

THESIS ABSTRACT

Master of Public Health

Adventist University of Africa

School of Postgraduate Studies

Title: FACTORS CONTRIBUTING TO COMPLIANCE OF COVID-19
SAFETY PROTOCOLS AMONG STUDENTS IN IKAGENG
JSS, (METSIMOTLHABE)

Researcher: Emang Mmaboipuso Nkadile

Primary Adviser: Janet Odhiambo, PhD

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Noncompliance with COVID-19 safety protocols has been associated with poor health outcomes. The COVID-19 pandemic has had a profound impact on the education system, with schools around the world implementing various safety protocols to reduce the spread of the virus. Compliance with these protocols, such as wearing masks, practising social distancing, and frequent hand washing, is crucial to protecting the health and safety of students, teachers, and staff. However, compliance with these protocols among students has been a challenge in many educational settings.

This paper explores the factors that contribute to compliance with COVID-19 safety protocols among students. The literature review suggests that several factors influence compliance with safety protocols, including individual factors, such as knowledge, attitudes, and beliefs, as well as contextual factors, such as social norms

and information dissemination. Descriptive statistics were used to describe the factors that contribute to noncompliance.

Studies indicate that students who have higher levels of knowledge about COVID-19 and its transmission are more likely to comply with safety protocols. Additionally, positive attitudes and beliefs towards safety protocols, as well as a sense of personal responsibility, have been associated with increased compliance. Social norms and information also play a significant role, as students are more likely to comply with safety protocols when they perceive that the information they have is sufficient. School support, such as well-laid infrastructure, clear communication of safety protocols and adequate resources for compliance, can also contribute to increased compliance.

In conclusion, compliance with COVID-19 safety protocols among 55 students aged 12-17 years was influenced by various factors, including individual knowledge, attitudes, and beliefs, social norms and information dissemination, and institutional support. Understanding these factors can help educators and policymakers develop effective strategies to promote compliance with safety protocols and protect the health and well-being of students and staff.

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JSS, (METSIMOTLHABE)

A thesis

presented in partial fulfilment
of the requirements for the degree
Master of Public Health

by

Emang Mmaboipuso Nkadile

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APPROVAL BY THE COMMITTEE



Primary Adviser
Janet Odhiambo, DrPH



Program Coordinator, MPH
Janet Odhiambo, DrPH



Secondary Adviser
Daniel Ganu, DrPH



Head of Applied Sciences Department
Lossan Bonde, PhD

Dean, School of Postgraduate Studies
Lossan Bonde, PhD

Extension Site: AUA Main Campus

Date: May 2023

This is dedicated to all students and my children as they adhere to COVID-19
protocols.

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LIST OF ABBREVIATIONS

ATR	African Traditional Religion
COVID-19	Coronavirus Disease
HBM	Health Belief Model.
JSS	Junior Secondary School.
SHE	Safety, Health, and Environmental Officers
USA	United States of America

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CHAPTER 1

INTRODUCTION

COVID-19, caused by a highly contagious novel coronavirus, is transmitted from one human to another through touching contaminated surfaces or being in contact with an infected person (Ramesh, Siddaiah, and Joseph, 2020). The wild spread of the virus has since caused negative impacts on mankind. Statistics show that 134 million people were confirmed cases while over 2 million fatalities globally were confirmed at the beginning of April 2021 according to Desye (2021). In Africa, over 5.4 million cases were reported representing almost 3% of the infections around the world (Salzer et al., 2021). African countries like South Africa, Morocco, Tunisia, Egypt, Ethiopia, Congo, and Botswana were among the most highly affected by the pandemic (Ookeditse, 2020; Statista, 2020).

Regardless of the efforts to improve hygiene and sanitation, COVID-19 was still a threat worldwide. Although its prevalence varies across nations and regions, developing countries were the most affected (Statista, 2021). When COVID-19 started in Botswana around March 2020, there was only one death reported. In addition, by the 11th of August 2020, there were 2 deaths, 169 active cases, 80 recoveries and more cases were expected due to more local transmission experienced as reported by the National Emergency Operation Centre (2020) and WHO (2020). WHO came up with safety protocols to minimize and curb the spread of the virus. Non –adherence to these safety protocols predisposes one to contracting the virus.

