

2022

## Using Social Perspectives on Vaccination to Build Public Trust in Pro-Vaccine Communication

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# Walden University

College of Social and Behavioral Sciences

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Walden University  
2021

Abstract

Using Social Perspectives on Vaccination to Build Public Trust in Pro-Vaccine

Communication

by

Lindsay A. Hale

MA, Norwich University, 2013

BS, Eastern Michigan University, 2002

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Administration

Walden University

February 2022

## Abstract

United States public health guidelines for mandating vaccination of school age children for preventable diseases is increasingly ineffective. Little is known, however, about what sociocultural factors influence parents' and legal guardians' decisions to adhere to, hesitate against, or refuse to abide by immunization public health guidelines. The purpose of this qualitative study was to discover and better understand sociocultural factors that contribute to or detract from parents and legal guardians' adherence to recommended vaccination schedules. The theoretical framework for this study was Coleman's Rational Choice Theory. Research questions involved sociocultural factors and reference groups that influence parents and legal guardians' vaccination decision-making. A qualitative phenomenological design was used with criterion and snowball sampling techniques to recruit 15 parents and legal guardians across racial demographics who had children in kindergarten in Leavenworth County, Kansas. Data were collected using a researcher-developed interview guide and a two coding cycle technique to discover and analyze three emerging themes: sociocultural beliefs, reference groups who's attitudes and interests are valued, and external vaccine communication. Reference groups and individualist or collectivist sociocultural beliefs heavily influenced parental decision-making involving public health guidelines. Implications for positive social change include enhanced budgets for county health departments to create participative vaccine education that is reflective of citizens' sociocultural beliefs to promote public health guidelines.

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## Dedication

This is dedicated to my son, Nathan. My catalyst for new beginnings and personal growth. Your presence in my life inspires me every day. As you grow remember learning is life long. Strive to make your piece of the world better and make a positive contribution to society. Your infectious smile and tenacity to achieve even at six years old proves you are destined for great things!

## Acknowledgments

I would like to thank Dr. Hilda Sheppard for empowering me to discover my own potential as a researcher and her steadfast guidance throughout this journey. I am thankful for your patience and support that truly helped me get to the finish line.

In addition, I would like to thank Dr. Paul Rutledge for his guidance and encouragement that my study will contribute to positive social change for public health guidelines.

Finally, I would like to thank my husband for his support and patience through this process.

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## Chapter 1: Introduction to the Study

The United States (US) consistently struggles to maintain required vaccination rates to ensure herd immunity. It is causing increasing alarm due to the speed of proliferation. Studies have shown that parents expressing these beliefs typically align with one or more of the following categories; risk perception, vaccine safety, distrust, parental choice, natural living, moral purity and lack of communication. Studies are limited in terms of what sociocultural perspectives influenced decision-making processes to support these beliefs and if this way of thinking is fixed. A study aimed at understanding influential factors can help public administrators form community-supported solutions to increase vaccination rates.

This chapter includes the background, problem and purpose of the study. I highlight specific research questions and scope involving the phenomenon while providing an explanation of why this study will make a significant contributions to health and communication policies necessary to reduce social resistance to vaccinations.

### **Background**

In the US, public health guidelines recommend a 95% vaccination rate to maintain herd immunity from childhood preventable diseases (Centers for Disease Control [CDC], 2018). The state of Kansas has one of the lowest childhood vaccination rates in the nation, at 89% for children entering kindergarten (Gillespie, 2019). Previous studies by the Kansas Department of Health indicate minorities and low-income households were affected due to lack of single provider immunizations and cost prohibition preventing childhood vaccination from taking place according to public

health guidelines and vaccine schedules (Gillespie, 2018). This is one know factor attributing to low vaccination rates in Kansas. Since Kansas kindergarten vaccination coverage survey was published, Kansas has instituted health and financial services for minorities and low-income households to offset vaccination barriers (Gillespie, 2018). However, vaccination rates in total still remain below recommended numbers.

Low vaccination rates are also affected by vaccination hesitancy or refusal. Intermixed themes of concern involving vaccine risks, safety, distrust, parental choice, natural living, moral purity, and lack of communication are used to describe parents that stray from recommended public health guidelines for vaccinations. Little is known about sociocultural factors and reference groups influence that guide their decision-making. This suggests that vaccine-decision making is not necessarily of rational deliberation to avoided disease (Howson, 2019).

The preponderance of literature on this topic uses a quantitative methodology. Qualitative studies are underused in terms of researching this phenomenon. Qualitative studies are necessary to address parents and legal guardians' experiences as well as internal and external influences that shape parental vaccination views. Qualitative data on vaccination decision-making could be used to determine how they ultimately decide to adhere, hesitate, or refuse (Cooper et al., 2019).

### **Problem Statement**

In the US, public health guidelines recommend a 95% vaccination rate to maintain herd immunity from childhood preventable diseases (CDC, 2018). The state of Kansas follows those guidelines, yet has one of the lowest childhood vaccination rates in

the nation at 89% for children entering kindergarten (Gillespie, 2019). Researchers do not know if sociocultural factors influence parent's and legal guardian's decisions to adhere to the Kansas immunization public health guidelines. This has resulted in exposing immune system compromised citizens and children who are too young to receive vaccinations due to undue risks (Enkel et al., 2017). In 2017, Kansas instituted health and financial services to offset vaccination hurdles. However, vaccination rates for school age children still remain below the recommended rates (Gillespie, 2019). Possible factors contributing to this problem are anti-vaccination information from non-healthcare providers that dominate media platforms as well as failure to adapt policy approaches that reflect social changes in America.

Literature reviewed for this study has involved the role of healthcare providers educating parents regarding the need for early childhood vaccinations (Gallone et. al. 2017). Complementing the educational efforts of healthcare providers, Flynn (2017) explored if offering financial incentives or penalty interventions would improve vaccination uptake of school age children. Additionally, Mitra (2016) and Dhoju et al. (2019) have examined methods to identify reliable and unreliable media in an effort to counter vaccination misinformation. My study contributed to filling a gap by providing data regarding the influence of reference groups and sociocultural beliefs that contribute to parents' decisions to follow vaccination guidelines. This data will help to determine what changes or additions to current health and communication policies are necessary to reduce social resistance to vaccinations.

### **Purpose of the Study**

The purpose of this study was to understand sociocultural factors that can contribute to or detract from parents and legal guardians' adherence to vaccination in accordance with public health guidelines in Leavenworth County, Kansas. This study involved parents and legal guardians with children in pre-kindergarten or kindergarten in Leavenworth County, Kansas. This qualitative study involved identifying vaccination perspectives are not always fixed and are subject to change based on sociocultural and reference group influences.

### **Research Questions**

The research questions were

*RQ1:* What sociocultural factors and immunization communication have influenced parents and legal guardians in Leavenworth County, Kansas to adhere to, abandon, or resist public health policies regarding vaccination?

*RQ2:* How have references groups such as family and social relationships promoted or precluded vaccine decisions for children?

*RQ3:* What sociocultural beliefs and traditions are most influential in terms of determining adherence to public health vaccination requirements?

*RQ4:* How can sociocultural beliefs be incorporated to improve trust in current education and communication approaches for public health recommendations involving vaccination?

### **Theoretical Foundation**

The study involved employing the rational choice theory (RCT) framework. The RCT can help explain how individual actions are considered rational and appropriate to achieve a goal (Wittek et al., 2013). The RCT involves combining individual mental and physical states, personal actions and interactions, and social and physical environments as a means to assess social phenomena (Wittek et al., 2013). The four principles of rationality are full, bounded, procedural, and social (Wittek et al., 2013). Full rationality assumes that individuals are provided with all available information to perform a cost benefit analysis regarding their decisions as well as alternative approaches (Wittek et al., 2013). Bounded rationality means the individual does not have complete information to form a decision or possesses only a fraction of available information to make satisfactory decisions without seeking if better options are available (Wittek et al., 2013). Drawing conclusions from previous experiences or imitating responses without decision evaluation is procedural rationality (Wittek et al., 2013). Social rationality involves assessing conditions in which full, bounded, and procedural rationality influence human behavior and decision-making (Wittek et al., 2013). Rationality is impacted by sociocultural factors, relationships, social environments, access to knowledge, and options in terms of making appropriate micro choices that impact the individual and macro choices affecting society as a whole (Heckathorn, 2005). I used the RCT framework to identify sociocultural factors and reference groups that influenced vaccination policy decisions contributing to or detracting from parents and legal guardians' adherence to vaccination public health guidelines.

### **Nature of the Study**

This qualitative study involved using a phenomenological research design. The phenomenological approach involves considering participants' unique life experiences and expression of those in connection with how sociocultural factors influenced perspectives of health vaccination guidelines and the research questions of this study. The deductive approach provided the opportunity to test the RCT through describing and understanding parents and legal guardians' decision-making involving vaccination schedules and explore if there are commonly held sociocultural influences.

The estimated population of parents or legal guardians with children attending pre-kindergarten and kindergarten in Leavenworth County, Kansas is 2413 during the 2019-2020 school year (Kansas State Department of Education [KSDE], 2019). This study involved using criterion and snowball sampling to obtain a sample of 12 parents or legal guardians with children in prekindergarten or kindergarten. Additionally, participants represented four racial demographics. Understanding decisions to adhere to public health guidelines through individual interviews while exploring influencers based on racial representation will lead to saturation with fewer participants. Data for this study involved a researcher-developed interview guide and exploratory coding to gain insights regarding emerging themes (Saldana, 2016). Data was coded using a two-cycle coding method. I used IVIVO for the first coding cycle (Saldana, 2016). To establish internal validity for my study, I referred to respondent validation and expert reviews by my chair and committee to develop a comprehensive understanding of this phenomenon (Walden University Library, n.d.-a).

## **Definitions**

*Healthcare Provider:* Nurses, doctors of medicine, health education practitioners, and healthcare assistants (United States Department of Labor, 2020).

*Reference Group:* A group whose interests, attitudes, and values the individual is oriented. (Merriam-Webster Dictionary, n.d.)

*Vaccine Hesitancy:* This refers to a delay in acceptance or refusal of an immunization by one's own decision despite accessibility (Butler, 2016).

## **Assumptions**

It was assumed participants had an understanding of public health immunization guidelines involving school attendance. Kansas Statute 72-6265 gives provisions to school boards to determine whether to exclude or not exclude students who are not compliant with required immunizations for attendance (Kansas Department of Health and Human Services, 2019). Finally, it was assumed that participants provided transparent and candid responses to interview questions.

## **Scope and Delimitations**

This study included 15 participants with children who attend schools in Leavenworth County, KS who had 16 children entering kindergarten during the 2021-2022 school year. Participants identified as White, non-Hispanic, Black or African American, Hispanic or Latino, or two or more mixed races. All participants' children were enrolled in the Leavenworth County school system or an established non-accredited private school (NAPS) where kindergarten curriculum is conducted within Leavenworth County. A NAPS is defined in Kansas as a homeschooling environment that is registered

with the KSDE to satisfy compulsory school attendance laws (Ruhlman, 2020).

Participants came from one school district, three child support programs, eight daycares, and two open forum parenting bulletin boards in Leavenworth County. All parents and legal guardians without children participating in kindergarten education within Leavenworth County were excluded. Theories most related to the area of study were narrative theory, social learning theory, and economic theory. The potential for transferability rests with the similarities among populations, policy and statutes in the United States. Each state maintains a variation of a mandatory vaccination policies or statutes requiring updated vaccinations for school aged children. Not all states require preschool or pre-K, which makes kindergarten the standard entry grade where these polices or statutes would apply.

### **Limitations**

The lack of participation from four out of five school districts in Leavenworth County was a limitation of this study. School district participation would have provided an opportunity for more interviews and diversity in terms of participant experiences and insights. Not broadening the scope to include the how SARS-COV-2 has or will affect parental decision-making is an additional limitation.

### **Significance of the Study**

Vaccination resistance is not an emerging trend in the US, but increased rejection trends in recent years suggest new societal or cultural influences (Taylor, 2016). There is a lack of congruence between policy formulation, knowledge outreach, and application of social factors that shape attitudes and behaviors regarding immunization guidelines

(Motta et al., 2018). Continued struggles are further compounded by the fact that diseases are not contained at geopolitical borders (U.S Department of Health and Human Services, n.d.). This is apparent with the emergence of SARS-COV-2. By understanding current sociocultural factors influencing parents and legal guardians' decisions regarding vaccination, public administrators can adopt interventions that complement public health policies. Working with citizens and factors which influence their lives builds public trust while promoting public priorities.

### **Significance to Practice**

This study can advance outreach and education by tailoring vaccine communication practices based on parents' preferred communication methods. Through understanding how societal constructs shape vaccination views, public administrators can adapt policy and education interventions. This includes creating a rapport and partnerships with community leaders and social influencers to communicate easily consumable information regarding the benefits and risks of each vaccination.

### **Significance to Social Change**

Rebuilding trust in healthcare providers and vaccinations that is rooted in evidence-based science is crucial to preserving public health for all US citizens. In the process of undertaking this dissertation the SARS-COV-2 pandemic was not in the American lexicon. It is a citizen's right to feel represented by public administrators and governing agencies that create policies and laws. Identifying sociocultural factors and reference groups through this study that influence vaccine decision-making will help

rebuild rapport so public administrators can better represent US citizens. This in turn can facilitate better communication methods and outreach programs.

### **Summary**

This chapter includes information about the background and current problem involving herd immunity related to reduced vaccination adherence. I highlighted the purpose of the study and research questions involving the phenomenon of parental decision-making when adhering to or opposing required vaccination schedules. The scope and significance section covered the way this study will contribute to positive social change.

In Chapter 2, I address the theoretical framework that guided this study. A review of current literature was used to explore previous approaches to this topic as well as present knowledge on the subject. Drawing from the review of literature I brought attention to what remains to be studied to further understand parental decision making in relation to recommended vaccination schedules.

## Chapter 2: Literature Review

The purpose of this study was to discover and better understand sociocultural factors that can contribute to or detract from parents and legal guardians' adherence to vaccination in accordance with public health guidelines in Leavenworth County, KS. This study involved parents and legal guardians with children in prekindergarten or kindergarten in Leavenworth County. I identified vaccination perspectives based on sociocultural and reference group influence.

I focused on current literature involving seven key themes: risk perception, vaccine safety, distrust in agencies promoting vaccines, parental choice, natural living, violating moral purity by causing harm to child by injection, and lack of communication. Parents do not categorically fit into just one of these themes during vaccine decision making and are often intermixed. Little is known about sociocultural and reference group influences that steered their decision-making. Parent preference communication and updated web-based methods require further exploration.

This chapter includes a detailed account of literature search strategies as well as the theoretical framework guiding this study. I reviewed previous approaches to the problem, the significance of these findings, and what remains to be studied in order to build a better understanding of why parents refuse, adhere to, or hesitate to follow recommended immunization schedules.

### **Literature Search Strategy**

To search for current and relevant literature I used EBSCOHost, ProQuest, SAGE Publications, PUBMED, NCBI, NLM, PsycINFO, DOAJ, and Science Direct. I limited

the search to peer-reviewed scholarly journals and conferences. I used the search terms *anti-vaccination* or *vaccination hesitancy*, *vaccine opposition*, *vaccination support*, *vaccination history*, *vaccine uptake* or *low vaccine rates*, *vaccination barriers*, *vaccine accessibility*, *vaccine education* or *vaccine intervention*. The search was then refined to articles dating from 2016 to present with the same search key terms.

Filters were applied to the same search term categories to refine the classification and subjects of vaccine and immunization research. Filter search terms applied were *vaccine safety*, *complementary and alternative medicine*, *civil liberties or autonomy*, *distrust*, *risk perception*, *reference group* and *socio-cultural factors and/or influence*, *school age vaccination program* was added to anti-vaccination, vaccine hesitancy, vaccine opposition and vaccination support. *Vaccination cost*, *vaccination accessibility*, *lower level social capital*, *low community equity*, and *transportation* filters were added to vaccination uptake, low vaccination rates and vaccination barrier. Finally, *pro-vaccination campaign*, *practitioner education*, *patient education*, *online rhetoric and misinformation*, *social media*, *reference group* and *family influence*, and *parental research* filters were applied to vaccination education, vaccination intervention and vaccination communication. This search criteria are still limited to current resources dating 2016 to present.

A final search across the same databases focused on peer-reviewed journals, reports and printed material centering on the same search criteria as it is applicable to the State of Kansas.

## **Theoretical Foundation**

### **Theory**

The RCT, as applied in sociology, seeks to understand decisions people make based on their calculations of costs and benefits of a decision or action combined with the influence of social interactions (Howson, 2019). However, this theory was not derived from sociological origins.

### **Origin of Theory**

The RCT has roots in neoclassical economic theory. Wealth is the production of goods and services followed by a cycle of exchange, consumption, and distribution (Bevir, 2007). The desire to obtain these goods is referred to as utility (Bevir, 2007).

An individual's decision is motivated by price in relation to a specific tangible resource (Heckathorn, 2005). The evolution to RCT began when Max Weber correlated the economic theory idea of market to rational decision making by identifying value oriented characteristics as a form of utility (Howson, 2019). Two grounding factors of the RCT are the influence of macro and micro choices (Heckathorn, 2005). A phenomenon or macro-social environment (society) could be explained via choices of micro social actors (individuals) (Heckathorn, 2005). Individual choices are made based on self-interest after rationally calculating the best outcomes based on costs to themselves (Howson, 2019). This cost benefit is the product of social interactions where a person reinforces or undermines a particular behavior in order to receive rewards or exchanges that best serve their emotional and social interests. (Howson, 2015).

The context of the RCT has expanded to encompass collective actions of groups as micro social actors (individual self-interest) and their influence on a macro phenomenon (society) (Howson, 2019). Individuals with strong interests in promoting a specific action create a diverse voluntary collective group to promote influence on a macro social environment (Heckathorn, 2005). Individual rational calculations of self-interest involve whether to participate in the collective goal, even if that means forgoing desired rewards or exchanges (Heckathorn, 2005).

