THE INFLUENCE OF MISINFORMATION ON THE HEALTH-RELATED DECISION MAKING OF THE SAMOAN PEOPLE DURING THE MEASLES EPIDEMIC

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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Abstract

The purpose of this research is to examine the role of misinformation in influencing the health-related decision making of the Samoan people during the 2019 measles epidemic. My interest in this topic emerged when I was in Samoa at the time of the epidemic, I observed a large volume of misinformation being spread online and in person partly stemming from anti-vaccine hesitancy following two babies who died after being administered the MMR vaccine. It was not made known by the government this was due to human error rather than the vaccine itself. This culminated in a health crisis which saw vaccine rates at its lowest point, despite the existence of a safe and effective vaccine. My research investigated the role of misinformation from the perspective of medical professionals. I established the research question: How does the influence of misinformation affect the health-related decision making of the Samoan people during the measles epidemic? Qualitative semi-structured interviews were used an allowed participants to share their individual experiences and offer their own interpretation. I analysed the interviews according to thematic analysis, which allowed me to identify patterns and recurrent themes within the data. These themes were: institutional influence, societal influence and palagi influence. Institutional influence encapsulates participants' thoughts on the role of governing bodies. Most notably the lack of communication and transparency leading up to and throughout outbreak. It was evident from the findings that governing bodies were more concerned with face-saving rather than communicating concise and accurate information to the public. The second theme, societal influence, explores the consultation of traditional medicine and anti-vaccination methods. Findings reveal that many Samoans consulted a traditional healer prior to seeking treatment from the hospital. It became apparent that traditional healers will always be consulted to some degree as it is ingrained in the Samoan culture. Therefore, it is important for the governing bodies to work collaboratively with traditional healers. On the other side of the spectrum, anti-vaccination activists were found to have exploited a vulnerable community for profit by disseminating misinformation. Furthermore, anti-vaxxers were perceived to have more credibility due to their status within society, as they were predominantly white. In conclusion, my research found that governing bodies were not prepared for this health crisis. As a developing nation, the health literacy gap is vast. The lack of communication left an opportunity for anti-vaccination activists to disseminate misinformation and drive real world actions.

Chapter 1

Introduction

In November 2019, the Samoan people were in the midst of a measles outbreak that led to a health crisis (MacIntyre et al., 2020). People were becoming very sick or worse, dying, and the low vaccine rates, because of a reluctance to seek professional medical treatment, compounded the issue (Kaspar et al., 2020). Much of the information spreading across communication channels centred on the deaths of two infants upon receiving the measles vaccine but misinformation and anxiety led to the misattribution that the vaccine was the main cause of the infants' death (Craig & Worth, 2020). To this end, the purpose of this research is to explore how medical professionals felt the role of information or misinformation influenced the health-related decision making of the Samoan people during the measles outbreak in November 2019. The views of medical professionals were sought based on the assumption that their first-hand experience of the crisis and their interactions with patients would reveal insights into how the situation was managed and specifically how patients were reacting to the epidemic. Additionally, they were among the groups most affected by the information and misinformation expressed in online forums given they were having to educate and persuade people to get help or receive the vaccine, often after people had been exposed to an array of information online and in person.

1.1 History of Measles

Measles is a highly contagious disease that has had a resurgence worldwide despite the existence of a safe and effective vaccine (Moss & Griffin, 2006). Measles is transmitted through respiratory droplets and small particle aerosols that can remain in the air for up to two hours (Perry & Halsey, 2004). It can be characterised by fever, nasal congestion, conjunctivitis, rash, and cough and has been found to be most dangerous when contracted by children (Perry & Halsey, 2004). Before the introduction of a vaccine in 1963, there were major pandemics that would occur every 2-3 years and measles caused an estimated 2.6 million deaths annually (Krishnamoorthy et al., 2019). The vaccine is designed to protect against three highly contagious and transmissible diseases: measles, mumps, and rubella (NHS, 2020). The first dose is administered to children generally around 9-15 months years of age and the second dose is given to children aged 4-6 years old. Having both doses help to provide long lasting protection against measles, mumps and rubella (NHS, 2020).

In Samoa, the first cases of measles were recorded in 1893. The epidemic was mild at first, but as with any easily transmissible diseases it eventually spread to other pacific nations including Tonga (Davies, 1894). It was estimated that no fewer than 1,000 Samoans died of measles and specifically, the complications that accompany the disease (Davies, 1894).

FIGURE 1.1 MEASLES EPIDEMICS IN SAMOA FROM 1830-1930.

Date	Disease
1830	Influenza
1837	Influenza
1839	Influenza
1846	Influenza
1849	Whooping Cough
1851	Mumps
1891	Influenza
1893	Measles
1907	Dysentery/Whooping Cough
1911	Measles/Dysentery
1915	Measles
1918	Influenza Pandemic
1923–24	Dysentery
1926	Whooping Cough

(Thomas, 1954)

From the early days of European contact, the pacific islands have been vulnerable to epidemic diseases. For example, during the New Zealand occupation of Western Samoa from 1914-1918, there were minor measles outbreaks which were brought by New Zealand troops. There were deaths, but these were not recorded (Craig et al., 2020). Due to poor record keeping, there is very little known about the impact of disease on the Samoan people during this time period but the continued influence and development of Western medicine, has had marked impacts on the Samoan people, from shaping their healthcare systems to the introduction of vaccine programmes designed to overcome epidemics (Thomas, 1954).

There has been extraordinary progress towards the eradication of measles in recent times. The immunisation program launched by the World Health Organization (WHO) in the 1970s expanded childhood vaccinations to include measles vaccinations (Hotez et al., 2020). The number of global measles deaths decreased drastically from 2.6 million deaths in 1980 to approximately 700,000 deaths in 1990. In recent years that number has declined even further from 500,000 in in 2000 to 100,000 in 2017 (Hotez et al., 2020). The suggestion here is that the measles vaccine has had positive impacts and

continues to reduce the influence and adverse effects on people, particularly those in first world countries. By the 1990s, immunisation programs in the pacific region had reduced measles mortality rates. Building on the successful model of eliminating polio, many nations were able to achieve measles eradication or come close to it (Mcfarland et al., 2003). After the introduction of the MMR vaccine to pacific island nations in 1982, the outbreaks in small island nations became less frequent and smaller. There were national campaigns in Nauru, New Caledonia, Samoa, Niue, Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu. Following these campaigns there were no confirmed measles cases (McFarland et al.,2003).

However, according to the World Health Organization (2019), the number of measles cases worldwide quadrupled at the beginning of 2019. Previously, the number of cases of the disease had been steadily declining but three years ago, measles cases started to rise globally again (Papachrisanthou, 2019). This is due to the increasing number of people who continue to question the safety, benefits and the necessity of vaccines (Papachrisanthou & Davis, 2019). There is an inherent shift from pro-vaccine to anti-vaccine with many parents choosing to delay or decline childhood vaccines (Thorton, 2020). On November 18th, 2019, the Government of Samoa declared a state of emergency due to the measles outbreak. It was the first Pacific Island to do so in the current global resurgence of measles (Champredon et al., 2020). At that time, there were 2,936 cases with 39 deaths recorded and 30 of those deaths were children. With an immunization rate of 31% in November 2019, it was mandated that all citizens were to be vaccinated (Isaacs, 2020). By January 2020, it was reported that there were 83 deaths and over 5,700 cases (Government of Samoa, 2020). The vaccination rate amongst the Samoan population was sub-optimal despite the existence of safe and effective vaccine (Thornton,2020)

Figure 1.2 MMR Vaccine coverage

***Figure*: First-dose measles-containing-vaccine (MCV1) and second-dose measles-containing-vaccine (MCV2) coverage of Samoa, 2004–2018**
No data for 2015. Reproduced from data extracted from WHO database.[6]

(Craig et al., 2018).

As shown in figure 1.2, there has been a decline in vaccination rates since 2004. The first dose coverage has fallen from 99% in 2003 for children younger than one year old, to 40% in 2018. The second dose of coverage has fallen from 87% to 28% over the same period (Craig et al., 2018). This coverage is well below the 95% coverage which is recommended by the WHO required to maintain herd immunity (Craig et al., 2018). To clarify, herd immunity is defined as the proportion immune among the individuals in a population (Fine et al., 2011). It refers to a pattern of immunity that should protect the population from invasion of a new infection (Fine et al., 2011).

The reasons for the declining vaccination rate are still complex, thus signalling a gap in the research around Samoan people's attitudes towards vaccinations and their attitude toward the views of medical experts. The reasons are partly linked to the two infant deaths in Safotu, Savaii in July 2018, as it sowed distrust in the community which sent the already low vaccination rate plummeting (Thornton, 2020). These incidents caused the Government of Samoa to suspend the immunization program while the investigation into the two deaths was underway (Craig et al., 2018). The immunization program was suspended until April 2019, eight months after the deaths. Thus, leaving thousands of infants unprotected from measles (Hotez et al., 2020). In pursuing this research, my intention is to consider how medical professionals observed the unfolding situation and what role information had in influencing the patients that they were tasked with treating.

1.2 Understanding Samoa

The focus of this research is the information and misinformation that shaped the attitudes of Samoan people around the measles epidemic and the vaccine, as

understood by frontline medical professionals. To clarify, Samoa is an independent island nation located in the South Pacific. Samoa gained its independence from New Zealand in 1962, after more than a century of foreign influence (Foster, 2021). It was known as Western Samoa until 1997. The current estimated population of Samoa is 202,500 (Foster, 2021). It consists of two main islands: Upolu and Savaii, two smaller inhibited islands Manono and Apolima, with several smaller islands including Nu'utele, Nu'ulua, Fanuatapu and Namua. Samoa was occupied by the German empire from 1899 to 1915, then by a joint New Zealand and British colonial administration until Samoa's independence (Dickonson & Green, 1998).

The traditional culture of Samoa is a communal way of life based on fa'asamoa which translates to "the Samoan way." It underpins the actions and cognition of the people in Samoa and is communicated down from generation to generation making the Samoan way an essential component to identity (Anae, 2005). One's faasamoa is dominated by these values: *aiga* (family), *tautala samoa* (Samoan language), *gafa* (genealogies), *fa'amatai* (chiefly structure), *lotu* (church), and *fa'alavelave* (ceremonial or family obligations) (Sauni, 2011). These values shape Samoan society into a collectivist system of governance known as '*fa'a Matai'*. In this system, society is organised by extended families (*aiga*), with each family having its own '*Matai'* ('chief' or 'leader') titles that are connected to certain districts, villages, and plots of family land (Scroope, 2017). Individuals in the aiga are expected to be generous with their possessions and prioritise the interests of the group or community over their own individual needs. For example, people tend to be communal and share their goods rather than prizing their individual ownership (Scroope, 2017). The individual does not have rank or sanctity in his own right. The social structure is highly regarded, and there are specific titles that carry specific privileges (Mead, 1928). It is only the holder of the title has power, and the accession to which has been validated by large distributions of property that is honoured and respected (Mead, 1928). Matai are responsible for administrative duties and maintaining traditions and customs of the village. Matai are also seen as spiritual caretakers of all those who fall under their authority. The status of Matai is highly respected among the community. Each large family can hold many titles of varying importance (Scroope, 2017).

In terms of health practice, Samoan people view health from a holistic lens. That is, they view health in terms of relationships, the environment and spiritual influences; they are whole beings with links to the physical, spiritual and mental world around them (Capstick, Norris, Sopoaga, & Tobata 2009). Health, then, is aimed at achieving and maintaining social order and ensuring the continued harmony of the country, with illness perceived as a rejection or subversion of appropriate Samoan lifestyles (e.g.

pursuing money and neglecting to care for the family) (McPherson & McPherson, 1994; Hubbell, Luce & McMullin, 2005). As Laing and Mitaera (1994) attest, for Samoans health is about being alive with kin and sickness is its antithesis because of how it disrupts kinship. The suggestion is, then, that any improvement to health cannot solely come from what could be termed ‘western medicine’ but needs to be accompanied by indigenous approaches such as traditional healers.

During the measles crisis, many Samoans turned to traditional healers for help. “Taulasea” which translates to traditional healer, are held in high regard in the Samoan culture (Krosch, 2010). Upon the arrival of Christianity, priests carried out healing practices to rid people of bad spirits or ‘aitu’. Since then, traditional healing practices have passed down through generations. A vital part of the healing process is the use of indigenous plants and massage (Maureen, 2000). The preparation of traditional medicine and the diagnosis of sickness has remained seemingly unchanged since the 1920s. Most healers learn their practices from an elder relative, taking the current remedies back at least two generations, with the recipes kept secret and closely guarded (Krosch, 2010).

There is an official body of healers called the ‘Asosi o Taulasea’ or Association of Traditional Healers (Sofara, 2017). Samoans still seek out traditional healers when they are ill as an alternative to western medicine, especially those who are dissatisfied with western treatment: they are encouraged to seek alternative methods of medicine by family members (Norris et al., 2009). Today, two methods of medicine exist within Samoa, traditional and western forms of medicine. They are built on different epistemological foundations and employ different practices within their institutional forms (Meleisa, 1996). One of the methods in which Samoans decide the course of treatment for their illness is to classify illness into two categories: ma’i samoa (indigenous illness) and ma’i palagi (foreign illness). If the illness is thought to be Samoan, the affected person seeks out a fofo/ Samoan healer (Kneubuhl, 1987). The same classification is made regarding the foreign medical system. Persons with severe injuries will often go straight to the hospital. However, when the symptoms are more ambiguous, they will often seek out both systems and determine which form of medicine is effective for their ailment. Within Samoan culture, the healers are also sought out to repair family relationships. In cases where relationships have been severely dislocated, there is a belief that aitu (supernatural agents) are the cause of the illness (Kneubuhl, 1987). Therefore, the role of the healer is to restore balance in and between the natural, social and supernatural elements of the person’s life.

Healers will earn respect based on the reputation for their vai (medicines) and fofo or togafiti (treatments) (Holmes, 1992). Many healers will become known for their

treatment of a particular disease, or in some cases, their ability to supersede supernatural elements (Holmes, 1992). Registered traditional healers still encourage people to also receive medical treatment from doctors, but there are unregistered 'healers' who claim to have the ability to cure measles patients (Fox, 2019). An example of this is a Samoan man who claimed that spraying kangen water on your whole body will cure measles. Another seller of this water reported they had 2000 customers in two weeks (Fox, 2019). Samoa is a conservative nation that values its traditions and customs. Therefore, it is likely that traditional medicine will retain support and continue to coexist with western medicine.

The health system in Samoa is like that of many developing nations, there is a lack of resources and skilled labour especially during an epidemic. Part of the under-development stems from a modernisation of diseases (cardiovascular and metabolic issues are now common concerns for the health of Pasifika people), bureaucratisation and professionalisation of the medical field that lacks understandings of Samoan culture, and which is an imported approach adopted in conjunction with the behaviours of their Western neighbours. As Capstick, Norris, Sopoaga and Tobata (2009) put it, impacts on the health of Pacific nations include "geographic isolation, history and culture, vulnerable economies and environmental degradation" (p. 1341), Accordingly, the medical services offered in Samoa (especially in rural areas) have tended to be curative as opposed to preventative (Schoeffel, 1984). Not unexpectedly, then, there were shortages in the capacity of the national hospital to cope with the measles outbreak, especially considering at the height of a public health crisis, pressure is put on resources such as medication, personal protective equipment, medical professionals and medical supplies (Choos & Rajkumar, 2020; S. Shrivastava, P. Shrivastava & Ramasamy, 2018). Low-income countries, in particular, struggle because they do not have the bargaining power to be adequately supplied with life-saving equipment in comparison to resource-abundant countries (McMahon, Peter, Ivers, & Freeman, 2020). In response the government of Samoa mandated that everyone unvaccinated was to be promptly vaccinated which was part of a mass vaccination campaign and resulted in 57,132 individuals being vaccinated (BBC, 2019). Since the state of emergency was declared, the Ministry of Health (MoH) has received aid from foreign countries. New Zealand sent 44 nurse vaccinators and 34 doctors, and support staff. Norway sent an emergency medical team to Samoa, while other countries such as Australia, Japan, the United Kingdom and the United States also sent health workers to help the National Health Service with the overwhelming numbers of measles cases (Craig et al., 2020).

1.3 Research Question

It is against this backdrop that I developed the following research question: how does the communication of health information and misinformation influence the health-related decision making of Samoans during the measles epidemic?

To address this question, the data will be collected through semi-structured interviews with four participants. All interviews were to be recorded and included a set list of questions for each subject. The data collected will be analysed with thematic analysis. This is a qualitative method of data analysis, and is a method for identifying, analysing themes found within a data set (Braun & Clarke, 2006). This method was chosen because it allows for a high level of flexibility and can be modified for this research as well as being more accessible. It is also useful for highlighting similarities or differences between subjects, which can allow for unanticipated insights. Thematic analysis can also be vital in summarising large data sets and examining the perspectives of each interviewee. The interviewees will include health professionals such as an epidemiologist and doctors. These health professionals were chosen as they were involved in treating patients during the measles epidemic and can provide information about patients' health related decision-making motivations given the number and breadth of people they interacted with in the course of their work.