Background of the Study

Non-adherence to safety protocols and guidelines can pose serious public health challenges with serious health implications, especially regarding infectious diseases. COVID-19, also known as the coronavirus disease, is one of the infectious diseases that has had a profound global impact since its emergence in late 2019. The disease spread rapidly across continents and affected millions of people around the world. Moreover, due to its persistent nature, it virtually affected all aspects of individual health and overall life and well-being (Tabish, 2020). The pandemic prompted a wide range of responses from governments, businesses, and individuals, highlighting the interconnectedness of the global community in the face of a health crisis (Zenbaba et al., 2021; Zhou, Shek, and Zhu, 2020).

The COVID-19 pandemic has exposed many existing global inequalities and vulnerabilities. Countries with weaker health systems have been hit hardest by the virus, with limited access to testing and medical resources (Chen and Chen, 2020). The World Health Organization (WHO) together with other scholars reported that the pandemic has also worsened economic inequalities, with many people in low-income countries losing their jobs and struggling to access necessities (Russell et al., 2020; WHO, 2020b). In addition, the pandemic has highlighted the digital divide, as many people do not have access to reliable internet or digital devices to work or learn from home.

The global response to the pandemic varied widely. Some countries implemented strict lockdowns and social distancing measures to slow the spread of the virus, while others were more lenient (Cummins, 2020). Schools, businesses, and workplaces closed indefinitely. On the other hand, Statista (2020) alludes that the development and distribution of vaccines have also been uneven, with many high-

income countries securing large supplies of vaccines while low-income countries struggle to access them. This has led to concerns about vaccine nationalism and the ethics of vaccine distribution.

Statement of Problem

Non-compliance with COVID-19 safety protocols continues to be a challenge in some areas of Botswana. Reports from Mathieu et al. (2021) indicated that the country continued to record accelerated incidents and fatality rates continued to increase. In June 2021, over 107,000 coronavirus cases were reported and over 1,500 mortalities were registered (Mathieu et al., 2021). The above-mentioned situation is in a country with a population of just a little over 2 million people.

Incidences of COVID-19 continued to escalate in different regions in Botswana including Ikageng Junior Secondary School (Ikageng JSS), and these contributed to the disease burden. The National Emergency Operation Centre (2021) reported that Ikageng JSS recorded 39 cases in February and 94 cases in June of the same year 2021. Compared with other schools within the same sub-district, this prevalence was high. For example, Mogoditshane JSS reported cumulative cases between February and July of 54 while Ikageng JSS reported 232 cases within the same period (National Emergency Operation Centre, 2021). This is a 72.7% difference in the increase.

The high increase in cases signified more infections necessitating public and private institutions to close. Therefore, institutions of learning including secondary schools were closed indefinitely in July 2021 (Government of Kenya, 2021; Sewpaul et al., 2023; Tiro, 2020). Hence a need for public health program intervention intended to educate and create awareness to necessitate behavioural change that can reduce the high prevalence of COVID-19 in Ikageng JSS.

Project Goal and Objectives

The goal of this research project is to reduce incidences of COVID-19 cases among students in public Junior Secondary Schools in Botswana.

Objectives

Health outcomes.

1. By the end of the program, at least 85 % of COVID-19 incidences will have been reduced in Ikageng JSS.
2. By the end of the program, at least 85 % of students should be able to adhere to COVID-19 isolation regulations.
3. By the end of the program, at least 85 % of the Ikageng JSS students should be able to list 4 correct facts on how to prevent COVID-19 infections.

Behavioural outcomes.

1. By the end of the program, at least 85 % of Ikageng JSS students should be able to practice proper hand washing, correct mask-wearing, and practice social distance.
2. By the end of the program, at least 70 % of Ikageng JSS students should be able to avoid crowded areas including attending weddings and funerals.
3. By the end of this program, at least 75 % of students should be able to have a sense of responsibility in adhering to COVID-19 safety principles.

Social outcomes.

1. By the end of the program, at least 80 % of the participants will be ambassadors of correct waste disposal.
2. By the end of the program, at least 75 % of the participants will be peer-educating other schoolmates on the importance of COVID-19 safety protocol compliance.
3. By the end of the program, at least 65 % of the participants will be role models of COVID-19 safety protocol compliance.

Physical environment outcomes.