### **Theoretical Propositions**

The social rationality model of the RCT seeks to identify which characteristics of full rationality, bounded rationality and procedural rationality influence an individuals decision making behavior (Wittek, 2013). Full rationality presumes individuals are holistically informed to include alternatives, probable outcomes and potential consequences and decision making is not impeded by biases or reduced cognitive abilities (Wittek, 2013). There are two fundamental suppositions of bounded rationality. First, a person does not have all complete information of available options when making a decision (Wittek, 2013) Second, if the decision maker has cognitive difficulties distilling the information they will process enough to make a decision that will sufficiently reach the goal regardless if another option may be better (Wittek, 2013). Procedural rationality suggests the decision maker relies on past experiences or imitation of environment to produce responses instead of performing their own cost benefit analysis (Wittek, 2013).

Considering the social rationality model, parental vaccination views are not fixed. They initially reflect the vaccination environment they were raised in. When individuals

make decisions for their own children they are influenced by socio-cultural factors and reference groups. Socio-cultural factors from reference group, social interactions and lack of vaccine communication or communication not optimized for processing alters a parent's approach to vaccination schedules.

### **RCT in Analysis**

The RCT has negligible representation in studies focusing on the socio-cultural factors that influence parents' and legal guardians' decision making on adhering or hesitating on recommended schedules. The interest in how vaccination decision making occurs has proven pivotal on whether vaccination programs succeed or fail (Billiard et al., 2016). Understanding the vaccination decision making process influences vaccination coverage, outreach and disease transmission (Billiard et al., 2016).

The closest research with a theoretical framework mirroring tenants of the RCT is the game theory. As previously discussed, the evolution of RCT has roots in game theory. Game theory provides a quantitative means to study the individuals interactions where each participant is considered a rational actor that has full knowledge of the other individual or organizations preferences and strategies during the decision making process (Amadae, 2007).

The applicability of game theory in vaccination decision making research assumes rational actors use evaluation to process risk perception when presented with epidemiology statistics (Billiard, et al., 2016). Research has demonstrated that human cognition capabilities are ineffective at processing probability when faced with uncertainty (Taulil et al., 2016). When processing risk, humans incorporate empirical

evidence to perform a risk assessment (Taulil et al., 2016). The need to incorporate empirical knowledge in decision making is a limiting factor on the applicability game theory of assessing sociocultural influences.

The use of empirical knowledge to drive vaccination decision making is a reoccurring theme in the literature. Narrative theory emerges regularly in the literature as a means to explain how socio-cultural factors influence immunization decision-making. This theory assumes that individuals are essentially rational and the levels of rationality vary depending on the depth and breadth of a persons knowledge (Allen, 2017). The influence of narratives are governed by fidelity and coherence of information or an argument (Allen, 2017). The processing of a narrative examines the consistency between the persons values, sufficient detail of the story, and perceived reliability of information provided (Allen, 2017). Studies using the narrative theoretical framework have shown that narrative's influence vaccination decision making (Bandur, et. al., 2020). Emotional appeals on the lack of vaccination safety, proliferation of conspiracy theories, misinformation and appeals to the morality of protecting children contributes to the encouragement of alternative medicine (Bandur, et al., 2020). These narratives deter trust in science and healthcare provisions, but alone does not provide enough data to determine impeding factors in immunization decision making habits. (Fiske, 2016). The rationality for adhering or resisting vaccination schedules must account for the individuals risk perception of medical research and narrative testimonials (Fiske, 2016).

## **Theory Rational**

The application of RCT to the topic of vaccination policy compliance takes into account that vaccination decision making is manifold. Vaccination decision making is not necessarily made based on a rational calculation of avoidance of disease or what is deemed a healthy behavior (Howson, 2019). The RCT is not limited to risk perception based solely on disease severity when deciding on childhood vaccinations (Heckathorn, 2005). It also considers the individual preferences and environmental influence as shaping potential in determination to adhere to vaccination schedules (Heckathorn, 2005).

## **Relation to Current Study**

Vaccine coverage rates are often assessed using the three Cs model of vaccination hesitancy (WHO, 2020). Complacency occurs when the perceived risk of contracting vaccine preventable disease is low and immunization is not considered necessary (Chantler et al., 2019). Confidence transcends the level of public trust not only in the vaccination itself but healthcare providers and political officials (Chantler, et al., 2019). Finally, convenience assess the availability, accessibility, and affordability of the vaccine (Chantler, et al., 2019). With these factors considered as the core tenants in vaccination decision making it does not account for individual preferences, knowledge and additional environmental influences (Chantler, et al., 2019). The social rationality model of RCT will consider the physical well being and social wellbeing factors that stimulate perceived rational decision making (Witteck, 2013). The increasing rise with vaccination hesitancy and the approaching introduction of a vaccination for SARS-COV-2, it is important to have a holistic understanding of how socio-cultural influences participate in vaccination

adherence or resistance. An agreed upon framework by healthcare agencies and policy makers to study and understand factors that influence vaccine acceptance does not exist and existing models do not take into context empirical qualitative evidence (Cooper et al., 2019). The utilization of RCT in this study provided insight into how multiple factors interact when influencing a parent or legal guardians decision to adhere to the recommended vaccination schedules.

The RCT clarified what rationality traits within full, bounded and procedural rationality guided decision making and which of these conditions influenced behavior (Wittex, 2013). This qualitative study used RCT by combining what people think about vaccinations, experiences with vaccination communication, and sociocultural influences that impact vaccine decision making. Taking into account these contextual factors provided better understanding of the impact on childhood vaccination acceptance and therefore provided information to tailor immunization outreach, communication and interventions.

### **Studies Related to the Constructs of Interest**

Over the last thirty years the continued struggle to maintain recommended vaccination rates is baffling despite increased safety measures and access to clinical evidence supporting the cost benefit of immunizations (Berezin, et. al. 2016). Researchers have put considerable effort into understanding attitudes of parents that adhere, hesitate or refuse recommended vaccination schedules. Additionally, researchers have attempted to understand what role various communication constructs play in increasing or decreasing vaccination uptake. Research explored for this review was

aligned with the constructs of this study that helped determine what influences parents to hesitate, adhere or oppose recommended vaccination schedules, while discovering what the role of communication is in parental decision making pertaining to immunization schedules.

### **Qualitative Studies**

Qualitative studies exploring the constructs of what affects parents decision making to adhere, hesitate or oppose vaccination schedules are the minority. A 2015 qualitative study set out to understand the rationale of parents seeking alternative vaccination schedules (Saada et al., 2016). Parents in this study reported apprehension of side effects due to perceived immune system overload through administration of multi-antigen shots or the number required based on recommended vaccine schedules (Saada et al., 2016).

A separate qualitative descriptive study explored categorical reasons why parents deviated from recommend childhood vaccination schedules (Aharon et al., 2017). This study determined parents hesitating or refusing recommended vaccinations believed that parental choice is a necessity in childhood immunization decisions and viewed this belief as good parenting, they also held critical views of distrust in medical and policy making establishments, and calculated their decisions on risk of vaccine compared to risk of disease (Aharon et al., 2017). The association between good parenting and vaccine opposition was prevalent in a 2018 qualitative study aiming to discover beliefs, attitudes and perceptions surrounding illness and health in light of mainstream immunization (Attwell et al., 2018).

A re-occurring themes among parents in this study was a belief that nature is best, parental health philosophies against immunization were superior to parents who follow the mainstream and the unfounded belief that children who receive immunizations are *the unhealthy ones* (Attwell et al., 2018). Not all parents however hold such strong convictions on vaccination and perhaps are influenced by outside events. A 2018 constructivist qualitative study in Australia explored how a recent influenza vaccine injury of a baby and an unvaccinated baby's death from whooping cough influenced parents immunization views (Enkel et al., 2018). This study showed patterns of parental fear, concern over disease and vaccine side effects as well as limited avenues to discuss concerns with healthcare providers (Enkel et al., 2018). A 2019 study in the Netherlands echoed similar patterns where parents in focus groups voiced concern over access to information beyond immunization brochures and the ability to have dialogue with healthcare workers over contradictory information (Romijnders et al. 2019).

Communication surrounding immunizations repeatedly surfaces as a parental concern. A 2017 systematic review of qualitative studies focused on parental views and experiences of vaccine communication and interventions aimed at increasing vaccination uptake for immunization hesitant or adverse parents (Ames et al., 2017). The synthesized qualitative evidenced determined parents had a preference for vaccine communication prior to scheduled immunization appointment and wanted more time for respectful discussions about vaccine concerns with healthcare providers that was non-judgmental (Ames et al., 2017).

The desire for better communication is also affected by socio economic status. A qualitative study in 2017 explored if participants perceived their healthcare and physician communication was affected by their lower socio economic status (Nicholas et al., 2017). Emerging themes from this study were *second class patients, physicians don't listen, talk down to patient, low income equals low grade medicine, refusal for routine followup and immunizations* (Nicholas et al., 2017). These studies show a benefit in using qualitative approaches to understand the thought processes of parents when deciding whether to adhere, hesitate or oppose vaccination schedules.

### **Quantitative Studies**

The majority of studies contributing to the literature on parental decision making pertaining to immunizations and desired communication approaches are of a quantitative methodology. These studies have provided the foundation for understanding the categories parents align with when they adhere, hesitate or refuse recommended vaccination schedules and show the growing need for appropriate communication and outreach.

Healthcare providers are pivotal in disseminating immunization vaccination. By United States law, a vaccine information sheet (VIS) must be presented to the parent before or at the time of vaccination (CDC, 2016). A 2016 national panel survey of 2603 US parents with children under the age of seven reported 59.7 percent received the VIS on time, 14.5% received it post vaccination and 15.1 percent were unsure when and if they received the VIS (Frew et al., 2016). The significance of this study however showed 49.4 percent who were vaccine hesitators or refusers found the information only slightly

beneficial because it was not coupled with time to address concerns with their healthcare provider (Frew et al., 2016).

In the absence of dialogue with healthcare practitioner's parents often turn to the internet for self research. A cross-sectional online survey of 1018 participants in 2018 discovered narrative implicit cues were just as powerful as explicit cues in misinformation surrounding vaccine efficacy and safety (Lyons et al., 2019). Narrative forms of communication surrounding vaccinations appear to have a large impact on parental decision making. A separate survey with a stratified sampling of 564 participants used three independent experiments that provided participants statistical and narrative vaccine information based on a hypothetical disease (Hasse et al., 2020). The results concluded the narrative forms of communication increased the likelihood of vaccination by 35 percent where statistical information alone only had a five percent impact on decision to vaccinate (Haase et al., 2020). A unique correlational study conducted in 2016 monitored 1489 comments over the course of a week on the most popular *time for vaccines* Facebook photo post (Faasse et al., 2016). Using a linguistic inquiry and word count analysis, they found pro-vaccination comments used more positive emotion and social process word categories whereas anti vaccination comments used more anxiety, anger, risk and causation psychological language indicators (Faasse et al., 2016). Fassee et al. (2016) also noted pro vaccination comments cited more evidence based vaccine information while anti-vaccination comments used narrative language with pseudo factual vaccine information without citing the location of data in an effort to mimic founded scientific data. In the plethora of internet information surrounding vaccination

some researchers suggests overconfidence may attribute to the public's skepticism about vaccine policies. In a modeled self-reporting survey of 1310 U.S. adults, 36% believed they knew more than doctors and 34 percent thought they knew more than scientists in regards to immunizations based on individual research they conducted online (Motta et al., 2018). A smaller survey of 53 parents with children under the age of five discovered nearly 33% of parents believed their curated information from self research made them capable of choosing their child's vaccination schedule (Sobo et al., 2016).

Healthcare networks are important influencers in helping parents maintain recommended vaccination schedules. The complementary and alternative medicine (CAM) healthcare network has become a focal point for researchers. Natural living and moral purity attitudes in parents have led to studies surrounding the influence of complementary and alternative medicine.

Quantitative studies have looked specifically at the influence of alternative medical systems like chiropractic care, holistic and naturopathic medicine or acupuncture, and other mind body therapies like yoga, meditation and tai chi in encouraging delayed vaccinations or refusal. A National Health Survey of 9000 parents with children under the age of 17 found that 66.73 percent of children who have consistently use CAM methods were unvaccinated for one or more vaccines (Bleser et al., 2016). Echoing the potential influence of CAM on parental immunology belief, a 2018 survey found 36 percent of participants reported nature is best, 14 percent believed in moral purity and the body has innate intelligence while 22 percent believed the

immune system was too fragile for the vaccine overload proposed by recommended vaccine schedules (Bean et al., 2018).

Studies have yet to determine if CAM is the catalyst for parental attitudes that nature is best when adhering to, hesitating or refusing recommended vaccine schedules. A cross-sectional online survey conducted in Australia with 2697 parent participants found that vaccine opposition or hesitant attitudes on vaccinations were not necessarily influenced by CAM practitioners, but an astounding 43.1 percent reported alternative health beliefs and nature is best before entering CAM forms of care (Bryden et al., 2018).

In the midst of the SARS-COV-2 pandemic, understanding what prompts decisions to adhere, hesitate or refuse vaccinations is extremely important. A cross-sectional survey conducted in April 2020 with random sampling of 1000 participants indicated 57.7 percent intended to receive the vaccination, 31.6 percent were hesitant and 10.8 percent would refuse the immunization (Fisher et al., 2020). The overall reasons for participants hesitation or planned refusal was vaccine safety, lack of trust, preference for further information, and preexisting anti vaccination beliefs (Fisher et al., 2020). A subsequent survey experiment was designed providing 3,113 participants with various information ranging from probability of the average American catching SARS-COV-2, conditional mortality rate, and informing them the source of data was communicated by the Center of Disease Control (CDC) and the White House (Thunstrom et al., 2020). Based on the presented uncertainty of probabilities for infection and mortality 20 percent of Americans would refuse the vaccination for themselves and their child (Thunstrom et al., 2020). The study highlighted significant distrust in the CDC and Whitehouse and

emphasized the need for constructing a uniform message about the pending SARS-COV-2 vaccination and developing policies that are supported by government agencies, healthcare systems and local officials (Thunstrom et al., 2020).

Other quantitative approaches to increasing adherence to vaccination policies is the use of financial incentives and penalties. An online discrete experiment in England of 262 parents with high risk of vaccine non-compliance showed twenty five percent of parents preferred cash vouchers as opposed to shopping vouchers for complete vaccinations (Flynn et al., 2017). A similar study conducted in the United States examined the efficacy and acceptability of financial incentives and penalties to increase vaccine uptake among preschoolers and kindergarteners (Thompson et al., 2020). Financial incentives were shown to successfully increase vaccination uptake but came with criticism over coercion by policy makers. Incentive penalties were shown just as effective (Thompson et al., 2020).

### **Mixed Methods Studies**

Mixed methods approaches correlating with the constructs of this study are minimal. These approaches however have contributed to linking existing quantitative and qualitative data to better capture the understanding of the anti-vaccination phenomenon.

In 2018 a mixed method systematic review of literature focused on how trust relationships and interactions among healthcare professionals, the government, friends and family influences childhood immunization decisions (Larson et al., 2018). Among the 28 quantitative studies reviewed the combination of trust in healthcare systems, the government and science played a role in parental decision to vaccinate their children

(Larson et al., 2019). Throughout the qualitative studies reviewed, distrust was tied to healthcare professionals based on perceived financial incentives for recommending vaccinations, vaccine safety and general distrust in health systems by minorities and those with lower socio economic status due to racial prejudice, historical medical injustices and malpractice (Larson et al., 2019).

The need for better communication on immunizations between parents and practitioners is a re-occurring theme in these mixed method systematic reviews. A systematic analysis of qualitative and qualitative studies in 2016 showed parents' vaccination decision-making was affected by cost benefit analysis between vaccine side effects and threat of disease, freedom of parental choice and level of communication surrounding immunization concerns and outreach initiatives (Corben et al, 2016). Insufficient communication increases the appeal for web based and social media research which appears as an untapped resource for healthcare network communication. In 2017 a mixed method study sought to discover if access to web-based and social media interventions would increase early childhood vaccinations (Glanz et al., 2017). The randomized controlled trial discovered providing parents with accurate information that was easily accessible and interactive technologies helped inform parents in real time and debunk misinformation found on the internet (Glanz et al., 2017).

Furthering the research into the influence of complementary medicine a critical review of qualitative and quantitative studies from 2000 to 2015 examined attitudes toward immunizations and the relationship between CAM practitioners, parents who use CAM approaches (Wardle, et al., 2016). Analysis of the studies concluded that the use

CAM alone is not associated with lower vaccine uptake, but ideologies of natural living and alternatives to mainstream medicine are influential (Wardle et al., 2016).

### **Previous Approaches to the Problem**

Qualitative methodology has been used to identify attitudes of parents who adhere or deviate from recommended vaccination schedules utilized various sampling methods. A study conducted in Australia used a purposeful criteria based sampling strategy for structured interviews. Criteria based sampling provides information rich data based on a set of criteria all participants must meet (Patton, 2015). This method of sampling composed a participant pool that created rich data identifying specific categorical alignment for parents views on vaccination schedules. A potential weakness of this study is that the sampling pool was a non-profit serving privately insured parents.

The study indicated the objective outcome was understanding attitudes of parents who chose to delay vaccination but the sampling pool may hinder representative data of the population as a whole. Two other studies, both conducted in the US, listed purposeful sampling as their method without outlining sampling strategy. By not indicating a sampling strategy the research could be subject to questions on bias and transferability.

Systematic qualitative evaluation reviews were also heavily used in studies exploring attitudes of parents who adhere, hesitate or oppose recommended vaccination schedules. This sampling technique produced rich data from studies spanning various geographical regions and time periods. It captured key categories parents align with when describing their stance on childhood vaccinations. A potential weakness of this type of

research however is using outdated data and researchers inadvertently manipulating the data based on perceived outcome (Patton, 2015).

