Distribution Agreement

In presenting this thesis as a partial fulfillment of the requirements for a degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my thesis in whole or in part in all forms of media, now or hereafter now, including display on the World Wide Web. I understand that I may select some access restrictions as part of the online submission of this thesis. I retain all ownership rights to the copyright of the thesis. I also retain the right to use in future works (such as articles or books) all or part of this thesis.

Thisara Gunawardana December 1, 2021

Analysis of the COVID-19 Response in Sri Lanka

by

Thisara Gunawardana

Melvin Konner
Adviser

Anthropology

Melvin Konner

Adviser

Rachel Hall-Clifford

Committee Member

Jessica Ham

Committee Member

2021

Analysis of the COVID-19 Response in Sri Lanka

By

Thisara Gunawardana

Melvin Konner

Adviser

An abstract of
a thesis submitted to the Faculty of Emory College of Arts and Sciences
of Emory University in partial fulfillment
of the requirements of the degree of
Bachelor of Science with Honors

Anthropology

2021

Abstract

Analysis of the COVID-19 Response in Sri Lanka
By Thisara Gunawardana

Countries that are considered “third world”, or a part of the “Global South” are often looked down upon by others in the rest of the world. This viewpoint is a remnant, an artifact, of the colonial age, that persists long past its expiration date. In the context of the novel coronavirus (COVID-19) pandemic in 2020, one might have expected countries classified as such to underperform and be ill-equipped to handle the response required of an illness of this scale. However, the island nation of Sri Lanka outperformed many of its neighbors, both geographical and economical, in the early stages of the pandemic, and even managed the most recent wave relatively well. In order to better understand how Sri Lanka was able to achieve so much, a set of sixteen open-ended interviews were conducted with members at different levels of the Sri Lankan healthcare system, as well as those affected by the pandemic and its subsequent response, with these then being supplemented via publicly available statistics and databases. This study discovered that through a combination of an extremely well-developed public health system, as well as a strong sense of cultural community, Sri Lanka was able to mitigate much of the effects of the pandemic through a largely successful response. However, this response was not without several difficulties, both economic and social, that continue to influence decisions even now, at the end of 2021. This success story of a so-called “developing” country speaks to the flaws of not only the colonial mindset, but also the danger of the usage of the binary of “developed versus developing” terminology, and instead recommends focusing on more specific measures pertinent to the issue being studied. Hopefully, this paper highlights that by seeking to define a country through a binary system, we remove much of the complexity surrounding its inner dynamics, and that countries like Sri Lanka could be considered “developed” in their own way, and should, with time, become part of a two-way exchange as opposed to a one-way “development”.

Analysis of the COVID-19 Response in Sri Lanka

By

Thisara Gunawardana

Melvin Konner

Adviser

A thesis submitted to the Faculty of Emory College of Arts and Sciences
of Emory University in partial fulfillment
of the requirements of the degree of
Bachelor of Science with Honors

Anthropology

2021

Acknowledgements

I would like to thank Dr. Melvin Konner, MD, for all of his assistance as my thesis advisor. From agreeing to advise me on my honors thesis almost a year ago, his support and knowledge has been an invaluable part of my experience as well as my honors thesis itself. I would also like to thank Dr. Jessica Ham and Dr. Rachel Hall-Clifford, for their support as members of my thesis committee. The suggestions and edits they provided to my thesis, as well as the time they took out of their schedule to assist me with the project were essential in making this paper what it is.

I would like to thank Dr. Debra Vidali and Ms. Heather Carpenter in the Emory Anthropology Department for their assistance in understanding all the different aspects of an honors thesis, as well as the honors program as a whole. For my fellow Honors Class members, thank you so much for all of the suggestions you made not only for my thesis paper, but also my defense presentation. I wish those of you who are continuing to work on their thesis only the best.

I would like to thank the Los Angeles Consulate General of Sri Lanka, the Sri Lankan Ministry of Health, my interviewees, and everyone else who participated in this project for not only agreeing to be a part of this research project, but for the work you have done in helping Sri Lanka respond to the COVID-19 pandemic.

I would also like to thank my family for all of their support throughout this thesis process and for helping me through some of the rough times of this year.

Table of Contents

Tables and Figures

Section 1: Introduction

The spread of the novel coronavirus, also known as COVID-19, has forever changed the face of the world and public health as we know it. Due to an increase in the viruses' variants and severity, as well as an increase in misinformation about COVID-19 and its transmission methods, countries have had to grapple with providing the proper response to the virus and, at the same time, combating those who believe their response to be in the wrong (Ball & Maxmen, 2020). One of the first documented cases in the island nation of Sri Lanka, was on the 27th of January, 2020, when a Chinese tourist was admitted to the National Infection Disease Hospital in Angoda, with the first Sri Lankan resident case being detected on March 11th of the same year (Wickramaarachchi et al., 2020). With a well-planned out response to the novel coronavirus, Sri Lanka was able to weather the storm much better than other countries with its already robust health care system supported via, preparation steps taken, increased contact tracing, and frequent press releases, which allowed Sri Lanka to retain a relatively low rate of infection. In September 2020, cases numbered only 3,123, with only 12 recorded deaths from the pandemic in a country of roughly over 20 million people, which would seem to indicate quite a good response to the pandemic, even in the early stages, where other countries had faltered. While recent events have increased these numbers, Sri Lanka's systems seem to be holding (Ministry of Health, 2021).

The aim of this project was to help determine why Sri Lanka performed so well, despite its classification as a member of the "third world" or "Global South". Interviews were conducted at almost all levels of the public health system, and even those who were heavily impacted by the pandemic's fallout, in order to gather a full picture of not only its effects, but also of the perception of quarantine restrictions and other guidelines by the public at large. I uncovered that the assistance of its strong public health system and leadership, as well as community support systems, allowed Sri Lanka to weather the worst of the pandemic, even during the explosive third wave. After discussing some of the

history and core frameworks at the start of this paper, I will describe the procedures I utilized to conduct my interviews, and finish by discussing the main findings as well as their larger context in public health, from an anthropological viewpoint.

Section 2: History and Background

In order to understand and analyze the coronavirus response that was initiated and continues to be utilized by Sri Lanka and determine what lessons can be learned to be used in response to the next global pandemic, we must first return to the beginning.

According to the World Health Organization (WHO), a pandemic is defined as a disease that crosses international boundaries, reaching beyond a single state (Porta, 2008). While the main focus of this paper will be on Sri Lanka, in today's age of globalization, ongoing events in the world affect one another and these infections in the island nation did not occur in a vacuum. In fact, most pandemics in history have had far reaching effects. One of the most well-known pandemics in history was the Black Death, which spread along existing trade routes and decimated medieval Europe and Asia, and had effects that shaped the decades to come. While the current coronavirus pandemic may not leave as intense a mark, its effects have been and will be felt, not only in lives lost, but in the political, social, and economic spheres as well.

The current virus is one of a multitude classified as coronaviruses, which usually lead to respiratory infections (Nishiura et al., 2012). Several different prominent viruses exist, including both MERS-CoV and SARS-CoV, which are attributed to Middle Eastern Respiratory Syndrome and Severe Acute Respiratory syndrome. The SARS-CoV virus was first identified in China in 2003, and spread to twenty-nine other countries (Rat et al., 2020). The MERS-CoV virus on the other hand was much more recent, being identified in 2019 and affecting several Middle Eastern other countries (Oboho et al., 2015). The current virus is a new type of coronavirus, classified as SARS-CoV-2, more commonly known

as COVID-19. COVID-19 first hit the news in early January 2020, when the WHO reported on the outbreak in Wuhan, China. By February, the first batches of tests were sent out to help identify patients with the virus, a month after which a Medical Product alert was distributed to combat the aforementioned misinformation (WHO, 2020b). This early response is one of the most essential aspects of pandemic and even disaster response.

The WHO and many countries around the globe each had their own plans put into place in order to mitigate the spread of the next possible pandemic. As is usually the case in today's world, these plan's differed not only in scope but also in perceived effectiveness. Developing countries had limited access to many of the resources that the developed had in abundance, and even prior to the pandemic, a main goal of preparedness was to ensure that this didn't hinder responses (Oshitani et al., 2008). To what extent these efforts succeeded can only be truly determined after the end of the pandemic is declared, especially after recent data seems to point in both directions. On the one hand, three out of the five highest countries with deaths due to coronavirus are considered developing countries: Brazil, India, and Mexico; which might lead one to think that these aforementioned efforts were in vain (Conference on Trade and Development, 2020) .However, a report published in December of last year points in the opposite direction. While it was initially believed that developing countries would be the hardest hit by the pandemic, the effect doesn't seem to be as extreme as initially predicted. From the list of Least Developed Countries (LDCs) released earlier in 2021, the highest death rates are in Bangladesh and Myanmar, ranking 39th and 63rd respectively (Committee for Development Policy, 2021) . The report attributes these differences to several possibilities, including underreporting of data, lower population density in majority rural regions, and more time to adopt mitigation techniques due to later infection incidences. In order to analyze the preparedness plans of nations, many scientists utilize systems such as the Systemic Rapid Assessment (SYSRA) Toolkit, which provides a framework upon which to develop models of and analyze the effectiveness of health care systems (Mounier-Jack et al., 2010). In the case

of a 2010 paper regarding the influenza preparedness of South-East Asia, the framework was split into two parts, health systems components and pandemic preparedness components. It was found that countries that had a much less developed healthcare system had quite limited pandemic preparedness, as many of these countries instead focused on simply containing the virus in its initial stages, with much less focus put into the response to its expansion, especially as their health systems have a fairly limited relative capacity in the first place (Hanvoravongchai et al., 2010). While we will return to the idea of health systems, the SYSRA framework developed to analyze the influenza preparedness of these countries, could, with slight modifications be utilized to analyze the preparedness plans put in place against SARS-CoV-2. Many of the core pillars of pandemic response remain the same, regardless of the disease, and the similarities in transmission modes between influenza and the novel coronavirus mean that many of the same aspects could be tested as is. While the level of preparation framework must be taken into account when analyzing the response to a pandemic, the active aspects of the response are often as, if not more important, than the planning phases of the framework.