Driving this research are my own personal motivations. I am conducting this research in part because I am Samoan. I was here with my family during the measles epidemic, and it was very interesting to see the factors that were at play in terms of antivaxxers and the general mistrust of the immunisation program. It was especially sad to see so many lives lost tragically which could have been avoided. It is very important to me to highlight how medical professionals perceived the Samoan people were influenced and why vaccinations rates were so low, to avoid this happening again with future epidemics. I am interested in what role medical professionals felt communicative channels had on their patients as these experts were then expected to reaffirm or invalidate the thinking of the Samoan people. It is a prevailing assumption of this research that medical professionals would be privy to stories gained while treating patients about sources of advice these people sought and the expectation is patients are less inclined to lie to medical professionals when their health is in jeopardy. Furthermore, as a face-saving culture, I anticipated that the views of the Samoan people may not be readily offered to an interviewer who was not condemning their choices, but nonetheless highlighting them.

It is anticipated that part of my research focus is understanding the influence of online media on the health-related decision making of Samoans. Admittedly, I am biased against the anti-vaxxer movement, in my opinion it is not supported by science and is

detrimental to the public health system and the wellbeing of the Samoan community. I acknowledge this bias here and will look to mitigate it in this research by asking participants to review the results, to assess whether the interpretations made represent their beliefs and the beliefs they attribute to the Samoan people. The research supervisor will also review the conclusions made to identify any gaps in the argument that need to be addressed, as well as provide affirmation that the conclusions made are reasonable given the data. Of course, the position of the medical professionals cannot be used to generalise the attitudes of all Samoan people but can instead offer a snapshot. The main reason I am conducting this research is to highlight how information and misinformation impacts the health-related decision making of Samoan community during a crisis.

1.4 Changing Health Attitudes

Underpinning this research is the assumption that health attitudes have changed and continue to change in response to medical crises such as the measles epidemic and more recently the COVID-19 pandemic. Such changes are in part, a response to what scholars have termed an infodemic, where information is spread rapidly across digital, and particularly social media platforms. That information need not be factually correct, nor is it guaranteed that the legitimate or integral information will be heard amongst the plethora of voices seeking solace at a time of heightened anxiety. For example, over the years we have seen a change in health attitudes towards mandatory vaccination and the prevalence of anti-vaccine movements. Vaccines are the most successful tool in public health, they have contributed to decreasing rates of common childhood diseases and in some instances have completely eradicated the diseases, such as smallpox and rinderpest (Hussain et al., 2018). Despite the evidence that vaccines are one of the most important preventative measures in public health, there has been rise of anti-vaccination sentiments in recent years. With many parents believing that vaccines cause more harm than good to their child (Hussain et al., 2018).

1.4.1 Anti-vaxxers

The term anti-vaxxer refers to people who oppose vaccinations and their accompanying mandated laws. The movement is seen as an organised group of people who refuse to vaccinate and site vaccines for the cause of health problems (Tafuri et al., 2014). Amongst their concerns, is that vaccination is interference by government in personal decision-making, that vaccine preventable diseases are not a serious threat, or the belief that there is a direct correlation between the MMR vaccine and the onset of medical conditions such as autism (Hussain et al., 2018).

There was growing opposition to vaccinations in Samoa after the incidents in Safotu caused a lot of distrust within the Samoan community regarding vaccine safety. It provided a foundation in which people spread misinformation and pushed an anti-vaccine stance. There were social media posts warning Samoan people of the “dangers” of the MMR vaccine as part of the anti-vaccine social media campaign (Kennedy, 2019). These posts pushed the narrative that getting the MMR vaccine would be harmful to children. This campaign garnered fear and distrust of the immunisation program amongst the Samoan community.

The consequence of skepticism and opposition to medical advice has seen the loss of herd immunity amongst the community, especially for manageable and preventable diseases such as measles (Hussain et al.,2018). To clarify, a pandemic is defined as a disease which is prevalent all over the world. In the United States, the Centre for Disease Control and Prevention has reported that the number of measles cases in the first half of 2019 was more than double the number for the whole year of 2018 (Patel et al., 2019). The growing number of unvaccinated people and the increase in interconnectivity between countries results in outbreaks that spread and affect communities with low vaccination rates such as Samoa.

1.4.2 The role of the Internet and Social Media

As suggested above, contributing to the formation of infodemics and changing health attitudes is the internet and social media. Although online research has made it more convenient for people to access medical information, too much reliance on information from social media and websites have proven to be problematic (Faasse et al.,2016). As the nature of social media and the internet is to allow users to share their opinions without being filtered or reviewed, varying sentiments can be expressed, and social groups can take advantage of uncertainty and anxiety (Kata, 2010). This is reinforced when users self-select into groups which creates an echo-chamber effect whereby they seek out sources of information which reinforce their pre-existing beliefs (Faasse et al., 2016). Before the internet, there were official news channels and media communications in the form of television, newspapers and radio which could not so easily produce articles and publish information that was not factually correct (Chiu & Tucker, 2018).

Social media facilitates the distribution of inaccurate and misleading information and can also establish social media movements that actively oppose medical advice, as people become more sceptical of authority and instead reliant on their own assessments to guide action and cognition (Chiu & Tucker, 2018). Such a shift towards accessing medical information online has perpetuated a focus on the negative

experiences people have had with vaccines, which creates a reluctance and critical understanding of the medical profession and its advice (Allam et al., 2014). Studies show that online information for consumer health is often unreliable and difficult for people to assess (Allam et al., 2014). The hope is that my research will contribute to this body of research as well as considering other sources of information and misinformation that govern people's decision-making processes.

1.5 The organization of the thesis

This chapter has been created to offer an overview of the fields of inquiry as well as provide an explanation for the overarching motivations for this research project. It addresses the cultural context of the situation and the events that led to the culmination of the measles crisis. This chapter acts as the foundation of the thesis providing a crucial backstory to give the reader insight into how the research concepts were formulated.

The following chapter reviews the concepts of western and traditional healthcare. Delving into how health is communicated effectively. I address the change in healthcare attitudes particularly in the doctor-patient relationship. I explore the role the empowered patient and social media have to play in the shift in patient attitudes. With particular attention to the growing infodemic that has contributed to the issue of misinformation and the rise of the anti-vaccine movement. I also review what constitutes a health crisis, outlining the importance of risk and crisis communication. The role of the government is closely reviewed with examples of effective and ineffective governance during times of crisis.

Chapter three outlines the methodology and the method. The chapter opens by outlining methodological frameworks of Burrell and Morgan (1979) with particular attention to the critical interpretivist approach which sets the tone for the rest of the chapter by emphasizing the concept that cultures are not viewed as objective but rather interpretive, which allow for different opinions based on social status and opinion.Further into the chapter, Qualitative research method and the research interview is outlined, as well as justification as to why it is the most suitable approach. The Qualitative approach provides more in-depth knowledge of the social phenomena which are under examination. The data collection method; snowball sampling is introduced in this chapter. As well as the form of data analysis employed which is thematic analysis. Braun and Clarke (2006) emphasize that thematic analysis allows the researcher a high level of flexibility and can be modified for the need of many studies, providing a rich detailed account of the data. The chapter is concluded with a detailed step by step account of the method employed during the research process.

Chapter four presents the data that was collected from participant interviews. It is divided into three themes that emerged using thematic analysis. These include institutional influence, which is an account of the role the government played during the crisis from the perspective of participants. The second theme societal influence explores the role that traditional medicine and anti-vaccination play in the measles epidemic. The third theme is titled palagi influence, which delves into the deference to palagi people and the palagi ideologies that may impact health-related decision making of the Samoan people.

The final chapter contains my discussion and conclusions. It reiterates the rationale for my research and is structured to answer the research question according to the findings and themes which emerged. It also outlines ideas for future research.

Chapter 2

Literature Review

Introduction

In Samoa in 2018, two babies died after being administered the MMR vaccine. The vaccine itself was not the cause, the vaccine was accidentally mixed with a muscle relaxant. This led to a 10-month long suspension of the MMR immunisation program. These cases undermined the trust that the Samoan people had in the MMR vaccine and the medical system because the reasons for their deaths were not made clear until much later. In November 2019, a state of emergency was declared because of the measles outbreak, and it was during this period where vaccination rates were at an all-time low of 31%. With the existence of an effective and safe vaccine, this outbreak was avoidable. Therefore, it is important to explore the scholarship on health communication as it plays a significant role in increasing knowledge and awareness of health issues as well as influencing the health beliefs and attitudes of individuals. This is crucial during a public health crisis. The following chapter will review health crises and communication, as it imperative to understand what is needed to build trust and display transparency especially at a time when people are fearful and looking for information to help them make informed health decisions.

2.1 Health

Health is defined by the World Health Organisation (2017) as the "state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity". This definition promotes social welfare as an equally important component of overall health which captures some of the essence of the Samoan approach to health. The Samoan approach to health is an amalgamation of traditional and western healthcare approaches, because, as Capstick, Norris, Sopoaga and Tobata (2009) have summarised, it centres on health and wellness amongst the Samoan people: pacific people see themselves as part of a community, rather than an isolated individual, but a Western approach to medicine has been incorporated which is based on scientific evidence. From a Western perspective, health is generally conceived and measured according to a biomedical model, described as being individualistic and

secular- whereby a disease is viewed independently from the person suffering it (Capstick et al., 2009). The biomedical perspective arose with scientific approaches to understanding the human body: biomedicine is focused on the cause of the disease, the characteristics of the organ involved, and the current evidence-based treatment for a recognized pathology (Salamonsen & Ahlzén, 2017).

Western scientific medicine is a universally accepted body of knowledge that is not specific to any specific community. Western healthcare is primarily aimed at curing physical ailments and disease (Chesney & Anderson, 2008). Treatment is typically used to alleviate physical ailments using modern technologies and treatments supported by scientific research. In contrast, rather than focusing on cures, in traditional medicine there is an emphasis on achieving balance and wellness (Chesney & Anderson, 2008). A Pacific scholar argues that “for us, health and wellbeing are about the presence of culture, rather than the absence of disease which is largely a Western interpretation of health” (Butt, 2002).

The implementation of western primary healthcare was put into effect in Samoa during the New Zealand colonial administration in the 1920s (Schoeffel, 1984). Initially the Western approach was introduced to ensure the native population did not die out, especially after the 1918 Spanish flu epidemic. The Spanish flu epidemic caused the death of one-fifth of the Samoan population due to an administrative fault by the New Zealand government, where they had failed to quarantine foreigners coming into Samoa (Schoeffel, 1984). The influenza epidemic showcased how disease and Western biomedical practices were used to defend the legitimacy of colonial rule with colonisers believing their interventions would save and transform the lives of Samoans (Herda, 2000). The only known effective western treatment at the time was aspirin and bed rest to lower the fever (Herda, 2000). However, this did not prevent the administration from claiming they were saving lives.

Due to the many lives that were lost during the influenza pandemic, there was growing discontent amongst Samoans, and due to the mishandling of the epidemic, the New Zealand government implemented the Samoa Act in 1921. This act established the foundation for civil administration and health reforms, which included two main goals; to build a medical service that was accessible throughout Samoa and to develop preventative and educational work (Akeli, 2017). New Zealand officials felt the need to reform the traditional healthcare approaches and believed the local people could not survive in the modern world; therefore, healthcare was one of the top priorities (Ministry for Culture and Heritage, 2014). In addition to the implementation of western biomedical practices, colonisers also insisted on dietary change for Samoans. Until the

1960s, the traditional diet of Samoans was taro, breadfruit, seafood, bananas, coconut cream and taro leaves. However, western interventions saw the introduction of canned, imported goods such as canned fish, spaghetti and corned beef, and these were considered luxury food items. Colonisers were promoting the consumption of imported foods which were considered to be more appropriate food items at a time which was central to make islanders more “civilised” (Hughes & Mark, 2005).

Although Samoans today still consume traditional foods, the convenience and low cost of imported foods have made these western items standard fare in rural diets. Over time, this has led to the loss of skills such as subsistence farming and fishing and increased the reliance on imported foods (McLennan & Ulijaszek, 2014). A further dimension to this issue is the cultural attitude toward the social status of food. The consumption of imported store-bought food is seen as more prestigious, furthermore research suggests the health education programs, whilst well-intentioned, had an emphasis on the three food groups or ‘balanced diet’ whereby it was reinforced that imported foods are superior to local foods and the traditional diet is perceived as inadequate. There is a strong link between the importation of foods and the increasing rate of non-communicable diseases. In fact, in recent decades, Samoans have suffered from some of the highest rates of diabetes, obesity, and heart disease in the world (Hawley, 2018). The influenza epidemic and the subsequent importation of foods was used as a vehicle to legitimise the colonial administration through the privileging of the Western lifestyle and its medical practices.

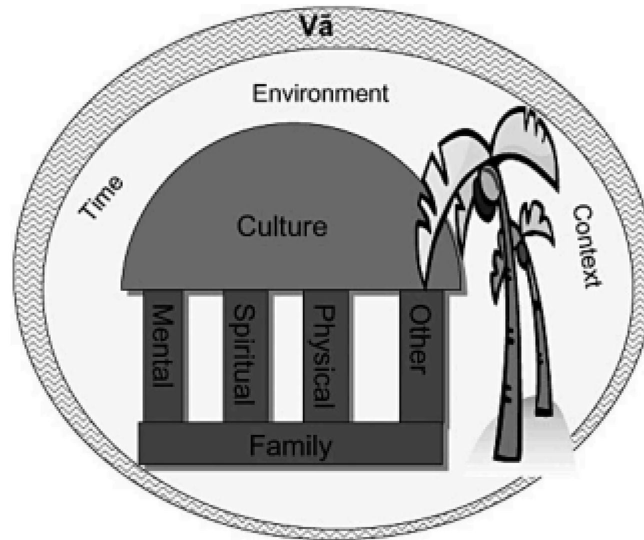
2.1.2 Pacific Approach: Fonofale Model

Admittedly, efforts have been made in Samoa to privilege a health system that is a hybrid of the Samoan and Western ideals and that has meant a conscious effort to understand how health is understood amongst the Samoan people.

Messages are more effective when they are strategically matched to the audience needs, values, and culture. Therefore, it is important to understand how Pacific people view health. Samoans see themselves as part of a community, rather than an isolated individual. Capstick and colleagues (2009) have described holistic views of health which encompass spirituality. The Samoan concept of self is holistic in that each person has three parts: physical, mental, and spiritual. Based on this belief, Samoans believe that when a person is healthy, all these elements are balanced and in harmony.The Fonofale model was developed by Fuimaono Karl Pulotu-Endemann in the early 1980s. It is a Pacific Island model which provides a culturally appropriate and

holistic way of exploring the health of Pacific people (Ioane & Tudor, 2017). This model was developed and sourced from values and beliefs held by Samoans, Cook Islanders, Fijians, Cook Islanders, Niueans, Tokelauans and Tongans. These groups identified family, culture, and spirituality as indicative of the values embedded in the Samoan culture or *fa'asamoa* (Boon-Nanai et al., 2021).

FIGURE 2.1 FONOFALE MODEL: HEALTH COMMUNICATION



(Ioane & Tudor, 2017)

The model depicts family as the floor or foundation, and the culture is represented by the roof that provides protection for these groups. The link between family and culture is represented by the four poles, which signal spirituality (traditional or Christianity), physical (biological, wellbeing), mental (emotional wellbeing), and other (which can include but is not limited to age, sex, sexual orientation etc.) (Ioane & Tudor, 2017). These poles connect and support the relationship between culture and family. Pacific people live and reflect in a collective culture, in which they view themselves in relation to others and how they fit within the community (Ioane & Tudor, 2017). Many families and individuals within the Samoan community view the importance of incorporating spiritual, social, physical, economic, and cultural systemic values as the sum of integrated values where one cannot exist without the other (Ponton, 2018).

Generally speaking, this model is normally applied to mental health frameworks that address the needs of Pacific groups and specifically within a New Zealand context. The Fonofale model can be used to tailor communication responses to medical emergencies such as a pandemic or epidemic, by building upon the values that encompass the fa'asamoa, and by promoting the use of strong familial relationships to refer individuals to seek treatment at the hospital. By also strengthening relationships

with diverse community organisations, congregations, and non-medical service agencies, this will strengthen their position and credibility within the community (Damien & Gallo, 2020). However, there is limited research on best practice in health communication in Samoa during an epidemic and an exploration of the Fonofale's application in an epidemic has yet to be tested.

2.1.3 Traditional Medicine

The hybrid Samoan approach to medicine also includes the role and value of traditional medicine. Traditional medicine is derived from a different philosophical background than that of Western medicine. Samoan healers or taulasea practice traditional massage (fofo) and prescribe herbal remedies. Taulasea practice alternative medicine that is passed down through generations. They have training in the treatment and diagnosis of natural and supernatural illnesses (Krosch, 2010). Krosh (2010) found that reasons for alternative medicine use varies: it may not reflect a negative attitude toward western medicine, but rather, an inclination to holistic treatment or desire to seek treatment which aligns with cultural beliefs. These culturally specific beliefs concerning the interpretation of illness, play a role in determining the right pathway of treatment. However, many biomedical conditions can be interpreted as ma'i samoa and traditional healers are sought out for conditions which can only be treated by trained medical professionals (Krosch, 2010).

It cannot be assumed that all Samoan people hold onto the concept of traditional healing to the same extent, with the effects of post colonialism leading some towards a deference to the palagi healthcare system (Norris et al., 2009). Finau (1994) claims there have been shifts in the level of acceptance of traditional methods, under colonial rule these were discouraged, however since then, it has been seen increasingly as a viable alternative. It has been argued that cultural beliefs and interpretations of illness with the use of traditional healing practices can lead to the non-adherence to Western treatment (Naidoo et al., 2009). Culture has the potential to significantly affect perceptions of health and health-related decisions: in some instances, biomedicine may fail to consider cultural and social issues. Research surrounding public health reflects the increasing importance of the role of culture in health communication as a means for enhancing the effectiveness of health communication campaigns and strategies (Kreuter & McClure, 2004).