Aside from systematic evaluation reviews, researchers used either focus groups or individual interviews. Focus groups provide a cost effective means to obtain data (Patton, 2015). They promote interaction between participants and can create mutual understanding while providing increased quality to data (Patton, 2015). Focus groups are best utilized when limiting participant to eight participants or fewer (Patton, 2015). One study used three separate focus groups to ensure saturation. The focus groups were run in succession and allowed for researchers to expand discussions based on new data from one group to the next. This particular study however tested the limits of a productive focus group. Each group had fifteen participants that consisted of a mix of parents who were vaccine opponents, pro vaccination and vaccine hesitant. The size of the focus groups were too large for productivity. Another potential weakness is that participants were placed in what is considered a controversial situation because vaccine stance is a highly personal issue (Patton, 2015). This may have lead to silencing some participants.

Other researchers used in-depth interviews in either a structured format or unstructured. The structure interviews followed predetermined questions and subsequent followups to every participant without deviation (Patton, 2015). This style enabled researchers to make comparisons across all the participants and identify possible deviations based on demographics. This style however, may prevent researchers from identifying additional characteristics or attitudes within parental vaccination views. The unstructured interviews did not follow predetermine questions but used open-ended

questions to build on parents vaccinations outlooks. These studies captured both major and minor categories that parents aligned with on vaccine reasoning. This type of approach however may present reliability issues due to lack of direction and stray from the purpose of the study (Ravitch et al., 2016).

Quantitative methods of inquiry have contributed significant useful data on what stances parents take on recommended vaccination schedules. Quantitative research approaches generally pose a beneficial option for a representation of the population depending on sampling method (Frankfort-Nachmias et al., 2018). Random sampling was the most widely used in the studies consulted for this review. Random or probability sampling was used in these studies based on general populations age, gender, income, education, race and geographical location. This method promotes validity and credibility to the study (Frankfort-Nachmias et al., 2018). The second prevalent sampling method in these studies was stratified sampling. This method was predominately used in survey experiments which allowed more precision with a smaller sample. The downfall to this approach is the inability to link every population variation to a sub group in the experiment (Frankfort-Nachmias et al., 2018). This may pose issues with validity and credibility (Frankfort-Nachmias et al., 2018).

The main data collection method for these studies were online surveys predominately cross sectional or experiment. Cross sectional studies are cost effective and enable researchers to study large samples of heterogeneous populations (Frankfort-Nachmias, C. et al., 2018). Although they cannot determine causal interference of parental attitudes the cross sectional surveys consulted in this review provided plentiful

data that may contribute to in-depth qualitative studies. Survey experiments consulted for this review assign participants to sub groups. Based on the survey experiment, subgroups were presented with various scenarios based on a hypothetical disease, new treatment, probability of the disease, and mortality rate by demographic. These survey experiments created a heterogeneous snapshot of how people approach their personal cost benefit analysis of contracting a disease, vaccination risk and probability of death. A potential weakness for these studies is the use of a hypothetical disease which could affect response rate and truthfulness because at the time of study was not a lived experience. Quantitative research has contribute significantly to understanding parental decision making on recommended vaccine schedules. However, it doesn't capture the context and complexity of the anti-vaccination or hesitation phenomenon and the parents lived experiences driving their decisions.

Throughout the research for this review mixed method was not widely represented as an approach into parental attitudes toward recommended vaccination schedules. The mixed method studies examined for this review were exploratory systematic reviews of quantitative and qualitative research focusing on parental trust in healthcare systems, government agencies and trust in vaccinations. These studies pose a strong contribution to understanding the contradictions between qualitative data and qualitative themes of parental attitudes towards immunization schedules. This method however presents a weakness in the quality of sampling ensuring current data is analyzed (Patton, 2015). These particular studies consulted between ten and fifteen medical and social science literature bases. One study failed to identify a date range for the studies

gathered and the other expanded their search criteria to studies older than five years in which the synthesis was conducted. This may call into question the validity and reliability because of the relevancy of information (Patton, 2015).

### **Rationale**

Existing research has created foundational categories that parents align with when asked why they adhere to, hesitate or refuse vaccinations. Equally important research has found a gap in communication approaches that compounds the issue of maintaining the recommended community vaccination rate. The end state of a parents hesitation or opposition aligns with one or more categories such as risk perception, vaccine safety, distrust of multiple government agencies and scientists, parental choice, natural living, moral purity and lack of communication. What the literature doesn't capture is the influence mediums that made parents arrive at one of these categories to hesitate, refuse or adhere to recommended vaccination schedules.

My qualitative study explored what sociocultural factors are influential, the influence of reference groups, and what communication approaches parents used in their decision making for childhood immunizations. Qualitative studies are underused in research aiming to understanding parental vaccine decision making. They are necessary to discover the why and how parents arrive at their stance on vaccination and what experiences shaped their views. Quantitative and mixed method studies are not suitable to capture these influences and experiences. Using qualitative methods will help policy makers and healthcare practitioners shape appropriate communication and outreach programs to reduce hesitant and adverse views of immunization. This type of study is

credible and relevant as the United States is in the grip of a pandemic. Understanding the influences of parents will help shape the message from national to county level as the SARS-COV-2 vaccination and subsequent boosters are made available.

### **Key Concepts**

#### **What is Known**

Through the use of various methodologies research has shown risk perception, barriers to immunizations, distrust, parental choice, natural living, and lack of communication are the reasons parents cite for hesitating or refusing childhood immunizations. These categories represent parental stance on why they stray from recommended vaccination schedules.

#### ***Risk Perception***

Risk perception is perhaps the most widely discussed and researched. This topic is multilayered and risk perception serves as an umbrella term. Risk perception encompasses multiple concerns voiced by parents. Commonly cited parental concerns are efficacy of vaccinations, the risk of side effects, and perceived immune system overload through administration of multi-antigen shots (Romijnders et al., 2019). Needle sensitivity and violation of moral purity have also found inclusion in what parents deem harmful side effects (Callaghan et al., 2019). Research suggests that parents with elevated moral purity view the antigens in vaccines as contaminating the body with disease and corrupting the purity of their child's body (Callaghan et al., 2019). With these factors governing a parents risk perception they conduct a cost benefit analysis of the risk of exposure to the disease versus perceived risks of the vaccination (Cooper et al., 2019).

### ***Known Barriers***

The approach to risk perception considers the psychological state of decision making, but physical barriers represents a significant impact as well (Bedford et al., 2018). Research has shown access barriers is a critical reason for children falling behind in recommended vaccine schedules (Bedford et al., 2018). Socioeconomic status and other factors like geographical access to clinics, lack of transportation during clinic hours and insurance status affects timely well-child visits (Ventola et al., 2016). Previous research in these areas enabled the enactment of the Vaccines for Children (VFC) program to offset income-related disparities affecting vaccine coverage (Walsh et al., 2016). The VFC is not however the singular answer for increasing vaccine coverage for low income or geographically challenged families. Between 2011-2016, Kansas conducted an analysis on the impact of socioeconomic status, insurance status and household ethnicity on adolescent vaccination coverage (Gillespie, 2018). Similar to previous studies on physical barriers, the aforementioned criteria had an impact on vaccination coverage. Kansas, like other states, does not participate in the VFC program for under or uninsured families and look to health care providers to use the opt-in option (Gillespie, 2018). Research has solidified reoccurring physical barriers that impact immunization coverage and subsequently encourages a state and local community approach in providing systematic and responsive services to counter known gaps in immunization access (Bedford et al., 2018).

### ***Growing Distrust***

Distrust exists in every aspect of vaccine questioning. Distrust of policy makers, pharmaceutical companies, and the health care system is often used to substantiate ideologies of parental choice from forced vaccine mandates (Brennan, 2018). A systematic analysis of peer reviewed studies on trust in vaccination programs concluded that a multi-level trust structure is expected by patients; trust in information, trust in those who propagate the information, trust of the confidence and competence in health care providers (Larson, 2019). Parents routinely consult web based health information that scantily includes evidence based data which further exasperates distrust (Faassee et al., 2016). Participants in a focus group believed healthcare providers are not unbiased because of perceived financial incentives from *big pharma* who are responsible for vaccine research and sales coupled with financial support from the government to manufacture vaccines (Sobo et al., 2016). Ongoing research seeking to identify why parents avoid or hesitate childhood vaccinations circles back to distrust in the government, producers of vaccination, the immunization itself and the collective value of choice (Rozbroj et al. 2019).

### ***Natural Living***

Natural living ideologies are quickly instigating the abandonment of vaccinations for the belief that closure to nature is healthier. The locus of responsibility of personal health and authority shifted with the introduction of the 1976 National Health Information and Health Promotion Act (Berezin et al., 2016). The law aimed at promoting public health education and encouraging personal health responsibility

unintentionally led to a rise in patients advocating for decisions in the treatment they would receive and questioning healthcare practitioners on treatment safety (Berezin et al., 2016). Individual patient advocacy reduced confidence in immunization programs and the lack of positive discussion in a practitioner's office prompted parents to use self-research on immunizations (Rominjnders et al., 2019).

The rise of the wellness industry including complementary and alternative medicine (CAM) is noted as a one such factor that encourages parents to adopt alternative approaches to vaccinations (Bryden et al., 2017). CAM practitioners, such as chiropractors and holistic medicine caregivers, assert unfavorable views on vaccinations and purport natural living lifestyles (Bleser et al., 2020). This fuels a parent's narrative bias whom is concerned with side effects, immune system overload and moral purity (Bean et al., 2018). Studies have not concluded whether CAM medical networks drive natural living or preexisting parental beliefs in alternative natural lifestyles, but CAM is an information source for encouraging alternative vaccination schedules.

The influence of CAM through practitioners or alternative living websites can drive parents to oppose vaccine schedules or seek to vaccinate their children on an alternative schedule (Bleser et al., 2020). Five alternative schedule methods are typically requested by parents; delay immunizations until a specified age, shot limiting to one per office visit, select or delay specific vaccinations, known as cherry picking, reducing the number of shots received for one antigen by refusing boosters, or complete refusal (Butler et al., 2020). Parents view alternative schedules as a means to bridge the gap between federal guidelines and mandatory school vaccine policies while managing their

concerns regarding vaccine safety (Buehning et al., 2017). This deviation from recommended vaccine schedules poses an issue with managing disease risk and the effectiveness of incorporating new vaccines in the future.

### ***Communication Gap***

Researchers have identified communication as the battle ground in overcoming vaccine adverse and hesitant attitudes. As public health concerns grow creating sustainable communication and outreach initiatives is imperative (Frew, 2017). Multiple studies have shown success with remind and recall outreach programs. A study of 993 parents who were behind on recommended vaccine schedules received text reminders, phone calls, and post card reminders resulting in a sixty two percent increase in vaccination coverage (Jaca, et al., 2018). While these advancements in outreach contribute to upholding public health guidelines, a quickly spreading gap in communication creates a bigger threat.

A study on communication tactics with hesitant or vaccine adverse parents revealed thirty one percent felt healthcare providers did not take the time to address their concerns about one or all vaccines (Moran et al., 2016). This perception is reasonably acceptable based on a 2016 study that found fifty three percent of physicians viewed vaccine information as time consuming only spending approximately ten to nineteen minutes with parents who had safety concerns (Thompson, et al., 2020). Narrative accounts of negative vaccine experiences and web based misinformation on immunization safety is quickly filling in as health care provider information (Hoffman et al., 2019). Emotional narratives have a greater impact on perceived risk than science

backed statistical research (Dhoju et al., 2019). The current health threat of SARS-COV-2 is the latest casualty of internet misinformation. Social networks and unsupported global reports have undermined current efforts by proliferating false claims and misinformation about vaccine research (Schiavo, 2020). A recent study of New York resident showed twelve percent stated they would not take a SARS-COV-2 vaccine and 82% of those cited safety concerns based on personal research (Schiavo, 2020).

The increasing reliance of internet health information breeds an environment conducive to the growing acceptance of misinformation causing a global impact on immunization behavior (Mitra et al., 2016). Researchers have growing confidence that transparency and access to credible information is essential to countering vaccine misinformation, but improving compliance to public health guidelines will take more effective personalized communication (Badur et al., 2020).

### **What is Controversial**

Public health interventions serve as a critical precaution in promoting immunization programs (Colgrove et al., 2016). These at times raise trepidation over the influence of parental rights on child rearing (Cosgrove et al., 2016). Public health policies mandating up to date vaccinations to attend school and day care is often referenced as a coercive tactic (Corben et al., 2016). Select persuasive tactics to increase timely childhood vaccinations has come under scrutiny as unethical coercion that still aims to remove parental freedom of choice (Grzybowski et al., 2017). The use of financial incentives, regardless of the form of payment, is controversial not only for perceive coercive techniques but ethical applicability (Flynn et al., 2017). To remain ethical, the

offer of monetary stimulus in exchange for timely vaccinations must be available to all parents not just those targeted as hesitant, adverse or simply behind schedule (Flynn et al., 2017) The opposite technique of incentives is penalties. Reducing access to school and daycare is social penalty in which most are familiar with. Studies however has explored the use of financial penalties, more specifically in reduction of state aid and welfare programs (MacDonald et al., 2018). The initiative to impose financial restrictions on welfare payments proved beneficial in recent studies (Thompson, et al., 2020). Controversy surrounding these studies suggests public health initiatives are singularly focused. These study approaches fail to consider the extended impact to marginalized and low income families who are left to decide wither to exercising individual liberties or receive necessary monetary support to survive (Chantler et al., 2019). Public health measures, whether citizens consider them coercive or persuasive, must take a measured approach that balances the limits of individual rights with evidence based public health guidelines (Chantler et al., 2019).

### **What Remains to be Studied**

After reviewing 213 articles that make varying contributions to the phenomenon of vaccine adverse or hesitant parents, researcher still do not know what sociocultural factors influence parents to gravitate to a specific immunization stance. Vaccine hesitancy and opposition within the general public cannot be fully understood if a corresponding effort to understand the level of influence reference group and sociocultural factors play. Majority of the data known in regards to anti-vaccination was obtained through quantitative or mix method approaches. Qualitative data on

immunization decision making could close the gap on parental reasoning base on their experiences, views and external influences (Cooper et al., 2019).

### ***Sociocultural factors and Reference Group Influence***

Sociocultural factors are not widely represented in the literature when investigating hesitant or opposition to immunizations. Parents are lumped into umbrella terms such as vaccine hesitant or vaccine adverse. Resistance however is diverse, each parent is comprised of political, sociocultural and economic influences that curates their personal lifestyle (Aharon et al., 2017). Parents are inundated with outside social and cultural influences daily through family and social interactions, internet habits and life experiences.

The examination of reference group in social decision making processes is often used in consumer behavior analysis. Exploring reference group influence helps understand consumer behavior and the symbolic value attached to popular or high demand products and services (Fernandes et al., 2019). Sociocultural reference points from friends, family, social networks, social norms, and consumption of information from multiple media platforms can enhance risky social decision making (Wang, et al., 2016). The degradation of adherence to public health guidelines is multifaceted with implicit and explicit cues from outside sources that shapes patterns of thinking on vaccination perceptions (Lyons et al. 2019). It remains to be studied what reference groups or sociocultural factors pose the greatest strength in vaccine decision making and the symbolic value attached with aligning to a particular vaccination stance. Previous

studies thus far have focused on the why parents adhere, hesitate or oppose vaccination. What remains to be studied is the who, where and how influences shaped those decisions.

### **Parental Preference Communication Approaches**

Adding to the complexity is the known disparities in vaccine communication. Research data has indicated that parents consult web based health information due to their concerns for vaccine safety. The plethora of narratives surrounding the perils of vaccine illness and injury is shown to have a higher impact on decision making (Hasse et al., 2020). Another indication from research data is the lack of pro-vaccine communication in user friendly media forms combined with parents feeling they have inadequate time to consult with their health care providers (Attwell, 2018). The speed in which social media and web based forums can transmit personal narratives is concerning (Baker et al., 2020). Current research does not contribute to the understanding of parent's preferred communication methods which is crucial in balancing immunization communication found online. This qualitative study is a small step in the right direction to understand parents concerns and the sociocultural views and experiences that formed their immunization views while capturing what forms of communication would best support them.

### **Summary**

Multiple methodologies have been applied in an attempt to understand the constructs of what drives parents to adhere, hesitate or refuse recommended vaccination schedules. The emerging themes in literature reveal increased parental desire for more control over childhood immunization decisions, meaningful communication regarding

vaccination concerns and greater transparency by government agencies and healthcare networks regarding vaccine communication and policy making.

What is known is parents who hesitate or refuse recommended immunizations schedules align with one or more categories that multiple research approaches have identified. Parents that identify as vaccine hesitant or adverse associate their reasoning to various risk perception ideas, vaccine safety, distrust of multiple government agencies and scientists, parental choice, natural living, moral purity and lack of communication. These stances become further rooted by lack of meaningful communication from multiple stakeholders.

What is not known in the literature is how sociocultural factors and reference groups have influenced the development of these parental immunization stances. The literature has not contributed to understanding what implicit and explicit cues from sociocultural factors and reference groups influence parents decision making that leads parents to affiliate with one or more of the identified categories and ultimately refusing or hesitate on immunizations for their children. In simple terms, who influenced them, where did the influence come from and how much influenced did they have in their decision making.

This qualitative study helped fill the gap in understanding the level of influence reference groups and sociocultural factors have on parental immunization decision making. First hand accounts through semi-structured interviews of parental experiences and influences are a great asset to public administrators. Additionally, this study contributed to the understanding of parental preferred communication methods in order to

better help public administrators and healthcare workers communicate in meaningful and effective ways.

### Chapter 3: Research Method

The purpose of this study was to discover and better understand sociocultural factors that can contribute to or detract from parents and legal guardians' adherence to vaccination policies in accordance with public health guidelines in Leavenworth County, KS. This study involved parents and legal guardians with children in pre-kindergarten or kindergarten in Leavenworth County. I identified vaccination perspectives are not always fixed and are subject to change based on sociocultural and reference group influences.

This chapter includes the research design and rationale, the role of the researcher, information about the methodology, and planned processes involving issues of trustworthiness.

#### **Research Design and Rationale**

This qualitative study involved using a phenomenological research design. The phenomenological approach involves considering participants' unique life experiences in connection with social factors. The phenomenological approach provided means to obtain specific insights regarding parents and legal guardians' decision-making involving vaccination schedules and explore if there were commonly held social influences.

