study?

You acknowledge that you won't receive any compensation for taking part in the research if you decide to participate.

Is study participation voluntary?

Furthermore, you are aware that your participation is entirely voluntary and that if you choose not to participate, you won't face any consequences or lose out on any benefits to which you would otherwise be entitled. You are aware that you may leave the research study at any moment without consequence or harm.

Whom do you contact if you have questions or concerns about the study?

Any questions that you may have concerning your participation in the research study will be answered by Marcia Abbo, who can be reached at [redacted]

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. Our physical address is Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA, 24515; our phone number is 434-592-5530, and our email address is irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

By signing this document, you are agreeing to be in this study. You understand that the alternative is non-participation. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the researcher using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

☐ The researcher has my permission to video record me as part of my participation in this study.

_____
Printed Subject Name

_____
Signature & Date

Appendix E

Recruitment Follow-up

Dear Potential Participant,

As a graduate student in the School of Health Sciences at Liberty University, I am conducting research as part of the requirements for a doctoral degree. I am conducting research to better understand vaccine hesitancy in Christian parents and/or guardians. The purpose of my research is to determine factors leading to parental wariness of vaccination (from newborn to 18yrs of age). If you meet my participant criteria and are interested, I would like to invite you to join my study.

Last week an email was sent to you inviting you to participate in a research study. This follow-up email is being sent to remind you to contact me/sign and return the attached parental consent document me if you would like to participate.

Participants must identify as Christians, are between the ages 24-48, attend church every week, and have a child or children aged 0 to 18. Taking part in this research project is voluntary. The primary assessment tool for the proposed case study is semi-structured interviews. A semi-structured interview will be conducted with those who agree to participate. The researcher will be able to pose incisive questions to the interviewees through the semi-structured interviewing method. During each interview, a set of questions with mandatory responses for all participants will be asked, with follow-up probing questions. The interviewing process should take approximately 45 minutes to an hour to complete. Participation will be completely anonymous, and no personal, identifying information will be collected. Names and other identifying information will be requested as part of this study, but the information will remain confidential.

To participate, please complete the attached consent form and return it to me by email or by handing it to Mark Gregory, the student pastor. Feel dree to contact me at [redacted] or [redacted] should you have any further questions. If you meet my participant criteria, I will be in contact with you to schedule a time for an interview.

Sincerely,

Marcia Salam Abbo
Doctoral Candidate, Liberty University

Appendix F

Semi-structured interview questions as follows:

1. What is the highest degree or level of school you have completed?
2. What is your current employment status? Do you believe your employment is a factor in your choice to vaccinate?
3. How many children do you have? Are your children fully vaccinated, partially vaccinated, or not vaccinated at all?
4. Are you immunized for yearly vaccines, if so, what led to that decision?
5. What do you know about public health and vaccines?
6. What is your understanding of public health's role with vaccines?
7. What kind of insurance do you and your children have?
8. What do you know about vaccines?
9. What do you believe about immunizations for children?
10. Do you have reservations about immunizations?
11. Do you believe there are any benefits with immunizing your child or children?
12. What drawbacks of immunizing your child or children do you see?
13. Do you have any fears or concerns about vaccines?
14. What further concerns do you have about immunizing your child or children?
15. What do you know about vaccine safety?
16. Have you come across misinformation regarding vaccines on social media that you knew to be false?
17. Do you typically consider the person who posted the material when you come across vaccine health information on social media?

18. Was it difficult to decide whether to immunize your child/children?
19. How easy is it for you to obtain immunization services for your child/children?
20. How worried are you that a vaccination could result in an adverse reaction for your child/children?
21. How much do you trust the [healthcare professionals] administering your child's vaccinations?
22. What, if any, barriers prevent your child/children from getting the vaccinations they need?

Appendix G

Financial Conflict of Interest Disclosure (FCOI)

For context, see Liberty University Policy ID: OSP 0003.

Below is the link to the Liberty University's institutional FCOI policy.

https://www.liberty.edu/sponsored-programs/wp-content/uploads/sites/139/2022/05/LU-FCOI-Policy-FINAL-May-2022.pdf

Appendix H

CITI TRAINING

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Marcia Abbo (ID: 11299706)
- **Institution Affiliation:** Liberty University (ID: 2446)
- **Institution Email:** [redacted]
- **Institution Unit:** Department of Allied Professions

- **Curriculum Group:** Biomedical Research - Basic/Refresher
- **Course Learner Group:** Biomedical & Health Science Researchers
- **Stage:** Stage 1 - Basic Course
- **Description:** Choose this group to satisfy CITI training requirements for Investigators and staff involved primarily in biomedical research with human subjects.

- **Record ID:** 49899019
- **Completion Date:** 30-Jun-2022
- **Expiration Date:** 29-Jun-2025
- **Minimum Passing:** 80
- **Reported Score*:** 88

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Belmont Report and Its Principles (ID: 1127)	30-Jun-2022	3/3 (100%)
Recognizing and Reporting Unanticipated Problems Involving Risks to Subjects or Others in Biomedical Research (ID: 14777)	30-Jun-2022	5/5 (100%)
Liberty University (ID: 15111)	30-Jun-2022	No Quiz
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	30-Jun-2022	4/5 (80%)
History and Ethics of Human Subjects Research (ID: 498)	30-Jun-2022	4/5 (80%)
Basic Institutional Review Board (IRB) Regulations and Review Process (ID: 2)	30-Jun-2022	5/5 (100%)
Informed Consent (ID: 3)	30-Jun-2022	5/5 (100%)
Social and Behavioral Research (SBR) for Biomedical Researchers (ID: 4)	30-Jun-2022	3/4 (75%)
Records-Based Research (ID: 5)	30-Jun-2022	3/4 (75%)
Genetic Research in Human Populations (ID: 6)	30-Jun-2022	5/5 (100%)
Research and HIPAA Privacy Protections (ID: 14)	30-Jun-2022	4/5 (80%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	30-Jun-2022	4/5 (80%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citiprogram.org/verify/?k328c56ac-41c5-448e-9fbe-723d70ed00e2-49899019

Collaborative Institutional Training Initiative (CITI Program)
Email: support@citiprogram.org
Phone: 888-529-5929
Web: https://www.citiprogram.org

Appendix I

Taylor & Francis Journal Permissions

Permissions Request

5/17/2024

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