2.2 Health Communication

Health communication is defined by scholars as a concept which involves "the art and technique of informing, influencing, and motivating an individual, institutional and public

audiences about important health issues" (Hanson et al., 2008). Research shows that public health strategy must address future health problems and challenges which require health officials and educators to be competent in health communication (Gebbie et al., 2003). Reynolds and Seeger (2005) suggested that health communication must be strategic, broad based, responsive, and highly contingent, because it is essential in guiding strategic health behaviours and decisions (Kreps, 1988). Thus, health communication is not only the process of giving people information but rather an active process that facilitates the use of health information to improve decision making, change behaviour and improve health outcomes (Vahabi, 2007).

Traditional health communication involves disseminating messages from experts to the public to motivate the public to change certain attitudes and behaviours. The messages are based on scientific research leading to the identification of risk factors for disease (Neuhauser & Kreps, 2003). There are two levels of health communication: the micro level and macro level (Ratzan, 1996). The micro level encompasses the communication between the patient and medical professionals led by doctors/physicians and followed by support staff, such as clinical support staff and paramedics (Thomas, 2006). The relationship between the patient and doctor is crucial as the trust between patients and their physicians is a fundamental part of health communication. In a hospital setting, patients are provided with information about their diagnosis, treatments and results, drugs, and their adverse effects. Traditionally printed health materials are also used to reiterate or replace verbal communication (Vahabi, 2007). The macro level of health communication is where all stakeholders involved with the various aspects of the health chain need to come together to address the wider population (Thomas, 2006). This level focuses on effective message dissemination for health promotion, disease prevention, and health-related messages transmitted through mediated channels including health marketing and policymaking (Ratzan, 1996). At the same time, the health relationship model is undergoing a change, the macro-level phenomena appear to be increasingly affecting the micro-level. One technique used at the macro level is health campaigns. These can be defined as organised health communication-based interventions targeted at a particular group of people and social marketing efforts that include communication (Snyder, 2007). Campaigns promote a wide variety of health behaviours such as dietary change, non-smoking, exercise and vaccine promotion. Campaigns vary with the form of communication that is used, they range from posters, handouts, public service announcements, and social media posts (Snyder, 2007).

2.2.1 Doctor-patient relationship

One of the traditional methods of health communication and an essential component in the delivery of healthcare information is the relationship between the patient and the doctor. Several studies on health communication emphasise the importance of doctor's communication skills. By communicating with a patient, a physician gets to know the patients' case and facilitates a therapeutic relationship with the patient which is necessary for its management (Verlinde et al., 2012). Over the years, changes in society and advancements in medicine and technology have made the doctor-patient relationship more challenging. Previously doctors were considered the only receptacle of medical information. However, a new era has been heralded where medical knowledge has become a commodity between the doctor and the patient with treatment being customised to individual patients.

Medical professionals are no longer the main provider of information to patients regarding their diagnosis and treatment options. Anderson (2004) found there were four factors which contributed to patients no longer having a passive role in consumption of health information and transitioning to a more active role.

1. The advances in medicine have led to unrealistic expectations on the part of the patient.
2. Due to the highly specialised care, medical professionals may seem aloof or impersonal.
3. Due to time constraints during consultation, patients are often left frustrated with the amount of information given.
4. Patients leave their consultation feeling they are better to seek information on the internet about their health condition.

The doctor's position has shifted from a paternal figure to become more of an advisor of their patients, who are offered advice and knowledge but are no longer obliged to take the doctors diagnosis (Petracci et al., 2017). Research shows that there are positive outcomes of this inherent shift in post-modern society highlight how today's healthcare rhetoric gives legitimacy to informed choice, encouraging parents to seek out health information (Kata, 2010). A wide array of literature suggests that the physician and patient relationship is changing from paternalistic to a more participatory and ultimately consumerism model. A common characteristic of consumerism is the shift in power to the patient. Consumers are active participants and take greater charge in their healthcare by becoming more informed, independently researching possible diagnosis, treatment information and alternative forms of healthcare. This context sets

the stage for phenomena that offer health information to consumers to propel consumerism (Welch Cline, 2003).

Over the coming years, face to face doctor-patient encounters will be less frequent: it will have a profound impact on how physicians and healthcare providers interact with patients (Weiner, 2012). This is important to keep in mind when managing patients, to provide quality care for patients, scholars note it is imperative that there is healthy patient-doctor relationship (Ridd et al., 2009). Trust is one of the fundamental components of a doctor-patient relationship. In the medical field, this can mean that patients expect their healthcare providers to be competent, ethical, empathetic, and honest, especially because patients are put in a vulnerable position where they are trusting doctors with private information and their body (Chandra et al., 2018).

2.2.2 Medicine, the internet and Dr Google

Research has found that the communication landscape is changing as the number of channels that audiences use to acquire information has increased (Hanson et al., 2008). The advent of the internet and social media has altered communication worldwide (Jenkins et al., 2020). Traditional media such as newspapers, television, radio, and later websites existed as a one- way information dissemination. In the case of websites information was conveyed through static web pages known as web 1.0. There has been progression to Web 2.0 which facilitates a two-way collaboration between users, creating a platform for collaboration, sharing and socialization (Jenkins et al., 2020). As a result, the internet is a frequently used as a source of health information with search engines becoming a tool for self-diagnosis e.g., Dr. Google.

It has become increasingly easy for users to access information regarding their symptoms and health conditions (Marcu, Black & Whitaker, 2018). There is a large volume of information available through formal sources such as government, healthcare providers and charities as well as informal sources of information such as user-generated content and social media (Marcu, Black & Whitaker, 2018). McMullan (2006) states that obtaining increased information from the internet can improve patients understanding of their health condition and care, with an American survey conducted on cancer patients showing that 92% of patients believe that information from the internet empowers them to make health decisions and consult their physician. However, the patients from the survey also found the information to be overwhelming (31%,), conflicting (76%), and confusing (19%). Health professionals are concerned with the quality of information that patients are finding on the internet. Studies of online health content have found that web-based health information frequently contains

misleading information. This new shift in the doctor patient relationship can also lead to patients self-diagnosing their health issues according to health information from the internet (Erdem & Harrison-Walker, 2006). For example, a study by Pucci (2003) found that 32% of patients who obtained health information online retained misleading and inaccurate information. One such place that misinformation around health issues is becoming abundant is social media.

The use of informal sources such as social media has its benefits and challenges. Scholars argue it enhances patient empowerment, as they feel more confident to make healthcare decisions, with informational and emotional support being the two main reasons that patients seek out social media (Smailhodzic et al., 2016). Social media has become an integral component within the public health conversation. Furthermore, social media is changing the nature and pace of healthcare interaction between patients and health organisations (Moorhead et al., 2013). Research has found that increasingly more of the public and health professionals are using social media as a tool to communicate and receive health information (Moorhead et al., 2013). Technologies that expand interconnectivity and collaborative content sharing include Facebook, Twitter, and Instagram. The benefits of using social media as a means for health communication are that social media can widen access to those who do not have easy access to health information via traditional methods, and in terms of public health surveillance, it can provide communication in real time at relatively low costs (Moorhead et al., 2013).

Although social media can be used as a tool to spread awareness surrounding health issues, there has been criticism from scholars (Chou et al., 2020) that falsehoods are more likely to spread faster than accurate information. Misinformation is a term which is used to describe false and inaccurate information, which then begs the question of what is defined as information. Krishna (2017) uses the data-information-knowledge-wisdom framework (Ackoff,1989) which conceptualises information as “data that one judges to be useful and applicable to a specific situation”. The increasing proliferation of misinformation, and specifically, inaccurate health information has produced what scholars consider an infodemic. The term ‘infodemic’ is short for information epidemic, depicting the rapid spread and vast amplification of valid and invalid information (Chowdhury et al., 2021). The infodemic makes it difficult for people to comply with public health procedures as people are unable to discern misinformation from fact which causes false perceptions of true risk. The sheer volume and complexity of social media creates a silo of information which makes it easy for users to self-curate the content they are exposed to (Chou et al., 2020). This also makes it difficult for users to be exposed to information with conflicting views to their own, with the risk of amplifying

misinformation within a closed network increase (Chou et al., 2018). Such an eventuality is especially dangerous as research suggests that misinformation can have repercussions in the real world, as individuals online are pushing anti-vaccine propaganda and promoting unproven treatments for vaccine preventable diseases such as measles, thus leading to a resurgence of the disease as more people choose not to get vaccinated (Chou et al., 2020).

Scholars argue that the heart of the issue of misinformation is the concept of health literacy, defined by Parker, Ratzan, and Lurie (2003) as “the degree to which people have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions”. Misinformation impedes the achievement of health literacy among individuals as they are armed with the wrong information and are not suitably equipped to make health related decisions (Wang et al., 2019). With social media it is increasingly difficult to assess the credibility of the sources as users themselves are the self-publisher, who is not subject to any verification or accountability (Wang et al., 2019). Health literacy is closely linked to digital literacy, given the role of social media during a health crisis, the definition of health literacy has expanded to ensure that users know how to navigate various platforms to access and judge information online (Ratzan et al., 2020). Although health literacy affects individuals of all ages, genders, incomes, and education levels, some are more vulnerable than others. Research shows that racial and ethnic minorities, those with low socio-economic status and medically underserved people (people who do not have health insurance) are disproportionately susceptible (Damien & Gallo, 2020). Recent scientific work has found that misinformation and health literacy are major obstacles to health (Damien & Gallo, 2020). As a result of the severity of this issue, the United Nations has launched a campaign known as the press to pause campaign as part of the UN Verified initiative. This campaign draws on research from psychologists and behavioural scientists whose studies indicate that pausing and reflecting before sharing can help to significantly decrease the spread of unverified information (United Nations, 2021). Misinformation confuses people as it dilutes the pool of legitimate health information, therefore, conspiracy theories start to work because they provide comfort during times of uncertainty and anxiety.

2.2.3 Anti-Vaccination

Over the last two decades there has been a growing number of parents in the modern world who do not want their children to be vaccinated. Vaccine hesitancy and fear of vaccinations is not a new phenomenon, although the new generation of internet has an emphasis on user generated content which has created a new environment for sharing

health information. The main ideology in anti-vaccine sentiments is that vaccines cause idiopathic illness, vaccines are used as a poisonous chemical cocktail, vaccine supporters are fearful of the truth therefore they blindly accept vaccinations, as well as an alternative healthy lifestyle will be enough to combat disease (Tafuri et al., 2014).

The anti-vaccination movement has gained more traction in recent years. Amongst the common assertions made online by anti-vaccine groups are that vaccines cause illness, they are ineffective, they are part of a government/pharmaceutical/ medical conspiracy, and mainstream medicine cannot be trusted (Kata, 2012). The effects of this movement are exacerbated by the introduction of Web 2.0, which is derived from Web 1.0, with the main difference being the ability for users to create content and interact with each other. Activists who oppose vaccination have formed grassroots coalitions on social media sites, mainly Facebook, which utilise the interactive platform to promote the dangers of childhood vaccination (Bradshaw et al., 2020). The information presented shapes the perspectives of parents and can affect their real-world decisions regarding their children's health (Bradshaw et al., 2020). Information that was previously only accessed through textbooks and held primarily by medical professionals is now accessible to the public. The information found has an impact on their decision making, therefore it is essential to understand what is shared online and how people interact online (Hussain et al., 2018). Web 2.0 facilitates health communication, users can engage with each other sharing medical histories, experienced side effects and treatment successes and failures. People who look for information about vaccination can now visit anti-vaccination websites and blogs by alternative medical practitioners. Many of these websites offer legal aids on how to reject vaccination as well as show testimonials of vaccine injury or even how to get compensation for vaccine injury. Anti-vaccine messages are more widespread on the internet than in other media forms.

A large-scale study in the USA indicated a correlation between negative vaccine information (misinformation, conspiracies, and safety concerns) on Twitter and low rates of the HPV vaccine. Particularly in states where there was a large volume of negative vaccine information, there were lower rates of the HPV vaccine even after accounting for socio-economic factors (Dunn et al., 2017). Anti-vaccination messaging may also be appealing to people as it speaks to underlying vaccine hesitant subcultures. Connecting vaccine ideologies to people's identity, for example in a study about Latinx parents, cultural barriers to accepting vaccines included religious beliefs, the influence of family members, and hesitancy to discuss vaccines with their children (Lindsay et al., 2020).

Another study of internet users in Canada tracked the sharing of influenza vaccine information on social media sites such as Facebook, Twitter, and YouTube and found that of the top search results which had been shared and viewed thousands of times, 60% shared anti-vaccine sentiments (Kata, 2012). A common theme throughout most anti-vaccine websites was the distrust in the government. This post-modern perspective questions the legitimacy of science, with decreasing levels of confidence in medical experts (Kata, 2010). The increase in anti-vaccine sentiment coincides with the change in patient empowerment. Patients have a more active role in their own treatment and care, which as mentioned above, challenges the traditional healthcare model and gives patients a role in decision making (Dimick, 2010). As a result, mandatory vaccination has become a controversial topic, it is an ongoing debate amongst the scientific community. There is the notion that compulsory immunisation limits personal autonomy and free choice. Therefore, an ethical issue can be raised, to what extent is it ethically appropriate to limit personal autonomy through mandatory vaccination to achieve the collective protection of the community?

However, the dilemma is that if many people choose not to get vaccinated then herd immunity is compromised which affects the whole population (Lawrence, 2015). This is evident in the Samoan measles epidemic in 2019: one of the factors leading up to the epidemic was low vaccination rates. Prior to the measles epidemic in 2019, the required vaccination levels for herd immunity were not reached for many years (World Health Organization, 2020). According to reports, the public were unaware of how serious the spread of the virus was, which contributed to its rapid spread and ultimately led to a health crisis (Boodoosingh et al., 2020).

2.3 Health crises and risk communication

A health crisis refers to a situation in which the health of a substantial portion of the community is either compromised or in imminent danger because of the inability of existing mechanisms for safeguarding the public's health to cope with the emergent threat (Jennings et al., 2016). There are three different scenarios of disease spread which are terms that are often used interchangeably: epidemic, pandemic, and outbreak. These three concepts differ regarding scale. An outbreak is identified as small in scale, and an unusual increase over the expected number of cases of a disease. An epidemic is defined as an outbreak over a larger geographical area. Whereas a pandemic is a situation where the disease has spread internationally to other regions (Svensson, 2007). As the world is more interconnected than ever, if one country fails to prevent an epidemic from spreading to another country it can cause a pandemic which means the world is affected. These health crises are exacerbated in

developing countries where meeting the basic needs of most of a population who are underprivileged, is difficult (Workie et al., 2020). Scholars found that the people in developing nations have lower access to healthcare services including vaccination (Cockcroft et al., 2009). Nations with weak economies and health infrastructure are the most likely to be the ones with the most inadequate resources to combat a health crisis. These countries have the lowest capacity to be able to build and expand the number of health workers. Deprivations that lead to ill health are common in developing nations with the marginalised majority being particularly at risk. The relationship between poverty and healthcare can be demonstrated as part of a cycle whereby poverty leads to ill health and ill health maintains poverty (Rahman, 2018).

In the case of Samoa, it has a closely interconnected community; many Samoan families rely on public transport which are often overcrowded and do not run consistently throughout the day. Therefore, there is a lack of accessibility for families living in rural areas to receive vaccination services as they are centralised in the National Hospital. The beginning of the outbreak also fell on White Sunday, a public holiday for children in Samoa, where families gather in church and their villages (Boodoosingh et al., 2020). These factors coupled with low vaccination rates created the perfect scenario for virus transmission. There was overwhelming pressure on healthcare services which required assistance of healthcare professionals from other countries to relieve the pressure on local healthcare services (Tyldesley, 2020).

Pressure on healthcare systems can be exacerbated by how people react based on fear of infectious diseases. Widespread panic is a result of health information reaching the public via mass media, the internet, social media, and the production of misinformation and the infodemic (Dillard et al., 2018). One of the most consequential pieces of misinformation that can be seen to have caused a health crisis and which has been spread in the last few decades is the notion that the MMR vaccine causes autism, which was widely disseminated, reinforcing the fear of getting vaccinated (Burgess, 2006). In this example the emergence of such anti immunisation rhetoric had effects on parents who were very concerned about the safety of the MMR vaccine. In the United Kingdom, MMR coverage dropped to its lowest point since the introduction of the vaccine. In London coverage fell from 92% in 1995 to 80% in 2003. Later other countries such as USA, Australia and New Zealand had similar decrease in vaccine coverage (Burgess, 2006).

The above situation from the 1990’s showcases how misinformation can spread and affect real life decisions. Legacy media such as television broadcasts and newspapers also play a role in the development of moral panic by magnifying the fear of health

threats (Chan et al., 2018). Prior research has demonstrated that legacy media help to shape the public's perception of a health crisis. For example, the initial portrayal of Wakefield in the media was more of nobleman seeking the truth against the government and profit-focused vaccine companies. Additionally, media focus on the vaccine companies' commercial motives to increase vaccine coverage decreased the publics perceptions that they had the community's best interests in mind (Alcock, 2002).

Sandmans model (1995) provides a useful tool that examines how health crises increase the perception of hazard within the community. This model emphasises that experts; medical professionals often focus on how dangerous an event is based on scientific evidence and the severity of the event, whether it is permanent or temporary. In contrast, members of the public take a more personal approach, in which the perception of the hazard is affected by the degree to which it causes outrage or fear (Sandman, 1998). For example, the MMR controversy was a low risk but high outrage perception. The most prominent feature of this controversy is that autism as an outcome is feared (Burgess, 2006). The concern surrounding autism and the MMR vaccine highlights why risk communication is so important. The failure to acknowledge the issue and discuss it openly with parents may allow parents to accept misinformation.