The research questions were:

*RQ1:* What sociocultural factors and immunization communication have influenced parents and legal guardians in Leavenworth County, Kansas to adhere to, abandon, or resist public health policies regarding vaccination?

*RQ2:* How have references groups such as family and social relationships promoted or precluded vaccine decisions for children?

*RQ3:* What sociocultural beliefs and traditions are most influential in terms of determining adherence to public health vaccination requirements?

*RQ4:* How can sociocultural beliefs be incorporated to improve trust in current education and communication approaches for public health recommendations involving vaccination?

A narrative inquiry was initially considered for this study. This approach was ineffective in terms of understanding sociocultural factors and reference groups that shape vaccination hesitancy and anti-vaccination phenomena. A narrative inquiry is better suited to studies desiring to understand what it means to parents identifying as vaccine opposed based on distrust, vaccine efficacy, safety, and natural living. This phenomenological study involved participants' lived experiences and interactions in order to evaluate the influence of sociocultural factors, reference groups, and preferred communication methods on this growing movement.

### **Role of the Researcher**

My role in this research was an observer-participant. This study did not involve participants who had personal or professional relationships with me. Additionally, any relationships of a supervisory nature did not exist. Participating in the study did not pose any potential physical harm. The potential ethical issue I was cognizant of was mental distress. The participant sample did not fall into the parameters of a sensitive population or pose undue influence due to existing relationships. The risk I mitigated was causing distress to participants due to the sensitive topic. The topic of vaccination, especially among children, is contentious and I wanted to minimize the risk of mental distress that

may incur due to perceived judgements on participants' parenting or custodial skills based on their vaccination beliefs. My study involved sociocultural factors that influence vaccination decisions. Religious influence also posed a potential risk. Religion was not a specific factor I addressed in my research questions. This topic did not emerge at any point during my study. This could have led to mental distress. If a participant's religion objects to vaccination, but the participant adheres to public health guidelines, the participant could become concerned with their religious institution finding out.

To mitigate these potential issues, I used informed consent to inform participants of their voluntary status, any risks, time commitment, and level of privacy. A second consideration was the assignment of a participant number as an additional method to protect their identities. Additionally, interviews involved maintaining neutral conversation and body language that prevented perceptions of judgement regarding custodial skills or parental vaccine decisions.

## **Methodology**

### **Participant Selection Logic**

#### ***Population***

The population of Leavenworth County, Kansas is 81,758 (Kansas Division of Budget, 2020). The county consisted of 64,343 White non-Hispanic, 7,603 Black or African American, 5,968 Hispanic or Latino, 2,698 two or more races, 1,226 Asian, 735 American Indian or Alaskan Native, and 164 Native Hawaiian or Other Pacific Islanders (United States Census Bureau, 2020). The kindergarten enrollment for Leavenworth County for the 2019-2020 school year was 705 students (National Center for Education

Statistics, 2020). Students in seven elementary school kindergarten programs were 486 White non hispanic students, with the remaining 219 comprised of Black or African American, Hispanic or Latino, or reporting two or more races (KSDE, 2019). Specific numbers for these demographics were not available per school due to the Family and Education Rights and Privacy Act (FERPA). The FERPA prohibits the disclosure of any information that is personally identifiable (U.S. Department of Education, 2017). The KSDE has deemed any quantity below 10 percent pertaining to reporting race per school district may be personally identifiable (KSDE, 2019). The target of interest for this study are parents and legal guardians of school age children in Leavenworth County, KS.

### ***Identification and Justification of Sampling Strategy***

This study involved using two sampling strategies. The overall strategy was criterion-based selection. Criteria based sampling applied a specific set of characteristics to produce information rich cases that aligned with my research questions by capturing the intended demographic of this study (Ravitch et al., 2016). Snowball sampling was the secondary means of sampling. Referral contacts from initial participant pool could strengthen the information rich cases and aid in capturing shared sociocultural factors and vaccine perspectives that influence parental decision making (Ravitch et al., 2016).

### ***Participant Criteria.***

The inclusion criteria included parents and legal guardians with children who are currently in Kindergarten for the 2021-2022 school year or entering Kindergarten in the next twelve months and self-identified as White, non-hispanic, Black or African American, Hispanic or Latino, two or more mixed races. Legal guardian is defined in Kansas as

a person, not of natural guardianship, but appointed by the court to make legal decisions that affects a minor's wellbeing including health, medical, safety, legal and overall welfare (Guardians or Conservators, Kansas Statute, 2019). Additionally, for inclusion in this study children were enrolled in the Leavenworth County school system or an established non-accredited private school (NAPS) where Kindergarten curriculum is conducted within Leavenworth County, Kansas. A non-accredited private school is defined in Kansas as a homeschooling environment that is registered with the Kansas State Department of Education to satisfy the compulsory school attendance laws (Ruhlman, 2020). Non-accredited private schools are not required to adhere to the compulsory vaccination public health guidelines required of public schools (Ruhlman, 2020). My exclusion criterion was parents and legal guardians without children participating in Kindergarten education within Leavenworth County, KS. To ensure that participants met the inclusion and exclusion criteria, I used a screener guide (see Appendix A).

### ***Participant Size and Rationale.***

The participant size for this study was fifteen participants with a minimum of three participants per represented race. The most recent attendance statistics for Kindergarten programs in Leavenworth County, Kansas notes the representation of White, non-hispanic, Black or African American, Hispanic or Latino, and children of two or more mixed races. Parents share the common experience of deciding whether to adhere to the compulsory vaccination guidelines for their child to participate in Kindergarten programs. This study discovered and created a better understanding of sociocultural factors that influence this parental decision making. While the decision to vaccinate is a shared

experience, socio-cultural factors that influence that decision may differ based on race. The desire to interview participants from each represented race ensured maximum variation in data collection (Guest et al., 2006).

### **Participant Identification, Contact Method, and Recruitment**

Procedures for participant identification began with an email (see Appendix B) requesting assistance in advertising my study through agency newsletters, social media posts and open forum parenting bulletin boards. This email was sent out to five school districts, six after school programs, three day cares, and two non-profit organizations serving families of school age children. A subsequent flyer (see Appendix C) was provided to each agency that choose to participant. The flyer included background on the study, inclusion and exclusion criteria, my affiliation with Walden University and my contact information.

As participants contacted me showing interest in the study I administered the screener with the inclusion and exclusion criteria ensuring they were eligible. After establishing their eligibility I recorded their contact information. At that time I scheduled their interview and notified them of the required consent form that was sent to their email that required their attention prior to our arranged interview. None of the participants declined the audio recording requirement so a scribe and the confidentiality agreement (see Appendix D) was required.

### **Sample Size and Saturation**

This study looked at sociocultural influences that affect parental decision making when presented with compulsory vaccine guidelines for school attendance. It was

reasonable that there may be variations in sociocultural factors influencing whether parents hesitate, refuse or adhere to public health recommendations based on race. The combination of exploring the shared experience of deciding to adhere to public health guidelines and the objective to represent each race, fewer participants were needed to reach the saturation rate when little to no change occurs in coded data (Guest et al., 2006).

## **Instrument**

### ***Identification of Data Collection Instruments***

The primary instrument for this study was a researcher developed interview guide. An interview guide optimally captured the lived experiences, influences and decision making of parents as it pertained to the phenomena of hesitating, adhering or refusing recommended vaccination schedules. The semi-structured interview guide (see Appendix E) used key questions, but also probes and individualized follow up interview questions. This form of data collection provided the opportunity to observe a wide range of perspectives surrounding views of vaccination guidelines and identified commonalities of influence or diversity in preferred communication methods (Patton, 2015).

Descriptive and inferential methods provided observations during and post interview. Descriptive field notes neutrally captured any physical or direct verbal quotes of interest. Inferential observations captured any interpretations or assumptions based on emotional cues, behaviors, motive or intent surrounding childhood vaccinations as perceived during the interviews. The field notes captured reflexive thinking to document positionality to maintain subjectivity.

### ***Sources for Each Data Collection***

A researcher developed instrument for data collection was determined based on reviewed literature that demonstrated the need for researcher developed interview guides in lieu of a published instruments to best capture parental vaccine decision making. The multitude of quantitative studies on this phenomenon provided copious surface level data on why parents choose to adhere, abstain or refuse public health vaccine guidelines. Researcher's desiring to look in-depth at a specific area of quantitative data used researcher developed interviews to collect rich in-depth experiences to better understand parental decision making. Researcher developed focus group and interview instruments were utilized when researchers wanted to collect data on a vaccine communications test model for a specific geographical region prior to implementation. Finally, just as with this study, researcher developed interview instruments were used to capture parental views on vaccinations from a specific demographic, geographical location, age category, or organization. Using a researcher developed semi-structured interview instrument was beneficial in capturing the unique experiences from these groups. Additionally, the researcher used field notes to collect key quotes, interpretations and assumptions of emotional cues, non-verbal behavior and capture reflexive thinking.

### ***Sufficiency of Data Collection Instrument***

The literature shows the preponderance of studies conducted on this topic have exceedingly used questionnaires and surveys. The closed-ended question approach of surveys and questionnaires on this subject has successfully captured the categorical reason parents align with when hesitating, refusing or adhering to vaccination guidelines.

The application of a semi-structured interview guide and subsequent reflective field notes was needed to understand what reference groups and sociocultural factors have an impact when making those decisions. The subjective data from a participant's lived experiences helped answer the who, what, where and how parents are influenced to change or maintain vaccination views. This type of data is important when exploring best practice in public health policies and communication approaches.

### **Researcher-Developed Instrument**

#### ***Basis for Instrument Development***

Findings in the current literature focus on categories that represent parental stance on why they choose to diverge from recommended vaccination health guidelines. It does not capture what lead them to align with those categories. The basis for the researcher developed interview guide was literature that explored how reference groups and sociocultural factors influenced consumer and risky decision making. Researchers in these fields describe that individual values and norms are shaped by external influencers that can adapt or change a particular behavior (Wang, 2016). These social reference points are described as informational, utilitarian, value expression, and interpersonal influencers (Fernandes, 2019). Informational reference groups are external narratives and information obtained through sources an individual deems credible (Fernandes, 2019). Individuals who make decisions based on societal norms and expectations are influenced by sociocultural reference points coined utilitarian (Fernandes, 2019). Individuals who seek to increase their self-image, societal or group status by associating with popular references in their environment are considered value expressive groups. Finally,

interpersonal influence occurs when an individual's decisions are shaped by family and those in social circles (Fernandes, 2019). Exploring through a semi-structured interview how external influencers adapt or change parental vaccine behavior provided valuable insight that can enhance future immunization communication and outreach programs.

### ***Establishment of Content Validity***

Content validity for the semi-structured interview guide was acquired through a small testing session. I conducted interviews with three participants to ensure clarity, capture additional questions needed and identify any repetitive questions. These participants were a combination of family and friends.

During the test interviews, I established the need to clarify for participants that vaccine and immunization had the same meaning. Interview questions will now only use the word vaccine or vaccination. I also noted the need to reword four questions for clarity and understanding. The testing session also indicated that two questions were cumbersome for participants to answer fully. These questions were broken into separate interview questions to better capture participants' intended thoughts.

### **Procedures for Recruitment, Participation and Data Collection**

#### ***Details of Data Collection: Interviews and Field Notes***

I used the interview guide and field notes as the data collection methods for each of the research questions.

### **Data Collector and Data Collecting Events**

As the researcher, I executed the interview guide. Data collection took place through a video conference or teleconference. The frequency of the interview was one, 30-40 minute interview which aligned with the pre-testing of the interview guide.

Field note documentation took place within an hour post interview and all subsequent participant interactions such as follow up interviews. Field notes will consist of a written log associated with each interview and shared the same nomenclature as assigned to the participant. This included date and time stamp as well as location of interview and any pertinent physical setting notations. The recorded content covered observations and details of the interview, descriptive summary of the interview, reflections as the researcher and emerging questions that may indicate a follow up interview was required. Duration of this data collection method was until complete, but typically lasted no more than 30 minutes.

### **Data Recording Method**

Audio recording methods captured interviews and interactions with participants provided written consent form was completed and returned. Audio recordings occurred at every interview and follow-up interaction with participants. I tested and operated the audio recording platform for the duration of the interview. Duplicate audio recordings for storage will insure data is not lost due to digital corruption or damage during transcription. To enhance validity participants were provided with a transcript of the recorded interview to insure it captured their words and expressions as intended. While

this is a researcher developed instrument transcription software was used with a follow on researcher check for accuracy prior to sharing with participants.

### **Followup Method Resulting from Lack of Participants**

This study recruited the desired number of participants per demographic with an additional three to ensure saturation. Through out the recruiting process I mad follow up calls to agencies and organizations that received the email asking for promotion assistance. I also made one additional attempt to contact any participants who expressed interest but didn't commit to an interview schedule or canceled a scheduled interview.

### **Option to Exit the Study**

Participants had the opportunity to review their transcript in entirety for clarity. Participants received a debriefing form at the end of the study While no participants chose to end their participation early, a debriefing form would have been provided to them if they exited early. The debriefing form included the name of the study, my contact information, a personal thank you for their contribution, a reiteration of the purpose of the study and an acknowledgment signature the participant was able to review their interview transcript.

### **Followup Procedures**

Only one followup interview was required and the participant was be contacted via phone and email address provided. Follow-up interviews for this study were intended to expand on a participants comments, clarify a portion for the researcher, or if a participant would like to correct or expand on an answer after reviewing their transcript. The follow-up interview for this study was to expand on a participants

comments. Follow-up interviews followed the same data collection procedures as the initial interviews. These were scheduled at the participants convenience.

## **Data Analysis Plan**

### ***Data Connection to Research Questions***

**Table 1**

#### *Data Connection to Research Questions*

<b>Research Question</b>	<b>Interview Questions</b>
RQ1: What sociocultural factors and immunization communication have influenced parents/legal guardians in Leavenworth County, Kansas to adhere, abandon or resist public health policies on vaccination?	1-13
RQ2: How has references groups such as family and social relationships promoted or precluded vaccine decisions for children?	1, 2, 3, 4, 6, 7
RQ3: What sociocultural beliefs and traditions are most influential in determining adherence to public health vaccination requirements?	5, 6, 10
RQ4: How can sociocultural beliefs be incorporated to improve the trust of current education and communication approaches to public health recommendations on vaccination?	11, 12, 13

### ***Coding Type and Procedure***

Interviews and subsequent transcripts from audio recordings used a two-cycle coding method. I used IVIVO for first cycle coding (Saldana, 2016). This type of coding is considered natural or inductive coding that captured the participants voice and key focal points of interviews (Saldana, 2016). I connected first cycle codes, key focal points

and participants responses to specific research questions. After first cycle coding, the application of eclectic served to tentatively highlight emerging patterns and potential categories (Saldana, 2016). For second cycle coding I used the pattern coding method. Pattern coding reconciles moderate or large amounts of data collected during first cycle coding to develop categories and themes (Saldana, 2016). This method was advantageous for my topic because it examined social influences and relationships for patterns of a phenomenon (Saldana, 2016).

Field notes followed the same coding method and occurred during the same time frame as the interview transcripts. I organized data from field notes into a memo for coding with the data associated with the appropriate research questions after first cycle coding.

The data analysis approach for this study was an inductive to deductive approach. I did not use predetermined categories when coding the data, but rather used open coding to allow for patterns and categories to emerge from the data (Patton, 2015). As patterns and categories developed through two cycles of coding I used a deductive approach for data analysis (Patton, 2015). Using the categories developed from the inductive phase, I applied them to additional interviews.

### ***Software Used for Analysis***

I used the software DeDoose to manage data for this study. The software is a qualitative and mixed method platform that allowed for the integration of text, audio, video and spreadsheets while offering encryption for data security.

### ***Discrepant Cases Treatment***

During and after the coding cycles I would have made note of any codes that diverged from the emerging patterns, categories and themes. In light of any discrepant cases I would have used a structured reflexive process to understand how the interpretation was influenced by myself as the researcher. This would include identifying other possible interpretations, alternative explanations and determine if other data or follow up interviews are needed to learn more about the discrepant evidence. There were no discrepant cases or nonconforming data discovered during analysis.

In the event a participant had chosen to stop participation all data related to that participant would have been deleted upon completion of the debriefing form. If required for sampling purposes I would have recruited a new participant. Additionally, if a participant was unable to be reached for a follow up to their interview, if required, the data from the initial interview would be used provided it did not make the data collection incomplete. The circumstances related to the follow up would be addressed during data analysis.

### **Issues of Trustworthiness**

#### **Credibility**

The use of a uniformed semi-structured interview guide during a private interview lead to data saturation and enhance credibility. Credibility was also established with the use of member checks. Each participant had the opportunity to review the transcript of their interview. This ensured the interview conveyed the intended ideas and experiences they were trying to convey. Reflexive commentary captured in field notes at the end of

each interview collected initial thoughts and impressions. Reflective thinking was also be noted after each coding cycle to document any patterns, categories or themes emerging.

### **Transferability**

Regardless of state, the US public health guidelines for vaccinations contribute to the formation of each state's vaccination policies for school-aged children. My study took place in KS. Defining participant criteria, the use of criteria based sampling with a secondary snowball sampling method available, outlined data collection methods and the time frame of collection contributes to the study replication potential in another state.

### **Dependability**

The audit trail of this study contributed to dependability. The audit trail will combine reflexive thinking from field notes and included the rationale for assigning and merging codes, patterns and themes within coding documents. Additionally, dependability was supported by participants reviewing and ensuring transcripts were an accurate reflection of our dialogue.

### **Confirmability**

To ensure confirmability, I maintained a detailed journal of the study and events. This included reflexive commentary on my positionality and personal experience, rumination of the effectiveness of the study, interview observations, and interactions with participants to maintain subjectivity. The journal will be made available to my committee for audit and review upon request.