1. By the end of the program, at least 85% of hand washing stations should be in good working condition.

2. By the end of the program, at least 90 % of public hand wash stations should be equipped with clean water and hand washing soap.
3. By the end of the program, at least 90 % of classrooms should have labelled waste disposal bins.

Significance of the Study

To Students

The respondents will be aware of the relationship between COVID-19 compliance and developing a positive attitude towards adhering to safety protocols as they make use of information on COVID-19 safety protocols. To add on, they will be able to be free from COVID-19 infections which will enable them to continue with learning activities and performing well. In return, the students will come to school every day without hindrances of isolation or being admitted to hospitals.

To Parents

Parents will enjoy the benefits of their healthy children. The parents know that their children's ability to comply with COVID-19 safety protocols saved them from contracting the disease and probably dying in worse scenarios. In addition, they will be very productive at work or in their economic pursuits with no disturbances of care giving family members infected by COVID-19. Moreover, their financial plans will not be overhauled by medical expenses towards COVID-19-infected family members.

To Ministry of Health and Wellness

It is the mandate of the Ministry of Health and Wellness (MOH) in Botswana to come up with comprehensive health services intended to prevent and promote health care for free (Food and Agriculture Organization, 2017). On the contrary, this pillar appears not to be achieved due to non-compliance with COVID-19. As a result, this study will help MOH with strategies which are contextualised to educate students

on best practices regarding compliance with COVID-19 protocols to minimize the incidences.

To Ministry of Education and Skills Development

The research results obtained will help the ministry to be able to attain its mission of creating with pride an atmosphere conducive to effective teaching and learning, educating students in totality, and equipping them with the necessary skills for life. This will enable students not to miss school due to either being on COVID-19 quarantine or isolation. The Ministry of Education will be the point of reference for other ministries.

To The Botswana Government

The government will benefit from this study by having reduced COVID-19 death rates in the country. Other countries will also consider benchmarking from what the government would have done. In addition, it will be an opportunity for investors to be attracted to a country with little or no COVID-19 cases.

To Other Researchers

Other researchers will use the findings of this study as baseline information, for future studies. Moreover, the ministry of research will be motivated to channel funds towards research on COVID-19. Furthermore, the country will be achieving its goal of having a knowledge-based economy.

Scope and Limitations

This research project only focused on Form 1 to 3 students in Ikageng JSS. No other school was part of the study in the sub-district or country. For inclusion criteria, Ikageng JSS class monitors were picked as participants. All JSS workers, either

teaching or non-teaching staff, as well as new students and students who had gone on transfer or suspended formed exclusion criteria.

Limitations of this study were that during the study some participants could not understand some words in the questionnaire, as they asked what the words meant, the researcher explained the meaning of the words. Some students were not very committed to attending meetings unless having to be followed up in their classes. This necessitated the project manager to task the keen participants to police the others who did not show commitment to meetings. Finally, sometimes the project education activities clashed with other school programs. This delimitation was mitigated by shifting meeting times to lunchtime when students were free.

Operational Definition of Terms

COVID-19: Deadly Coronavirus contracted through human droplets from the mouth or nose.

JSS: Abbreviation standing for Junior Secondary School. These are schools offering Form 1 to Form 3 or grades 8 to 10, thereafter these students go for Senior Secondary school and then University if they perform well academically.

Non-Compliance: Inability or refusing to adhere to measures recommended and imposed by WHO that prevent the spread of COVID-19.

Safety protocols: Health guidelines outlined by WHO to prevent the spread of COVID-19.

Sub-region: The second level of administration of the Ministry of Education is organized to run schools in a section of a district or county. For this project, the sub-region is called Mogoditshane – Thamaga under the Kweneng District which includes six JSS out of 33 JSS in the Kweneng region.

CHAPTER 2

LITERATURE REVIEW

This chapter presents the literature review for the project. It gives an overview of COVID-19 prevalence globally. It also provides a review of information dissemination on the safety protocols and how it has impacted the community. It also highlights the impact of knowledge and attitude and their role in the prevention strategy.

COVID-19 Overview

After COVID-19 was declared a pandemic by the World Health Organization (WHO) in March 2020, the number of positive cases started spiralling daily. On the 9th of June 2020, the United States of America (USA) had the highest number of confirmed COVID-19 cases recorded at 1,993,560 with 110,220 deaths (Sanyaolu et al., 2021). The same authors reported that Brazil recorded 691,758 confirmed cases and 36,455 deaths, and China at 84,638 confirmed cases and 4,643 deaths. In Africa, the highest number of confirmed cases at that time was 50,879 with 1,080 deaths in South Africa (Sanyaolu et al., 2021).