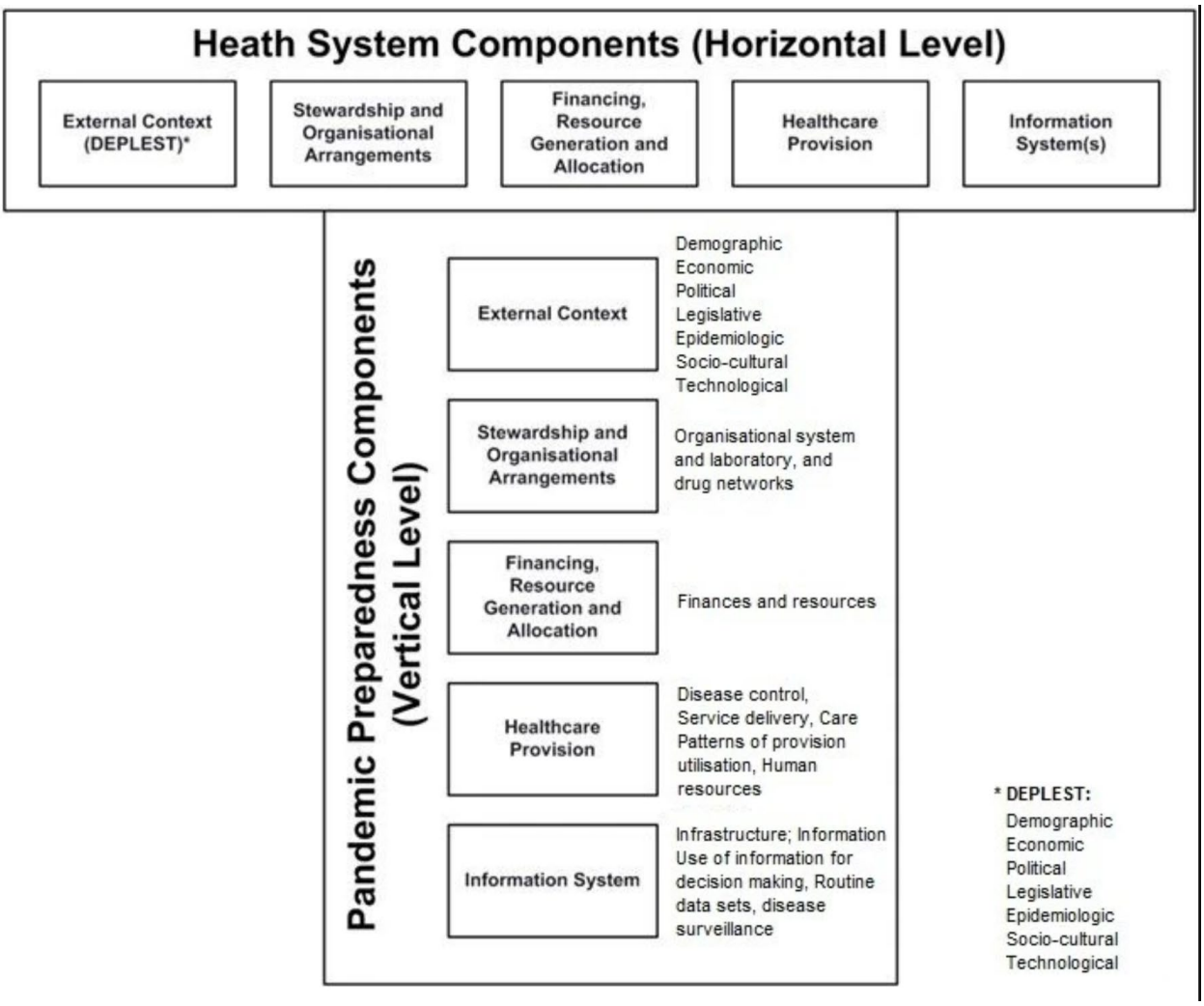


Figure 1: Model of the SYSRA Toolkit Framework built to analyze influenza pandemic preparedness in South-East Asian countries.

Section 2.1: Pillars of A Response

The provision of healthcare is one of the most necessary parts of the pandemic response, and one of the more active portions of it. Most aspects of this medically-based response must be modified and updated throughout the pandemic, in order to ensure that it continues to remain effective. One of the more important pillars of this response, especially in this day and age, is contact tracing. Contact tracing is the system of tracking “contacts” of the disease, or patients, in order to gather information

about the spread of the virus. It has been in use in the United States since the early 20th century and is a hallmark not only of the US's pandemic response but on a global scale as well. While it may seem like a simple aspect of any pandemic response, the social contexts surrounding contact tracing have made it a hot button issue. Contact tracing relies on both the trust of the populace and the ability of the government or organization to react to the data presented in a timely manner. The addition of technology-based contact tracing adds another level of mistrust and complexity to the issue as people who do not have access to such technology could potentially be excluded from any tracing efforts. This tension between the need to trace the path of the disease and the privacy of the individual means that different states have differing levels of contact tracing in place (Cohen et al., 2020). For example the Chinese method of contact tracing works on a color system of green, yellow, and then red codes that can be scanned, but no information has been given to what data is being gathered to help determine these values (Davidson, 2020). However, other tracing methods developed by Google and Apple, require user input to activate, and work over short range Bluetooth (Panzzarino, 2020). While these are more in line with modern perceptions of privacy rules, the requirement for user consent means that if not enough people participate in these methods that they will not be successful, as they will not provide enough actionable information.

Another essential aspect of healthcare provision during a pandemic would be the testing being put into place. Testing is an essential part of most pandemic responses as it allows healthcare workers to determine who has the illness and requires treatment, but also can be utilized to isolate and quarantine those infected in order to prevent further spread. Even now, with the vaccines being distributed across the globe, testing remains a central pillar in most countries. During past pandemics, such as the 2014-2015 Ebola crisis, testing was extremely slow, with it taking almost a year after the start of the outbreak began to bring diagnostic capabilities to full capacity (Perkins et al., 2017). While it would be reasonable to predict that prior to, or even during, subsequent pandemics that there would be

a stronger push to establish effective testing procedures, the response to the novel coronavirus shown quite a bit of variability. For some countries this was the case, such as in South Korea, where drive-through testing facilities were made available as early as February of 2020 (Lee & Lee, 2020). However, in some cases, testing procedures were overwhelmed and unable to catch up to the volume of cases. In the United States, testing fell behind with multiple failures, including faulty test kits and a failure to approve a working test kit from the World Health Organization, which prevented these tests from being utilized as a preemptive quarantine measure (Schneider, 2020). Cases quickly spread into the community, and by April, the disease was classified as spreading through community transmission, necessitating the movement of these tests from the prevention phase of the response plan to the mitigation phase (Schuchat, 2020). Availability shortages have plagued both the United States and other countries across the globe, such as Iran and India, with the latter recently facing an overwhelming case load of a particularly virulent strain (Seddighi, 2020). Testing frameworks that have been implemented in preparation of a pandemic like this one seem to have largely failed, and require a revaluation to see where they were successful and where changes need to be implemented in order to increase their effectiveness.

While the health care aspect of a response plan is important, the social contexts within which it occurs cannot be ignored. These include not only the governmental response, but also social media and its effects on popular opinion. After analyzing the response to Hurricane Harvey in late 2017, it was determined that those with access to information regarding the crisis in question can be leveraged to maintain trust in the system (Mirbabaie et al., 2020). By mitigating the factors that lead to social media distrust, it was believed that social media networks could be leveraged to assist in dealing with the coronavirus pandemic (Bunker et al., 2019). While social media has allowed for the rapid dissemination of new mandates and best practices, it is not without its own pitfalls, just any new tool has (Kumar et al., 2021). One such fault was the spread of the emotion contagion. While emotion contagion has been

previously defined by Hatfield, E., Cacioppo, J. T., and Rapson, R. L. in 1994 in their book of the same name, in this case it is the emotional impact that the pandemic had on the population, including the fear, despair, and other emotions that come about when facing such a virulent disease (Hatfield et al., 1994).

The ease with which information about treatment and testing facilities can be offered to the public has a flip side of the coin for information about the virus on social networks, with it spreading as fast, if not faster, than public releases. The spread of the emotion contagion has been linked to increased levels of anxiety and other similar mental illnesses, and increasingly highlights the need for further studies into the fear factor when dealing with pandemics, especially of this scale (Wheaton et al., 2021). Another important aspect, that also plays into the emotional contagion as well, is the disinformation available via social media. While the rapid spread of proper information through social media can cause anxiety, mixing in misinformation only worsens these effects. While misinformation campaigns have been present in other pandemics, their presence during the current coronavirus pandemic has been likened to a parallel pandemic, spreading quickly through the same channels utilized to disseminate official information. Not only can these rumors cause organizations to make overarching decisions based on false information, but can cause increased damage to the population due to them following false rumors in search of treatments. For example, in Iran, alcohol was described as having the ability to kill coronavirus particles. As alcohol is much more easily available to the general public, many people tried to take advantage of this to help them with their illnesses. However, in the rush to obtain the alcohol, many people obtained alcohol that contained toxic methanol, resulting in 300 deaths and about 1000 hospitalizations (Love et al., 2020). These could have been mitigated by rigorous fact-checking or response by authorities, but due to the speed with which ideas can now spread via the internet, these have become increasingly difficult to implement. However, we will likely need to be more vigilant against the misinformation due to the increasing pervasiveness of not only this

misinformation, but conspiracy theories that serve as barriers to care (Daniel Romer and Kathleen Hall, 2020).

Overarching all of these individual aspects of pandemic response is the necessity of having an effective and strong leadership team to make decisions and provide feedback and information to the general population. Usually this involves the government's and other leading healthcare organization's response plan and active decisions during the pandemic. Not only must the response plan mentioned above be prepared and executed in the proper fashion, but they must maintain an active leadership role in disseminating information as well as providing modifications to the response as necessary. These differences in behavior were evidenced even in the beginning of the pandemic. An open letter by current and former members of the Centers for Disease Control and Prevention, including former directors Jeffrey Koplan and Tom Frieden, has decried a lack of national leadership in the US on the pandemic and called for the CDC to be at the "forefront of a successful response to this global public health emergency." (McKay, 2020) Current research being done into both the actions taken by governmental organizations and how early in the pandemic they were instituted, suggest that the earlier stronger actions were taken seem to correlate with reducing or even reversing the death rate from COVID-19 (Dergiades et al., 2020). For example, the mask mandates utilized in Ontario, Canada were associated with a reduction in new cases, and that the implementation of similar programs nationwide could have reduced cases by 50,000 (Karaivanov et al., 2020).