2.3.1 Risk Communication

Risk communication has typically been associated with health communication and efforts to warn the public of risks (Seeger, 2007). It is largely conceptualised as a problem of getting the public to attend to identifiable risks. Communication during an outbreak presents a challenge to governing bodies and requires planning for all stages of a crisis: pre-crisis, during the crisis and post crisis. Risk communication becomes very important for decreasing uncertainty and disseminating accurate information to the public (Chon & Park, 2019).

Poor planning and lack of risk communication can lead to widespread panic. For example, during the SARS epidemic in China in 2003, there was no risk communication or emergency plan in place. No health staff were allocated to risk communication and therefore there was no prior training of staff. There was a lack of coordinated approaches which led to a severe delay in information release and in some cases, conflicting information from other authorities (Frost et al., 2019). If risk communication is poor, the government can lose the public's trust if they release contradictory information or are perceived to be hiding information (Qiu et al., 2016). In

the long term, this can lead to difficulty implementing future public health policy, and in the short-term, lead to individuals ignoring critical healthcare advice. As governmental power increases during a health crisis, effective communication is particularly important, as it can go one of two ways. If risk communication is poor, the public will tend to criticise the government and society will become chaotic and unstable as people fear the uncertainty due to limited information (Kim & Kreps, 2020). In contrast, effective risk communication is linked to the willingness of citizens to cooperate with government mandates in tumultuous times (Mizrahi et al., 2021).

However, Witte (1994) critiques attempts to influence public decision-making using risk because it infringes upon their autonomy (Witte, 1994). Rossi and Yodell (2012) argue that persuasive health communication may lead to harm such as distress, guilt, anxiety, and stigma. Persuasion adds an implicit “ought” for audiences to act or behave in a certain way (Guttman & Salmon, 2004). Admittedly, harm is not specific to persuasive risk communication, for example communication along any type of risk such as genetic risk can cause an individual stress, or anxiety. Guttman and Salmon (2004) also argue that persuasive risk communication can lead to social stigmatisation as people may blame others for behaviour which is not compliant with the message.

These messages seek to induce behavioural change by presenting a threat and presenting behaviour that will alleviate the threat. Risk communication is grounded in the theory that the public have the right to be aware of potential threats and make an informed decision (Seeger & Reynolds,2007). Risk messages should include some self-efficacy action that can be taken to reduce the risk. Communication should be clear and appeal to emotion and logic, as well as offer solutions to problems.

2.3.2 The role of the Government in a health crisis

Research suggests that during times of acute crisis, the level of responsibility and complexity of communication from the government is heightened. There is the argument presented by Kim and Kreps (2020) that as governmental bodies are looked upon during national health emergencies, effective communication from the government is needed to combat epidemics and stabilise society. Policymakers and governments have an important role in a health crisis such as the measles epidemic. They decide on the structure of health services, monitor the national and global risks, as well as responding to outbreaks and listening to healthcare workers who work directly with patients on the frontline (Tyldesley, 2020). The Ministry of Health in Samoa is responsible for the legislature and regulatory direction for the health sector as well as public health initiatives through health promotion and the effective delivery of

healthcare services (Ministry of Finance, 2018). In Samoa, there are strong rural ties which make access to healthcare and communication difficult as the services are centralised in the main city of Apia. When an infectious disease breaks out, it is the Ministry of Health's job to increase the lay publics' understanding and awareness of the disease as well as provide accurate information to decrease confusion and uncertainty (Chon & Park, 2019). There is widespread agreement amongst scholars that communication during a crisis should be the priority, however, several governments tend to focus on the impact to their reputation rather than the fear and uncertainty of the people (Claes et al., 2021).

Reputation is defined as the "result of information processes impacted by cues from the organisation itself, from its peers, media and last but not least, from personal experience" (Carroll, 2013). When the organizational reputation is damaged, it is difficult to recover, when the government is not communicating appropriately, it has an impact on their reputation. Therefore, it is imperative that the crisis response from the government is communicated effectively. The public perception of a government's communication efforts has a profound impact on the crisis management outcome. In the case of Vietnam's measles epidemic in 2013, there was elevated hospital fees, vaccine fraud and an uncontained measles outbreak. The mismanagement of the measles epidemic led to deteriorating public trust in the government which led to the withdrawal of public support (Ly-Le, 2015).

Crisis communication scholars adopt a three-stage approach where crisis response is divided into the life cycle stages: pre-crisis, crisis event and post-crisis. During the pre-crisis stage, the Ministry of Health should focus communication on monitoring and prevention. However, if a crisis cannot be prevented, it enters an important stage whereby a crisis should be recognized and contained (Coombs & Holladay, 2011). The SARS crisis in Hong Kong is an example of a health crisis. There were 1766 residents who were affected, and the epidemic claimed 299 lives (Buus & Olsen, 2006). The Hong Kong government's response was considered one of the worst responses. During the pre-crisis stage, a neighbouring province in China declared a SARS outbreak, however, the secretary of health publicly stated there is no reason for concern (Cheng, 2004). When cases were detected in Hong Kong, measures for containment were not taken. Government officials remained largely silent during the outbreak, with very little effort taken to minimise media scrutiny, there also were conflicting messages amongst government agencies (Liu & Horsely, 2004). The Department of Health issued a statement in the beginning of the outbreak which stated the outbreak had not spread to the community. However, another health entity under the government stated there was a possibility of community transmission (Lee, 2009).

The inconsistency in the government response reflected a lack of control over the crisis and the breakdown of communication highlighted this.

In contrast, the Singapore response to the SARS epidemic was considered one of the most effective responses to a health crisis. The Singaporean government were able to learn from their neighbour's mistakes and plan for a possible epidemic by preparing emergency response plans. Government officials were aware of the media scrutiny surrounding the lack of transparency in Northeast Asia, and consciously made a coordinated effort to be forthcoming with crucial information at the beginning of the outbreak (Menon & Goh, 2005). A SARS dedicated TV channel was established for the sole purpose of disseminating information about the SARS epidemic to the public. The Prime Minister set up a task force of three ministers under the Minister of Health to manage public response (Chua, 2004).

Communication from the MoH should be formulated with the aim of calming the publics concerns and uncertainty. When the crisis is resolved, it is vital to evaluate and take lessons from the event (Reynolds & Seeger, 2005). A government crisis differs in scope and nature to a corporate crisis, as the government has a higher level of accountability towards its citizens: they are looked upon to provide expertise and guidance. Scholars state that the public perception of government communication has a major effect on the crisis management outcome (Ly-le, 2015). During a health crisis, the MoH is under pressure to communicate information to the public more frequently and effectively. When little information is given during times of heightened fear and uncertainty, the level of trust in the government decreases (Noval & Barrett, 2008). People are fearful and willing to follow what the government guidelines show out of fear for contracting an infectious disease, however the longer the crisis continues, the more impatient the public gets which then prompts them to turn on their government (Panarese & Azzarita, 2021).

2.3.3 Crisis Communication

Although touched on above, a deeper consideration of the influence on crisis communications on health emergencies is worthwhile here. Fearn-Banks (2002) defines crisis communication as the "sending and receiving of messages in order to prevent or lessen the negative outcomes of a crisis, and thereby protect the organization, stakeholders, and/or industry from damage". These processes are designed to reduce any harm, provide specific information to stakeholders, manage the image and perception of blame, repair legitimacy, generate support and use the opportunity to apologise and take accountability (Seeger & Reynolds, 2007). One of the

principal differences in risk versus crisis communication is that crisis communication is designed to strategically manage the image of the organisation and frame the perception of an event to reduce harm to an organisation and its stakeholders (Seeger & Reynolds, 2005). Whereas risk communication is associated with warning the public of health risks to persuade the public to adopt behaviours which will alleviate the risks (Freimuth et al., 2000).

William Benoit (1995) developed a crisis communication strategy called the image restoration theory. Benoit (1995) stated this theory consists of two components: an offensive act and an accusation of responsibility for the action. There are five strategies which exist within the image restoration theory which include: (1) Denial: this involves shifting blame or refuting responsibility; (2) Evasion of responsibility: organisations may evade responsibility by claiming they lack sufficient information, or despite the crisis they were acting with good intentions; (3) reducing the offensiveness of an event: this category involves three stages which include bolstering, differentiation, and transcendence. Bolstering is aimed at reducing the negative effects by strengthening the publics positive feelings towards the organization. Differentiation occurs when the communicator attempts (4) corrective action or acknowledges that they are (5) mortified. Image restoration is often framed as a genre of apologetic discourse. This is usually following accusations of wrongdoing such as those made during the aftermath of a crisis. This strategy is mostly associated with organisations who were perceived to have contributed or caused a crisis or those organisations that have failed to illicit an effective crisis response. This framework is based on the belief that image and reputation are valuable commodities for individuals and organizations.

According to Covello (2003) there are best practices that can be adopted when interacting with the public in a crisis or when trying to avert risks. The checklist for public health communicators includes:

1. Accept and involve relevant stakeholders as legitimate partners

2. Listen to people: ensure to find out what people think, know, or want done about risk.

3. Be truthful, honest, frank, and open: Disclose information as soon as possible, if in doubt lean toward more sharing more information or the public may think there is something significant being withheld.

4. Communicate clearly with compassion: Use clear, non-technical language appropriate for the target audience. Respect the unique communication needs of

special and diverse audiences. Research suggests individual’s responses to events that threaten their health and safety evoke a wide array of emotional cognitive responses (Gilk, 2007). Higher risk perceptions can simulate proactive behaviour, however when people are upset, angry, fearful, or in a feeling of high concern, they tend to have difficulty processing information which is important to consider when they receive risk communication (Gilk, 2007).

5. Plan thoroughly and carefully: Begin with clear and explicit objectives. Such as providing information, establishing trust, encouraging appropriate actions, stimulating emergency response.

Seeger (2007) argues that planning is an integral part of the process. This includes a variety of benefits which includes identifying risk areas and corresponding risk reduction, pre-setting initial crisis responses so that decision making during a crisis is more efficient. Mitroff (2004) warns that following a crisis, any positive image can be wiped out, therefore this notion reinforces how important planning and crisis policy is during a crisis. In advance of the crisis, an organisation must cultivate a positive image with core values whilst creating a mutually beneficial support network. However, it is challenging to plan for all eventualities when it comes to a crisis.

2.4 Conclusion

The purpose of this literature review was to consider the different approaches to healthcare, western and traditional methods that influence Samoan people. That included exploring the ways health information is communicated and what models are better suited to Samoan people. Additionally, this literature review examined the different health crisis responses, what strategies worked, and which ones were unsuccessful. The common component in successful health crisis responses was total transparency with the public from the beginning of the outbreak, emergency planning had taken place, as well as a dedicated team assigned to manage the outbreak and all crisis communication. The ineffective responses commonly displayed a lack of transparency and secretive or face-saving methods which caused public distrust. There has been extensive research into the importance of risk and crisis communication during a health crisis, with poor planning and crisis management leading to widespread panic in most cases. The aim of this research is to explore the insights of medical professionals who were active during the measles epidemic, and as such, will inevitably mean reflecting on the Samoan approaches to health and well-being discussed above.

Chapter 3

Methodology and Method

Introduction

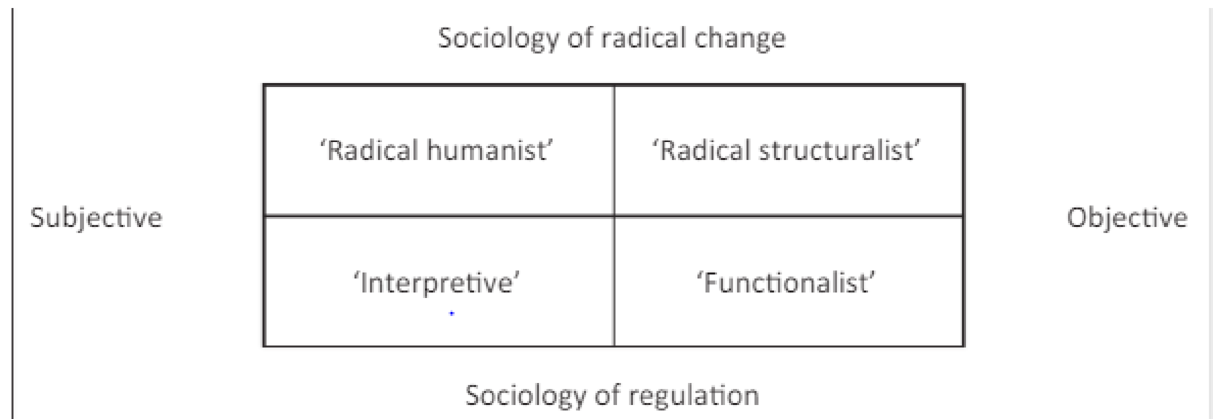
The purpose of this research was to answer the question: “how does the communication of health information and misinformation influence the health-related decision making of Samoans during the measles epidemic?” To address this research question, a qualitative approach was adopted. During early qualitative research, researchers often had a preconceived hypothesis based on prior research. Recently, a transition has occurred among qualitative researchers to a postmodern paradigm to emphasise constructivist-interpretivist perspectives (Charmaz, 2005). Semi- structured interviews were conducted with medical professionals to gain an understanding of the phenomenon under examination. Following primary data collection, thematic analysis was used to analyse participant interviews. Thematic analysis provides an accessible and rigorous approach to code and theme development. One of the main advantages of thematic analysis is its flexibility in terms of research question, sample size and data collection method. Thematic analysis is used to identify patterns within and across data in regard to participants' lived experiences (Clarke & Braun, 2017). The following chapter details these areas of methodological concern for the thesis.

3.1 Research Paradigm

First it is important to define the overall research approach; Burrell and Morgan (1979) propose that there are four approaches that researchers can adopt to explain social phenomena. The paradigms are based on two dimensions: Objective versus subjective ontology/epistemology and human nature, and the sociology of radical change versus the sociology of regulation. The functionalist paradigm in the Burrell and Morgan framework seeks to understand the societal order or status quo from a standpoint that tends to be realist or positivist, offering explanations for affairs within society that are deeply rooted in sociological positivism. Functionalism seeks to provide practical solutions to practical issues: there is an emphasis on the maintenance of order and stability within society (Burrell & Morgan, 1979). The functionalist paradigm is differentiated from the interpretivist paradigm as showcased in the table below. However, both axes relate to the status quo, which is directly in contrast with the

radical humanist subjective and radical structuralist objectivist paradigms which relate to sociology of radical change (Callaghan, 2017).

FIGURE 3.1 RESEARCH PARADIGM

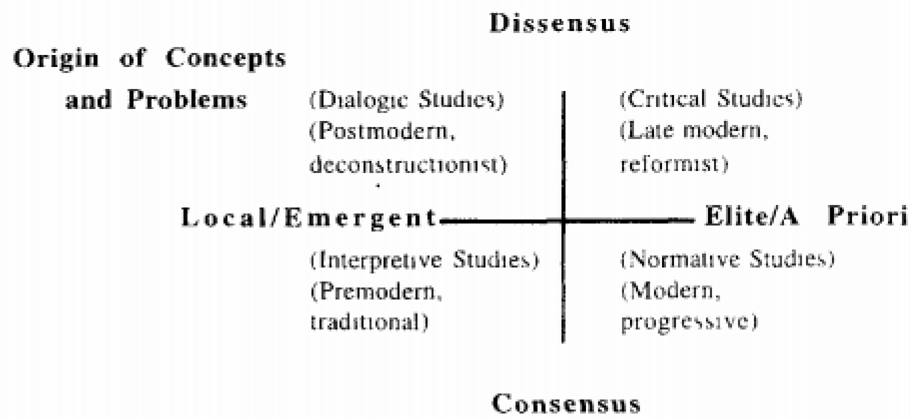


(Burrell & Morgan, 1979).

The critical interpretivist approach as opposed to radical structuralism, radical humanism, and functionalist perspective is the most fitting for my research intentions because it focuses on shared meanings or symbols that render the world meaningful based on the subjects' experiences. Cultures are not viewed as objective categories but rather they are interpretive frameworks which allows for different interpretations based on social status and opinions. As a researcher, I acknowledge that social reality is produced and responded to by individuals. This allows for a research approach which enables me to seek to explain the behaviour of Samoan people as they respond to information and how they react within society. Consequently, I understand that people socially and symbolically build and sustain their own organisational reality (Berger & Luckman, 1966). Furthermore, for interpretivist researchers, the "organization" is a social site or a special type of community that share's similar characteristics with other communities, with emphasis on the social view rather than the economic view within organisations (Deetz, 1996). The aim of my research is to understand the Samoan community and the individuals within it, and the reasonings behind their decision making, according to medical professionals.

In Stanley Deetz's (1996) critique of Burrell and Morgan's four paradigm grid, he argues that the that a researcher's position can be plotted along a grid, with the "local emergent or elite/A priori x axis and the consensus-dissensus y axis.