On 10 August 2020, Botswana had two deaths, 739 active cases one critical and 63 recovered, more cases were expected due to more local transmission experienced (WHO, 2020b). To mention but a few, Finland and South Korea did not have cases spiralling which could be attributed to educating the people on the risk factors of the disease as well as proper hygiene and sanitation (WHO, 2020b).

To reduce the spread, different countries put up measures to prevent and or contain the virus. These included the setting of the state of emergency, lockdown, and closing of the borders. In response, Botswana quickly closed its borders as well to prevent COVID-19 infection cases from outside Botswana. In a journal on “Preparedness and vulnerability of African countries against importations of COVID-19: modelling”, with an objective assessment of being exposed to risk from outside borders, findings suggested that Botswana falls within countries which were cited as not at the highest risk of importing COVID-19 from outside borders as compared to South Africa, Algeria and Egypt from China (Gilbert et al., 2020). However, Sun, Dickens, Cook, and Clapham (2020) were silent on stating whether Botswana was at COVID-19 risk or not.

Despite being classified as at low risk of infection cases from outside Botswana's borders, Botswana recorded its first Coronavirus positive case on 30 March 2020 from across the borders. People who tested positive for COVID-19 outside Botswana were not allowed into the country unless they were quarantined for 14 days first (Government of Botswana, 2020). This led to a countrywide lockdown from 2nd April to 30th April 2020. Botswana then had lifted at different stages of lockdown which started releasing different people until the whole population and students were allowed to start schools on 2nd June. The first was for candidates and the last to come back to school being Preschool children in August 2020 (Government of Botswana, 2020).

In Greater Gaborone, where Ikageng JSS is located, there was a 2nd lockdown on the 12th of June up to the 14th of June 2020 which resulted from a non-essential travel border boundaries initiative within Botswana called zones, requiring movement permits to move from one zone to another (Government of Botswana, 2020). The last

restriction was from 30 July to 13th August 2020 when five schools recorded cases of COVID-19 (Government of Botswana, 2020). The first locally recorded COVID-19 case was reported on 30 March 2020, and more local transmissions were recorded on 28 April 2020 (Motlhatlhedhi, Bogatsu, Maotwe, and Tsimma, 2020).

It is worth noting that since its first lockdown, the government of Botswana has been enforcing the WHO protocols on COVID-19 prevention. These protocols include wearing a mask, social distancing, and washing hands regularly with clean water and soap or sanitizing. Isolation of those infected with the virus and quarantine, checking of temperatures, and recording names at all places of the gathering were also enforced. Despite all these efforts the number of cases continued to rise, hence the study aims to look at attitudes and practices of people in Ikageng JSS towards compliance to COVID-19.

On a different note, there are countries in Africa that are not keen on promoting compliance with COVID-19 safety protocols, especially social distancing and are just silent on wearing face masks because they do not believe COVID-19 exist (Salzer et al., 2021). This may be because the countries wanted to avoid the economic decline that would have resulted from the lockdowns hence, they preferred to prevent COVID-19 infections with the use of naturopathy.

Information Dissemination

Since the WHO declaration of COVID-19 as a pandemic, different countries adopted different ways of disseminating information to their citizens. In Botswana, the Ministry of Health and Wellness distributed placards and fliers. Various ministries then wrote similar information with their logos, while Botswana Television and Radio Botswana disseminated information too. This information was on WHO protocols towards reducing the infection rate.

There are mostly controversies on who has more information on COVID-19, whether people in rural areas or urban. Chen and Chen (2020) did research in China examining the differences between people's behaviours and the prevention of COVID-19 in urban areas and rural areas, their findings were that there was little information among people in rural areas on COVID-19. Upon evaluating and examining the effect of disseminating evidence-based intervention strategies on the promotion of physical activity in the state and local health departments, using quasi-experimental workshops, it was evident that information dissemination needed to be done differently considering audience characteristics. This suggests different learning styles and spiral curricula in which the same information can be taught to different people differently considering their cognitive learning and stage of development (Brownson et al., 2007).