Section 2.2: Sri Lanka's Medical System

But while all of these aspects do contribute to an effective pandemic response, they are only half of the equation, as evidenced by the SYRSA framework. Any pandemic response's success is mediated by the health care system of the nation, whether it be for better or for worse. Many would expect that developing nations would be much worse off in this sector, but the term developing can be

deceptive. The International Health Regulation (IHR) capacity is a measure, out of 100, developed by the world health organization to determine a country's ability to detect and report public health crises. While countries like the United States might have an IHR capacity of about 100, one might expect nations like Sri Lanka that have an IHR capacity of 75.5 to be underprepared and under-equipped for dealing with a pandemic of this magnitude (WHO, 2020a). However, the Sri Lankan medical system has provided health outcomes that exceed many of its neighbors, and is believed to be one of the most robust public healthcare systems in South Asia (Rosenberg et al., 2018). The current healthcare system implemented in Sri Lanka is pluralistic, combining aspects of Western biomedicine, as well as traditional ayurvedic practices with these systems serving as the major healthcare provisioner for most citizens (Figure 2 pg. 14). Each part of the public health system works as part of a well-oiled machine, helping to largely eradicate or mitigate prevalent diseases in the region, including malaria and dengue, respectively (Ranaweera et al., 2020). Additionally, despite the limited resources available to the healthcare practitioners, they have reduced the maternal mortality ratio (MMR) in Sri Lanka, declining from 340 to 43 over multiple decades, with their healthcare procedures recommended as models for other neighboring nations to follow suit, whereas their neighbors of India and Bangladesh are at MMRs of 145 and 173, respectively (Haththotuwa et al., 2012) (UNICEF, 2021).

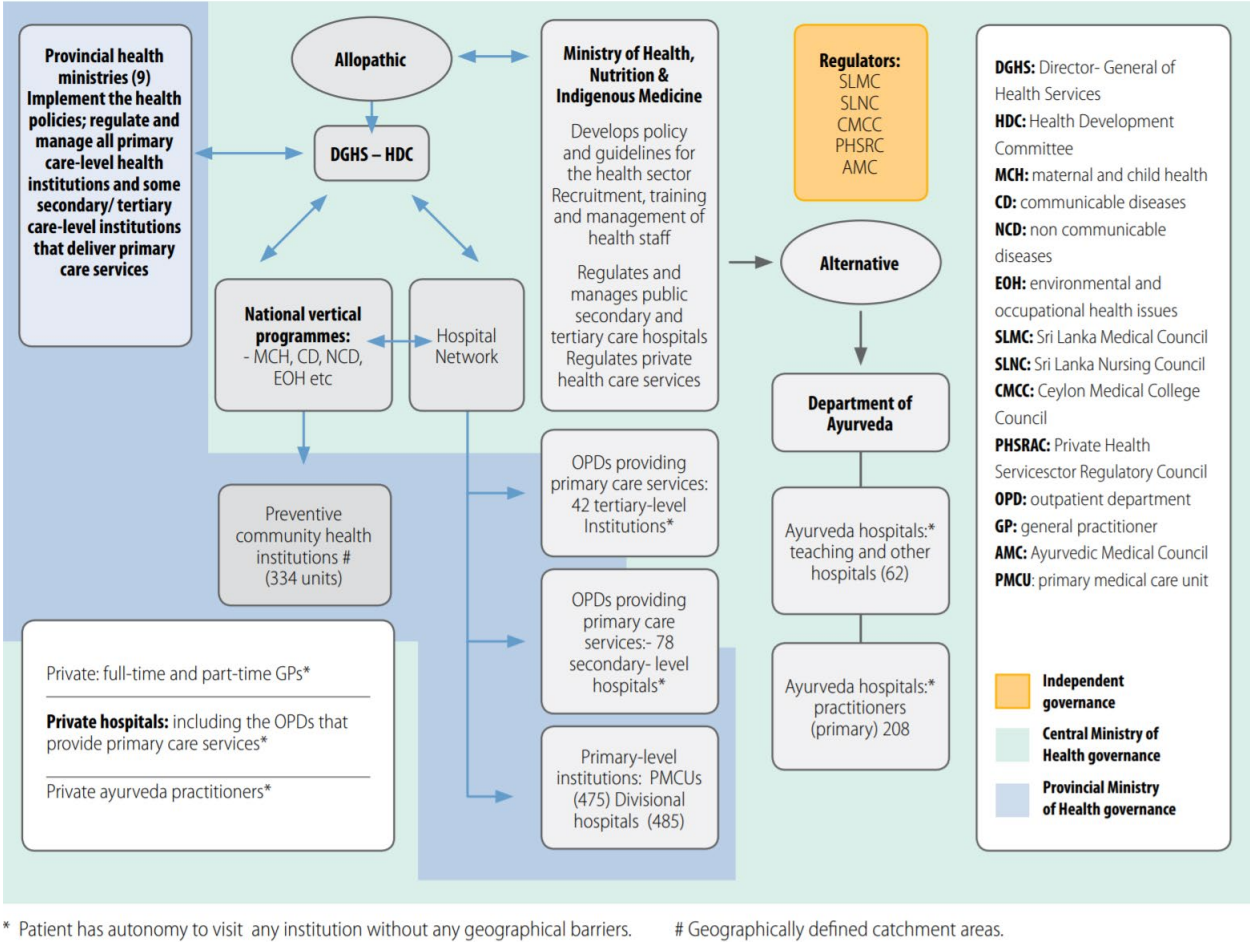


Figure 2: Framework for the pluralistic medical system developed in Sri Lanka (Perera & Perera, 2017)

While there is a large amount of research available on past pandemic responses, the coronavirus is still a relatively new development and research data on both responses to it and the effectiveness of these responses has changed over the course of the pandemic. It is possible that some of the conclusions presented will change as more data and information is provided to us. While some believe that with the rollout of vaccination programs it will fade into obscurity, achieving herd immunity is a long process, and as the second COVID-19 wave in January of 2021, in India has shown us, we must continue to research the pandemic and the effects it will leave on a global scale (Khedar et al., 2021). These analyses must be conducted in a holistic manner, incorporating not only the response and plan themselves, but also the healthcare system through which it was developed. While this project will aim

to determine how Sri Lanka was able to respond to COVID-19, it does so in the hope that the lessons learned from this analysis can be applied to new pandemic preparedness plans. By synthesizing the lessons of the pandemics past and present in order to prepare for those yet to come, we can begin to not only mitigate the impact of these future illnesses but improve the overall health and wellbeing of humanity as a whole.

Section 3: Methods

When looking at the response to a pandemic, many make their determinations of success by gathering and analyzing data on the overall outcomes that were achieved. Much of the decision-making is not only developing but implementing public health policy, which relies on data analysis to ensure that a net benefit is being provided to the populace. Be it interventions in foreign countries or domestic health policies, each must have a tangible, usually data-driven checkbox to determine its success. While these data-driven approaches to the policy are important to ensure that funding is allocated properly, they can sometimes give us an incomplete idea of the situation. As such in order to gain a more complete understanding of the issue at hand, it is much better to combine both data and the personal experiences of those affected by the aforementioned issue, in order to get a full grasp of what is occurring and its effects.

In most countries, the data on cases and vaccinations are posted online and available for members of the public to see. In the United States, the Centers for Disease Control takes a central role in coalescing data on different aspects of the pandemic and its response, including case numbers, fully-vaccinated percentages, and even hospital admittances. While not as globally well known as the CDC, this role is taken up in Sri Lanka by the Ministry of Health's Epidemiology Unit. As this data is largely available online, it provides a supplementary aspect to the focus of this project. This thesis instead chooses to focus more on the personal stories offered by those who experienced the pandemic

themselves. These stories are usually swept under all the epidemiological data and in the process of doing so, cast into shadow a large part of what we seek to discover about the pandemic response.

While the nature of the pandemic meant that I was unable to travel to Sri Lanka and meet the individuals I planned to interview face-to-face, I was nevertheless able to contact several people I had hoped would be willing to take part in this study. While the method of contact for these interviewees varied from a case-by-case basis, they can be separated into those I contacted via email, and those I contacted via phone, which provided specific differences I will touch on later. In some cases, those that I interviewed at the beginning of the project provided contact information for those that I could speak to for more information, providing an almost snowballing-style of recruitment for some of these interviews. All guidelines, as issued and approved by the Emory Institutional Review Board, were followed, and the names of the interviewees were removed in the body of this paper. While this study did cover human-subjects research, the Emory IRB didn't believe it required further review and exempted it.

In the process of looking for those I could interview, there were several times where I was forced to look for other contacts, either through non-responses or through reluctance to participate in this project. The interviews I ended up having were varied in length, with most lasting for about an hour to an hour and a half in length. I utilized open-ended questions that covered topics such as employment, pandemic regulations, and opinions on the response to encourage them to answer the questions, but feel free to provide other information that they felt was pertinent as well. The open-ended nature of these interviews meant that I was able to delve further into topics that the participants were more willing to discuss and learn more about those specific ideas. There was a total of sixteen interviews conducted, both in English and Sinhala. However, two of the interviewees withdrew from the study after I conducted their interviews, which may have been influenced by the method of contact I utilized. While I did take notes during all of these interviews, I endeavored to give them my full attention during the

interview by recording it and noting down major points that I would like to highlight. As these were done utilizing Zoom, the native recording function enabled me to listen to them while still being able to analyze their responses later for more information. Each of the interviews were transcribed by hand, with those that were done in Sinhala being transcribed directly to English. As I developed my project and analyzed the interview data, I looked for the common themes and ideas that I found within that supported, and even conflicted with those that I came across in my research into pandemic response, in order to provide a well-rounded investigation of Sri Lanka's pandemic response as well as the effects it caused for the general public. I have provided a table of the sixteen interviewees below, after which I will strive to highlight several aspects of my methodology in this study.