FIGURE 3.2 CONTRASTING DIMENSIONS FROM THE META THEORY OF REPRESENTATIONAL PRACTICES (DEETZ, 1996)



The local emergent dimension addresses where and how research questions arise. They are either developed with other organisational members and developed through the research process, or they are brought by the researcher and remain static throughout the entire process (Deetz, 1996). The elite priori axis brings attention to the tendency of some research programs to privilege the language system of the researcher and the expertise of the research community. This research tends to be heavily theory driven; particular attention has been given to definitions and cultural contexts that are likely to shape understandings of the subject matter. The local emergent pole is different in the sense that it draws attention to researchers who work with an open language system, and accordingly, the knowledge and research produced makes fewer bold claims. The research activities are guides to provide further insight rather than provide truths (Deetz, 1996). My research is guided by the premise of uncovering insights rather than truths; however, it is still using the privileged language of the researcher in which I would hold an elite/ priori position. The “consensus-dissensus” dimension is in relation to research conducted on existing social orders. It should not be looked at as an agreement/disagreement but rather a presentation of unity or of difference. The consensus axis shows how some research programs seek order and treat order production as the dominant feature of social systems. My research would be situated more in the dissensus paradigm as it aims to challenge social order and critique the current practices in place within the health communications industry.

3.2 Qualitative Method

All research methods are founded on philosophical beliefs regarding the acquisition and interpretation of data. Those beliefs drive the researchers' interview approach to participants (Marx & Burkard, 2009).

In addressing my research question, I adopted a qualitative approach. Qualitative methods can include interviews (group or one on one), participant observation, and

textual analysis (to name a few). Qualitative methods such as research interviews are used to provide an in-depth understanding of social phenomena from the perspective of participants. It allows for participants to share their individual experiences and offer their own interpretation (Gill et al., 2008). Researchers work collaboratively with participants to understand the phenomenon of interest, using interviews as a way to stimulate conversation with participants about the meaning of their experiences (Marx & Burkard, 2009). Qualitative methods are highly appropriate for my research as the purpose is to learn from my participants' experiences and how they interpret them. This method allows me to attempt to discover and interpret their perception of reality and the complexities that arise with it.

Qualitative research does not need to include a long-time immersion within culture, some qualitative studies can be covered in shorter periods of time (Hacket & Strickland, 2018). I adopted a qualitative approach to data analysis as opposed to quantitative analysis as it allows me as a researcher to understand insights and patterns within an unspecified set of concepts. Qualitative interviews are used by researchers as a method to co-create meaning with interviewees and recount their perception of events and experiences (DiCicco-Bloom & Crabtree, 2006). Whereas quantitative methods focus on understanding phenomena through a narrow lens with a specified group of variables such as collecting numerical data that are analysed using mathematical formulas (Duffy & Chenail, 2009). If quantitative were chosen instead, it would not allow for an in-depth analysis as it is typically involved in enumerative induction, the aim is to infer a relationship between set variables (McCracken, 1988). This method has been chosen as it allows the researcher to use themselves as the instrument to seek insights into the respondent’s social world, where the investigator is expected to be flexible and reflective (McCracken, 1988).

A qualitative method is suitable to attempt to understand the influence of information during the measles epidemic that has affected Samoa, as the objective of qualitative methodology is to understand and produce in depth information in order to better understand the dimensions of the problem under analysis (Queiros, Faria & Almeida, 2017). Qualitative is more applicable as it deals with aspects of reality that cannot be measured, it is more focused on the nature or dynamic of social relations. There are also disadvantages to the qualitative method. Silverman (2010) argues that qualitative research focuses more on meanings and experiences and leaves out the contextual sensitivities.

For my research, I adopted an interpretivist perspective which means there is no single unitary reality apart from our perceptions, because every individual is unique in their own reality, individuals cannot be aggregated to explain such phenomena. This also

applies to me as a researcher, the effect of the researcher's views, and my bias also affects the research. Researcher bias is commonly understood to be any influence that distorts the results of the study (Galdas, 2017). One of the most challenging aspects in qualitative research is accounting for the researcher's personal lens, however, it is important to note that a participants view as well as the researchers view is present in all social research, whether intentionally or unintentionally (Fields & Kafai, 2009). To mitigate bias as the researcher, I have adopted bracketing, which is putting aside previously held knowledge. This allows for personal beliefs and values to be bracketed so that it does not influence the research study (Richards & Morse, 2013). This is accomplished through bringing researcher bias to the forefront and making them known throughout the research. This strategy can be executed by writing personal notes where the researcher can document personal beliefs about the study, possible findings and what role personal experience may play (Wadams & Park, 2018). This is a way to foresee any potential bias and mitigate it.

3.3 Interviews

Interviews are the most common format of data collection in qualitative research. The interview is a type of framework in which practices are not only recorded but also achieved, challenged, and reinforced (Oakley, 1998). Most of the qualitative research interviews are either semi structured, lightly structured, or in-depth interviews. The qualitative research method that will be used to gather information for my research is the semi structured interview. This is described by Hitchcock and Hughs (1989) as allowing depth to be achieved by providing the interviewer the ability to probe and expand on the participants' answers. These kinds of interviews will start with a generic question and leave the respondent to answer freely and add any extra information that can lead to follow up questions from the researcher. Respondents will answer pre-set open-ended questions; these types are utilised extensively as an interview with a person or group of people. These interviews generally only happen once and cover the duration of 30 minutes to an hour (Jamshed, 2014).

One of the advantages of a semi- structured interview is that the interviewer is in charge of the process, but there is still freedom to pursue leads as they arise (Partington, 2001). The aim is to go beyond the surface of the topic being discussed, to explore more concepts that may not have been anticipated at the outset of the research (Britten, 1995). This type of interview allows me as a researcher to probe for further information and ask respondents to justify previous answers to establish a connection between multiple topics. It is necessary for interviewers to rapidly develop a positive relationship with participants and develop rapport and trust (DiCicco & Crabtee, 2006). By establishing a safe and comfortable environment, participants can

share their experiences as they actually occurred. It is through the connection of many 'truths' that the interview process reveals our knowledge of the meaning of human experience (DiCicco & Crabtree, 2006). These semi- structured interviews are advantageous in the sense that it allows for participants to provide insightful information and you need fewer participants to provide relevant insight (Queiros, Faria & Almeida, 2017). Eventually the process of data collection gets to a point where no new categories or themes emerge, this is referred to as saturation. Signalling that data collection is complete. These interviews are widely used by health researchers to co-create meaning with interviewees by reconstructing perceptions of events and experiences related to healthcare (DiCicco-Bloom & Crabtree, 2006). While there was scope to abide by the talanoa method, as a researcher I managed to create the conditions of reciprocity and trust between myself and the participants. The fundamental principle of talanoa is building a trusting relationship (Cammock et al., 2021). Despite not framing the method as talanoa, the semi-structured interviews mimicked the talanoa as the end goal was the same.

However, there are limitations as well. With these more in-depth interviews, it can be very time consuming. There is no limit to the answers that could be given in the interview, and it can be a much longer verification process to extract compared information. Participants should also be chosen very carefully to avoid bias. For my research, participants who are related to me were excluded to avoid bias, as well as any participants who were not present at the time of the measles epidemic.

Below is a list of open-ended questions used in the interview process that provide a basic framework for examining the phenomena and accompanying attitudes (Patington, 2001).

Interview Questions

1. What is your experience in the health industry?
2. How has the health sector in Samoa evolved over the years?
3. What is your personal experience with vaccinations?
4. How has social media played a role in influencing the Samoan people during the measles epidemic?
5. Were there any vaccination campaign communication materials, and how effective do you think they were?
6. What role do you think culture has played in the measles epidemic?
7. What factors contributed to the sub-optimal MMR vaccine rates?

3.3.1 Sampling

Snowball sampling is a sampling procedure where the researcher accesses informants through contact information provided by other informants. In this process, informants refer the researcher to other informants and the process repeats itself (Noy,2008). Hence the ever evolving "snowball effect" which is a central part of this sampling process. This method is efficient and cost effective and gives access to people that would otherwise be difficult to find (Noy, 2008). As a form of convenience sampling, it is often combined with purposive sampling, whereby participants are chosen based on their characteristics or because they belong to a certain group. It is criticized for its selection bias, generalizability and lack of representativeness (Noy, 2008). The parameters for the selection of participants in the ethics application excluded any individual who is related to me as the researcher and anyone who is not a medical professional and/or was not present during the measles epidemic. Despite this criticism, snowball sampling allows researchers to access groups that the researcher would not usually have access to. It has cultural competence and trust that it garners among potential participants (Sadler et al., 2010). This can also help to increase the likelihood that a participant will agree to participate. Trust is an important value when involved with human participants, as it is often considered to be the key to the success of the research, particularly in sensitive research topics such as the measles epidemic (Guillemin et al., 2018). According to Jones (2012) genuine trust occurs when the trustee has been invited to trust in some way or has made a promise to trust. This concept highlights the effectiveness of snowball sampling as participants are invited by a trusted source.

3.4 Thematic Analysis

The method used to analyse the data collected is thematic analysis. This is a term used to describe the qualitative method for identifying, analysing and reporting patterns within a data corpus (Braun & Clarke, 2006). It is a term which has been used interchangeably with content analysis to name everything that allows for the quantification of qualitative data and more interpretive forms of analysis based on identification of recurrent themes or patterns in data. Braun and Clarke (2006) argue that a theme captures the salient aspect of the data in a patterned way, regardless of whether that theme captures the majority experience.

Braun and Clarkes (2006) thematic analysis is an iterative process that consists of six steps:

1. Becoming familiar with data: this may include transcription or re-reading of data

2. Generating code categories: this requires marking interesting features of the data in a systematic way and then collating the data.
3. Generating themes: this requires the researcher to collate initial codes into potential themes. Gathering all the relevant data to the theme. A theme captures something important about the data in relation to the research question.
4. Reviewing themes: this allows the researcher to check whether the themes work in relation to the entire data set.
5. Defining and naming themes: this includes determining what is the core concept of each theme. Simply put, themes are patterns in the code, they take the various pieces of related code to portray the bigger picture.
6. Locating exemplars: this allows the researcher to select compelling examples that provide evidence of the theme in relation to the research question.

Qualitative research is largely inductive, allowing meaning to emerge from the data; however, the research process requires the researcher to make analytical conclusions from the data presented as codes (Castleberry & Nolan, 2018). Thematic analysis allows the researcher a high level of flexibility and can be modified for the needs of many studies, providing a rich and detailed account of data (Braun & Clarke, 2006). It is a useful tool to understand the varying perspectives of research participants, highlighting similarities and differences. It allows me as the researcher to gain familiarity with the content and contributes to an understanding of lived experiences. Themes capture the essence of the phenomena under examination in relation to the research question. This is usually abstract and difficult to identify through raw data in the beginning. In thematic analysis, the importance of the theme is not related to the volume of data within the theme but rather the relevance of the theme in answering the research question (Castleberry & Nolen, 2018).

FIGURE 3.3 THEMATIC MAP OF THEMES, CODES AND THEIR RELATIONSHIPS

(Daley, 2004).

Figure 3.3 is a visual representation of thematic analysis which allows the researcher to place themes in a larger context within the phenomenon (Daley, 2004).

There are also disadvantages to thematic analysis, there is a lack of substantial literature surrounding thematic analysis, in comparison to ethnography, grounded theory and phenomenology, which may cause new researchers to be uncertain in how to conduct a rigorous thematic analysis (Holloway & Todres, 2003). While It is flexible, it also allows for inconsistencies and lack of coherence when developing themes (Holloway & Todres, 2003). This has been combated by promoting and applying an explicit epistemological position that clearly underpins the studies empirical claims (Holloway & Todre, 2003)

3.5 Method

The intention with this research was developed through my interest in the events which led to the culmination of the 2019 measles epidemic in Samoa. The infant deaths in 2018 which occurred after they received the MMR Vaccine was not handled appropriately. The results of the investigation were not released until months later. The suspension of the immunisation program resulted in fear and vaccine hesitancy in the Samoan community. Coupled with the increased usage of traditional healers and anti-vaccine sentiments, I developed a keen interest in how this all played a role in the health-related decision making of the Samoan people. Through my observations, it was apparent the crisis response was not adequate and was clearly exacerbated by misinformation on social media platforms. In the initial stages, I submitted my research proposal with the research topic: The role of social media in the dissemination of information during the Samoa measles crisis. This was due to observing a large volume of misinformation on social media regarding vaccine safety. I had initially set up a meeting with a medical professional to recruit participants for this research project. From this meeting it was determined that I would possibly have four participants who would be interested in participating in this research project. Given that I would be using participants as part of this project, the next stages involved applying for ethics approval. The ethics application was submitted in February 2021. There were amendments sent back to me from the ethics committee regarding researcher safety protocol amendments, as well as assurance that participants would not share other people's contact details with myself as the researcher. There was also a clause to reconsider the negative effects that the measles epidemic had on participants who were medical professionals. Once these amendments were completed, the ethics application was approved in May 2021. The ethics application covered a range of topics including how the data would be collected. It was determined that as I already had a contact who was willing to gather three additional participants for the research, that snowball sampling would be the most appropriate form of data collection.

My first participant informed me that I would need approval from the Samoa Ministry of Health to conduct my research. I applied for ethics approval with the MoH which involved a similar process. The application covered the scope of the research, data collection and possible participant questions, the names of the participants were kept anonymous. I applied for ethics with the Ministry of Health in Samoa and received approval in June 2021. Once all four participants agreed to take part in the research,

each participant signed a letter of consent. I set up meetings with each of them in Samoa. I curated a list of questions based on their experience as a medical professional who was present during the measles epidemic in Samoa. Each meeting was recorded with my phone and backed up on my computer. I transcribed every interview with the participants, their names were kept anonymous in the transcription as well. Upon analysing the transcriptions from participants, patterns and themes were identified. From there I was able to assign codes and conduct a thematic analysis for each transcript. I developed a summary of the findings and shared it with participants. From there, I was able to write the data chapter of the thesis and put all the findings together.

Chapter 4

Findings

Introduction

In this chapter, I recount the findings that emerged from the semi-structured interviews and the accompanying thematic analysis. I identified three themes: institutional influence, societal influence and palagi influence. Where necessary, I have referred to scholarship to support the interpretation of these themes.

4.1 Institutional Influence

The theme of Institutional influence encapsulates the thoughts of my participants on the response from the health bodies to the measles epidemic within Samoa and the perceived impact those bodies had on the Samoan community. Institutional influence was identified as a theme because there were multiple statements from participants regarding the communication from the Ministry of Health (MoH) during the measles outbreak, most notably the lack of transparency and information dissemination regarding the two infant deaths during the early stages of the outbreak.

Discussing the lack of communication from the MoH, participant A stated:

> *So, after that MOH clammed up, they hunkered down on the investigation to figure out what is going on, so they suspended the MMR vaccination campaign for a while, for many months. But they did not tell the public anything, they did not say this happened, we are aware and investigating it*.

The lack of communication also extended to branches within the MoH. According to participant B, the internal communication was lacking:

> *They weren't transparent at all. If anything, even as doctors we had no idea who was doing the investigation, that information should have been made known at least within the ministry. I felt like it wasn't. It wasn't disclosed.*

It is evident that the communication strategies employed by the Ministry of Health were egocentric and secretive. To be egocentric in this regard is to not engage in dialogue with the key publics likely impacted by the measles outbreak, while to be secretive is to withhold information to manage conflicts. Either approach does not bode well for an organisation's reputation which is problematic when a reputation is what people assess when trying to discern whether the organisation will deliver valuable outcomes for key

publics (Fombrun & Van Riel 1997). Although the actions of the Ministry could have been to manage the crisis by not fuelling the discussion, clearly it had the reverse impact according to these participants, leading instead to confusion and frustration.

4.1.1 Lack of communication and transparency

According to the participants, part of the problem, then, was a lack of communication among the decision makers and efforts to filter and censor information about the measles cases and the subsequent outbreak. As Participant B suggests:

> *We do have a media team that does media releases and writes a paragraph for the DG to say. It has most of the information but if the DG is not happy with the facts, he will take it out. I think it's not appropriate and the public deserve to know. Its selective in what is put out there which is the sad thing about it. I have noticed the public health side is very particular with what they disclose to the public.*

It is evident that the Ministry of health were withholding information in an attempt to project an image of calm. Yet when the identity and image of an identity do not align (Hatch & Schultz, 2004), in this case messages or lack thereof playing down the crisis when clearly the organisation and its members were concerned, that disjoin can create anxiety and anger among those who can see that the situation and messaging are not what they seem. It can lead to more negativity and exacerbate rather than mitigate the effects of the measles outbreak. Admittedly, beyond the immediate public health concern and strategic health objectives, there is a long-term rationale, which is an integral part of the management of the outbreak but also speaks to the capacity of the health bodies to fulfil their responsibilities: preserving and building trust within the community (O'Malley, Rainford & Thompson, 2009).

One of the key roles of public health is to prevent the spread of diseases and respond to outbreaks, and assist communities in recovery (Wise, 2001). Part of that role is public relations and being able to inform and educate the public about health issues (Wise,2001). The Ministry of Health were not forthcoming with the information surrounding the two infant deaths in Safotu after they received the MMR vaccine, which led to the suspension of the MMR vaccination program. Research suggests that information about a health crisis is usually retrieved from social contacts communicating across social media rather than corporate websites (Veil, et al., 2011). More people are searching for information on the internet and through social media, which can influence the medical decisions they make (Kata, 2010). If an effort is not made to provide some information through official channels, then online speculation can amp up developing a paracrisis. A paracrisis is defined as "a publicly visible crisis

threat that charges an organization with irresponsible and unethical behavior" (Coombs & Holladay, 2012, p.409). A paracrisis is primarily a reputational threat. To avoid such a situation, the MoH needed to evaluate the urgency of the situation, characteristics of the publics involved, potential threats to the organisation and the likely costs (Valentini & Kruckberg, 2016). The suggestion from the participants is the MoH did not do this, people turned to alternative sources of information and consequently the MoH's reputation was impacted. They appeared to act in irresponsible or unethical ways which could have impacted on the information learnt about the organisation through direct (from the organisation) and indirect forms (from other sources) of communication with an organization (Combs & Holladay, 2012).