## **Ethical Procedures**

Consultation with IRB occurred before this study was conducted with a Walden University's approval number for this study as 07-14-21-0580334 and will expire on July 13, 2022. This study did not require agreements or formal request to gain access to participants or data. Procedures for recruitment of participants used a consistent email and flyer form and did not deviate. As previously mentioned religion was not a specific factor in my research questions, but does emerge in the literature as a reason parents abstain from vaccinations. To maintain ethical collection of data, the participant would not be asked to identify their church nor their religion when. This was too alleviate any concerns the participant many have of their religious institution becoming aware of vaccination views if they differ from religious teachings. Participants did not list religion as a reason for vaccination stance. All participants received written consent that highlighted the length of the interview, notification of audio recording, the voluntary nature of the study and the right to leave the study at any point, the risks and benefits of the interview and how their privacy would be protected. If a participant wished to discontinue participation they would receive a debriefing form.

Data collection and participant identity were kept confidential. Storage for all forms of data collected during this study exist in two places. Primary storage is an encrypted folder located on the web based storage service Icloud. A replica of the data for redundancy purposes resides on an encrypted external hard drive. Access to the data is limited to the researcher and the researcher's committee members. Destruction of the data will occur five years after the completion of the study.

### **Summary**

Throughout this chapter, I discussed the methodology, including the logic behind participant selection, sampling methods, and instruments for collecting data. This chapter also included the data analysis plan and procedures to ensure trustworthiness.

## Chapter 4: Results

### **Introduction**

This chapter includes settings as well as influences that impacted participants or their experiences that could influence data interpretation. I discuss the number of participants, location, and frequency of data collection event per instrument. I also address unusual circumstances during the data collection process. This includes the process used to move through coding development to larger thematic representations. I address trustworthiness processes as well as the results of the study.

### **Purpose of the Study**

The purpose of this study was to discover and better understand sociocultural factors that contribute to or detract from parents and legal guardians' adherence to vaccination in accordance with public health guidelines in Leavenworth County, KS. This study involved parents and legal guardians with children in pre-kindergarten or kindergarten in Leavenworth County. This qualitative inquiry involved identifying if vaccination perspectives are fixed or if sociocultural factors alter individuals' approaches to vaccination schedules.

### **Research Questions**

The research questions were:

*RQ1:* What sociocultural factors and immunization communication have influenced parents and legal guardians in Leavenworth County, Kansas to adhere to, abandon, or resist public health policies regarding vaccination?

*RQ2:* How have references groups such as family and social relationships promoted or precluded vaccine decisions for children?

*RQ3:* What sociocultural beliefs and traditions are most influential in terms of determining adherence to public health vaccination requirements?

*RQ4:* How can sociocultural beliefs be incorporated to improve trust in current education and communication approaches for public health recommendations involving vaccination?

### **Setting**

There were no personal or organizational conditions that influenced participants or their experiences at the time of the study that could be noted. However, it is unknown whether the impact of the ongoing SARS-COV-2 pandemic had an impact on this study.

### **Demographics**

This study included 15 participants with children who attend schools in Leavenworth County, KS who had 16 children entering kindergarten during the 2021-2022 school year.

**Table 2**  
*Participant Demographics*

<b>Characteristics</b>	<b>Participants</b>
<b>Gender</b>	
Female	14
Male	1

### **Racial Demographic**

White/Not Hispanic	5
African American/Black	3
Hispanic/Latino	3
Two or more mixed races	4
<b>School District</b>	
USD 449	3
USD 453	4
USD 469	3
USD 464	2
USD 458	2
Home School	1

## **Data Collection**

### **Recruitment**

Emails requesting support for the study went out to five school districts, six child support programs, four daycares, and two nonprofit organizations serving families of school-aged children. Of the five school districts, one made a single social media post with a flyer, but the other four school districts declined to participate. Three of the child support programs agreed to publish flyers via a social media post, two declined to participate, and one is no longer open to the public. All daycares agreed to post flyers in their drop off and pick up areas while nonprofit groups declined to participate.

Additionally, flyers were published on two open forum parenting bulletin boards in Leavenworth County, KS. Each manner of advertisement obtained at least one of the 15 participants.

## **Instrument Procedures**

### ***Interviews***

The primary instrument for this study was a researcher-developed interview guide. The semi-structured interview guide (see Appendix F) involved key questions as well as probes and individualized followup interview questions. This instrument was used for all 15 participants in this study. Interviews took place via video conferencing with audio recording. Interviews were conducted over the course of 3 weeks as participants contacted me, and consent was obtained prior to all interviews. An additional two weeks were used for any follow on participate interest which garnered one who did not meet the screening criteria. After 12 interviews, it appeared data saturation was achieved. Three additional interviews were conducted. The duration of these interviews was 30-40 minutes in length. Audio recordings were made of interviews and then transcribed into word documents.

### ***Field Notes***

Field notes were used to capture any physical or direct verbal quotes of interest. I also documented interpretations or assumptions based on any emotional cues, behaviors, motives, or intent involving childhood vaccinations as perceived during interviews. I wrote field notes at my desk directly after conclusions of each interview, spending an average of 20 to 30 minutes.

### ***Data Collection Variations or Unusual Circumstances***

There was no variations to the data collection plan presented in Chapter 3. Additionally, no unusual circumstances were encountered at any point during the data collection process.

## **Data Analysis**

### **Process**

This study consists of 15 interviews. Transcripts were created from audio-recordings using Trint artificial intelligence software. After software transcription, I compared the audio and transcription for accuracy. During the interviews I also made note of non-verbal communication such as vocal tones, pauses in speech and hand gestures. I made note of non-verbal cues the gave particular emphasis of comments on transcripts. To ensure familiarity, I re-read each transcript multiple times and took note of initial key words, ideas and phrases that reoccured.

A two-cycle coding method was then applied to the transcripts. I used IVIVO for first cycle coding. I connected first cycle codes, with repetitive focal points and highlighted functional codes to emphasize specific research questions. This form of coding connects research questions with participants lived experiences creating meaningful interpretations of the data (Saldana, 2016). For second cycle coding I used a pattern coding method. During pattern coding I recorded emerging themes from the first cycle codes and repetitive focal points. The use of second cycle pattern coding provided rich interpretation of the data that describes the context of sociocultural and reference

group influence on this phenomenon. It also highlighted the breadth and depth of parental perceptions and the shortcomings surrounding vaccine communication.

Following the second cycle of coding I created a list of codes and themes with an associated definition supported by excerpts from the transcripts. To validate the data I then followed-up with each participant providing them with a copy of their transcript via email requesting feedback. Email was used for this step as requested by participants. All but one participant responded with validation of their transcript. I made two follow up attempts via email and phone call with the outlying participant validation but did not receive a response. Post validation I incorporated any points of clarity from participants, however all but one didn't have any changes from the transcribed data. From the data analysis process three major themes emerged. The themes for established for this study were socio-cultural beliefs, reference group influence and external vaccine communication. Table 3 depicts the themes and subsequent categories that were codified from the In Vivo codes.

### **Theme Formulation**

<b>Codes</b>	<b>Categories</b>	<b>Themes</b>
Social Responsibility Take Care of the Village Responsible parent for all children	Collectivism	Socio Cultural Beliefs
Parental Choice Self Reliant	Individualism	

**Theme Formulation**

Codes	Categories	Themes
“Childs right to education, not lab rat” “Poison child to access school”	Pay to Play Education	
Familial Matriarchal Social Circles	Narrative Effect	Reference Group Influence
Aggressive (Vaccine Opposed) Passive (Pro-Vaccine) Aggressive Efficacy	Social Approach	
Mainstream medicine Alternative Medicine Interpretation of personal research Distrust in resources	Self-Research	External Vaccine Communication
Lack of time No dialogue	Healthcare Professionals	

**Table 3** *Theme Formulation*

## **Themes, Categories, and Codes**

### ***Theme 1: Sociocultural Beliefs***

The first theme that emerged from the data was sociocultural beliefs. This theme encompasses how participants beliefs systems surrounding parenting have influenced their decision to either adhere, oppose or hesitate in recommended childhood vaccinations. This theme has three categories. First, collectivism which places value on interdependence among others with a strong belief in social harmony by meeting social expectations for the good of the group. The codes associated with this category are social responsibility, “take care of the village” and “responsible parent for all children.” The next category, individualism, places importance on independence and views themselves and interests separate from a group or community and strive to minimize outside influences. Codes assigned to this category include parental choice and “self-reliant.” The final category for the theme sociocultural beliefs is “pay to play education.” This category describes repetitive trends in the data that immunizations are seen as the fee to gain access to public education. The codes associated with this category are “child’s right to education, not a lab rat” and poison a child, to access school.”

### ***Theme 2: Reference Group Influence***

The theme reference group pertains to the individuals or groups a participant uses as a standard to compare their beliefs and behaviors too. The foremost category in this theme is the narrative effect. The narrative effect explains how a persons story telling of experiences using sensory detail that provides context and meaning of events and evokes an emotional reaction from the listener (Dewey, 2020). The codes for this category are

familial and matriarchal social circles. Familial uses stories from families past to influence vaccine decision making. Matriarchal social circles refers to the network both pro-vaccination and anti-vaccination parents rely heavily on for advice when interpreting vaccination information. The second category in this theme is social approach which describes the presence and behavior of one set of individuals and how that impacts other people's behavior (Allen, 2017). This category is broken into three codes. First is aggressive approach, which the data aligns with vaccine opposed individuals and their active approach in providing their interpretation of vaccine information. The second is passive approach, which the data overwhelmingly showed correlates to vaccine adherence participants highlighting their approach as "avoidance" and "stay silent." The final code in this category is aggressive efficacy. This code describes the potency that an aggressive social approach has on mothers opposing or hesitating on vaccinations when they previously adhered to public health guidelines.

### ***Theme 3: External Vaccine Communication***

The external vaccine communication theme captures the outside flow of vaccine communication participants received but do not have a personal relationship with or attachment to. This theme is broken into two categories, self research and healthcare professionals. Self research enables an individual to research, interpret and validate data on their own. Self-research was assigned three codes. First, was mainstream medicine which describes government agencies, world organizations, and research hospitals. The second was alternative medicine which depicts non-mainstream vaccination information that is not peer reviewed, holistic and naturopathic practitioners along with chiropractors.

Finally the third code, distrust in resources. This code illustrates the interpretation of data found in self research as junk science, fake government information for money, and overwhelming specific attention was given to the Center of Disease Control as biased, “too political” and “not all together.”

Health care professionals are defined in this category as mainstream practitioners. These health care providers include family doctors, pediatricians, and physician assistants. The code for this category is “lack of time” which captures the participants frustration over physicians minimal efforts to engage in meaningful dialogue over vaccine concerns and the receipt of vaccine information forms moments prior to vaccine administration without time given to read them.

### **Discrepant Cases**

There were not any unusual cases or quality discrepancies noted in this study. The participants met all of the screening criteria and either aligned with adhering to publish health vaccination guidelines or were hesitant or opposed. Participant responses could be coded and categorized into the previously described themes, categories and codes with out any outlying data.

## **Evidence of Trustworthiness**

### **Credibility**

A uniformed semi-structured interview guide was used during each private interview to enhance credibility. Credibility was also established by conducting member checks. Each interviewee had the opportunity to review the transcript of their interview. One participant did not respond not immediately respond to requests for transcript

review. After three attempts to contact the participant, the participant reached out that she did not have time to review the transcript. The review and feedback on accuracy of the remaining 14 participants ensured the interviews conveyed their ideas and experiences that were expressed during our conversation. The post interview field note process captured reflexive commentary documenting my initial thoughts and impressions. Reflective thinking was also applied after each coding cycle to document the emerging patterns and themes. This was performed by taking a 60 minute break then reviewing the coding cycle first to determine the clarity. Then reflecting on my own pro-vaccination beliefs to determine if that had any influence on the coding process. Most notably I reflected on the current exposure of SARS-COV-2 information in the media and personal position to determine if it had any influence in the patterns of interpretation.

### **Transferability**

US public health guidelines on vaccination contribute to the formation of each states vaccination policies. The CDC along with the Public Health Law Program work in conjunction with state and private agencies to provide tools and advice on the latest laws and research data that affect public health and immunizations (Center of Disease Control, 2018). Each state has compulsory vaccination policies for school age children that are within the guidelines of the CDC and Public Health Law Program. Combining participant criteria to include parents and legal guardians with children who are currently in Kindergarten for the 2021-2022 school year or entering Kindergarten and a criteria based sampling lends applicability across all 50 states. Further more defining a state's definition of legal guardian and a state's registration process for a non-accredited private school as

this study further lays out methods for replication. This study took place in Kansas and the study included the represented racial/ethnic demographics for this area which is easily determined by state databases. It is appropriate to assume that the approach applied in this study can be transferred to other states.

### **Dependability**

An audit trail of this study contributes to dependability. To ensure dependability multiple sources through out the data collection and analysis process were used to demonstrate the findings were credible and replication is possible. The audit trail includes transcripts from audio recordings, non-verbal communication notation and reflexive thinking from field notes, the validation of transcripts from participants accurately reflected our dialogue and the applied rationale for assigning and merging codes, categories and themes that emerged during data analysis.

### **Confirmability**

To insure confirmability, I maintained a detailed journal throughout the study. This included reflexive commentary on my positionality and personal experience during the interviews, rumination of the effectiveness of the study as it progressed, interview observations, and interactions with participants to maintain subjectivity. Additionally, while participants referenced the SARS-COV-2 pandemic in their interviews I paid close attention that I remained within the scope of my study. I did this by limiting my exposure to the current SARS-COV-2 data, media reports and personal narratives on social media for the duration of data collection and analysis. This further ensured that the codes

annotated in my research data was a reflection of the participants lived experiences and perceptions, not my own.

## **Results**

Results of this study are organized by research question. The organization of the results will begin with the overarching question presenting the main themes that emerged to influence parental decision making on vaccine public health guidelines.

### **Research Question Results**

RQ 1: What sociocultural factors and immunization communication have influenced parents/legal guardians in Leavenworth County, Kansas to adhere, abandon or resist public health policies on vaccination?

#### ***Sociocultural Factors***

The overarching sociocultural factors that influence parents and legal guardians in Leavenworth County, Kansas when making decisions pertaining to vaccine public health guidelines is whether they align with an individualist or collectivist cultural view. It appears that these serve as a counter weight in maintaining or reducing herd immunity as depicted in (see Figure 1). Participants who adhere to the public health guidelines on vaccinating their children holistically displayed a collectivist attitude. Collectivists value interdependence among others with a strong belief in social harmony by meeting social expectations for the good of the group (Fatehi et al., 2020). Participant 12 said it is “important for everyone to play a role in keeping the community safe.” Participant 15 said, “you have to take care of the villages health for a productive society.” Participant 2

said, “if you live together in society and use public schools and spaces be a responsible parent and vaccinate.”

Participants who opposed or resisted childhood immunizations recommended by public health guidelines exhibited an individualist perspective. Individualists place importance on independence and view themselves and interests as separate from a group or community and strive to minimize outside influence on their person (Fatehi et al., 2020). Participant 3 said “no one should make a decision for a child but their parent.” Participant 11 said “we are self reliant and no one will tell me what to put in my child.” Participant 10 said “we believe it is our child, our choice whether we decide to vaccinate, not societies.”

### ***Immunization Communication***

This study showed that immunization communication that has an influencing effect on vaccination decisions is complex. Narrative communication is the overall theme among these influential modes of communication. Two primary means of communication that influenced participants in this study were familial stories and communication filtered through social circles specifically those formed from the common bond of motherhood.

**Familial Stories.** Familial stories regarding the hardships of lack of access to vaccination played a role. Participant 7 said “my Grandma’s stories growing up in Mexico without vaccinations affected me.” Participant 8 said “I vaccinate my daughter because of my upbringing in Guatemala where shots are not always easy to get.” Additionally, experiences by parents and grandparents who contracted and had subsequent long term effects of having a childhood preventable disease was a consistent influencing factor for those

who adhere to public health guidelines. Participant 6 said “My Grandfather had polio and Grandma on my Dad’s side had long term side effects of measles.” Participant 3 said “my uncle was paralyzed from polio, I can prevent that for my child” and Participant 4 said “my Grandparents telling me about living though polio is why my kids are vaccinated.”

**Peer Communication and Resources.** The most complex was vaccine communication that permeates through conversations among peers, specifically mothers. The use of this type of communication was observed by both parents who adhere to vaccination guidelines and those who oppose or hesitate. To better understand why this form of communication is so powerful it is important to first review how participants view and process vaccine information.

Participants reported that they consulted a multitude of vaccine resources. Mainstream medicine resources included the World Health Organization, American Pediatric Association, John Hopkins, Children’s Mercy Kansas City, Harvard Medical, the Leavenworth County and Kansas Health Department and the CDC. Participants who have their children in the care of a pediatrician acknowledge that vaccine information sheets are provided at the time of the immunization visit but majority explained they are not given in a timely manner to read and ask questions. Participant 12 said they are “just thrown at you.” Participant 1 explained they are “handed to you moments before the vaccine occurs.” They also noted their pediatricians did not seem to have the time to discuss concerns. Additionally, parents showed concern with trusting information from the Centers of Disease Control based on current handling of SARS-COV-2. There Participant 2 said “ The CDC is back and forth without data to back it up and makes me

go to them less.” Participant 4 explained that “lately the CDC seems like they may not be all together, makes me wonder were they together on the other vaccines.” Participant 5 said “the CDC appears clouded and biased they are too political now, I don’t trust them, it makes me as a parent wonder if they should trust their content on other vaccinations.” Finally, statistical information provided by the mainstream vaccine resources previously mentioned frustrated parents. Participant 9 said “I’m not a doctor or scientist, give me something I can relate to.” Participant 12 explained “all the data is well and good, but it means nothing to me when it comes to making the best decision for my child.”

Alternative resources consulted by parents were Dr. Sears, Dr. Axe, [ChildrenHealthDefense.org](http://ChildrenHealthDefense.org) and [vaccinetruth.org](http://vaccinetruth.org) and local holistic or naturopathic doctors. Participants who frequented these sites leaned toward vaccine hesitancy or opposition. Participant 11 said “they give you the whole story not just the statistics.” Participant 3 said “these are resources where you can read how vaccines have damaged children for life.”