Table 1.1: Interviewee Information

	Interviewee	Method Of Contact (Phone/Email)	Language of Interview (Sinhala/English)
1	Director General of Medical Services (Colombo)	Email	English
2	Consultant Microbiologist (Colombo)	Email	English
3	District Medical Officer of Health (Matara)	Phone	Sinhala
4	Teaching Hospital Pediatrician (Galle)	Phone	English
5	District Hospital Nursing Officer (Kalutara)	Email	Sinhala
6	Midwife (Colombo)	Phone	Sinhala
7	Supervising Public Health Inspector (Matara)	Phone	Sinhala
8	Jaffna PHI (Jaffna)	Phone	Sinhala
9	Tea Plantation Public Health Officer (Nuwara Eliya)	Email	Sinhala
10	Ayurvedic Doctor (Deniyaya)	Phone	Sinhala
11	Retired Military Officer (Matara)	Phone	Sinhala
12	Middle School Teacher (Southern Province)	Email	Sinhala
13	Organic Farmer (Puttalam)	Phone	Sinhala
14	Business Owner (Kurunegala)	Phone	English

Section 3.1: Travel Restrictions and Obstacles:

In the case of the coronavirus pandemic, its worsening effect has put a damper on many of not only my own research plans but also those of others. In March of 2020, when the pandemic was officially declared by the World Health Organization, it was believed by many that this would be a smaller disease in scale, and only last for a few months, if not a year. However, this pandemic has surpassed many early predictions, now well into its second year. While several countries have just passed a peak in case numbers and deaths, the toll on human lives continues to be staggering. In the middle of April of 2021, the third wave of the novel coronavirus quickly began to affect more and more people in Sri Lanka, leading to record numbers of both cases and deaths, leading to a lockdown that was only lifted at the beginning of October. The daily new case count during the height of the third-wave was just under 6,000, but these numbers have dropped quite drastically as the outbreak has been brought under control. (Appendix A) As such, plans to travel to Sri Lanka that were tenuous at best, due to the initial effects of the coronavirus pandemic, were put indefinitely on hold, and the interview portion of this project moved to a virtual platform. While this provided additional difficulties, including ensuring a stable internet connection for the interviewee and scheduling interviews, we were, for a large part, able to successfully interview multiple people from several walks of life and different ethnicities. However, while virtual interviews can provide us with an understanding of the issue, they cannot be a full replacement for the breath of understanding provided via participant observation of pandemic response practices. As such, this paper hopes to provide an encompassing snapshot of the response to the pandemic and the lives it has affected.

Section 3.2: Cultural Boundaries:

As mentioned earlier in this paper, Sri Lanka is made up of several different ethnic groups. In fact, to say that Sri Lanka is made up of Sri Lankans would be an oversimplification. For example, many in the United States, India, and China may identify as Americans, Indians, and Chinese but are also a part of other ethnic, cultural, or even religious, groups, such as African-Americans in the United States or the Muslim population in China. In the same way, each Sri Lankan is a part of different religious or ethnic groups that provide further complexities and differences to their identity. And just as is common around the world, these groups sometimes come into conflict with each other, in the case of Sri Lanka, quite violently.

While several papers could and have been written on the ethnic disparities that have and still exist in Sri Lanka, one of the most well-known of these conflicts that exploded in violence that affected even the international community was the Sri Lankan Civil War. Lasting for almost three decades, from 1983 to 2009, the war claimed several thousands of lives with many others completely unaccounted for and left deep wounds on both sides that for many have yet to heal. The goal of this paper isn't to analyze the conflict, nor to place blame on any party. But to not acknowledge the cultural differences that exist amongst those in Sri Lanka would likely be a repeat of decades of mistakes not only by Sri Lanka but other countries as well. As such, we endeavored to ensure that this paper provided viewpoints from all Sri Lankans, and not just from the majority.

Section 3.3: Language and Translations:

Sri Lanka has three official languages: English, Sinhalese, and Tamil. Most of the general population is fluent in two if not all three of these languages. I myself can lay claim to relative fluency in both English and Sinhala, and while these languages can be translated between one another, any bi-lingual person can say that there are several phrases and idioms that do not directly translate, instead

relying on explanations of the concepts being explained or conveyed. Even in translation, the words lose some of their linguistic flavor and tone as they're moved between languages.

For example, "Diye andha irak vage"[1] is a phrase in Sinhala that means to draw a line in the water. In English, it would translate to something along the lines of declaring something but it then being forgotten, just as quickly as the water washes it away. Another example would be "Ibbagen pihatu gattha vage"[2] which literally means to get a feather from a tortoise. This one might be a little bit easier to understand, as it means that something is very difficult to do. Last but definitely not least is "Kirigahata anna vage"[3] which would be translated to mean that something is done extremely well. While the literal meaning of this one might be a little bit harder to connect, it means to have hit the milk tree, and points to the important role that milk, or "kiri" plays in several aspects of Sri Lankan culture.

The schooling system in Sri Lanka aims to ensure that all of the students who pass through can communicate with each other. This has resulted in most Sri Lankan citizens having an understanding of all three languages, even if it is not the one they speak at home, quite similar to how learning multiple languages is part of the core curriculum at many institutions in the United States. As such, it was possible to conduct interviews with those who self-identified as of the Tamil ethnicity, as many of them understood both English and Sinhala if not just Sinhala. However, there is the fact that while most people speak multiple languages, they only think and dream in their home language, which means that the aforementioned issue with translation is still encountered, albeit in a much more reduced fashion. Once again, the general idea and verbiage may come across to the listener, but the exact message including certain emotive words may be reduced. While this may not have influenced the overall information in this paper, it is something that should still be taken into consideration.

[1] "දියේ ඇන්ද ඉරක් වගේ"
[2] "ඉබ්බාගෙන් පිහාටු ගත්ත වාගේ"
[3] "කිරිගහට ඇන්න වගේ"

Section 3.4: The Email Mask

Additional complexity in gathering interview information was provided by my positionality. While I am essentially a native speaker of Sinhala and English and would identify as Sri Lankan-American, to many of my interviewees, I was a researcher conducting a project. While this may not have been the case with all of the interviewees I participated with, there were two interviewees, who while very vocal in their viewpoints and commentary on the pandemic response and even vaccination rollout, both in support and against, decided to pull their interviews from the project a few weeks later, likely after further considering that their opinions would be a part of a larger research paper.

While this removal is a facet of research that must be faced by many researchers at all levels, I believe it was further compounded by the pandemic's restriction on travel (Garda, 2021a). As mentioned earlier in this paper, the initial plan for this project involved travel to Sri Lanka and face-to-face interviews. These plans were then placed on hold during the second wave of the pandemic, which started in October of 2020, and suspended during the third wave of the pandemic, replacing the face-to-face interview with those done virtually. While this in itself wouldn't affect the data provided, it also meant that many of the people who were interviewed were contacted for their permission via email and phone calls. While introductory phone calls would allow me to discuss the topics and schedule interviews, even switching to Sinhala, if necessary, preliminary emails usually contained the information regarding the research project in a much more condensed manner. For example, emails sent to Public Health Inspectors (PHIs) offices were usually written in English and contained information regarding the project, and as such were written in a formal tone. This likely caused those who received these emails to view me as more of a foreign researcher, as opposed to a more informal light. As such, they may have been more apprehensive about providing strong opinions on certain issues, as they believed they were at more of a risk.

In comparison, phone calls were much less formal and allowed for a relatively more spaced-out application of the information. In my experience, these phone calls seemed to match the face-to-face interview seeking that would have likely occurred if not for the pandemic. They allowed me to explain my situation in a much more casual but still respectful tone, which may have lessened their caution and given me more information regarding specific aspects of the pandemic experience, as opposed to being more reluctant to provide their opinions on the response. In fact, those who have declined to be included in the study were from those that I initially emailed in order to contact, with none of those who were contacted via phone call initially not having withdrawn from the study. While it would have been preferable to conduct all of the searches for interviews via phone calls, not all of the people who we were hoping to interview had available phone numbers and contact info, sometimes necessitating several emails prior to establishing the contact information of the proposed interviewee.

Section 4: Results

When I initially began looking into the pandemic response in Sri Lanka, I thought that there would be one thing that would be the shining example that would allow one to understand how they were able to perform so well during the initial response to the pandemic and even later. But as is usually the case, the reasons behind Sri Lanka's success in its response to COVID-19 and the subsequent rollout of vaccines seem to be the result of multiple variables, each as important as the last, that came together to combine into a multifaceted response that allowed for them to perform as well as they did. While there were several complications that resulted during this time, in the course of interviews many of the people I spoke to seemed to agree that Sri Lanka was doing quite well, especially considering that they understood that many people dismiss it as a "developing country" or "third world". With a combination of swift multi-sector action and a cultural sense of community, Sri Lanka was able to largely contain the

coronavirus pandemic, despite the detrimental effects felt by the economy, among other challenges, that continue to hinder efforts even now.

Section 4.1: Multi-Vector and Multi-Level Assault

One of the first interviews I was able to secure was with the Deputy Director General (DDG) of Medical Services, which was also one of the interviews I was most excited to conduct, as in his position he had been charged with the management of much of the curative sector as a member of the Ministry of Health. While I mentioned earlier that the pluralistic health system that had been developed in Sri Lanka was one of, what I believe to be, the main factors in its success against the virus, his interview was the first that gave me a true insight into how the health system functioned. In a simple sense, the robustness of the system comes not from its solely pluralistic nature, but from the equivalent focus given to both sides of the coin, both the preventative and curative fields of medicine.

While many people might consider the curative aspect to be the most active during a response to a disease or pandemic of this scope, the preventive aspects are just as if not more important to stopping the spread of the virus and preventing it from reaching those who would then need the curative aspects of the health system in order to heal them. In Sri Lanka, the origins of the current health system can be traced as far back 1926 (Hewa, 2011). This was when the first Health Unit Programme was rolled out in Kalutara, which is located in the southwest, in order to provide an equitable, community focused health approach, building upon traditional ayurvedic practices already in practice across the island. This would eventually be expanded to include the rest of the island, and serve as the precursor to the systems that are currently in operation. However, as I found while discussing the framework of the health system with the DDG, some papers gloss over the finer details of the system, as it is not the main focus of the paper or presentation. However, some of these same sections played crucial roles within the pandemic response, and were highly essential to Sri Lanka having as good of a

response as it did. For example, while some frameworks, like the one utilized at the beginning of this paper describe 300+ “preventative community health institutions”, the DDG explained that these community health systems are in his opinion the “backbone of the public health system.” Broken down by the nine provinces and then even further by region, the working parts of these units have been on the front lines of the pandemic in Sri Lanka working alongside the local law enforcement and the military to track and reduce the spread of the pandemic. They can be broken up into the several hierarchical offices that largely follow the same structure. In each region, this system consists of Medical Officers of Health (MOH), who serve larger areas, with the Public Health Inspectors (PHI) and Midwives who work under them being much more numerous to provide a more hands-on approach to the community they serve.