The lack of transparency combined with information from social contacts and indirect sources of communication can create a wave of numerous data points that result in unclear and inaccurate information. During a crisis, research has found that an open and empathetic style of communication will garner the public's trust. This is an effective way to mobilise the population to take positive action or refrain from a harmful act (Reynolds and Quinn, 2008). Research has shown that people do not trust governments as much as before, there is increasing scepticism from the public. In this case, poor communication from the Ministry of Health and their lack of transparency; may have adversely impacted on levels of trust, especially because healthcare is an 'industry' where people need to be, or at least feel, as if they are being informed.

The frustration of the public that accompanied the lack of communication had ripple effects, with the participants reporting that they were on the receiving end of backlash from groups of people frightened, concerned and in need of support during the measles crisis. As Participant B puts it: *"It was frustrating because we were getting a lot of negative feedback as frontline workers, people were like it's your fault and you did it wrong."* Essentially, blame was being levelled at those in point of contact roles rather than the Ministry of Health. Research conducted during the SARS epidemic in 2003, found that is inevitable that frontline workers will receive backlash because they are the first point of contact: they experience a high level of distress and stigmatisation and feeling scrutinised by the public (Maunder, 2004). Such a reaction can make it difficult for frontline workers to do their jobs because when trust is lost and people blame them for the predicaments they are facing, they are less inclined to follow the medical professional's advice which can exacerbate the epidemic further.

Furthermore, with little to no information being released to the public, opportunities arose for 'others' to offer alternative explanations, adding further confusion to the situation. Participant A explains the difficulty patients experience when they are presented with decisions that are ruled with emotion:

When you're in an emergency situation, your options for communication and your strategy go out the window. Because people don't respond when they are afraid. They are not hearing and the only priority they have is the baby in front of them.

Participant A laments:

When there's silence from health agencies, other people fill that void for a reason and for a profit. That's where these anti-vaxxers came in. So, one of the major lessons learnt from measles is that we have to speak first within hours of an event happening to kill gossip. Because that is the only way to kill gossip in an island community, where you speak first.

Although social media has been a vital tool used to spread awareness and knowledge surrounding public health, it has been misused through the spreading of false and misleading information, making the situation even more fraught for frontline workers (Kadam & Atre, 2020).

Participant A explains how the dissemination of misinformation coupled with the lack of communication and transparency from MoH has led to growing distrust within the government stating:

Then you're in a position where you have to argue against that narrative because it's already been established. So MoH clamped down on their communication. There is also the historical distrust of the health system too, so people were already like never mind hospital.

Participant B confirms the growing distrust in the healthcare system due to the lack of transparency*:*

These are the things they should've disclosed properly with all these cases. That's why a lot of outside people are criticizing, saying why haven't they been honest about everything? Is it a government conspiracy?

With the infant deaths in Safotu and the suspension of the MMR program without explanation, the Samoan community had growing distrust about the Ministry of Health. Given the highly publicised nature of these two incidents, and the absence of an explanation that it happened due to human error rather than the vaccine itself, the MMR vaccine was seen as the bigger threat rather than contracting measles. This is supported by research that found when a new risk is highly publicised, people often seem to believe the new risk is more significant than others. Here the threat was not measles but the vaccine. People will assess how the event will affect them personally and their beliefs of how severe the harm to them might be. Accordingly, this

preventable crisis (Romenti, et al., 2013) led to threats to public safety and generated negative outcomes for everyone (Coombs, 2015). Scholarship suggests that an organisation experiencing a crisis should engage in image repair strategies including corrective action such as taking responsibility and apologising (Benoit, 1995; Coombs, 1997). The lack of either approach may account for why the general public resented frontline workers and refused necessary preventative treatments.

Studies show people are less accepting of risk when it is imposed upon them by external parties (CDC, 2018). Many external and internal factors influence people's ability to assess risk and the ability of individuals to receive public health messages (Reynolds and Seeger, 2005). If the most scientifically accurate information is to be used there needs to be collaboration between communicators and health officials. The thoughts of the participants suggest that the public lost trust in the medical profession at a time when medicine should have been seen as the solution to the epidemic. Studies show that the way that experts convey the risks and benefits of vaccines is very important as trust is seen as a method to achieve higher rates of vaccination (Nihlén Fahlquist, 2017).

In addition, it is not sufficient to simply communicate scientific evidence and fact when conveying the risks and benefits of vaccines. People tend to rely more on emotion when making decisions based on risk which is contrasted in the way which experts conceptualise risk, weighing outcomes and benefits and probabilities. The crisis response during an epidemic should present information in a way which puts morals and emotions at the top of people's considerations (Nihlén Fahlquist, 2017). In times of crisis, there is no room for false and inaccurate information to influence the public. This only leads to growing scepticism and resistance within the community. It was the responsibility of MoH to respond to these inaccurate claims with the facts and be transparent in their communication. It is vital that MoH does this in order to stay ahead of the narrative as research shows that people will search for any source of information to reduce uncertainty in times of crisis (Gesser-Edelsburg, Diamant, Hijazi & Mesch, 2018).

4.1.2 Privileging image and identity

The approach of the MoH appeared to revert to what researchers consider to be one-way asymmetric communication. One-way communication emphasises the use of press releases and other one-way communication techniques such as websites to distribute organizational information (Grunig & Hunt, 1984). Here, an institution relays the information to the public, without any feedback or input from stakeholders. However recent research in social science suggests that a two-way dialogue with stakeholders

that become involved in discussions will produce more favourable responses and heighten relationship development that offset unease and a lack of trust. In this case, adopting a dialogic communication approach would have made the public more likely to understand the implication of human error and the openness could have increased the level of trust within the government and healthcare officials (Wise,2001). Currently, MoH's main method of communication is in the form of press releases and press conferences via Facebook live and television. There is no affordance for dialogue between the public and the government to gather feedback and incorporate this into their communication tactics. The MoH needs to adopt a two-way symmetrical model of communication, which involves resolving conflict and promoting the mutual benefits of vaccination and promotes understanding and respect between key stakeholders (Gurnig & Hunt, 1984).

Interestingly, prior to the measles outbreak the MoH had used a more dialogic approach to communication. Participants stated how the ministry of health previously enlisted the help of the Women's Committee who played a major role in community health work. Participant A stated that:

> *Health development projects took a different turn more toward infrastructure in a different direction, so those communal relationships and investment in those community grassroots driven health systems were under resourced and under prioritized". The risk communication methods previously utilized which suited the Samoan culture in terms of getting to know each person in the village and informing them of certain health risks in a way which was interactive*.

Participant C stated: "*They also changed the model for the women's committee, so I am not privy to the exact changes. All I know is the link that we had is not as strong".* The Samoan people trusted the community health workers whereas during the measles epidemic, there was no pre-emptive risk communication or interaction with the public regarding vaccine safety. There communication veered away ideal risk communication where it should in fact be an interactive, holistic and a continuous engaging activity (Wise, 2001). The fact that the MoH chose instead to avoid such an approach implies that they were not abiding by the needs of the culture and were not controlling the messages during the outbreak that would permit prevention and preparedness.

Organisational identity is defined as "how we see ourselves, it relates to how employees and other intra-organizational stakeholders perceive their own organization" (Chun 2005, p. 96). Health workers were frustrated with the organisation in terms of the internal communication breakdown and having to bear the brunt of criticism as frontline

workers. Clearly, the were showing evidence of disidentifying with their governing organisation, which is problematic for their own self-concepts and what they stand for, but also their respect for the organisation. Disidentification, or the need to separate from organisations that no longer have congruent values with people can have long-term negative impacts including public condemnation, a lack of support and in some cases, exodus from these organisations. At a time of crisis, such eventualities can prove to be a serious concern.

Partnered with the high volume of misinformation online, the distrust in the Ministry of Health continued to grow, furthering damaging the organisational image of the MoH. Organisational image refers to how others perceive the organisation or the summary of perceptions of an organisation which are held by external stakeholders (Chun 2005, p. 95). The management in the Ministry of Health let political reasons factor into the crisis management of the measles outbreak. In an attempt to minimise public scrutiny health officials did not disclose all the information to the Samoan public. There is research that supports why they may have chosen not to communicate, which suggests that reputation actively shapes organisations strategies and behaviours (Bankins & Waterhouse, 2018). To save face, they chose the option not to communicate which appears, according to the account of these participants, to have done a disservice to the MoH's identity and image.

The Ministry of Health is split into two sections: the medical and the clinical sections. The outcome of the investigation into the infant deaths in Safotu was not made known to the clinical team within the hospital, therefore they were not prepared for the questions from the public and the scrutiny that followed. Participant B stated*:*

> *Even with the clinical side, we did not know about It until it hit the news. So that was the really sad thing with the health system. Even internal communication is really poor, it's terrible. I don't blame them and it's a lot of political reasons why they don't disclose a lot of truthful information to the public.*

Participant A seems to share a similar perspective*:*

> *I think health could've done much better. We could've done more, especially before the outbreak and leading up to it. We could've done more communication, especially around those previous infant deaths at the Safotu hospital…. We will let you know when we get to the bottom of it and well keep updating you every couple of days. That's what they should've done.*

There was a breakdown in communication internally within the organisation and externally to the public and other organisations.

Although the MoH was warned by external sources about the potential spread of the measles due to rise of cases in New Zealand they did not appear to change their procedures and had dangerously low vaccination rates: they did not take preventative action in the early stages. As Participant C explains:

> *When it happened, it was so weird because we had heard in the beginning of the year there were cases of measles in Auckland. So, if that had happened ten years ago when our numbers were up it wouldn't be a concern. But knowing at the time that less than 40% of people were vaccinated.*

Previously the vaccination rates used to be in the high 80s-90%, this was partly credited to the help of the village women's committee. They acted as community health workers who would go out into the village and pre-screen people and refer them to the hospital if needed as well as carry out vaccinations. This method-built community trust and was shown to achieve higher rates as research shows that people respond to information when it is given in an interactive way instead of laying information to the public, there is more dialogue.

One participant stated that they had patients who were on the fence about vaccinating their children, with information online showing the side effects of vaccination making them sceptical about the safety of the MMR vaccine. Once the participant had a conversation with the patient and stated the facts and how the risk of getting measles and becoming very sick was greater than the risk of side effects from the MMR vaccine, that patient changed their stance. In the majority of interactions, patients ended up getting their children vaccinated because they had a two-way conversation with doctors which helped them to understand the benefits of vaccination. It is evident that interpersonal communication and culture play a large part in risk assessment for the Samoan public. Graves and Graves (1985) outlined a framework whereby they compared the interpersonal behaviour of palagi and that of Samoans, Māori and other Pacific Islanders. They described Samoan social behaviour as a sense of belonging, collectivist culture which promotes solidarity within the community. It is apparent that the shared need for a greater good of the community has played a role in the success of interpersonal communication between doctors and patients.

4.1.3 Health literacy & leading the way

Despite some success in communicating directly to patients, the overall issue is there is limited health education in Samoa. This plays a large role in the dissemination of misinformation. Samoan people are not well-equipped to combat the wave of numerous data points that are available through social media making health

information that comes from credible voices all the more important. As Participant C explains, the importance of health education and the negative impact of silence:

> *Our health literacy gap is quite big at the moment. So, making sure the right information is out there. And I just had a chat with the young public health doctors, and I said guys we need to create the right dialogue and MOH has to be out there. Because it turns into a beast if you ignore it.*

Similarly Participant B also believes that there needs to be more information relayed about health to educate communities*:*

> *There is definitely a gap. We found that with those that finish their education around year 11 and 12, the young parents. We found those were the people really in herbal medicine and traditional stuff. Listening to their parents.*

As is suggested above, there was limited content produced and distributed by the lading health organization during the measles outbreak. Research shows that a more interactive approach will allow people to feel empowered to decide and weigh the risks and benefits of vaccination but that means communication is key, especially when there are concerns that people are not literate when it comes to their health and well-being (Roeser, 2006).

It is important to note the role that leadership (or the lack of) within the Ministry of Health has played in the measles crisis and the dissemination of misinformation. Participant B explains:

> *When the risk communication team does a bulletin for the public, they generally write all the facts but if the Director General does not approve of these facts being disclosed to the public, it won't go on the press release. It doesn't give the accurate representation of what is happening.*

The quality and quantity of communication coming from a leader during a health crisis is paramount. Uncertainty produces anxiety throughout the workforce and the public. The Director General's silence on issues has created space for the public to make assumptions which are negative. It is important to communicate reality and reinforce a clear perspective on what is happening. The communication needs to be clear and consistent (Kaul, Shah & El-Serag, 2020). Successful leaders are able to cut through the wave of numerous data points and misinformation and focus on the areas that need attention and resources. It is also important to be flexible and adapting to more promising ideas (Kaul, Shah & El-Serag, 2020).

4.1.4 Conclusion of this theme

One of the common methods that health organizations use is to call information on social media "myths" or fake news versus the facts that health bodies promote to the public. This is a form of correction of misinformation that governments tend to use. However, research shows that calling them myths still makes people remember the information even if it is not correct. Another reason is people tend to reject a biased version from the organization (Gesser-Edelsburg, Diamant, Hijazi & Mesch, 2018). Due to the distrust in MOH it becomes more difficult to educate people on the benefits of vaccination due to the lack of transparency in the early stages of the outbreak and throughout. Risk communication needs considerable attention during public health emergencies. It is apparent that the Ministry of Health is taking steps toward improving their communication through interpersonal methods of communication by reviving their grassroots program in villages, however there is still improvement to be made in transparency of information given to the public to increase the levels of trust within the Ministry of Health. It was evident the leadership in MOH were very concerned with saving face instead of communicating accurate and concise information to the public. There was a large emphasis on protecting the image they project to the public, in an attempt to be seen as calm and collected during a crisis. This is also due to the nature of the Samoan culture, whereby the influence of your reputation is seen as a direct reflection of not only yourself as an individual, but your family and your village as well. However, in a public service role where you need to communicate the stark realities of the crisis and provide the community with trust and hope that you will overcome these challenges, it is vital that you are clear and consistent, without leaving room for interpretation.

4.2 Societal Influence

This theme explores the consultation of alternative forms of medicine such as traditional/herbal medicine and anti-vaccination within Samoan society as a result of misinterpreted information, culture, and the flow on effects of institutional influence. This theme delves into concepts such as health literacy and vaccine hesitancy, which interview participants believe have influenced the health-related decision making of the Samoan people during the measles outbreak.

When discussing the overlap of institutional influence and the issues within society, participant A stated:

> *So, it's really a mix of things: between the distrust of healthcare services, the cultural attitude to just toughen up/just deal with it, you'll be fine, don't be a baby. Also, the consulting of traditional medicine first. Those things create a measurable delay when you go to the healthcare service.*

Therefore, although interrelated, I have sought to show how societal influences capture the role of traditional medicine and anti-vaccinations in shaping the perceptions of Samoan people.

4.2.1 Traditional Medicine

Participant A went on to describe how traditional medicine is ingrained in the Samoan culture:

> *Well Samoa is unique in that you have a culture and tradition of traditional medicine. That has been an establishment for hundreds of thousands of years. It's part of the culture and how Samoans perceive health and wellness. How they perceive themselves, not just health-wise but there is a spiritual component to traditional medicine.*

Participant B concurred with participant A's assessment:

> *Those were the parents whose kids usually come in after seeing a traditional healer. And this was a week after the kid has been sick, so they come in nearly dying, and you're like what the hell? They come at the end when they are really sick when they've realized the herbal medicine isn't working. Then they decide to come to the hospital.*

Participant D added that there were some traditional healers or fofo samoa (samoan massage) who would send patients straight to the hospital, however there were many who delayed referring patients:

> *They did play a role, and many would send kids to hospital. There were a few babies who went to the fofo and the fofo said to bring them to the hospital. There were also a lot of really sick babies who were at fofo for two or three days. We could've made a difference 2-3 days ago, but they are arriving in shock now.*

Traditional medicine is a form of primary healthcare that many nations still utilize such as the Western Pacific and Asian nations. It is a means of health advice that has been culturally embedded among the people (Park & Canaway, 2019). For Samoans, health and wellbeing is closely linked to cultural identity. In the Pacific, health is seen as a societal resource that gives meaning to an individual's place within a community context. Therefore, culture has the potential to significantly affect perceptions of health and health related decisions of the Samoan people (Capstick et al., 2009). The Pacific notion of health incorporates the linkage of the wellbeing of community and society and those within it. Health Is perceived by Samoans as more than physical but also to include the social and spiritual (Butt, 2002). Therefore, many Samoans still seek out

traditional healers as a form of treatment for their ailments as they believe that their illness and physical symptoms of the body are not signs of physiological disease but a spiritual one.

The treatment of patients using traditional medicine has seemingly exacerbated the symptoms of measles causing patients to deteriorate at a faster rate. Medical professionals tend to view alternative approaches and traditional medicine as ineffective as it is not backed up by science. Physicians have a bias against traditional medicine as they view it as a hindrance for their patients to get better. Their views are reinforced during the measles crisis, as patients who sought alternative treatment would come back in worse condition.