Furthermore, Song and Karako (2020) recently conducted a study on real-time dissemination of scientific information to fight a public health emergency of international concern, they realized that the effectiveness of information dissemination limits panic attacks among people. The study offered guidance to medical practitioners like epidemiologists on how to prevent the pandemic from blowing out of proportion. This is further explained to show that the information was on symptoms of COVID-19, people at risk, and interventions in case of infection. Moreover, genetic information to assess the stability of the virus, diagnostics in the laboratory, clinical management, transmission, and origin of the virus were discussed (Song and Karako, 2020).

Political leadership has the prerogative to set public health knowledge and influence behavioural change. Pakhtigian, Downs-Tepper, Anson, and Pattanayak (2022) allude that inability to have leaders who can help people realize the importance

of behavioural change in terms of sanitation, poses a danger to public health including the spread of COVID-19. In a study carried out in India, the findings showed that information dissemination contributed to the mitigation of COVID-19 transmission. To add on, information dissemination encouraged behavioural change regarding the washing of hands and proper sanitation.

There are several strategies to alleviate discrimination against people who test COVID-19 positive. In another research study, Chopra and Arora (2020) stressed the effectiveness of information dissemination as it could curb escalating discrimination. They further alluded that it guarded against inequities and stereotypes, through the dissemination of correct information. The Botswana journal titled “Coronavirus Disease 2019 in Botswana: Contributions from Family Physicians” showed that online social media platforms helped disseminate information, mostly to Doctors (Motlhatlhedhi et al., 2020). Moreover, the same information dissemination had a positive impact in improving the urge to have positive attitudes towards avoiding crowded places, thus a rise in compliance with social distance (Pakhtigian et al., 2022).

Factors Affecting COVID-19 Protocols Compliance

The increase in infection rates showed that there could be several factors influencing non-compliance. Bacon and Corr's (2020) research titled ‘Coronavirus (covid-19) in the United Kingdom: A Personality-based Perspective on Concerns and Intention to Self-isolate’ assessed factors influencing COVID-19 compliance. The findings suggested that personality types, and being rewarded can impact positively or negatively compliance to COVID-19 safety protocols. Further, the findings alluded that elderly people are not likely to comply with COVID-19 protocols especially

when isolated. It is further postulated that youngsters had no problem with isolation since it gave them more time to be alone giving chance to go online and chat with friends (Bacon and Corr, 2020).

On the contrary, Wright, Steptoe, and Fancourt (2022) postulate that young people are not likely to comply with COVID-19 protocols, especially in the event of self-isolation. This is due to their risky behaviours. Probably this could be the reason why young students in junior high school were challenged to comply with the recommended safety protocols.

Another challenge was that people were not willing to yield to the lengthy lockdowns intended to curb the spread of COVID-19. Rigby (2020) postulated that the government should avoid such lengthy homestay measures because they contributed to individuals' and companies' financial muscle impairment. Therefore, they needed to be avoided considering they were a factor to prevent safety protocol compliance. Thaba-Nkadimene (2020) in a journal titled “COVID-19 and e-learning in Higher Education” paints this picture in South Africa, which insinuates that one other factor that prevents compliance with COVID-19 protocols is a lack of technical know-how. This is said to be especially the use of interactive technology to teach which could enable students to learn from home through any learning platform.

Insufficient information on prevention and protection measures at the workplace contributed immensely to non-compliance. Employers were not allowing employees to work from home because they did not have the infrastructure to do so remotely. To add on, the mandatory wearing of personal protective equipment was not required for other people working outside the health fraternity. This also became another factor affecting COVID-19 protocol compliance. In addition, people did not adhere to the burn imposed on public gatherings. They continued to attend their

organized traditional meetings physically. These physical meetings exposed them to contracting the coronavirus as social distancing and wearing of masks were not observed (Belingheri, Paladino, and Riva, 2020).

The use of face masks has popularly been advocated to prevent the spread of COVID-19 even though some people doubt it. Rab, Javaid, Haleem, and Vaishya (2020) confirm that it is indeed true that there are studies that investigated how best face masks can be used to alleviate the spread of COVID-19. One study of this nature was the “Light-scattering experiment.” The study was mainly intended to assess droplets responsible for COVID-19 infection and it was concluded that the N95 mask prevents COVID-19 transmission by up to 95 %. In comparison, the homemade mask and others apart from N95 prevent 50 to 100 % chances of transmitting the coronavirus. This study does not suggest that only N95 masks should be used rather, it shows to what extent COVID-19 be prevented. No wonder Venezuela was one of the pioneers in enforcing the use of wearing face masks in public (Rab et al., 2020).