As a part of my thesis process, I was also given the opportunity to interview several members of these medical units. In this vein, however, I wanted to get the whole picture. There have been cases in the past where the different regions and members of the country were discriminated against, specifically in the northern portions of the country which are dominated by the Tamil ethnic minority. This led to violence and discriminations that while lessened, still affects people to this day. As such, another of the very first interviews I endeavored to conduct was with those who served as frontline workers of the pandemic in these aforementioned regions, to see if they felt that this discrimination may have been echoed in the way that pandemic response was implemented in their area. Surprisingly and fortunately however, this didn’t seem to be the case. In fact, some of the people I spoke with seemed to think that some of these regions performed better or received more attention and supplies than some of those with a Sinhala ethnic majority. One of the PHIs who worked near the city of Jaffna told me that he didn’t feel that there was any undue discrimination to himself or to any other members of his constituency. In fact, he was surprised I asked about this, stating, “Madhi paduwak vune na”[4] The

[4] “මදි පාඩුවක් වුනෙ නෑ”

English translation amounted to there not being even a hint of a rumor of a slowdown in the availability or the rollout of the vaccination programs. However, there have been reported shortages in other regions of Sri Lanka. In an article from *The Associated Press* from June 2021, Sri Lanka was reported as unable to open schools nationwide due to a lack of promised AstraZeneca from India after an initial donation of 500,000 doses (Associated Press, 2021). While this discrepancy may have had multiple reasons, one possibility is the different vaccines that were used in different regions of the country. As another one of the PHI's who works near a tea plantation stated, "[We] had a lot of Sinopharm vaccines available, and we were able to get almost everyone vaccinated." The same article from *The Associated Press* does mention that Sri Lanka is receiving a continuous supply of Sinopharm vaccines from China, whereas the AstraZeneca vaccines have been lacking in delivery even with the assistance of the WHO and COVAX. At the time of writing this paper, vaccination rates across Sri Lanka account for 69.72% of people receiving at least one dose, with 61.20% having received both doses, as of October 26, 2021 (Ritchie et al., 2020). These rates are greatly different from their closest but much larger neighbor to the north, India, which while having about 51.56% of their population with one dose, only has 21.94% of the population being fully vaccinated (Ritchie et al., 2020). Rates in Sri Lanka have been greatly increasing as the now largely developed formula for vaccination has been duplicated across the island. The Jaffna PHI stated that he believed that one of the slowdowns for the vaccination process was actually getting the centers and personnel that are a part of the formula initially set up, as he mentioned that everyone who received the vaccine was entered into a database. The database included their name, address, sex, and other identifying information, in order to properly track the numbers and information of those who had already received the vaccine. While this will provide invaluable data for controlling the spread of the virus, it requires almost twice as many people at each vaccination center than those rolling out the vaccines, which consequently takes more time.

The situation was quite similar in the rest of the country, albeit with a few differences. In many of the other regions of the country, those who identify as Tamil are usually in the minority, with the vast majority identifying as Sinhala. However, as most of the Sri Lankan population learn English alongside their home tongue, if not all three languages, providing them with the ability to converse with each other. In fact, as a midwife from the south of the country in Matara, pointed out to me, as a part of her training, she was required to take a Tamil Service Exam, in order to ensure that she was at least conversationally fluent enough in Tamil in order to effectively perform her duties as a midwife. Midwives are an essential part of the public healthcare system in Sri Lanka, both during the ongoing response and prior. Before the advent of the pandemic, they provided care for pregnant and nursing mothers, and now do their best to ensure that these patients are not forgotten in the rush to contain and cure the novel coronavirus. The midwife I spoke with mentioned that there was quite a bit of hesitancy with vaccination among her patients, especially those who were pregnant, as they were afraid of possible side effects it could have on their unborn child. This was further compounded by small but quite effective rumors that were spread on social media regarding harmful effects on unborn children, but was then mitigated by the cooperation of the government and public media sources that provided information to largely refute these. There is quite a large amount of trust in the media in Sri Lanka, at least with my own experience and even with those I have spoken with in the process of conducting this review, which is surprising given that in other countries such as the United States, it seems that the mistrust in the media has only expanded since the beginning of the pandemic. A study by the Pew Research Center shows that trust in the public news media has dropped by almost 20% among all adults in the past five years in the US, which would be unprecedented in Sri Lanka's case (Pew, 2021). While there was not much in the way of misinformation in Sri Lanka, that which did occur largely came from misinterpretation of guidelines or exaggerations in headlines for stories. For the latter, an image of an article that circulated the social media in Sri Lanka touted that thousands of patients had made full

recoveries after being treated with ayurvedic medicine and was shared over 500 times (AFP, 2021). However, a close read of the article itself shows that the patients were only showing mild and moderate COVID-19 symptoms. Ayurvedic medicine is a large part of Sri Lanka's public healthcare system, with several separate ayurvedic hospitals operating alongside those that utilize traditional western biomedical approaches. Ayurvedic doctors must also undergo training and exams not dissimilar to those studying to be physicians in western biomedicine. In speaking with an ayurvedic doctor in Sri Lanka, she made sure to emphasize that none of the treatments she provided her patients with ensured a cure from COVID-19. Those who have been trained in traditional ayurvedic medicine focus much more on the preventative aspect of the virus, instead ensuring that any patients that come their way are given things such as salt-water to gargle, steaming of the sinuses, and medicinal broths to improve immunity.

While the preventative side of healthcare in Sri Lanka is operating at full-steam on the public front lines, the curative sector is not falling behind at all. Even during the initial waves of the pandemic, in March to April 2020, 152 patients were hospitalized as laboratory-confirmed positive cases in three state-sector hospitals, with 146 of them being later discharged and only six patients passing away (Arambepola et al., 2021). In more recent months, the Ministry of Health's Epidemiology Unit has not released any official information regarding COVID-19 hospitalizations, while many health professionals state that the nation's bed capacity is nearly full, which mirrors what I have heard during my interviews. A pediatrician at a Teaching Hospital near Galle stated that while the country's health system was not initially prepared for a pandemic of this scale, the response had become, "one of the most organized [he] has seen." As he explained it, Sri Lanka has broken their health system's hospitals into a tier-like fashion in order to allow for the proper treatment of patients. While those on the lower tiers deal with patients who may have had milder symptoms of coronavirus, those with more severe cases of the illness are taken to higher level hospitals, usually those that serve at the district and regional level. He was also

quite supportive of the role that those in the ayurvedic field played in supporting the pandemic response, especially ensuring that those who had milder symptoms still received treatment.

One of the major players in the pandemic response that was quite difficult to get an interview with was the military. The Sri Lankan Tri-Forces played a major role not only in the quarantine efforts to forestall the advance of the infection, but also in the rollout of the vaccine. While this project was unable to receive any interviews with any active-duty personnel, due to operational security requirements and regulations, we were able to speak with a member of the armed forces who had since retired but was able to give us a small glimpse into the role played by the military. He explained to us that the military worked alongside the government at the beginning of the pandemic to track and quarantine those who might possibly have been exposed. “We provided them free quarantine, with food and beds in very good hotels,” he replied explaining that while he understood that some people complained that quarantine measures were overly strict, they were necessary in order to slow the spread of the pandemic, and it is his belief that the coronavirus would have had a much more drastic effect on the country had these measure not been put into place. While some hotels were utilized in the later stages of the pandemic, initially it was also the military forces that constructed and managed quarantine centers and provisional hospitals across the country, not only helping to manage these centers, but also helping to deliver people to these centers, which did result in some negative consequences that will be discussed further on in the paper. The military continues to conduct vaccination clinics with those staffed by military officers being open around the clock 24 hours of the day, alongside many military hospitals being converted to top tier treatment facilities to deal with those who have been the most severely affected by the pandemic. Overall, the mobilization of the Sri Lankan Tri-Forces played a major role in helping to control the spread of this virus.

Section 4.2: Community Strength: Together Strong

While Sri Lanka's health system played a large role in ensuring its success against the coronavirus, it's cultural sense of community also supported this result. Many Sri Lankans live with their extended families and do their best to support each other. A nursing officer in Matara, the south of the country mentioned that this meant the neighbors often provided unofficial care for those whose family had been infected with the virus and were under quarantine: "They made food for them and bought them groceries. I think it speaks to the emphasis on family for Sri Lankans." Many of these neighbors were in fact, members of extended family. While this incidence is lessening slowly, most children in Sri Lanka end up living very close to their parents, be it next door or even just down the street. Due to this trend's pervasiveness for much of Sri Lanka's history however, family members are almost equitable to neighbors with some villages essentially being one large family. While this has caused some complications in regards to governmental regulations that will be discussed later, it also served to provide a boost in ensuring that those who couldn't provide for themselves due to quarantine procedures were able to receive food and other necessary goods from those around them. This neighborly compassion also extended to those outside their village communities. One of the medical officers who serves in a more administrative and advisory position, still found a way to contribute to the more frontline response by gathering food, clothing, and other basic donations from members of the community who were willing to spare them. These donations were then delivered to villages in more rural regions of Sri Lanka that were unable to get these supplies due to quarantine procedures and an ongoing ban on interprovincial travel. "It was a lifesaver for them," he explained, stating that while the efforts to quarantine stalled the effects of the virus, it also meant the disruption of much of the trade flow and markets that were present, leaving many of these more remote villages with no way to access these necessities of life. Other members of the community also donated to the hospitals in order to ensure that patients were properly taken care of when they arrived. A staff microbiologist I spoke with

in a hospital near the capitol remembered hearing the news of the first of many monetary donations that would enable them to build additional wards to care for patients. “It was like a relief, before we were trying so hard, with so little, and not being able to help so many. And then to get this [donation] was like ‘Ok we can finally help them now’,” as she recalled her emotions. Other donations soon followed with some containing supplies such as portable sinks and additional hospital beds. These donations, combined with government and military efforts to expand hospitals in order to bear the increasing caseload of patients, was another of the factors that I believe led to Sri Lanka performing as well as it did. Those directly affected by the virus were assisted by their communities, with this sense of togetherness and closeness affecting even those who experienced the effects of the lockdown.