4.2.2 Health Literacy Gap

One of the contributing factors resulting in the consultation of traditional medicine is the health literacy gap that is present within the Samoan community. Health literacy entails the motivation, knowledge, and competence to understand, appraise and apply health information to make judgements concerning healthcare, disease prevention and health promotion in everyday life (Sorenson et al., 2012). Studies suggest that more individualised approaches targeting vaccine hesitant parents to discuss their concerns on an individual level would be successful in this scenario (Robinson, Wiley & Degeling, 2021). Low health literacy is linked to poor health outcomes. Regarding general literacy rates, although enrolment in primary education is high, in the Samoa Pacific Islands literacy and numeracy assessment results are concerningly low (World Bank Group, 2014). Samoans tend to judge a situation based on the beliefs of the community as a collective rather than taking accountability for individual health (Sorenson et al.,2012) perhaps accounting for why they differed to traditional healers rather than subverting the trend and pursuing Western approaches. The suggestion then, is that low health literacy has exacerbated the effects of the dissemination of misinformation online.

Participant C identified the existence of a large health literacy gap and stressed the importance of educating the public, stating:

> *Our health literacy gap is quite big at the moment. So, making sure the right information is out there. And I just had a chat with the young public health doctors, and I said guys we need to create the right dialogue and MOH has to be out there. Because it turns into a beast if you ignore it, like when did you grow up? And if you do put the message out every day, even if its repetition, you will get there.*

Participant D highlighted the importance of a preventative approach:

> "*We were slow in containing the fear and getting the communication out. We did have warnings, there were academics saying we have to start immunising because we have a whole cohort of unimmunised babies in addition to the unimmunised children."*

These statements from participants highlight that there was knowledge of a literacy gap but a lack of effort was put into the health risk communication from the Ministry of Health. Risk communication focuses on the projection of some harm that may be experienced in the future. This approach is highly effective in public health events, because of the necessity for integration of proactive and adaptive strategy to stem the further adverse impact of the crisis (Wang et al., 2021). As the Ministry of Health was aware of the potential risk of a measles outbreak given the low vaccination numbers and the close proximity of cases in its neighbouring country of New Zealand, the MoH should have started communicating with the public about the risk and the steps of action that should be taken to minimize that risk. Only by offering this information in an easily understood, transparent way, could some of the problems with literacy have been overcome. However, it further shows a reactionary approach from the Ministry of Health rather than a proactive one.

Participant A shared the reluctance of Samoans to go to the hospital:

> *Before going to a hospital, everyone consults it to some degree. And some more than others. People out in the rural areas tend to go to a traditional healer first. Then when whatever illness they have or their child has becomes more complicated or they are getting worse, then they come to the hospital. Obviously, there are consequences from that, it is harder to treat an infection that has progressed. It is harder to manage complications, you want people to come in first, so the disease is manageable upfront. So, people in Samoa tend to rely on traditional medicine to some degree. Even if they don't, Samoans generally just don't want to come to the hospital.*

This is a common theme among the Samoan community where people do not seek out healthcare unless they are extremely ill, and their symptoms are no longer bearable. The low level of health literacy contributes to this because they are too scared to come into the hospital.

Participant B added:

> *Yes, and a part of it does have to do with the level of education. For example, that young, educated couple who did their research, and know the effects, I*

> *think the outcome of some of these babies could have been better. It was a very frustrating time*.

Again, it was clear from the interviews that those who were educated, were better equipped to deal with the measles epidemic than those lacking in health literacy and inclined towards traditional healers who were readily accessible and able to fill a cultural/holistic void.

Participant D adds how traditional healers are here to stay and stresses the importance of working together:

> *They were here long before western medicine, so people still hold onto them and its not just us its other islands as well. They still have their traditional fofo, for a long time there were many of us in medicine that want them gone, we wanted traditional medicine to stop. But now we realize we are never going to get rid of them. So, we need to find a way to work with them. So, when the government wrote them into the act, the medical society was upset because they recognised them when we are having problems with them without consultation with us. So, we exist, and they exist, but we have to find a way to co-exist.*

As traditional medicine is part of the Samoan culture and is linked to their cultural identity, there is a natural inclination to consult a traditional healer first. This is a difficult cycle to break, as there is a belief that the supernatural plays a role in the cause and cure of mental and physical illness. There is a still a strong belief in in aitu and mai aitu (spiritual illness). One of the factors that is believed to determine the success of a taulasea is it is thought to be God's will (Holmes, 1992). Therefore, it could be assumed that regardless of information dissemination some people would still have opted to consult traditional healers because of cultural socialisation. However, they need not have been the only option and more information and consideration of the holistic needs of Samoan people could have circumvented some of the communicative problems experienced before, during and after the epidemic.

4.2.3 Anti-vaccine opportunism

Social media has become a large source of information for health information. Due to the flow on effects from institutional influence and the lack of communication from the Ministry of Health, coupled with the low health literacy, this left a void which was filled by an emerging group of anti-vaccination activists who were very vocal on Facebook. Facebook is the most popular social networking site in Samoa: it has been used as a

source of information for many people, as well as a platform for anti-vaxxers to promote the dangers of vaccination.

Pariticipant A stated: "*So MOH clamped down on their communication, then the anti-vaxxers just let loose on social media and they were the first ones that a lot of people heard in reference to this incident.*"

Participant A added further:

> *Yes so, the anti-vaxxers were very vocal on Facebook. They were telling people not to get vaccinated during the mass vaccination campaign. Every day, like 5 posts a day they would be spewing all this stuff on Facebook. All the prominent authorities, they would be speaking to newspapers, they would actively seek to undermine the measles response.*

Due to the growing mistrust in the government, it gave space for anti-vaccine activists to capitalize on the outbreak using social media. Social media has had a large and growing role in health communication. Messages regarding vaccine safety can be laden with misinterpreted or false information with user generated content offering more damaging effects to the concept of vaccine safety (Volkman, Hokeness, Morse, Viens & Dickie, 2020).

Participant A confirms the role anti-vaxxers played during the crisis:

> *Then there all this horror stories from anti-vaxxers like 'Oh the vaccine is what is killing your baby'. They would actively say this on Facebook. Like 'The vaccination is why your babies are all dying'. Even though the only reason we had this epidemic to begin with is because we had no vaccination. So, it was just absolute terror.*

Studies show that people with anti-vaccination attitudes tend to manifest conspiracies and distrust in government using online social platforms to promote scepticism and risk regarding vaccination. Facebook in particular has been used to spread highly polarised user generated content (Broniatowski et al., 2020). This movement threatens public health in that it reduces the likelihood that vaccine preventable diseases can be eradicated. Studies show that parents wishing to exempt their child from receiving vaccination were more likely to have received their information via the internet or social media (Mitra, Counts & Pennebaker, 2016). These anti-vaxxers are dangerous as they have contributed to fears and anxiety surrounding vaccination. They have a strong presence on social media but no scientific evidence to support their claims. In addition to this, they are using this outbreak to make a profit. A Samoan anti-vaxxer named Taylor Winterstein planned to host seminars promoting her anti-vaccination stance,

charging people $200 WST each. However, it was deemed a public health risk by the Government of Samoa, therefore it was cancelled (Srinivasan, 2019).

In contrast Participant B added that the only positive outcome from the anti-vaccination movement was it pushed more people to do their own research:

> *"t definitely did have an effect on people. It made people read more and at the time during the antivax commotion. We had quite a few normal, educated people come around and asking well that's not what I read on google, is it true? Its good sign because its showing people are taking initiative to check the facts and see if its actually true. That was the only positive thing from the antivax movement, it really did make people do their homework. That was for the educated people but for the people who weren't so educated.*

Although it did allow people to ask questions and investigate further into the benefits and side effects of vaccination, it was not everyone. There are still people who continue to be disadvantaged because of their low health literacy and education level. These vulnerable people continue to be misled by the plethora of misinformation that they are seeing online. Antivaxxers mainly used Facebook as their platform to spread their narrative, however there was also anti-vaxxers who would show up to the hospital and interfere with healthcare as

Participant A explains:

> *But then you also have Edwin Tamasese, who during the measles epidemic, showed up at the hospitals, multiple hospitals and was giving people Vitamin A and D and C. Because we used that to treat nutritional deficiencies that arise during a severe measles case. You give that to sort of treat their symptoms, but it does not cure measles. But he was sort of marketing it to the patients in the hospital whose babies are dying from measles like 'Here take this, you're fine you don't need any other treatment, go home'. So, people were sort of self-discharging.*

This situation highlights how virtual platforms such as Facebook allow anti-vaxxers to spread misinformation and potentially drive real world behaviours. These affordances enable actors to exploit vulnerable communities into believing the ideologies that suit their purposes. Patients were discharging themselves and returning in worse condition than before. Some of the anti-vaxxer activists were found to promote the use of Vitamin A to cure measles, yet vitamin A supplementation is used to reduce mortality from multiple factors including diarrhoea and other symptoms, it is not a cure for measles (Sudfeld, Nafar & Halsey, 2010). Scholars have found that anti-vaccination activists

use many persuasive tactics online that include skewing science to fit their narrative, censoring the opposition, attacking any critics who challenge their views, claiming they are pro-safe vaccines and not anti-vaccine. These tactics are deceitful, the sites they post which promote the dangers of vaccination, have been proved to be inaccurate and were not evidence based.

Participant B confirmed how Antivaxxers capitalized on the state of fear the community was in:

> *Talking to people and telling them not to get their children to get vaccinated, there's a lot of side effects and they could get a disability and one of the reasons why those children died. It was all this bullshit. Just spreading it and in a time of crisis that's when people are most vulnerable. It is sad because if you're going to be telling people false facts, it does mislead a lot of people. That was another thing we were struggling with, getting people to come in and get vaccinated.*

4.2.4 Conclusion of this theme

Traditional medicine is an integral part of the Samoan culture. They have been written into the health act and have been formally recognised. Therefore, it is a difficult cycle to break for Samoans to go to the hospital rather than consult a traditional healer first. This is due to how closely Samoan's view health with spirituality and the holistic being. Patients who consulted a traditional healer first would come into the hospital with their symptoms exacerbated from the treatment received. It is important for the Ministry to consult with traditional healers and inform them if they receive any measles cases, to refer them to the hospital as well as increase the awareness within the Samoan community to consult with a doctor first. There needs to be a way in the future to work with taulasea (traditional healer) as it is clear they are here to stay.

On the other side of the spectrum, there are anti-vaccination activists. It is genuinely concerning during a time of crisis to have these people exploit vulnerable communities for profit by disseminating misinformation. Facebook is the main platform in Samoa where anti-vaxxers can spread anti-vaccine propaganda which skews science to fit their narrative. The websites that they post are not evidence based nor are they accurate. Samoans were in a state of fear, it can become exceedingly difficult to make logical decisions based on emotions. These anti-vaxxers preyed on the fear and anxiety that the community felt, especially after the deaths in Safotu. It also shows how misinformation spread online can drive real world actions: which was evident when anti-vaxxers showed up to the hospital to convince patients to discharge themselves.

The anti-vaxxers capitalized on the measles outbreak and used the lack of communication from the Ministry of health as an opportunity to spread misinformation.

4.3 The Palagi Influence

The palagi (white) influence was chosen as a theme because participants shared their experience and thoughts surrounding the deference of the Samoan people to palagi (white) people. Through the interviews it became clear that the palagi ideologies were impacting the health-related decisions of the Samoan people. I use the term palagi, despite it being considered by some a contentious term. The term palagi is derived from Polynesian root words "pa" meaning gates and "lagi" meaning sky or heaven. It has been suggested that when the missionaries first settled in Samoa, the people had never seen anyone with white skin therefore they thought they were sent from heaven (Stair, 1987). The language and terminology places higher value on someone who is palagi, in contrast to if you have a darker skin tone. Those with a darker skin tone are often referred to as "meauli" which translates to "black thing" (Belshaw & Mageo, 2002). The contrast in language is stark in that if you are white or white passing you will be labelled as palagi: sent from the heavens. Whereas if you have a darker skin tone, the terminology reduces you to a black thing or property, of lesser value. The term palagi then, captures how those interviewed for this research found Samoan people responded to white medical professionals: as if their palagi were more important.

It is evident in language the privilege that palagi people are afforded, this is showcased in the account by Participant B. Participant B shared their experience detailing how patients prefer foreign white doctors over Samoan doctors:

> *They get more credit because it sounds better coming from the afakasi rather than the Samoan. We got that a lot, me, and my colleagues. I would be counselling a family and sit there for a good half an hour, telling them this is what you have to do because your baby has dehydration. I was giving them this advice, and trying to educate and nothing sunk in. But, when my colleague from the NZMAT team, who is palagi, he sat there for 5 minutes and then they understand.*

The deference to palagi people is an after-effect of the post-colonial era. In old Samoa, young girls were kept indoors so that their skin remained fair, as this was seen as more desirable to attract a chief or matai (Mead, 1983). The spread of western culture and ideologies began around 1722 and continues to shape Samoan people's perspective today. Since the arrival of European colonizers, they have instilled the narrative that the European way of life is superior to traditional lifestyles (Tahana et al., 1997). These western ideologies have become imbedded into Samoan culture and accordingly,

shape people’s attitudes towards those considered to be white (Tahana et al., 1997). That is, there is a tendency to view white people as superior which can be problematic when a culture prides itself on fa’asamoa (Samoan way of life). However, when it came to a health crisis, rather than relying on those from the same culture for advice and guidance, the medical advice of a Samoan doctor is seen as less credible than that of a palagi doctor. Such deference signals that even in a post-colonial society, the influence of colonization remains and continues to shape everyday practices.

Participant A went on further to describe the position of the Samoan people during the outbreak:

> *Vulnerable, rural dwelling, poor families who don’t have access to health education and resources. There is this cultural deference that Samoans give to palagis (White people). If you’re palagi or afakasi or lighter shade, you are automatically in some ways more credible and knowledgeable. If a white person is talking to you in a hospital, you assume they are a doctor. So, they really give deference to those people. But also, a lot of deference to wealthier people.*

During the New Zealand administration in Samoa, there were major social, cultural, and political reforms regarding Samoan lifestyles (Tupu Tuia, 2019). Samoan parents were pushing their children to do well in a white man’s education system. Education was a major colonial influence; people were discouraged from speaking Samoan in schools and higher value was placed on being fluent in English and being well educated (Tupu Tuia, 2019). In the post-colonial era, the effects of post-colonial identity and confusion is present in many pacific islands, and this is apparent in the Samoan attitudes towards whiteness. Colonisers have imposed their language and culture, forcing the cultural identity of Samoans to be distorted and altered. Such an eventuality is dangerous because that creates a society which favours the views of white or whiter people at the expense of the Samoan people. Clearly, whiteness is seen by some Samoan people as associated with power and privilege. Therefore, the concept of white supremacy becomes a part of the discussion. White supremacy is the presumed superiority of white racial identities, in support of the cultural, political, and economic domination of non-white groups (Mills, 2003). It is evident in Samoan society that white people are still given a level of authority which inevitably leads to the continued domination and exploitation of indigenous people.

Deference to white perspectives and ideologies is particularly problematic when considering that many of the anti-vaccination activists are white or afakasi. Whether intentionally or unintentionally, this leads to anti-vaxxers having some sway in persuading Samoan people to adhere to their anti-vaxxer world view. As participant A

laments the anti-vax movement has gained traction is Samoa because these predominantly white people are seen as more credible:

> *The majority of the anti-vaxxers originally came from wealthier afakasi (half caste) families that import these palagi (White) ideas overseas, where they were either raised, or did uni or spent a lot of time or they have a lot of connections. They bring it back and they're like "I'm in Samoa, I'm going to live this all-natural lifestyle and I'm going to start telling people about the dangers of vaccination.*

These afakasi anti-vaccination activists have imported the western ideologies of developed nations and brought concepts that have altered Samoan community's perception of healthcare. In a developed nation, there are an abundance of resources available for people to evaluate the information being disseminated, usually via online media. Furthermore, a level of digital literacy is usually assumed of those in developed nations (when ideas of the digital divide are negated). As participant A highlights, the objective of those half caste or white anti-vaxxers appears to be to persuade others to adopt anti-vax perspectives, which reflects an apparent ignorance of fa'asamoa and sense of a collectivist culture which promotes the needs of the community over the needs of the individual. The efforts of anti-vaxxers to spread their ideologies suggests attempts at acculturation and assimilation of viewpoints.

Acculturation is a defined by Linton's (1940) as those "phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both groups". (Berry, 2008). It is evident that the group of anti-vaccination activists have all spent time overseas in developed nations and had some form of overseas education which has altered their way of thinking. They also have the ability to impose these ideas within Samoan society because of the higher value placed on their opinions due to their whiteness and privilege.

White privilege is a term which describes the way in which white people benefit from a society that attribute whiteness to mean higher value (Wildman, 2005). These anti-vaxxers are afforded the privilege of having their agendas listened to because of their position within Samoan society. There is also a sense of a white saviour complex, this is when a person who has been raised in privilege and is taught that they possess the answers and skills needed to "save" others (Walsh, 2020). Fundamentally they believe they are better than the person they are helping. Saviors want to help struggling communities however they want to remain in charge as the only authority on the matter (Walsh, 2020). The saviour complex means you want to help others but are not open to

guidance from those you want to help. This is extremely problematic because the 'saviour' believes they are ultimately superior to those they are rescuing. Even if the vulnerable communities push back and tell them they are not helping, 'saviours' think they are mistaken and need their help even more so as a result.