In the midst of filtering through all the resources available on vaccinations a common thread for vaccine decision making among all participants was dialogue with respected peers. When a participant was unsure about information they were taking in from one resource or there was conflict between resources, they consulted their peers who were also moms. Participant 8 said “I ask my friends who are also mothers what they would do.” Participant 2 said “I send the information to a few in my moms group for advice,” Participant 5 said “I ask my mom friends their interpretation what I am reading.”

Another channel of complexity in peer communication is the active promotion of misinformation on vaccines from mothers who hesitate or oppose vaccination. The proactive approach within groups where diverse views of vaccination exist among mothers was at times productive. Some participants reported being provided with information sheets and articles about how vaccines effected specific children or information that gave testimony from unverified medical doctors that explain why vaccines are not safe. Participant 9 explained “Mom’s send mass emails to our community playdate list or our playgroup meet up facebook page of junk science on vaccines.” Participant 3 said “those Mom’s at my Son’s soccer practice and games always try to initiate conversation or pass on articles not based in science or reality even, most are not even from real doctors.” During the course of the interviews participants were asked to describe an instance where vaccination views among friends or acquaintances has influenced someone to change their stance on vaccinations. This method has proven effective in Leavenworth County, Kansas. Participant 7 said “two of my friends got sucked into information anti-vax moms were putting out, now we don’t talk.” Participant 6 explained “Mom’s who oppose vaccines have used COVID to scare mothers into going against other vaccines, one of my friends has put her daughter on an alternative vaccine schedule.” Participant 10 said “Actually yes! As all this COVID stuff about vaccines for our kids has been in the news and one of my friends has become concerned over how fast the process is moving and questioned the safety. She asked what I thought and I sent her some resources that helped me from the twins facebook group. Now she is on an alternative schedule for all vaccines.”

This type of communication from vaccine adverse peers to previous pro-vaccination parents has proven effective. The level of peer communication between pro-vaccination parents and their vaccine adverse peers is not as aggressive. The overwhelming majority of pro-vaccination participants do not feel that engaging in conversations to change their mind is worth it. Participant 9 explained “no matter what you say, even overwhelming science back information they dismiss it.” The consistent response on how they handle different perspectives among friends and acquaintances determined they avert confrontation. Participant 2 said “it is better to avoid it, it works better that way.” Participant 4 said “switch topics or avoid in engaging in conversations with those Moms.”

RQ 2: How has references groups such as family and social relationships promoted or precluded vaccine decisions for children?

### ***Family***

Family relationships have a strong influence on promoting vaccine decisions for children. Eleven participants maintained the familial approach to vaccines they were exposed to as children transcended to their own. Participant 6 said “I was always vaccinated on time and so are my children.” Participant 7 said “my Grandma would be furious if I didn’t vaccinate my daughter.” Participant 3 said “why wouldn’t I protect my kids that same way my parents protected me.” Familial experience has a distinct effect on promoting vaccine decisions for children.

### *Social relationships*

Influence of social relationships proved to have weight in vaccine decision making even among pro-vaccination parents. Social relationships, most commonly matriarchal in nature, played a role in discussing and debating the merits of vaccine communication that was available online in the absence of health care professional advisement. Regardless of vaccine self-research, health care professional communication, and familial input the common overlap for pro-vaccination, vaccine opposed or hesitant participants was the consultation of a matriarchal social group (see Figure 2). Participant 11 said “I ask my mom friends I trust and respect.” Participant 3 said “I go to my support network of other Moms.” Participant 4 said “I ask my Mom friends what they think of the information.”

This matriarchal reference point has shown vaccine communication can take an individual previously raised with a pro-vaccination approach to abandon it for a position of opposition or hesitation. Data from this study shows the potential for a matriarchal reference group holding a great degree of influence over vaccine decisions. Of the four participants who oppose vaccination, one comes with a family history of vaccine opposition, the other three adopted their vaccines views from their social relationships with other mothers. These participants of whom previously prescribed to pro-vaccination views for their children altered their approach when they were introduced to anti-vaccination resources from other mothers. Participant 5 said “ I found a Mom’s of twins facebook group. I don’t know how I would do it without them. Some of the educational posts on the Mom’s group discussed each vaccination and gave a background on what it

was, what was in it and the side effects or injury that it has caused some children. I never knew vaccines hurt so many kids.” Participant 10 explained ”When I started the mothers of preschooler program or MOPS for short, I met some ladies that didn’t vaccinate. At first I thought they were crazy and couldn’t imagine why you would put your child at risk of disease. As we got to know each other they shared so many wonderful resources on parenting and ideas for child development. They showed me the reporting website for vaccine injury and I was astonished! So many kids with reactions we never hear about and I had been blindly just letting the doctor inject my daughter. I stopped vaccinating my daughter when she was three.”

RQ 3: What sociocultural beliefs and traditions are most influential in determining adherence to public health vaccination requirements?

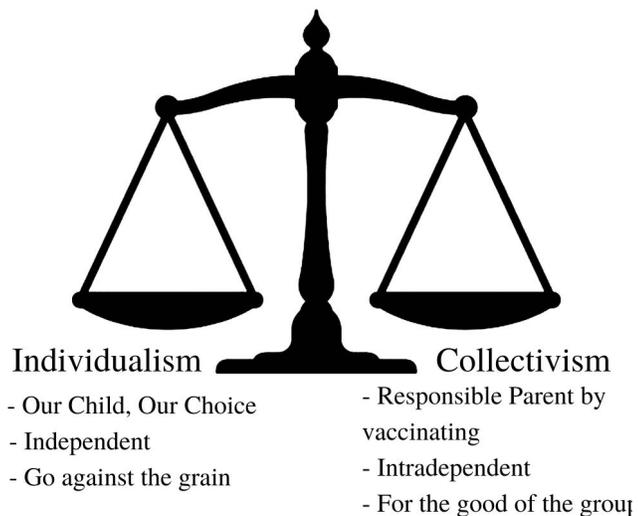
There were not any specified traditions reported during the study. The sociocultural belief that is the most influential in determining adherence to vaccination requirements is a sense of social responsibility. When participants were asked what sociocultural beliefs influenced their decision to vaccinate the overwhelming response related to a sense of responsibility to their community. Participant 12 said “its our responsibility to vaccinate our children for the good of society.” Participant 1 said “I don’t want my family being the reason something spreads to other.” Participant 6 said “It is a parents responsibility to contribute to keeping herd immunity numbers up.”

RQ 4: How can sociocultural beliefs be incorporated to improve the trust of current education and communication approaches to public health recommendations on vaccination?

Using communication methods such as a narrative approach would amplify the benefits of immunizations and make it relatable to parents that are researching vaccinations. Parents discussed frustration in the delivery of science backed vaccine information. Participant 8 said “its too statistical.” Participant 2 said “give me information I can relate to.” Concurrently a communications campaign is needed that educates parents and helps build a resilience to misinformation surrounding vaccinations while reaffirming social responsibility. Participant 9 said “I cannot understanding what is real or fake vaccine reporting.” Participant 2 said “I’m not sure anymore if what I read is junk science or if they are even real doctors, I mean they look like real studies.” Equipping parents with the tools to discern between accurate information and misinformation could empower pro-vaccination mothers, who usually avoid conflict with anti-vaccination peers, to advocate the benefits of vaccination in social groups.

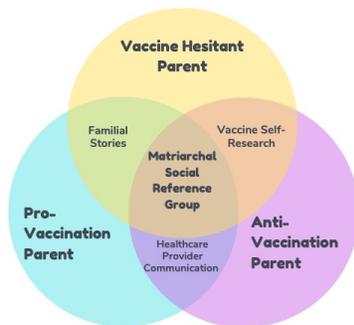
There were no discrepant cases or nonconforming data discovered during analysis.

**Figure 1**



*Sociocultural Beliefs That Influence Vaccine Decisions*

**Figure 2**



*Matriarchal Social Reference Group Influence*

### **Summary**

Over the course of this study a greater understanding was gained that societal beliefs of social responsibility is an overwhelming determining factor in whether parents adhere to public health guidelines. However, an increasing practice of individualized choice is quickly tipping that scale which is impacting the community immunity in Leavenworth County, Kansas. Familial and matriarchal social reference groups impose a strong influence on parents perception and interpretation of vaccine information. Without valuable healthcare professional feedback on vaccine concerns, parents are not in the position to make fully rational decisions.

Chapter 5 includes study findings, theoretical interpretations, and recommendations and implications for future research.

## Chapter 5: Discussions, Conclusions and Recommendations

### **Introduction**

This chapter includes the summary of key findings as well the interpretation of those findings. I discuss the major themes of the study and how they relate to the theoretical framework. I address the limitations of the study and provide recommendations for future research as well as implications for positive social change.

### **Purpose and Nature of the Study**

The purpose of this study was to discover and better understand sociocultural factors that can contribute to or detract from parents and legal guardians' adherence to vaccination in accordance with public health guidelines in Leavenworth County, KS. This study involved parents and legal guardians with children in pre-kindergarten or kindergarten in Leavenworth County. I sought to identify if vaccination perspectives are fixed or if sociocultural factors alter individuals' approaches to vaccination schedules.

This qualitative study involved using a phenomenology research design. The phenomenological approach involves considering participants' unique life experiences and expression of those in connection with how sociocultural factors influenced perspectives of health vaccination guidelines and the research questions of this study. The deductive approach provided the opportunity to test the RCT through describing and understanding insights into parents and legal guardians' decision-making regarding vaccination schedules and explore if there are commonly held sociocultural influences.

### **Summary of Key Findings**

This study has confirmed from literature that parents who hesitate or oppose vaccination align with one of the dominant categories from the literature: risk perception, vaccine safety, distrust, parental choice, natural living, moral purity, and lack of communication. Parents rely heavily on vaccine self-research in the absence of open dialogue with healthcare providers. Finally, my study reinforced data from literature that narrative forms of communication are most effective in terms of vaccine decision-making processes for parents.

Data from this study has contributed to knowledge in the discipline by identifying how societal beliefs of collectivist and individualist ideologies influence vaccine decision-making. I discovered matriarchal reference groups have a strong influence in determining whether to adhere to, oppose, or hesitate to abide by vaccination guidelines. My research also addressed education and communication approaches for public health recommendations championed by healthcare providers when face-to-face discussions are not feasible.

By applying the RCT, I discovered that parents rarely, if ever, used a full rationality approach to vaccine decision-making. Most prevalent rationality traits used were procedural and bounded rationality in decision-making for childhood vaccinations.

### **Interpretation of Findings**

Sociocultural factors are not widely represented in the literature when investigating how sociocultural factors and reference groups influence parents decision-making that leads parents to affiliate with one or more of the identified categories and

ultimately refuse or hesitate to provide immunizations for their children. In simple terms, who influenced them, where did the influence come from and how much influence did they have in their decision making.

### **Theme 1: Sociocultural Beliefs**

This study has expanded knowledge by showing societal beliefs involving social responsibility are what empowers most parents to vaccinate their children. Participants internalized this belief describing it as taking care of the village, community safety is holistic and vaccination is responsible parenting. Contraposition to that shows a growing embracement of individualized decision making without regard to social impact. My study confirms as reported in the literature that parents who oppose childhood vaccinations align with one or more of the following categories: risk perception, vaccine safety, distrust, parental choice, natural living, and moral purity . At the root of these alignments is an individualist ideology. Participants in this study cited allegiance to the belief in “our child, our choice” and feelings of self-reliance negated societies’ influences in terms of child-rearing when discussing categorical reasons explaining why they are hesitant or oppose vaccination. Literature for this study did not include how sociocultural beliefs dispose a parents openness to align with one of the categorical beliefs leading to vaccine opposition or hesitation nor did it account for the strength in the belief of social responsibility. This study has extended knowledge that sociocultural beliefs regarding a person’s place and relationship with society influences their vaccine decision-making.

## **Theme 2: Reference Group Influence**

This study confirms that the use of narrative forms of communication are extremely effective. Participants routinely cited stories of family members or friends who were affected by childhood preventable diseases as the reason they vaccinate their children. This holds true for vaccine adverse and hesitant participants. Participant 11 stated “I have read about all the children who died or were made sick from vaccines.” Participant 3 said “They showed me the reporting website for vaccine injury and I was astonished! So many kids with reactions we never hear about and I had been blindly just letting the doctor inject my daughter.” Narrative accounts of negative vaccine experiences and web-based misinformation regarding immunization safety are being used as healthcare provider information (Hoffman et al., 2019). A survey conducted in 2018 showed parents find emotional narratives more relatable on perceived risk than science-backed statistical research (Dhoju et al., 2019). During the course of this study participants confirmed the manner in which science backed data is communicated relies too much on statistical data. However, while internet resources and other media platforms serve as powerful vehicles for spreading misinformation on vaccinations, it is reference groups that share the common bond of motherhood that is impactful in terms of how that information is processed to make decisions on vaccines.

The examination of reference groups in social decision making processes is often used in consumer behavior analysis. Exploring reference group influence helps in terms of understanding behavior and the symbolic value attached to popular or high demand products and services (Fernandes et al., 2019). The literature also indicated that reference

groups like friends, family, social networks, social norms, and information from media platforms can enhance risky social decision-making (Wang et al., 2016). Consideration of influential reference groups should extend past consumer behavior, and this study shows the applicability of reference group research on public health guideline perspectives.

### **Theme 3: External Vaccination Communication**

This study also confirmed that parents conduct self research. Parents in this study reported they conducted self research because of their experiences in pediatricians offices. Participant 1 said “she seems rushed when answering our questions.” Participant 10 said “visits are always so short to discuss concerns.” Lack of positive discussions in practitioner’s offices prompted parents to research immunizations themselves (Rominjnders et al., 2019). Furthermore, 31% of parents felt healthcare providers do not take the time to address their concerns about one or all vaccines (Moran et al., 2016). A 2016 study that found 53% of pediatric physicians viewed vaccine information as time-consuming, and spent approximately 10 to 19 minutes with parents who had safety concerns (Thompson et al., 2020). This fuels the environment for parents to turn to reference groups and unvalidated vaccine data when making decisions regarding whether to adhere to, oppose, or hesitate to follow childhood vaccine standards. When considering how to improve current education and communication approaches for public health recommendations, healthcare providers must present patients with knowledge that is accurate and easily accessible if face-to face-discussions are not feasible.

## **Theoretical Framework**

The RCT involves understanding which tenet will guide decision making and which of these will influence behavior (Wittex, 2013). Application of RCT in this qualitative study presents the predominant use of procedural and bounded rationality in decision making for childhood vaccinations. Procedural rationality suggests the decision maker relies on past experiences or imitation of environment to produce responses instead of performing their own cost benefit analysis (Wittek, 2013). The utilization of this approach was highlighted by participants who maintained the same vaccination views as their parents and imitated their own childhood experiences with immunizations. Subsequently, some parents who previously vaccinated imitated the reference groups they were affiliated with that opposed or refused vaccinations. Bounded rationality was equally used as a means to weigh decisions on childhood vaccination. There are two fundamental suppositions of bounded rationality. First, a person does not have all complete information of available options when making a decision (Wittek, 2013) Second, if the decision maker has cognitive difficulties distilling the information they will process enough to make a decision that will sufficiently reach the goal regardless if another option may be better (Wittek, 2013). In the absences of discourse with healthcare providers parents often conducted self-research. Regardless of which media outlet or resources parents drew from, without communication from their healthcare provider, it was difficult to scrutinize what information was accurate or inaccurate. Compounding this issue was the participants feelings that science backed information provided too

many statistics and information presented in a way that prevented them from distilling it down into useful forms to make vaccine decisions.

**Table 4**

*Application of RCT*

<b>Constructs of RCT</b>	<b>Description of Tenet</b>	<b>Participant response as related to Tenet</b>
Full Rationality	Individuals have all available information to perform cost benefit analysis on decisions and alternative approaches.	All participants claimed they felt they did not have access to all accurate vaccine information.
Bounded Rationality	Individual does not have complete information to form a decision or only processes a fraction of available information to make a decision without seeking a better option.	<p>Most participants claimed in absence of healthcare provider communication conducted self research of unverified sources.</p> <p>Information was too statistical to distill down to make it easily understandable.</p> <p>Utilized reference group to determine what information was important and viable.</p>

Constructs of RCT	Description of Tenet	Participant response as related to Tenet
Procedural Rationality	Drawing conclusions from previous experiences or imitating responses without decision evaluation.	Many participants conveyed they maintained the same vaccination views as their parents and imitated their own childhood experiences.

### **Limitations of the Study**

The study achieved saturation with the intended diverse variation of participants based on racial representation. However, a limitation for my study was the lack of participation from the majority of school districts. School district participation would have provided an opportunity for more interviews accumulating an even richer diversity in participant experiences and insight. An additional limitation of my study was not broadening the scope to include how the SARS-COV-2 pandemic has or will affect parental decision making.

### **Recommendations**

Participants repeatedly illustrated the lack of time and inadequate attention from healthcare providers when it came to vaccine communication. Therefore, matriarchal reference groups have become the default filter for determining what self-research information is considered viable when making decisions whether to adhere to vaccine public health guidelines. Follow on research is necessary to determine the efficacy of new

vaccine education tactics that appeal to both collectivist and individualist sociocultural beliefs while alleviating the need to solely consult respected peers. A potential for future research could include a pilot study of a collaborative tool spearheaded by the Leavenworth County health department. This tool would disperse information in a complementary two prong approach. First, the tool would make available vaccine education in narrative form accessible as a webinar, transcript or audio clip sent to parents prior to the scheduled vaccine or vaccine due date. The second would consist of a forum platform serving as a space where parents could post follow on questions pertaining to the information they received or upload information either obtained by self-research or a reference group. The forum would be monitored by rotating pediatricians collaborating with the health department to provide open dialogue with parents. By inviting parents who adhere, oppose or hesitate vaccinations to participate over the course of two years, policy makers can determine if this form of education increases adherence to recommended guidelines.