Many of the children were unable to attend school due to their closure in hopes of reducing the spread of the pandemic. While some of the students were able to attend the new online classes, others were unable to even attempt to do so due to the lack of a computer. Many in Sri Lanka lack permanent access to internet connections or are unable to even purchase laptops and other equipment, making the transition to remote learning much more difficult. This is where many of the teachers stepped in to pick up the slack that the government had left. “We made packets for them [the students] and left them in drop off locations for them to pick up. If we didn’t do it, then there wouldn’t be anyone to teach them and they wouldn’t be able to continue their schooling,” one middle school teacher told me. She explained that while the government pushed for classes to be moved online, they were unable to provide students with a universal way to access these classes. So, teachers had to pool resources together to go out and buy computers or phones for these students, out of their own money. In some cases, local messaging groups were set up, as many parents and teachers were quite close to one another, and students could be added to the group, with a group phone call taking the place of a virtual classroom.

This sense of togetherness also was present in many local businesses. A business owner I spoke to manages quite a large motor spare parts business, which would normally require quite a bit of face-to-face interaction, as the customers had to bring in representative parts to show which ones needed to be ordered. However, this would have been a detriment to business during the pandemic as face-to-face interaction was largely limited. He explained that face-shields were constructed to allow customers to show their parts to the employees, while still reducing the spread of the virus particles. While others might forget them, many of the farms in Sri Lanka were impacted by the pandemic as well. Many farms shifted over to online delivery services of their perishable fruits and vegetables, which prior to this had been taken directly to market after harvest to be sold to the consumer. One organic farm owner in central Sri Lanka I spoke with mentioned that in order to reduce the risk of transmission to his employees, he changed some of the operating parameters around the farm. “Before we let them work together in the fields picking from the same line [of crops], but now we make sure that they stand 3-4 meters away from one another.” The public health inspector who worked to oversee a tea plantation in central Sri Lanka, also spoke in the same vein. With how large the tea plantation was, much of the nearby village depended on the income provided by working there. “Out of the 2,300 people we have working on the plantation, only three people have tested positive and had to go (quarantine). Only one of those was a worker here, and there was no social transmission from him” The pride in both of these farmers' voices in making a dent in the numbers of the pandemic was quite palpable in their tone, and rightfully so. These community steps, while individually small, came together to provide a much larger effect than those of the individuals, and served as the second aspect in the success story of Sri Lanka. But as one can already see, this community environment has led to some pitfalls during the pandemic response.

Section 4.3: Economic Challenges and Uphill Battles

While it may seem that up until now Sri Lanka's fight against the novel coronavirus has been all positive, with quite few, if not any downsides, this is not the case. Just as many who I had the chance to interview were quick to showcase how well Sri Lanka performed, many of them were also the first to make sure that I would present the negative aspects as well, in order to make sure these lessons were brought to light.

One of the first issues that was raised with the current response was the rapidity of the quarantine procedures. While many of my interviewees praised the efficiency of the lockdown and subsequent quarantine procedures, these aspects were also their biggest detractors. The organic farm owner I spoke with explained, "A lot of these people were not given a lot of time to move to quarantine centers, and they couldn't take much with them." Many of the people in these quarantine centers, especially at the beginning of the pandemic, didn't understand why they were there, even though it may have been explained to them. In other cases, remote villages that reported high numbers of infections or positive test results were quarantined as a whole, instead of meticulously testing each individual due to the large caseload of the time. Once again, these villagers were not fully made aware of the conditions of their stay, and in many cases didn't understand the transmission of the virus, once again mirroring the fear felt by those at the start of the pandemic. Combining the fear of not knowing with the military being in charge of most quarantine procedures, some of these people lived their lives in fear of either spreading the virus to others or catching it themselves. Not only is this detrimental to the control of the current pandemic, as they may have avoided seeking medical help, in order to prevent catching it, when they already may be presenting symptoms, but also to the preemptive prevention of future pandemics and illness control. The pediatrician I spoke with mentioned that many of them may need specific psychological counseling in order to counteract the effects of living for almost a full year in this way, but would also need to be taught more about how the virus is transmitted, among other basic

epidemiological information, so as to prevent such an event from occurring again. Education betterment was another aspect that pitched as a place for possible improvement by many of the healthcare professionals I interviewed. The consultant microbiologist I spoke with stated that even some members of her staff didn't properly follow the guidelines outlined by the government, as they misunderstood what was stated. "They wore gloves, because it helped prevent the spread, but then they didn't take them off regularly," she explained. For them, the wearing of gloves prevented the virus from spreading and so they believed that if they wore these gloves, they would be safe. However, as they didn't understand the actual transmission of the disease, they didn't wash their hands regularly like they normally would or change their gloves as most people with a more scientific background would do. As such, they left themselves much more open to the pandemic than they would have if they maintained their prior behavior. By combining future pandemic responses with a more educated public awareness, and ensuring that the parties and stakeholders involved understand the situation, we can further improve upon our current pandemic response framework.

But not all of these are so easy to improve. As it is still largely a "developing" country and considered part of the Global South, many of Sri Lanka's citizens depend on being able to work on a day-to-day basis and travel to that job. Whether it be as a three-wheel rickshaw driver or a food market vendor, the bulk of Sri Lanka is made up of working-class individuals who need to be able to get to and from work to be able to make a living. However, this flies directly in the face of the pandemic regulations put into place by the government, including the lockdown and quarantine guidelines. And so, we come to the dilemma that many of my interviewees also came to. While the quarantine procedures and pandemic regulations put into place helped to slow down the pandemic, they also prevented many of these workers from attending to their jobs. While many of them didn't feel the full effects of this, as it was largely mitigated by the community driven support system, it was still largely a detrimental factor. On an even larger scale, a similar effect can be seen when looking at case numbers

over the course of the pandemic. Numbers began to peak in mid to late April 2021, in a wave that surpassed anything before it, just after the celebration of Sinhala New Year. The Sinhala New Year celebration is for many one of the biggest events of the year, celebrated among friends and family. For many, this year was no different. Even some of my interviewees stated that they themselves went out because they didn't believe that the coronavirus would be such a large threat, but it is the transmission time, super spreader event, if you will, that many people blame for the current wave of coronavirus cases. While there is no surefire way around these incidents, quarantine efforts in the future could be shifted to be slightly variable in consideration of the socio-economic status they are being applied to, such as providing government compensation or providing for some way for these individuals to maintain their businesses. Additionally, these future guidelines should ensure that people understand why they are being placed under such regulations.

Section 5: Discussion

Over the past years, data-driven approaches have become part of the core framework for developing and evaluating public health initiatives. Utilizing these data sets are largely important in evaluating the success of certain interventions, where they might best be implemented for the largest effect, or even ensuring that those in charge of these interventions are held accountable (Tsui et al., 2015). While this focus on data is important in allowing us to advance and adapt in public health, it sometimes means the human element can be lost in the drive to be more objective and data-driven, which leaves us as members of the public blind to the whole story. As I mentioned while discussing my methodology for this thesis, the story behind the numbers can sometimes be swept away when looking at a pandemic response from an epidemiological or even public health standpoint. Anthropology teaches to strive for a more holistic approach, combining both the numerical data on an issue alongside the human narrative (Atkinson, 1993).

When one looks at the numbers and statistics of the COVID-19 pandemic and the subsequent response in Sri Lanka, there are several takeaways that could be made. For example, when looking at the curve of deaths and cases in Sri Lanka during the course of the pandemic, they can see that during the beginning stages of the coronavirus, and even during the second wave of the pandemic the influx of new cases never reached above 1,000 people and deaths never reached more than 20 as well as the rapid increase of the third wave. One could look at other datasets to see that the vaccination rollouts have allowed almost 63% of the population to receive both doses of the original vaccine as well as a recent roll out of booster shots for at-risk populations (Mallawarachi, 2021). While this type of data might provide us with some determination of performance during the response, it provides no avenues for how this increase could be rectified in the future, as well as glossing over several of the aspects that played a role in these resultant numbers. The quarantine and travel restrictions put into place early on in the pandemic were just a small part of how the public health system managed to largely control the spread of the disease. Throughout my interviews, I was able to feel the large amount of trust as well as pride that many of those I interviewed had not only in Sri Lanka as a whole, but also in their pandemic response. While many of them mentioned that the response did have its faults, and that there were things that could have been done better, they were also quite quick to point out that Sri Lanka did extremely well, especially in comparison to their neighbors. The innate trust that seems to be a product of not only how open members of the health establishment are with programs and actions they are taking, but also having members of one's own community as members of the same establishment, helped me in gathering information on the coronavirus response. This also allowed much of Sri Lanka's population to weather the aforementioned shortcomings of the response. All of this ethnographic information, while valuable due to the information we can gain regarding people's behavior during a pandemic as well as on the health system as a whole, would be largely lost if one focused on a solely

data-driven approach. This is not to say that utilizing the data points is not important, however, as it allows us to make determinations of whether initiatives are cost effective and where these initiatives would be most needed. But in order to truly understand the choices that are being made as part of a pandemic response, we need to look at both the data and the human narrative and synthesize them together to provide a cohesive whole that we can then utilize to determine its success as well as employ other aspects in other nations to the same effect.

But Sri Lanka's overall success in fighting the pandemic, speaks to a deeper conversation that is happening in fields such as anthropology, and in the global community (Jimba et al., 2019). For decades, we have tried to define countries in a binary system, be it the developed world and the developing world, or the Global North and the Global South, or the multitude of other systems that have tried to categorize nations into these two separate groups. The history of these groupings can be traced back to the colonial system that anthropology itself was brought into being under. As a field, anthropology was initially developed by the colonizing powers, almost always a member of the former in the binary grouping, to allow them to exploit and undermine the populations that existed in the colonized world. The world has tried to move past these issues and help these populations that were oppressed and marginalized to "develop". For example, anthropology has gone through several changes since its introduction, and is not the same discipline that existed during the 1800's, with it largely pushing for a more culturally relativistic viewpoint, as opposed to one bound in ethnocentrism and cultural superiority (Embree, 1950). There is even quite a large movement both in academic circles as well as in the general public that is trying to decolonize fields such as literature and science (Gill, 2018). However, the colonial mindset that existed for much of that age has stayed with us in the development of many of the frameworks and systems we utilize today, and as such these efforts have had varying degrees of success. The same binary system that exists today, that many across the globe utilize to determine countries where developmental aid and assistance is necessary, is inherently flawed in its limits. Defining a

country as developed or developing, while useful as a generalization of the country, hides the more complex reality from us. For many, nations like Sri Lanka can be classified as developing, and as such, one might infer that they had much less resources to mount a response to the pandemic or to help its citizens. As such, when the country performs quite well in providing a response, even outperforming its geographical and economical neighbors in some aspects, it comes as quite a surprise and shines a light on the fact that while a country may be classified as overall more developed or less developed, there is quite a bit more nuance that must be understood when looking at a certain country. By moving beyond the binary system of development, we can understand the complexities involved with a country that is trying to advance itself, as well as provide a system that enables us to make more realistic predictions on how a country might perform in comparison to its peers as well as others across the globe.