These anti-vaxxers who come from white or afakasi families possess an immense amount of privilege and have leveraged their position to push their western ideologies of anti-vaccination, not listening to experts within the medical field but claiming that their way is the only way to save people's lives. They come back from developed nations that have a large number of resources and bring these ideas into a vulnerable community where there is a large health literacy gap and a lack of resources to support the people. They are driven by self-interest while framing their interventions as charitable and kind. Flaherty (2016) argues that the saviour mentality preserves ideas of western dominance and superiority and the idea that vulnerable communities need external salvation by white rescuers. This is an issue as it negatively impacts the Samoan culture by reinforcing the narrative that the palagi ideas and concepts are more important than that of the indigenous people. This in turn leads to a loss of cultural identity for these anti-vaxxers as they undergo behavioural and psychological changes which is part of the acculturation process.

It also gives way to the *u*s vs. *them* representation as social groups. This is also evidence of ethnocentrism. Ethnocentrism is the attitude that one's group, ethnicity, or nationality is superior to others (Kam & Kinder, 2012). It is commonly expressed through stereotypes, as they seem to capture the characteristics of a group, often these characteristics have to do with underlying dispositions, temperament, and trustworthiness (Kam & Kinder, 2012). It is a general readiness to divide the world into adversaries and allies or us vs. them, it is a way of looking at the world which paves the way to racism. Racism is defined as a system of structuring opportunity and assigning value based on the social interpretation of how we look (Jones, 2012). It is evident that higher social value is placed on palagi people and afakasi people, this impacts the way Samoan people view their own people. There is a form of internalized racism which involves the conscious and unconscious acceptance of a racial hierarchy whereby by white people are ranked higher than people of colour (Pyke, 2010).

Conclusion of this theme

It is evident that even in post-colonial Samoa, the perspectives of the Samoan people still show deference to palagi people. From the stark contrast of terminology, palagi roughly translating to 'sent from the heavens' to meauli translated to 'black thing'. The data reveals participants experience with patients preferring palagi physicians rather

than Samoan doctors. Samoan attitudes have been shaped from years of colonial occupation where there have been many political, social, and cultural reform under the New Zealand and German administration. However, deference to white perspectives and ideologies has proved to be problematic. Afakasi and palagi anti-vaxxers have used their position within society to push a narrative that they can save the lives of the those affected by measles. They are coming from a place of privilege in which they have been afforded the opportunity to study or work overseas and bring back western ideologies they believe are needed to save others. Although this is even more problematic as they inherently believe they are superior to those they are trying to save. These prominent anti-vaxxers use their position within society to exploit a community which has been affected by a major health crisis. Not listening to medical experts but instead insisting their way is the only way forward.

Chapter 5

Discussion

Introduction

The measles outbreak in Samoa in November 2019 led to a major health crisis which was exacerbated by low vaccination rates and the reluctance to seek professional medical treatment (Thornton, 2020). The lack of communication surrounding the two infant deaths in Safotu resulted in a myriad of misinformation regarding vaccine safety leading up to the outbreak. Due to the lack of a strong crisis response from legitimate government sources, coupled with the increase in information from alternative sources, the burden was shouldered by medical professionals on the frontline to inform the public about how to navigate the unfolding measles epidemic. Therefore, the research question governing this thesis was prompted to investigate how medical professionals felt the role of information and misinformation influenced the health-related decision making of the Samoan people. Four medical professionals participated in the research and were asked a series of questions in a semi-structured interview format. The data revealed valuable insights into how the outbreak was managed and how patients reacted to the epidemic. These were identified in the three key themes: institutional influence, societal influence and palagi influence.

The findings of the research revealed that the lack of transparency and communication from the Ministry of Health surrounding the infant deaths and the outbreak resulted in a lack of trust amongst the public, which, in the views of the medical professionals interviewed, resulted in increased vaccine hesitancy, anxiety and confusion surrounding health information (Craig et al., 2020). Whether intentionally or unintentionally, the response of the Ministry typified a secretive, face-saving approach rather than a strong crisis management approach which, from a public relations perspective, can adversely impact on the organisation's reputation and ability to influence key target publics: a serious problem when the situation is life and death (O'Malley et al., 2009). Reputation damage can have long-term effects and is only rectified overtime through adopting a more open and honest approach to communications (Christensen & Laegreid, 2020). Governments with good reputations are more well equipped to execute successful crisis management (Christensen & Laegreid, 2020). As it happens, the Ministry did not have a great deal of time to

improve their reputation before the emergence of COVID-19 which could have hampered their efforts as a new health crisis swept the globe (Offerdal et al., 2021). What the research highlights is that the Ministry of Health is looked upon to provide crucial health information in times of crisis and their lack of communication with key target publics appeared to exacerbate the uncertainty and frustration experienced by the Samoan people.

According to the participants, vital information around the results of the infant deaths was handled poorly, the decision to suspend the immunisation program without clear communication as to why was misunderstood, and the censoring of information by the MoH leadership intensified the situation. The research demonstrates a correlation between the lack of trust for the MoH and the increased consultation of alternative forms of medicine such as traditional healing and the prevalence of anti-vaccination sentiments. Traditional medicine is an integral part of the Samoan culture. As the interviewees suggested, many patients were found to have consulted a traditional healer prior to presenting at the hospital. However, the treatment from traditional forms of medicine were found by medical professionals not to alleviate the symptoms of measles. This is significant in that it highlights the lack of integration of the Samoan culture within the models of health communication that the MoH utilises. In other words, a clear disjoin between indigenous and western approaches to medicine exists in the country that can impact on the respect and reputation of the MoH and suggests more effort needs be made to ensure the development of a strongly integrated approach to medicine that addresses the needs of all the Ministry’s target publics. Also observed in the interviews with medical professionals was that anti-vaccination activists appeared to capitalise on the lack of communication from the MOH by disseminating misinformation, therefore taking advantage of a vulnerable community which was in a state of fear and anxiety. Such evidence proves how the spread of misinformation by groups within society can drive real world actions.

Finally, the remarks of interviewees show a correlation between the deference to palagi people as sources of credibility and the rise of anti-vaxxer activists in the Samoan community. The majority of the anti-vaxxer activists were either palagi or afakasi. These activists were found to have imported western ideologies and adapted them to an indigenous community. Clearly, the concept that the European lifestyle is superior to traditional lifestyle was identified by the participants, much to their frustration. Such a finding is significant because the Samoan people pride themselves on fa’asamoa, however there is still a tendency to view palagi people as the authority. This was evident during the outbreak where the results indicated that medical advice from Samoan doctors was seen as less reliable than advice from a palagi doctor.

Furthermore, it signals how even in a post-colonial society; the influence of colonisation remains and continues to shape the perspectives of the Samoan people.

At this point, I have summarised the key ideas that presented in the research, in the sections to follow, my intention is to consider the wider significance of these findings for understanding the Samoan measles situation and the communication of health professionals.

5.1 Crisis response

It is evident that the participants and stakeholders were dissatisfied with the crisis response implemented by the Ministry of Health. Especially the lack of transparency and accountability by the MoH leadership during a critical time in which the Ministry is called upon to provide crucial information at the height of a crisis. Transparency is important as it promotes core public health objectives that are needed when the public is faced with a health threat. Scholars argue that communication and guidance remain a vital tool to mitigate risk (O'Malley et al., 2009). Olsson (2014) found that transparency helped organisations to gain respect and trust during a crisis. Communication control is a crucial tool to ensure the perceptions of risk are aligned with the actual risk to limit the amount of misinformation (O'Malley et al., 2009). The actions of the MoH contradict scholars' advice on best practice during a crisis which explains why they encountered issues. There was no clear communication or any reassurance regarding the infant deaths leading up to the outbreak, the information was filtered by leadership and led the public and medical professionals to feel lost, confused, and directionless. Declining trust in the MoH led to the public undermining the credibility of the organisation in leading public health and strategy. It is significant in that it impacts the willingness of the public to heed the advice of the Ministry in the future, given that COVID-19 was on the heels of the measles outbreak.

The communication breakdown highlights not only the low levels of digital literacy that exist in Samoa, but also the need for increased health literacy. Education becomes a greater concern in a crisis as people are driven by anxiety and fear. Scholars argue that governing bodies cannot afford to ignore health literacy (Paasche-Orlow et al., 2007). The response goes beyond promoting literacy skills and health education in schools, in fact, health literacy must also be facilitated in interaction with health systems through easy and clear communication from medical professionals as well as accessible and evidence-based information on websites and patient portals (Berkman et al., 2011). Studies show that vulnerable populations such as the elderly and lower educated are at higher risk for low health literacy (Moreira, 2018). This is significant as low health skills correlate with increased hospitalisation and emergency care. During

times of crisis, vulnerable people are scared and anxious. Health literacy is not only the ability for an individual to interpret health information but also how easy the information is presented (Moreira, 2018). The MoH did not present all the information during the outbreak, therefore people sought information elsewhere from less credible sources.

5.2 Infodemic

The exposure to misinformation across social media platforms is rampant leading scholars to argue that these infodemics can have severe consequences on public health (Eysenbach, 2020). The dynamics of health misinformation on social media platforms pose a serious threat to public health and vaccinations (Mesquita et al., 2020). They expose vulnerable people to misinformation regarding vaccine safety, whilst simultaneously eroding trust in governing health bodies and public health experts (Broniatowski et al., 2018). Although the term infodemic did not gain widespread popularity until the COVID-19 pandemic, it is apparent in the research findings that the infodemic existed prior to COVID-19. Participants stated that anti-vaccine activists were promoting misinformation across Facebook which amplified vaccine scepticism and exposed vulnerable people to misinformation.

The misinformation was widely disseminated on social media in addition to conspiracy theories which strengthened the anti-vaccine movement and created a vacuum of misinformation. As misinformation spreads further and more significantly than information supported by evidence (Mesquita et al., 2020), the infodemic has real-world consequences, with many countries losing their measles elimination status because of the outbreak of 2019. The suggestion from the research, then, is that a conscious effort needs to be made by governments to get in front of infodemics, to communicate effectively with target publics and to educate the public on the most appropriate course of action, particularly during a health crisis. Research suggests that a proactive approach to addressing misinformation is needed to save lives. Clearly, the Ministry of Health did not take such an approach during the measles epidemic which means re-evaluating their crisis response strategies to address the possibility of future infodemics.

Digital communication platforms are here to stay, and it is impossible to be able to mitigate what individuals share on social media due to freedom of speech (Reuter et al., 2018) Therefore, a stronger crisis response is needed to combat this. This is significant in that many studies confirm that during a crisis the public seeks information to reduce uncertainty and will use whatever means they can to obtain it (Reuter et al., 2018). According to participants, the anti-vaxxers filled the void left by the Ministry of Health with information unsupported by science. During a time in which individuals are

anxious to obtain information people want to know the risks of infection and the severity of the infection and ways that can prevent it from happening before they can assess the health risk for themselves (Gessel-Edelsburg et al., 2018).

The measles outbreak was replete with complexity which required the Ministry of Health to manage it effectively. It was under-managed, front-line workers were overworked without enough support from the Ministry of Health. According to the participants, there was an immense strain on resources, health professionals were working overtime whilst simultaneously having to deal with anti-vaxxers showing up to the hospital to persuade patients to leave or being convinced by their family members to consult a traditional healer instead. Patients were fearful and looking to MoH for guidance.

5.3 Post-Colonial Society

The research results indicate that Samoan people still give deference to palagi people and their ideologies. The credibility given to anti-vaxxers who are mostly wealthy palagi people or afakasi people, gives way to a larger issue of inequality that exists in Samoa. Samoan society itself still upholds the supremacy of the white saviour. The history of colonialism and the predatory nature of capitalism underpin the global health system, which puts indigenous people at a disadvantage (Tuck & Yang, 2012). This outbreak widens the pre-existing inequities even further: vulnerable people who are often underpaid and uneducated live in overcrowded and food insecure conditions which increases the risk. Consequently, the most vulnerable people suffer disproportionate rates of severe outcomes due to measles. According to participants, vaccine resistance has become a form of privilege, only individuals with more resources, who are well-educated have a sense of entitlement. There is a sense that these individuals believe they are more credible than medical professionals, which has been exacerbated by the information age we live in. Social media has given everyone a voice and the ability to share content online with others freely (Sommariva et al., 2018). However certain voices are privileged to the determent of society.

White people continue to exploit their position in society, whether consciously or unconsciously, further putting Samoan people at a disadvantage. Lower income families do not have the resources to mitigate the disease once they are sick. This highlights the pre-existing gap between the marginalised majority who are disempowered by racial and financial inequities that fuel the structural determinants of health (Buym et al., 2020). It leads to the severity of the epidemic worsening, with lower income families who are less educated seeking information from some palagi people who exploit their position within society and take advantage of these vulnerable groups.

The crisis response by governing bodies is not being executed effectively, thus leading people to obtain information elsewhere.

5.4 Traditional Medicine

Traditional healing has remained and will most likely continue to be an integral part of Samoan culture despite the effects of post colonisation and the advancements in western medicine. Fadiman (1997) outlines how different cultural beliefs can lead to miscommunication between health professionals and indigenous peoples. According to participants, most people are still consulting traditional healers or taulasea for vaccine preventable diseases. According to the participants, patients' conditions worsened after consulting taulasea, some of the treatments exacerbated the dehydration of babies causing their condition to progress faster. Participants were frustrated with the number of patients who discharged their children to take them to taulasea, only to return with severe outcomes. This not only highlights the problem of health literacy within Samoan society but also the level in which taulasea are integrated into the Samoan culture. It is important to look at how traditional healers can be integrated into the health system: they are already formally recognised by the MoH, there is official association of taulasea but there is no regulation of traditional healers and their activities. This is significant in that Samoans will most likely continue to consult traditional healers to some degree, therefore it is important to make sure this is dealt with in the safest way possible.

Participants stated patients still exhibit a lack of knowledge that is needed to assess healthcare decisions. Individuals with low health literacy are less likely to manage ill health and seek professional medical help. Low health literacy is often associated with low-socioeconomic status. This is significant as it further increases the gap between social groups, generated by social conditions in which those from lower socio-economic backgrounds are at a higher risk of death despite it being preventable (Gibney et al., 2020).

5.5 Limitations

The first limitation of the research was the selection the participants: due to time constraints, I was unable to widen the scope of participants to include patients who were affected by the misinformation. Future research could explore a wider scope of participants from medical professionals to patients. The second limitation of my research was that I did not analyse the texts that were being distributed/ communicated. Future research could explore what kind of information was coming from the Ministry of Health and other entities, to explore why people were misinformed. The third limitation is the number of participants could have been larger, to gain more

perspectives than the four participants. However, doing a master's thesis does not allow for a large sample of participants due to time constraints. Future research might extend the number of participants. As I was focusing on the measles outbreak once it had already happened, I was relying on the memory of the participants. This is the fourth limitation in that people remember events differently after time has passed. Therefore, it is more of a snapshot of how participants have reflected on the situation. In future, for research to take place, it could happen at the height of the epidemic. Future research, based on the findings here, might explore how the MoH have navigated the COVID-19 situation in comparison to this measles outbreak and how information and misinformation is shaping health attitudes. Additionally, future research could also explore anti-vax movements in relation to other diseases such as COVID-19.

5.6 Conclusion

In this research project, I set out to investigate how medical professionals felt information and misinformation influences the health-related decision making of the Samoan people during the 2019 measles outbreak. I interviewed four people from the medical profession in the aftermath of the measles epidemic. Clearly, it is evident that communication is key and the way that communication functions ultimately influence the willingness of people to engage in certain medical practices, such as traditional healing and western medicine. The data revealed valuable insights into the management of the outbreak and how patients reacted to it. These were identified into key themes: institutional influence, societal influence and palagi influence. There was evidence of a lack of transparency and communication from the MOH during a crucial time in which the government is looked upon to provide guidance. The response from the MOH whether it was intentional or unintentional was a face-saving attempt rather than a strong crisis management one.

The plethora of misinformation available has been deemed an "infodemic" which was exacerbated by the low health literacy rates that exist within Samoa. It poses a serious threat to public health by further eroding the trust in governing bodies. During times of uncertainty, people want to find out information which will subdue their anxiety and confusion. Anti-vaxxers exploited their position within society as wealthy palagi/afakasi people using the outbreak to further widen the gap of inequality, putting lower income families at more of a disadvantage, as they suffer more severe outcomes of the virus despite the fact this could have been avoidable with the availability of a safe and effective vaccine. Most Samoans still consult a traditional healer to some degree as it is ingrained in the Samoan way of life. However, the patients' conditions seemed to have worsened after treatment, although it is inevitable that people will continue to seek out

traditional healers, it is imperative to find a way to co-exist with western medicine to reduce severe outcomes. It is evident that colonialism has had a major impact on the Samoan perspective. The concept of the white saviour is still held up by Samoan society, thus allowing white anti-vaxxers to use their position of privilege to influence lesser educated and lower income families who cannot afford to mitigate the risks of contracting the virus. In short, the Ministry of Health needed to have a much stronger crisis response to combat the myriad of misinformation that affected these vulnerable groups.

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Glossary

Afakasi A Samoan person with mixed European ancestry.

Aitu Ghost or spirit.

Asosi o Taulasea Association of traditional healers.

Fa'asamoa The Samoan Way. This term refers to the Samoan culture and traditions that constitute the Samoan lifestyle.

Fofo Samoa Samoan massage.

Ma'i palagi foreign illness**.**

Ma'i Samoa indigenous illness.

MMR Measles Mumps and Rubella.

MoH Ministry of Health.

Palagi A White or non-Samoan person.

Taulasea Samoan healers or taulasea practice traditional massage (fofo) and prescribe herbal remedies.

Vai Medicine.

WHO World Health Organization.