The scope of my study did not include how SARS-COV-2 has or will affect parental decision making on vaccinations. The final question of the interview guide asked parents what has or what will play a role in the future for vaccination decisions for their children. Participants reported that the lack of consistent messaging and transparency regarding SARS-COV-2 vaccine from mainstream medical resources like the Center of Disease Control has made them question whether other routine childhood vaccines are safe and effective. Further research should be conducted to determine if experiences with

the SARS-COV-2 pandemic has or will change parents approach to adhering to public health guidelines on all childhood vaccinations.

## **Implications**

### **Positive Social Change**

Positive social change draws on the relationship between useful research, ideas and actions to better the lives of those within society. The implications of my study can promote positive social change by state enhanced budgets for county health departments to create participative vaccine health programs reflective of citizens sociocultural beliefs to promote public health guidelines.

### ***Individual Level***

At the individual level, my study could encourage parents to get involved with the Leavenworth County Board meetings and other policy discussions open to the public. Rebuilding trust in vaccine communication should include two way communication with citizens. By creating a sense of ownership and influence people have the inclination to commit to seeing success as holistic not just individualistic. This is important to building a more collectivist environment. This approach would allow individual citizens to express their thoughts. Citizens could appeal for more education solutions that are easily understandable and accessible, programs that teach to identify misinformation and deliver what citizens expect for transparency in vaccine policy making.

### ***Organization Level***

At the organization level, my study could aid the Leavenworth County Health Department with formulating a communications campaign that encourages citizen

participation and capitalizes on narrative forms of communication that distills information down that is easily processable. This information could be made available on an easily navigated health department forum where parents could post questions regarding the provided vaccine material or material found through self-research and receive a response from a health care provider within 24 hours. Additionally, health department administrators can create health promotion material that could be used as quick reference for parent to help identify misinformation and build a resilience to aggressive social approach often utilized among parents that oppose or hesitate childhood vaccination. By dispersing this health promotion material to healthcare providers across Leavenworth County they can provide parents with the tools to advocate for the benefits of immunizations when presented with resources by their peers that are counterproductive to public health guidelines.

### ***Society/Policy Level***

At a societal level policy makers must begin to understanding that collectivism and individualism are competing forces when parents decide whether or not to adhere to public health guidelines. My study showed that collectivist and individualistic alignment is very much part of a persons identity. Policy makers at the state level have overlooked including cultural influence in policy making and how policies are received by the public at a cultural level. The state of Kansas can encourage counties to conduct additional open floor board meetings or extend citizen's speaking time on specific vaccine policies. The efforts to incorporate and reflect citizens beliefs would encourage an environment where citizens are more committed to the good for all not just one. Furthermore, the state can

enhance budgets for county health departments to create more robust vaccine communication programs and health promotion materials.

### **Methodology**

My study has shown that qualitative methodology is underused when exploring parents decisions to stray or conform to recommended public health guidelines. Quantitative methodology has been the primary means to attempt to explore and understand this phenomenon. Quantitative studies however continue to reverberate the same data, why do parents adhere, abstain or hesitate on childhood vaccinations usually resulting in one of the previously mentioned categories of alignment. Qualitative research on this topic gets to the who, where and how parental interactions influence and shape those decisions. Qualitative research using individual interviews enables researchers to view and understand the mental processes parents go through to reach that decision that qualitative research just cannot evaluate. This dialogue provides important data on the influences that hold significant weight as well as the need for proactive communication efforts from healthcare providers instead of reactive ones.

### **Practice**

Policy making often relies on socioeconomic data and population demographics that are captured in spreadsheets on databases. The use of community dialogue is increasingly required to formulate policies that promote social wellbeing and positive social change but not widely used. The commonality among all participants in my study was the desire to be heard and to feel their view point mattered. This is exemplified through the use of reference groups to talk through a cost benefit analysis of information

and the increasing dependence over the lack of communication with healthcare providers. The message taken by parents in society stems from conflicting goals of public administrators which are created by the motivation to engage in political activity and execution of duties to social interaction and relationships (Cooper, 2012). The implications of my study for the practice of public administration is the need to execute duties in a way that shows citizens that they as a person are more than a demographic statistic, but can have valuable input to their communities. Additionally, my study indicates that public health officials are disconnected with those they serve and must revisit how they administer public health communication and find manners to interact with citizens on multiple communication venues.

### **Conclusion**

The increase of qualitative studies in this discipline is necessary. Quantitative analysis alone cannot put a researcher in touch with the in-depth mental processes parents go through when deciding whether or not to vaccinate their child. Hesitance and opposition to recommended public health guidelines is a people issue, a conversation issue and an education issue that requires researchers and public administrators to hear and understand struggles from the source, parents. My study provided a better understanding of societal beliefs highlighting that creating a sense of social responsibility is one of the most beneficial factors in promoting vaccine compliance. It has also shed light that we are at a juncture in society that individualized choice, while a corner stone of our democratic society, is quickly impacting herd immunity in counties such as Leavenworth Kansas. The study pierced through the layers of self-research vaccine

communication such as social media, internet resources and media platforms to find that one of the strongest influences in parenting decision making is matriarchal social reference groups. This in conjunction with the absence of health care professional feedback on vaccine concerns, parents are not in the position to make fully rational decisions. Knowledge from my study is a valuable contribution to creating communication practices that breaches societal beliefs and contributes to building strong dialogue between public policy makers, public health officials and those they serve.

## References

- Aharon, A. A., Nehama, H., Rishpon, S., & Bron-epel, O. (2017). Autonomy and control among parents who do not comply with recommended pediatric vaccinations: A qualitative case study. *Journal of Community and Public Health Nursing*, 3(1), 1–6. <https://doi.org/10.4172/2471-9846.1000152>
- Allen, M. (2017). Fisher narrative paradigm. *The SAGE Encyclopedia of Communication Research Methods*, 576–578. <https://doi.org/10.4135/9781483381411.n205>
- Allen, M. (2017). *The SAGE encyclopedia of communication research methods* (Vols. 1–4). SAGE Publications.
- Amandae, S. (2007). Rational choice theory. *Encyclopedia of Governance*. <http://www.walden.edu/sage/encyclopediaofgovernance.htm>
- Ames, H. M., Glenton, C., Lewin, S., & Ames, H. M. (2017). Parents’ and informal caregivers’ views and experiences of communication about routine childhood vaccination: A synthesis of qualitative evidence. *Cochrane Database of Systematic Reviews*, 2(Issue 44), p. 134-160. <https://doi.org/10.1002/14651858.CD011787>
- Arnesen, S., Baerøe, K., Cappelen, C., & Carlsen, B. (2018). Could information about herd immunity help us achieve herd immunity? Evidence from a population representative survey experiment. *Scandinavian Journal of Public Health*, 46(8), 854–858. <https://doi.org/10.1177/1403494818770298>
- Attwell, K., Smith, D. T., & Ward, P. R. (2018). ‘The unhealthy other’: How vaccine rejecting parents construct the vaccinating mainstream. *Vaccine*, 36(12), 1621–1626. <https://doi-org.ezp.waldenulibrary.org/10.1016/j.vaccine.2018.01.076>

- Badur, S., Ota, M., Öztürk, S., Adegbola, R., Dutta, A., Ota, M., & Adegbola, R. (2020). Vaccine confidence: The keys to restoring trust. *Human Vaccines & Immunotherapeutics*, *16*(5), 1007–1017.  
<https://doi.org/10.1080/21645515.2020.1740559>
- Bean, S. J., & Catania, J. A. (2018). Immunology beliefs as a factor in vaccine opposition among complementary and alternative medical providers. *SAGE Open Medicine*, (Issue 6), p. 45-52. <https://doi.org/10.1177/2050312118807625>
- Bedford, H., Attwell, K., Danchin, M., Marshall, H., Corben, P., & Leask, J. (2018). Vaccine hesitancy, refusal and access barriers: The need for clarity in terminology. *Vaccine*, *36*(44), 6556–6558. <https://doi.org/10.1016/j.vaccine.2017.08.004>
- Benartzi, S., Beshears, J., Milkman, K. L., Sunstein, C. R., Thaler, R. H., Shankar, M., Tucker-Ray, W., Congdon, W. J., & Galing, S. (2017). Should governments invest more in nudging? *Psychological Science*, *28*(8), 1041–1055.  
<https://doi.org/10.1177/0956797617702501>
- Berezin, M., & Eads, A. (2016). Risk is for the rich? Childhood vaccination resistance and a culture of health. *Social Science & Medicine*, *165*, 233–245.  
<https://doi.org/10.1016/j.socscimed.2016.07.009>
- Bevir, M. (2007). *Encyclopedia of governance*. SAGE Publications, Inc.
- Billiard, S., Voinson, M., & Alvergne, A. (2016). Correction: Beyond rational decision-making: Modelling the influence of cognitive biases on the dynamics of vaccination coverage. *PLoS ONE*, *11*(12), e0167842.  
<https://doi.org/10.1371/journal.pone.0167842>

- Bleser, W. K., Elewonibi, B. R., Miranda, P. Y., & Belue, R. (2016). Complementary and alternative medicine and influenza vaccine uptake in US children. *Acta Paediatrica Espanola*, 74(9), 241. <https://doi.org/10.1542/peds.2015-4664>
- Brennan, J. (2018). A libertarian case for mandatory vaccination. *Journal of Medical Ethics*, 44(1), 37–43. <https://doi.org/10.1136/medethics-2016-103486>
- Bryden, G. M., Browne, M., Rockloff, M., & Unsworth, C. (2018). Anti-vaccination and pro-CAM attitudes both reflect magical beliefs about health. *Vaccine*, 36(9), 1227–1234. <https://doi.org/10.1016/j.vaccine.2017.12.068>
- Buehning, L. J., & Peddecord, K. M. (2017). Vaccination attitudes and practices of integrative medicine physicians. *Alternative Therapies in Health and Medicine*, 23(1), 46–54.
- Butler, A. M., Grabinski, V. F., Boloker, G. D., Newland, J. G., & Politi, M. C. (2020). A qualitative study examining pediatric clinicians' perceptions of delayed vaccine schedules. *Vaccine*, 38(30), 4740–4746. <https://doi.org/10.1016/j.vaccine.2020.05.015>
- Butler, R. (2016). Vaccine hesitancy: What it means and what we need to know in order to tackle it. *Journal of Vaccine*, 34(16), 1643–1649.
- Callaghan, T., Motta, M., Sylvester, S., Lunz Trujillo, K., & Blackburn, C. C. (2019). Parent psychology and the decision to delay childhood vaccination. *Social Science & Medicine*, 238. <https://doi.org/10.1016/j.socscimed.2019.112407>

- Center for Disease Control. (2016). *History of Vaccine Information Statements*. Vaccines and Immunizations. <https://www.cdc.gov/vaccines/hcp/vis/downloads/vis-history.pdf>
- Center for Disease Control (2018). *Rate of unvaccinated children rising*. <https://www.cdc.gov/mmwr/volumes/67/wr/mm6740a4.htm>
- Center for Disease Control. (2019). *History of Vaccine Safety Concerns*. <https://www.cdc.gov/vaccinesafety/concerns/concerns-history.html>
- Center for Disease Control (n.d.). *History of Vaccine Safety Monitoring Vaccine Safety*. <https://www.cdc.gov/vaccinesafety/ensuringsafety/history/index.html>
- Chantler, T., Karafillakis, E., & Wilson, J. (2019). Vaccination: Is there a place for penalties for non-compliance? *Applied Health Economics and Health Policy*, 17(3), 265–271. <https://doi.org/10.1007/s40258-019-00460-z>
- Colgrove, J. (2016). Vaccine Refusal Revisited - The limits of public health persuasion and coercion. *The New England Journal of Medicine*, 375(14), 1316–1317. <https://doi.org/10.1056/nejmp1608967> Actions
- Cooper, S., Schmidt, B.-M., Sambala, E. Z., Swartz, A., Colvin, C. J., Leon, N., Betsch, C., Wiysonge, C. S., & Cooper, S. (n.d.). Factors that influence parents' and informal caregivers' acceptance of routine childhood vaccination: a qualitative evidence synthesis. *Cochrane Database of Systematic Reviews*, 2 <https://doi.org/10.1002/14651858.CD013265.www.cochranelibrary.com>
- Cooper, T., *The Responsible Administrator: An approach to Ethics for the Administrative Role*. (6th ed.) San Francisco, CA: Jossey-Bass

- Corben, P., & Leask, J. (2016). To close the childhood immunization gap, we need a richer understanding of parents' decision-making. *Human Vaccines & Immunotherapeutics*, 12(12), 3168–3176.  
<https://doi.org/10.1080/21645515.2016.1221553>
- Dedoose (n.d.). What Makes Dedoose Different. <https://www.dedoose.com>
- Department of Labor (2020). Definition of a Healthcare Provider.  
<https://www.natlawreview.com/article/ffcra-health-care-provider-definition-narrowed-dol>
- Dewey, J., PhD. (2018). Narrative Paradigm. Salem Press Encyclopedia
- Dhoju Sameer, Md Main Uddin Rony, Muhammad Ashad Kabir, & Naemul Hassan. (2019). *Differences in Health News from Reliable and Unreliable Media*. 981–987.  
<https://doi.org/10.1145/3308560.3316741>
- Elkin, L. E., Pullon, S. R. H., & Stubbe, M. H. (2020). ‘Should I vaccinate my child?’ comparing the displayed stances of vaccine information retrieved from Google, Facebook and YouTube. *Vaccine*, 38(13), 2771–2778.  
<https://doi.org/10.1016/j.vaccine.2020.02.041>
- Enkel, S. L., Attwell, K., Snelling, T. L., & Christian, H. E. (2018). ‘Hesitant compliers’: Qualitative analysis of concerned fully-vaccinating parents. *Vaccine*, 36(44), 6459–6463. <https://doi.org/10.1016/j.vaccine.2017.09.088>
- Faasse, K., Chatman, C. J., & Martin, L. R. (2016). A comparison of language use in pro- and anti-vaccination comments in response to a high profile Facebook post,. *Vaccine*, 34(47), 5808–5814. <https://doi.org/10.1016/j.vaccine.2016.09.029>

- Fatehi, K., Priestley, J., Taasoobshirazi, G. (2020). The expanded view of individualism and collectivism: One, two, or four Dimensions. *International Journal of Cross Cultural Management*, 13, 175-188 <https://doi.org/10.1177/1470595820913077>
- Fernandes, S., & Panda, R. (2019). Influence of social reference groups on consumer buying behavior: A Review. *Journal of Management Research (09725814)*, 19(2), 131–142.
- Fisher, K. A., Bloomstone, S. J., Walder, J., Crawford, S., Fouayzi, H., & Mazor, K. M. (2020). Attitudes toward a potential SARS-CoV-2 vaccine : A survey of U.S. adults. *Annals of Internal Medicine*, 173(12), 964–973.  
<https://doi.org/10.7326/m20-3569>
- Fiske, S. T., Wolfe, J. M., Malmberg, K. J., Newcombe, N. S., Dhimi, M. K., McNamara, D. S., Betsch, C., Böhm, R., & Chapman, G. B. (2015). Using behavioral insights to increase vaccination policy effectiveness. *Policy Insights from the Behavioral and Brain Sciences*, 2(1), 61–73.
- Flynn Darren PhD, Laura Ternent PhD, Frauke Becker PhD, Yemi Oluboyede PhD, & Jean Adams PhD. (2017). Parental preferences for the organization of preschool vaccination programs including financial incentives: A discrete choice experiment. *MDM Policy & Practice*, 2. <https://doi.org/10.1177/2381468317708319>
- Frankfort-Nachmias, C., & Leon-Guerrero, A. (2018). *Social statistics for a diverse society* (8th ed.). Thousand Oaks, CA: Sage Publications.

- Frew, P. M., & Lutz, C. S. (2017). Interventions to increase pediatric vaccine uptake: An overview of recent findings. *HUMAN VACCINES & IMMUNOTHERAPEUTICS*, *13*(11), 2503–2511. <https://doi.org/10.1080/21645515.2017.1367069>
- Frew, P. M., Chung, Y., Fisher, A. K., Schamel, J., & Basket, M. M. (n.d.). Parental experiences with vaccine information statements: Implications for timing, delivery, and parent-provider immunization communication. *VACCINE*, *34*(48), 5840–5844. <https://doi.org/10.1016/j.vaccine.2016.10.026>
- Gallone, M., Tafuri, S., Cappelli, M. G., Martinelli, D., Prato, R., & Germinario, C. (2017). Addressing the anti-vaccination movement and the role of HCWs. *Vaccine*, *32*(38), 4860–4865. <https://doi.org/10.1016/j.vaccine.2013.11.006>
- Gillespie, Kelly. (2019). *Kindergarten Vaccination Coverage Survey 2017-2018*. Kansas Department of Health and Environment. [https://www.kdheks.gov/immunize/download/Kindergarten\\_2017-18.pdf](https://www.kdheks.gov/immunize/download/Kindergarten_2017-18.pdf)
- Gillespie, K. (2018). *Adolescent Vaccination Coverage in Kansas an Analysis of BRFSS Surveys 2011 - 2016*. Kansas Pharmacy Foundation. <https://www.kansaspharmacyfoundation.org/pdf/vaccines/vaccination-rates-Adolescent-Coverage-2016.pdf>
- Glanz, J. M., Wagner, N. M., Narwaney, K. J., Kraus, C. R., Shoup, J. A., Xu, S., O’Leary, S. T., Omer, S. B., Gleason, K. S., & Daley, M. F. (2017). Web-based social media intervention to increase vaccine acceptance: A randomized controlled trial. *Pediatrics*, *140*(6). <https://doi.org/10.1542/peds.2017-1117>

- Gottlieb, S. D. (2016). Vaccine resistances reconsidered: Vaccine skeptics and the Jenny McCarthy effect. *BIOSOCIETIES*, *11*(2), 152–174.  
<https://doi.org/10.1057/biosoc.2015.30>
- Grzybowski, A., Patryn, R. K., Sak, J., & Zagaja, A. (2017). Vaccination refusal: Autonomy and permitted coercion. *Pathogens and Global Health*, *111*(4), 200–205. <https://doi.org/10.1080/20477724.2017.1322261>
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, *18*(1), 59–82.  
<https://doi.org/10.1177/1525822x05279903>
- Haase, N., Schmid, P., & Betsch, C. (2020). Impact of disease risk on the narrative bias in vaccination risk perceptions. *Psychology & Health*, *35*(3), 346–365.  
<https://doi.org/10.1080/08870446.2019.1630561>
- Heckathorn, C. D. D. (2005). Social Theory Rational Choice. In *Encyclopedia of Social Theory* (pp. 621–624). SAGE Publications, Inc. City: Thousand Oaks.  
<https://doi.org/10.4135/9781412952552>
- Hoffman, B. L., Felter, E. M., Chu, K. H., Shensa, A., Hermann, C., Wolynn, T., Williams, D., & Primack, B. A. (2019). It's not all about autism: The emerging landscape of anti-vaccination sentiment on Facebook. *Vaccine*, *37*(16), 2216–2223. <https://doi.org/10.1016/j.vaccine.2019.03.003>
- Howson, A. (2019). Sociological Theory : Rational Choice Theory. In *Salem Press Encyclopedia*.