Section 6: Conclusion

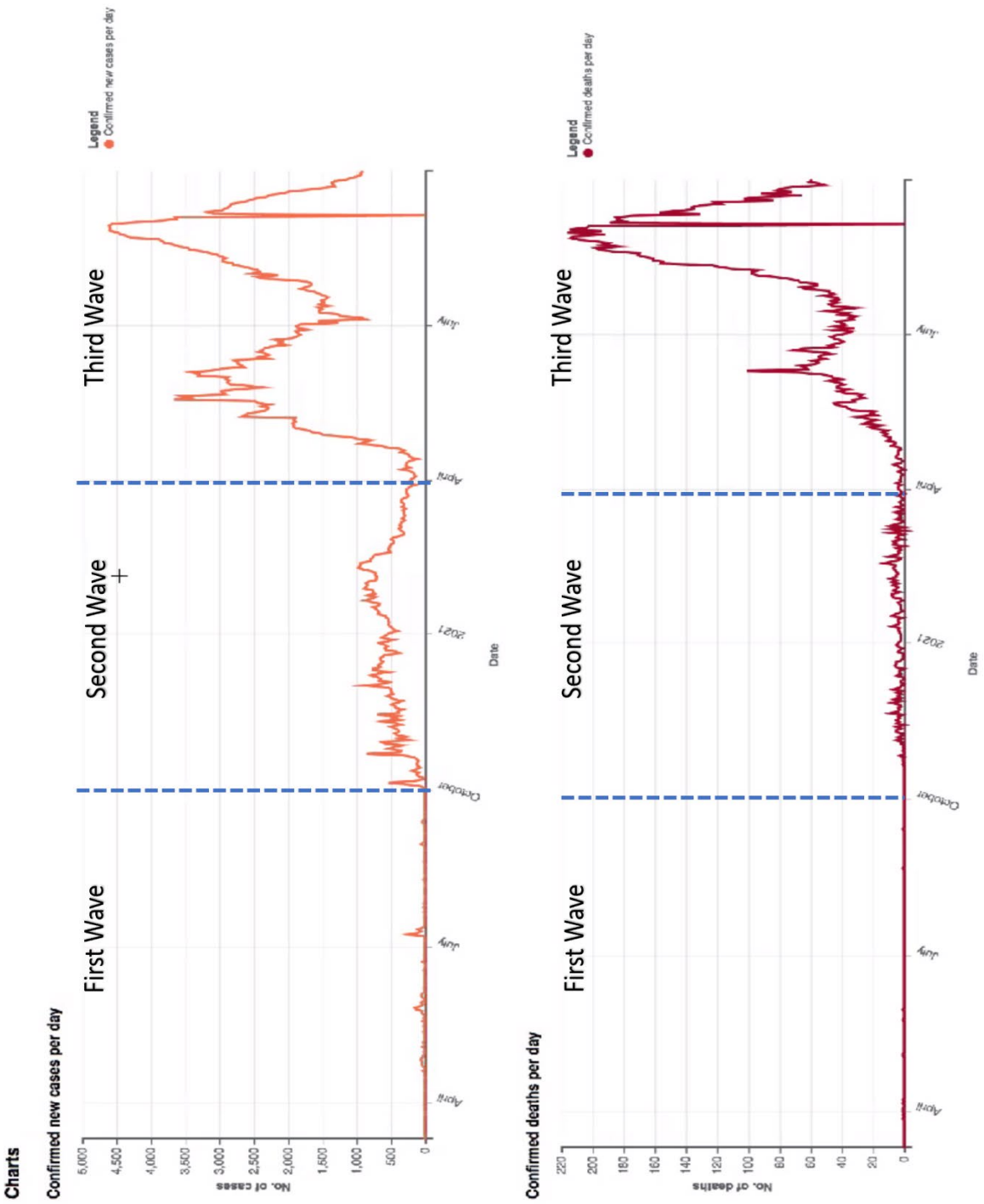
As a member of the developing world, "the Global South", or however one describes it, countries like Sri Lanka are often overlooked by the rest of the world as backwards places in need of assistance by the "noble West" who know how to do things the "right way". This belief can be traced as far back as the colonial era of the world, where the cultures and traditions of these so-called third-world nations were pushed out of the way, usually forcefully, in place of new traditions that were considered better by the colonizing powers. While the age of colonization is largely considered to have ended, its legacy can be felt not only in the impacts that it has had on those countries, some of which didn't exist before, but also in the attitude that many take in relation to them. Some might believe that these cultures and groups have nothing to teach us, and that they must follow our version of development in order to become a part of the developed world. But if this look into the pandemic response has shown us anything, it is that this is not the case. There are things in these countries that we can learn from as well. Sri Lanka's public health system has been touted as one of the strongest among South Asia, and

somewhat comparable to those of countries in the developed world. It's important role in the success of the control of COVID-19 by Sri Lanka speaks to this strength, and as a proven formula that can be adapted and modified to be utilized by others. It has also assisted in ensuring the smooth provision of vaccines to the public, with over 60% of the population having received both doses of the vaccine by the middle of October 2021. The community health institutions that are a part of this system, comprising the MOH, PHI, and Public Health Midwife framework, also allowed for a more interactive community involvement. While the sense of community and togetherness that served as another part of that success is mostly intrinsic to Sri Lanka's cultural beliefs, the ideals of working together and helping others are universal, and with their emphasis in public programs, could become a center point of systems utilized by other countries as well. But as mentioned in the document above, the response rollout was not wholly perfect, as the rapidity and strictness of the lockdowns implemented heavily impacted much of the country that relied on daily work to earn their salary. While this paper will not offer specific recommendations on how to modify these restrictions for any upcoming pandemic or even the continuation of the current one, it would be recommended to include those who are experts in such fields as economics, as well as members of the community, be involved in any subsequent considerations for pandemic restrictions and specifically lockdown restrictions. In addition, further research should be done to consider what changes could be made for these restrictions both in terms of economic and psychological support. In this way, not only could guidelines be modified to improve quality of life during their effect, but the government and others in power could be provided with suggestions on how to compensate and assist people during the pandemic. There should also be some consideration on the usage of the binary of developed and developing, as we have clearly seen that nations categorized as the latter could be considered "developed" in their own right, as is the case with Sri Lanka. Care should be taken to look at specific factors, such as the strength of a country's medical system, that would be better predictors of the outcomes one is studying

Almost a full year has passed since I first submitted my proposal for this research project, and much has changed in Sri Lanka as the population has continued to weather the pandemic. The peaks of the third wave, alongside the Delta variant, are hopefully behind us. More recent statistics show daily new cases only reaching the 500-700 mark, far below the 6,000-case peak. As of November 1st, the nationwide lockdown has been lifted in Sri Lanka, and the country is, with luck and the learned experience of the previous year, moving towards a more normative operating state (Garda, 2021b). Booster shots have also been implemented island-wide for everyone over the age of 20, with 380,213 people having received the booster shot as of November 24 of 2021 (Farzan, 2021). While Sri Lanka is on the road to recovery, it isn't out of hot water yet, and it remains to be seen whether the administration and the people of Sri Lanka have learned from the mistakes made during the previous phases of the pandemic over the coming years, possibly decades. But if they are able to rectify these detriments to their response and continue to provide the same level of dedication and cooperation, I think it is quite likely that they will be able to recover to quite close to pre-third wave levels, if not pre-pandemic.

By recognizing that while it does have its faults, Sri Lanka's pandemic response has aspects that can be applied to other nations, the international community can move away from the colonial mindset, and realize that in order to develop the exchange must occur in both directions. In this way, we can ensure a future that does not just advance the ideas and beliefs of those in the "Global North", but combines them into a synthesis with those of countries that are considered to be a part of the developing world and those in between, in order to arrive at a path that benefits us all.

Appendix A: Chart of the Cases and Deaths of the COVID-19 Pandemic in Sri Lanka[5]



[5] Modified from "Epidemiology Unit Report" (PDF). Ministry of Health, Nutrition and Indigenous Medicine. 24 May 2021. (As of October 2021)

Appendix B: Geographical and Political Map of Sri Lanka

(Geology.com, 2021)

Section 7: Bibliography

AFP, S. L. (2021). *Sri Lankan posts misleadingly tout traditional medicine as coronavirus 'cure'*.

Arambepola, C., Wickramasinghe, N. D., Jayakody, S., Hewage, S. A., Wijewickrema, A., Gunawardena, N., Dhanapala, S., & Prathapan, S. (2021). Sri Lanka's early success in the containment of COVID-19 through its rapid response: Clinical & epidemiological evidence from the initial case series. *PLOS ONE*, *16*(7), e0255394. https://doi.org/10.1371/journal.pone.0255394

Associated Press, T. (2021). The Latest: Sri Lanka gets 2nd vaccine donation from China. *ABC News*.

Atkinson, S. J. (1993). Anthropology in research on the quality of health services. *Cadernos de saude publica*, *9*, 283-299.

Ball, P., & Maxmen, A. (2020). The epic battle against coronavirus misinformation and conspiracy theories. *Nature*, *581*(7809), 371-375.

Bunker, D., Stieglitz, S., Ehnis, C., & Sleigh, A. (2019). Bright ICT: Social Media Analytics for Society and Crisis Management. In *IFIP Advances in Information and Communication Technology* (pp. 536-552). Springer International Publishing. https://doi.org/10.1007/978-3-030-20671-0_37

Cohen, I. G., Gostin, L. O., & Weitzner, D. J. (2020). Digital smartphone tracking for COVID-19: public health and civil liberties in tension. *Jama*, *323*(23), 2371-2372.

Committee for Development Policy, U. N. (2021). *List of Least Developed Countries (as of 24 November 2021)*. https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/ldc_list.pdf

Conference on Trade and Development, U. N. C. (2020). *The Least Developed Countries Report 2020*

Daniel Romer and Kathleen Hall, J. (2020). Conspiracy theories as barriers to controlling the spread of COVID-19 in the U.S. *Social Science & Medicine*, *263*, 113356. https://doi.org/https://doi.org/10.1016/j.socscimed.2020.113356

Davidson, H. (2020). China's coronavirus health code apps raise concerns over privacy. *The Guardian*.

Dergiades, T., Milas, C., & Panagiotidis, T. (2020). Effectiveness of government policies in response to the COVID-19 outbreak. *Available at SSRN*, *3602004*.

Embree, J. F. (1950). A note on ethnocentrism in anthropology. *American Anthropologist*, *52*(3), 430-432.

Farzan, Z. (2021). Booster dose for all those over 20 years – Health Minister.

Garda, W. (2021a). Sri Lanka: Officials extend interprovincial travel ban, relax other rules through July 19 /update 64. *Garda World Crisis24*.

Garda, W. (2021b). Sri Lanka: Officials lift interprovincial travel restrictions as of Nov. 1 /update 76. *Garda World Crisis24*.

Geology.com. (2021, 2007). *Sri Lanka Map and Satellite Image*.

Gill, J. (2018). Decolonizing literature and science. *Configurations*, *26*(3), 283-288.

Hanvoravongchai, P., Adisasmito, W., Chau, P. N., Conseil, A., De Sa, J., Krumkamp, R., Mounier-Jack, S., Phommasack, B., Putthasri, W., & Shih, C.-S. (2010). Pandemic influenza preparedness and health systems challenges in Asia: results from rapid analyses in 6 Asian countries. *BMC public health*, *10*(1), 1-11.

Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1994). Emotional contagion: Cambridge studies in emotion and social interaction. *Cambridge, UK: Cambridge University Press. errors-in-variables regression model when the variances of the measurement errors vary between the observations. Statistics in Medicine*, *21*, 1089-1101.

Haththotuwa, R., Senanayake, L., Senarath, U., & Attygalle, D. (2012). Models of care that have reduced maternal mortality and morbidity in Sri Lanka. *International Journal of Gynecology & Obstetrics*, *119*, S45-S49. https://doi.org/10.1016/j.ijgo.2012.03.016

Hewa, S. (2011). Sri Lanka's approach to Primary Healthcare: a success story in South Asia. *Galle Medical Journal*, *16*(2), 24-30.

Jimba, M., Fujimura, M. S., & Ong, K. I. C. (2019). Developing country: an outdated term in The Lancet. *The Lancet*, *394*(10202), 918. https://doi.org/10.1016/s0140-6736(19)31098-0

Karaivanov, A., Lu, S. E., Shigeoka, H., Chen, C., & Pamplona, S. (2020). Face Masks, Public Policies and Slowing the Spread of COVID-19: Evidence from Canada. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3698420

Khedar, R. S., Mittal, K., Ambaliya, H. C., Mathur, A., Gupta, J. B., Sharma, K. K., Singh, Y., Sharma, G., Gupta, A., Bhargava, V., Mangal, K., Sharma, A. K., Gupta, Y. K., Sarwa, P., Mishra, B. S., Sharma, S., Sharma, K., & Gupta, R. (2021). Greater Covid-19 Severity and Mortality in Hospitalized Patients in Second (Delta Variant) Wave Compared to the First: Single Centre Prospective Study in India. *medRxiv*, 2021.2009.2003.21263091. https://doi.org/10.1101/2021.09.03.21263091

Kumar, S., Xu, C., Ghildayal, N., Chandra, C., & Yang, M. (2021). Social media effectiveness as a humanitarian response to mitigate influenza epidemic and COVID-19 pandemic. *Annals of Operations Research*. https://doi.org/10.1007/s10479-021-03955-y

Lee, D., & Lee, J. (2020). Testing on the move: South Korea's rapid response to the COVID-19 pandemic. *Transportation Research Interdisciplinary Perspectives*, *5*, 100111.

Love, J. S., Blumenberg, A., & Horowitz, Z. (2020). The Parallel Pandemic: Medical Misinformation and COVID-19. *Journal of General Internal Medicine*, *35*(8), 2435-2436. https://doi.org/10.1007/s11606-020-05897-w

Mallawarachi, B. (2021). Sri Lanka rolls out booster jabs amid warning of virus surge. *AP News*.

McKay, B. (2020). More Than 1,000 Current and Former CDC Officers Criticize U.S. Covid-19 Response.

Ministry of Health, S. L. (2021). *Corona Virus 2020 / 2021*. Epidemiology Unit Retrieved from https://www.epid.gov.lk/web/index.php?option=com_content&view=article&id=225&lang=en

Mirbabaie, M., Bunker, D., Stieglitz, S., Marx, J., & Ehnis, C. (2020). Social media in times of crisis: Learning from Hurricane Harvey for the coronavirus disease 2019 pandemic response. *Journal of Information Technology*, *35*(3), 195-213. https://doi.org/10.1177/0268396220929258

Mounier-Jack, S., de Sa, J., Krumkamp, R., & Coker, R. (2010). A toolkit for rapid assessment of health systems and pan-demic influenza preparedness and response.

Nishiura, H., Mizumoto, K., Ejima, M., Zhong, Y., Cowling, B. J., & Omori, R. (2012). Incubation period as part of the case definition of severe respiratory illness caused by a novel coronavirus. *Eurosurveillance*, *17*(42). https://doi.org/10.2807/ese.17.42.20296-en

Oboho, I. K., Tomczyk, S. M., Al-Asmari, A. M., Banjar, A. A., Al-Mugti, H., Aloraini, M. S., Alkhaldi, K. Z., Almohammadi, E. L., Alraddadi, B. M., Gerber, S. I., Swerdlow, D. L., Watson, J. T., & Madani, T. A. (2015). 2014 MERS-CoV Outbreak in Jeddah — A Link to Health Care Facilities. *New England Journal of Medicine*, *372*(9), 846-854. https://doi.org/10.1056/nejmoa1408636

Oshitani, H., Kamigaki, T., & Suzuki, A. (2008). Major Issues and Challenges of Influenza Pandemic Preparedness in Developing Countries. *Emerging Infectious Diseases*, *14*(6), 875-880. https://doi.org/10.3201/eid1406.070839

Panzzarino, M. (2020). Apple and Google are launching a joint COVID-19 tracing tool for iOS and Android. *Tech Crunch*, *10*.

Perera, A., & Perera, H. (2017). PRIMARY HEALTH CARE SYSTEMS (PRIMASYS)-Case study from Sri Lanka.

Perkins, M. D., Dye, C., Balasegaram, M., Bréchot, C., Mombouli, J.-V., Røttingen, J.-A., Tanner, M., & Boehme, C. C. (2017). Diagnostic preparedness for infectious disease outbreaks. *The Lancet*, *390*(10108), 2211-2214. https://doi.org/10.1016/s0140-6736(17)31224-2

Pew, R. C. (2021). Wider partisan gaps emerge in trust of national and local news organizations, social media. In s. m. Wider partisan gaps emerge in trust of national and local news organizations (Ed.), *<img src="https://www.pewresearch.org/wp-content/uploads/2021/08/FT_21.08.30_news_trust.png?w=640">*. https://www.pewresearch.org/fact-tank/2021/08/30/partisan-divides-in-media-trust-widen-driven-by-a-decline-among-republicans/ft_21-08-30_news_trust/: Pew Research Center.

Porta, M. (2008). *A dictionary of epidemiology*. Oxford university press.

Ranaweera, P., Wickremasinghe, R., & Mendis, K. (2020). Preventing the re-establishment of malaria in Sri Lanka amidst the COVID-19 pandemic. *Malaria Journal*, *19*(1). https://doi.org/10.1186/s12936-020-03465-5

Rat, P., Olivier, E., & Dutot, M. (2020). SARS-CoV-2 vs. SARS-CoV-1 management: antibiotics and inflammasome modulators potential. *Eur Rev Med Pharmacol Sci*, *24*(14), 7880-7885. https://doi.org/10.26355/eurrev_202007_22293

Ritchie, H., Mathieu, E., Rodés-Guirao, L., Appel, C., Giattino, C., Ortiz-Ospina, E., Hasell, J., Macdonald, B., Beltekian, D., & Roser, M. (2020). Coronavirus pandemic (COVID-19). *Our World in Data*.

Rosenberg, J., Dreisbach, T., Donovan, C., & Weintraub, R. (2018). Positive Outlier: Sri Lanka's Health Outcomes over Time. In *Harvard Business Publishing*.

Schneider, E. C. (2020). Failing the Test — The Tragic Data Gap Undermining the U.S. Pandemic Response. *New England Journal of Medicine*, *383*(4), 299-302. https://doi.org/10.1056/nejmp2014836

Schuchat, A. (2020). Public Health Response to the Initiation and Spread of Pandemic COVID-19 in the United States, February 24–April 21, 2020. *MMWR. Morbidity and Mortality Weekly Report*, *69*(18), 551-556. https://doi.org/10.15585/mmwr.mm6918e2

Seddighi, H. (2020). The Performance of the Iranian Red Crescent by Launching Testing Centers for the Coronavirus Disease. *Disaster Medicine and Public Health Preparedness*, *14*(6), e45-e46. https://doi.org/10.1017/dmp.2020.167

Tsui, K. L., Chen, N., Zhou, Q., Hai, Y., & Wang, W. (2015). Prognostics and Health Management: A Review on Data Driven Approaches. *Mathematical Problems in Engineering*, *2015*, 1-17. https://doi.org/10.1155/2015/793161

UNICEF. (2021). The State of the World's Children. In (October 2021 ed.). https://www.unicef.org/reports/state-of-worlds-children: World Health Organization.

Wheaton, M. G., Prikhidko, A., & Messner, G. R. (2021). Is Fear of COVID-19 Contagious? The Effects of Emotion Contagion and Social Media Use on Anxiety in Response to the Coronavirus Pandemic [Brief Research Report]. *Frontiers in Psychology*, *11*(3594). https://doi.org/10.3389/fpsyg.2020.567379

WHO, W. H. O. (2020a). *THE GLOBAL HEALTH OBSERVATORY*

WHO, W. H. O. (2020b). *Medical Product Alert N°3/2020: Falsified medical products that claim to prevent, detect, treat or cure COVID-19*

Wickramaarachchi, W. P. T. M., Perera, S. S. N., Jayasinghe, S., & Blyuss, K. (2020). COVID-19 Epidemic in Sri Lanka: A Mathematical and Computational Modelling Approach to Control. *Computational and mathematical methods in medicine.*, *2020*, 1-9. https://doi.org/10.1155/2020/4045064

info:doi/10.1155/2020/4045064