- Hulseley, E., & Bland, T. (2015). Immune overload: Parental attitudes toward combination and single antigen vaccines. *Vaccine*, 33(22), 2546–2550.  
<https://doi.org/10.1016/j.vaccine.2015.04.020>
- Jaca, A., Mathebula, L., Iweze, A., Pienaar, E., & Wiysonge, C. S. (2018). A systematic review of strategies for reducing missed opportunities for vaccination. *Vaccine*, 36(21), 2921–2927. <https://doi.org/10.1016/j.vaccine.2018.04.028>
- Kansas Division of Budget (2020). *Certified Kansas Population by County*.  
<https://budget.kansas.gov/population/>
- Kansas Guardians and Conservators, Stat.§59-3058, Article 30 (2019).  
[http://www.kslegislature.org/li\\_2020/b2019\\_20/statute/059\\_000\\_0000\\_chapter/059\\_030\\_0000\\_article/059\\_030\\_0058\\_section/059\\_030\\_0058](http://www.kslegislature.org/li_2020/b2019_20/statute/059_000_0000_chapter/059_030_0000_article/059_030_0058_section/059_030_0058)
- Kansas State Department of Education (2019). *K-12 Kansas Education Data Reporting*.  
<http://datacentral.ksde.org>
- Kansas Student Health, Article 62 Pub. L. No. K.S.A 72-6265, 21 (2019).  
[http://www.kslegislature.org/li/m/statute/072\\_000\\_0000\\_chapter/072\\_062\\_0000\\_article/072\\_062\\_0065\\_section/072\\_062\\_0065\\_k.pdf](http://www.kslegislature.org/li/m/statute/072_000_0000_chapter/072_062_0000_article/072_062_0065_section/072_062_0065_k.pdf)
- Korn, L., Betsch, C., Boehm, R., & Meier, N. W. (n.d.). Social Nudging: The effect of social feedback interventions on vaccine uptake. *Health Psychology*, 37(11), 1045–1054. <https://doi.org/10.1037/hea0000668>
- Larson, H. J., Clarke, R. M., Jarrett, C., Eckersberger, E., Levine, Z., Schulz, W. S., & Paterson, P. (2018). Measuring trust in vaccination: A systematic review. *HUMAN*

*Vaccines & Immunotherapeutics*, 14(7), 1599–1609.

<https://doi.org/10.1080/21645515.2018.1459252>

Lyons, B., Merola, V., & Reifler, J. (2019). Not just asking questions: Effects of implicit and explicit conspiracy information about vaccines and genetic modification.

*Health Communication*, 34(14), 1741–1750.

<https://doi.org/10.1080/10410236.2018.1530526>

MacDonald, N. E., Harmon, S., Dube, E., Steenbeek, A., Crowcroft, N., Opel, D. J., Faour, D., Leask, J., & Butler, R. (2018). Mandatory infant & childhood immunization: Rationales, issues and knowledge gaps. *Vaccine*, 36(39), 5811–

5818. <https://doi.org/10.1016/j.vaccine.2018.08.042>

Mark Mason. (2010). Sample Size and Saturation in PhD Studies Using Qualitative Interviews. *Forum: Qualitative Social Research*, 11(3).

Merriam-Webster. (n.d). Reference group. *Merriam-Webster dictionary*

<https://www.merriam-webster.com/dictionary/reference%20group>

Mitra, T., Counts, S., & Pennebaker, J. W. (2016). Understanding Anti-Vaccination Attitudes in Social Media. *Association for the Advancement of Artificial Intelligence, Icwsm*, 269–278.

Moran, M. B., Lucas, M., Everhart, K., Morgan, A., & Prickett, E. (2016). What makes anti-vaccine websites persuasive? A content analysis of techniques used by anti-vaccine websites to engender anti-vaccine sentiment. *Journal of Communication in Healthcare*, 9(3), 151–163. <https://doi.org/10.1080/17538068.2016.1235531>

- Motta, M., Callaghan, T., & Sylvester, S. (2018). Social Science & Medicine Knowing less but presuming more : Dunning-Kruger effects and the endorsement of anti-vaccine policy attitudes. *Social Science & Medicine*, 211(January), 274–281. <https://doi.org/10.1016/j.socscimed.2018.06.032>
- National Center for Education Statistics (2020). *Leavenworth County, Kansas Public Schools Common Core of Data*. <https://nces.ed.gov/ccd/schoolsearch/index.asp?Search=1&DistrictID=2008430>
- Navin, M. C., Wasserman, J. A., Ahmad, M., & Bies, S. (2019). Vaccine education, reasons for refusal, and vaccination behavior. *American Journal of Preventive Medicine*, 56(3), 359–367. <https://doi.org/10.1016/j.amepre.2018.10.024>
- Navin, M. C., & Largent, M. A. (2017). Improving nonmedical vaccine exemption policies: Three case studies. *Public Health Ethics*, 10(3), 225–234. <https://doi.org/10.1093/phe/phw047>
- Nicholas C. Arpey, Anne H. Gaglioti, & Marcy E. Rosenbaum. (2017). How Socioeconomic Status Affects Patient Perceptions of Health Care: A Qualitative Study. *Journal of Primary Care & Community Health*, 8. <https://doi.org/10.1177/2150131917697439>
- O’Sullivan, E., Rassel, G. R., Berner, M., & Taliaferro, J. D. (2017). *Research methods for public administrators* (6th ed.). New York, NY: Routledge.
- Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Thousand Oaks, CA: SAGE.
- Ravitch, S. M., & Carl, N. M. (2016). *Qualitative research: Bridging the conceptual,*

*theoretical and methodological*. Thousand Oaks, CA: Sage Publications.

Romijnders, K. A. G. J., van Seventer, S. L., Scheltema, M., van Osch, L., de Vries, H., & Mollema, L. (2019). A deliberate choice? Exploring factors related to informed decision-making about childhood vaccination among acceptors, refusers, and partial acceptors. *Vaccine*, 37(37), 5637–5644.

<https://doi.org/10.1016/j.vaccine.2019.07.060>

Rozbroj, T., Lyons, A., & Lucke, J. (2019). Psychosocial and demographic characteristics relating to vaccine attitudes in Australia. *Patient Education and Counseling*, 102(1), 172–179. <https://doi.org/10.1016/j.pec.2018.08.027>

Rudestam, K. E., & Newton, R. R. (2015). *Surviving your dissertation: A comprehensive guide to content and process* (4th ed.). Thousand Oaks, CA: Sage. ISBN: 978-1-4522-6097-6

Ruhlman, M. (2020). *Homeschooling in Kansas (Non-Accredited Private Schools (NAPS))*. <https://www.ksde.org/Agency/Division-of-Learning-Services/Special-Education-and-Title-Services/Title-Services/Non-Accredited-Private-Schools>

Saada, A., Lieu, T. A., Morain, S. R., Zikmund-Fisher, B. J., & Wittenberg, E. (2016). Parents' choices and rationales for alternative vaccination schedules: A qualitative study. *Clinical Pediatrics*, 54(3), 236–243.

<https://doi.org/10.1177/0009922814548838>

Saldaña, J. (2016). *The coding manual for qualitative researchers* (3rd ed). SAGE Publications.

- Schiavo, R. (2020). Vaccine communication in the age of COVID-19: Getting ready for an information war. *Journal of Communication in Healthcare*, 13(2), 73–75.  
<https://doi.org/10.1080/17538068.2020.1778959>
- Sobo, E. J. (2018). Theorizing vaccine refusal through cultural views. *Cultural Anthropology*, 31(3), 342–350. <https://doi.org/10.14506/ca31.3.04>
- Sobo, E. J., Huhn, A., Sannwald, A., & Thurman, L. (2016). Information curation among vaccine cautious parents: Web 2.0, Pinterest thinking, and pediatric vaccination choice. *Medical Anthropology*, 35(6), 529–546.  
<https://doi.org/10.1080/01459740.2016.1145219>
- Tauil, M. de C., Sato, A. P. S., & Waldman, E. A. (2016). Factors associated with incomplete or delayed vaccination across countries: A systematic review. *Vaccine*, 34(24), 2635–2643. <https://doi.org/10.1016/j.vaccine.2016.04.016>
- Taylor, S. A. J. (2015). Culture and behaviour in mass health interventions: Lessons from the global polio eradication initiative. *Critical Public Health*, 25(2), 192–204.  
<https://doi.org/10.1080/09581596.2014.895799>
- Thompson, K. M., Orenstein, W. A., & Hinman, A. R. (2020). An opportunity to incentivize innovation to increase vaccine safety in the United States by improving vaccine delivery using vaccine patches. *Vaccine*, 38(25), 4060–4065.  
<https://doi.org/10.1016/j.vaccine.2020.04.044>
- Thunstrom, L., Ashworth, M, Finnoff, D., Newbold, S. (2020). Hesitancy towards a COVID-19 vaccine and prospects for herd immunity. *Clinical Infectious Diseases*, 1–3. <https://doi.org/10.1093/cid/ciaa959>

- U.S Census Bureau. (2019). *Population Estimate for Leavenworth County, Kansas*.  
<https://www.census.gov/quickfacts/leavenworthcountykansas>
- U.S. Department of Education. (2017). *FERPA for school officials*. Washington, DC.  
<http://familypolicy.ed.gov/ferpa-school-officials>
- U.S Department of Health and Human Services. (n.d.). *Healthy People 2030 Framework*.  
<https://www.healthypeople.gov/2020/About-Healthy-People/Development-Healthy-People-2030/Framework>
- U.S Department of Health and Human Services (n.d). *Healthy People 2020: Immunization and Infectious Diseases*. <http://www.healthypeople.gov>
- U.S Department of Health and Human Services (n.d). *Healthy People 2030: Proposed Objectives for Inclusion in Healthy People 2030*. <http://www.healthypeople.gov>
- Ventola, C. L. (2016). Immunization in the United States: Recommendations, barriers, and measures to improve compliance: Part 1: Childhood vaccinations. *P&T: A Peer-Reviewed Journal for Managed Care & Formulary Management*, 41(7), 426–436
- Vijayaprasad, G. (2017). Public trust in vaccination: an analytical framework. *Indian Journal of Medical Ethics*, 2(2), 98–104. <https://doi.org/10.20529/ijme.2017.024>
- Walden University, Center for Research Quality. (n.d.-e). Institutional Review Board for Ethical Standards in Research. <https://academicguides.waldenu.edu/research-center/research-ethics>

- Walsh, B., Doherty, E., & O'Neill, C. (2016). Since the start of the vaccines for children program, uptake has increased, and most disparities have decreased. *Health Affairs*, 35(2), 356–364. <https://doi.org/10.1377/hlthaff.2015.1019>
- Wang, D., Zhu, L., Maguire, P., Liu, Y., Pang, K., Li, Z., & Hu, Y. (2016). The influence of social comparison and peer group size on risky decision making. *Frontiers in Psychology*, 7. <https://doi.org/10.3389/fpsyg.2016.01232>
- Wardle, J., Frawley, J., Steel, A., & Sullivan, E. (2016). Complementary medicine and childhood immunisation: A critical review. *Vaccine*, 34(38), 4484–4500. <https://doi.org/10.1016/j.vaccine.2016.07.026>
- Wittex, R., Sniders, T., & Nee, V. (2013). *The Handbook of Rational Choice Social Research* (First). Stanford University Press, Stanford California.

## Appendix A: Screener Guide

- 1) Are you the child's parent or legal guardian?  
Yes \_\_\_\_\_ No \_\_\_\_\_
- 2) Is your child enrolled currently in Kindergarten, completed Kindergarten last year or will attend Kindergarten in the upcoming 2021-2022 school year?  
Yes \_\_\_\_\_ No \_\_\_\_\_
- 3) What school district in Leavenworth County, Kansas is your child enrolled in?  
Yes \_\_\_\_\_ No \_\_\_\_\_
- 4) Is your non-accredited private school the registered with a Leavenworth County, Kansas address with Kansas Board of Education?  
Yes \_\_\_\_\_ No \_\_\_\_\_
- 5) Which of the following race/ethnic backgrounds do you identify with?
  - a) White (non-hispanic) (recruit # \_\_\_\_\_)
  - b) Black/African American (recruit # \_\_\_\_\_)
  - c) Hispanic/Latino (non-white) (recruit # \_\_\_\_\_)
  - d) Two or more mixed race (recruit # \_\_\_\_\_)

## Appendix B: Email

Good Morning/Afternoon, Sir or Ma'am,

My name is Lindsay Hale and I am a student with Walden University in their Ph.D. Public Policy and Administration Program. I am conducting a study called "*Using Social Perspectives on Vaccination to Build Public Trust in Pro-Vaccine Communication*" that aims to understand and discover sociocultural factors that influence parental approaches to vaccinations schedules. This study is partial degree fulfillment of the Ph.D. program at Walden University.

I am emailing you to seek your assistance in advertising the study in your school, daycare, after school program, bulletin board, newsletter, etc. I am looking for parents or legal guardian volunteers with children who just completed Kindergarten, currently attending Kindergarten or will attend Kindergarten in the upcoming 2021-2022 school year. The study is interview based and only requires 30-40 minutes of a participant's time. Due to SARS-COV-2 all interviews will be conducted via teleconference or video conference. This request is only requesting you post the attached flyer where you deem appropriate and does not involve your staff in providing any information to the participant.

As indicated on the flyer, participation is voluntary and no personal identifying information will be collected. Individuals who are interested will contact me directly for additional information and screening for eligibility. The results of the study will be reported in the aggregate and in no way connect your organization or the participants to the findings.

I have attached a flyer that is newsletter, social media and bulletin board friendly. I appreciate your time.

Respectfully,

Lindsay Hale

## Appendix C: Flyer

# STUDY SEEKING PARENT OR LEGAL GUARDIAN PARTICIPANTS

The new study called “Using Social Perspectives on Vaccination to Build Public Trust in Pro-Vaccine Communication” seeks to understand what experiences can impact a parent or legal guardian’s decision to vaccinate their child.

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## ABOUT THE STUDY

- The interview based study is part of the doctoral study for Lindsay Hale, a Ph.D. student at Walden University.
- Interview duration 30–40 minutes
- Names of participants will not be used and a number will be assigned for privacy protection

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## VOLUNTEERS REQUIREMENTS:

Parent or Legal Guardian with children who:

- Who completed Kindergarten during 2020–2021 school year in Leavenworth County, KS

OR

- Will attend Kindergarten during the 2021–2022 school year in Leavenworth County, KS

## Appendix D: Scribe Confidentiality Agreement

This interview confidentiality agreement is made effective on (Date).

BETWEEN: Scribe name and/or scribe company

AND: Lindsay Hale, Walden University Student

TERMS:

The scribe is hired to accurately provide written record of the interview between participant (participant number) and the researcher. The scribe understands that the name of the participant, family members or any other personally identifying characteristics will not be part of the written record. At all times during and after the interview the scribe will not produce, provide or disclose this confidential information to any other person or entity.

RESEARCHER:

Print: \_\_\_\_\_

Signature: \_\_\_\_\_

SCRIBE:

Print: \_\_\_\_\_

Signature: \_\_\_\_\_

## Appendix E: Interview Guide

## Interview Guide

### Introduction (Demographic Data)

Male or Female

Leavenworth County, KS School District: \_\_\_\_\_

Ethnic/Race demographic: \_\_\_\_\_

**Length of Interview:** 30-40 minutes.

**Primary Purpose:** What and how social factors contribute to a parent and/or legal guardians decision to adhere, hesitate or abstain from the public health guidelines on vaccinating children.

### Written Consent Reminder:

The interview is voluntary. If you decide to take part now you have the option to stop the interview at any time. Participating in this interview does not pose any risks beyond typical daily life. For privacy purposes your name will not be used and a participant identification marker will be assigned. This interview will be recorded and transcribed. A copy of the transcription will be made available to you.

### Background Questions: (5 minutes)

Let us begin with you telling me about yourself.

### Culture/Childhood/Vaccination Experience (10 minutes)

1. What was your experience with vaccinations as a child?
2. What were your parents views of vaccination of childhood preventable diseases?
3. How have your views differed from your parents?
4. How would you describe vaccination views of your siblings (if applicable) or extended family?
5. Can you describe any societal beliefs or family traditions that has influence on how you view any childhood vaccinations?

### Reference Group/Sociocultural Influences (10 minutes)

6. How would you describe the attitude surrounding vaccinations among your friends with children?

7. What are their perspectives on mandatory vaccination policy for school age children?
8. If your views differ from your friends or acquaintances can you give me an example of how you handle the different perspectives?
9. Can you describe an instance where vaccination views among friends or acquaintances has influenced someone to change their stance on vaccinations?
10. What resources, sociocultural beliefs or traditions, if any, have your friends and acquaintances mentioned when determining to adherence to public health guidelines on vaccines?

**Vaccination Self-Research and Education (6 minutes)**

11. What do you think about the information your child's doctor provides on vaccinations and the time they take discussing any concerns?
12. What sources do you consult and trust to answer questions about any childhood vaccinations?
13. What do you do if those sources have conflicting information?

**Conclusion (3 minutes)**

14. Overall, what do you think played or will play a key role in defining your views on vaccinations for your child?
15. Is there anything else you would like to tell me?