It has been hypothesized that using a mask most of the time prevents the spread of COVID-19 infection. Hence people including those in school settings must be mandated to wear masks rather than mandating only health sector employees. Aravindakshan, Boehnke, Gholami, and Nayak (2022) carried out a cross-sectional study called ‘You Gov personal measures survey’. This study was done to investigate the benefits of using facial masks in 24 countries using data which was publicly available.

It was observed that those countries which did not enforce the use of facial masks had high incidences of COVID-19 as Sweden, Denmark, Finland, and Norway. This study shows a correlation between the use of facial masks and COVID-19 infection as those using facial masks had an 88% decline of COVID-19 infection.

However, some arguments on the benefits of using facial masks resulted in the United States of America and Sweden having mixed feelings on the benefits of using facial masks.

Attitudes Towards Compliance with COVID-19 Protocols

Health knowledge of preventative measures can influence an individual's attitude and consequently, an intention to comply with the set COVID-19 safety protocols. Odukoya and Omeje (2020) in their study on 'COVID-19 Pandemic in Nigeria: a Case Study of Kano State—Challenges and Lessons Learned', attributed factors influencing non-compliance to issues of spirituality, especially the use of traditional medicine in healing COVID-19.

However, Azlan, Hamzah, Sern, Ayub, and Mohamad (2020) noted that the culture of attending community funerals and weddings negatively affects compliance. On the contrary, Lunn et al. (2020) research assessed that factors influencing Americans' compliance are staying home and keeping social distance. It has been concluded that people adhere to COVID-19 protocols not because they fear authorities but rather because it's innate in them to adhere which is influenced by societal norms.

Moreover, van Rooij et al. (2020), stress that people should be more responsible than depending on the government to reward them to comply. If people understood the importance of complying with the recommended protocols, they could be consistent in their behaviours as they practise what is expected. Hence, the WHO-imposed preventive strategies and initiatives would be easily implemented or adhered to without the people necessarily pegging their compliance to rewards. van Rooij et al. (2020) study revealed that participants in that study automatically complied better

when they were given some kind of reward. Furthermore, if protocols are not stipulated it makes it difficult to comply, though with COVID-19, WHO has stipulated COVID-19 safety protocols.

Political orientation and goodwill have been shown as a factor that prevents a positive attitude towards compliance. In Botswana, opposition party members felt COVID-19 is not an issue except that the ruling party wanted to use the money to their advantage (Mokwena, 2020). The elderly and women aged 50 in the high-income class were more knowledgeable about COVID-19, and few men about twenty-five per cent complied with COVID-19 safety protocols (Azlan et al., 2020; Tomczyk, Rahn, and Schmidt, 2020; van Rooij et al., 2020).

In a cross-sectional study, Reuben, Danladi, Saleh, and Ejembi (2021) found that the majority of the participants had positive attitudes toward compliance with government IPC strategies. On the other hand, people felt the government is doing little to curb the spread of COVID-19. To add on, 61.8% of the participants did not have confidence in the Chinese doctors' intervention. Olum, Chekwech, Wekha, Nassozi, and Bongomin (2020) conducted a study assessing the knowledge, attitudes, and practices of healthcare workers in the country of Uganda on COVID-19 it was found out that most of the teaching hospitals and healthcare workers of Makerere University, had a negative attitude towards COVID-19, especially having to take care of those infected. This could imply that they feared being infected.

Chen and Chen (2020) say virus infection correlates with seasons, which suggest in cold temperature the level of infection transmission was extremely high. Other researchers felt that it was too early to make such conclusions because in the USA even though seasons changed the infection rates remained high. The same

scholars felt that the little research done since COVID-19 was a new phenomenon, would not warrant such conclusions.

On the other hand, as suggested by Saba, Nzeh, Addy, and Karikari (2020), COVID-19 was seen as a punishment from God. Chen and Chen (2020) bring in a different perspective, they suggest that the mode of transmission may also be attributed to faecal transmission because in as much as the virus was detected in the respiratory organs, it was also found in faeces. However, this speculation does not have any means which WHO protocol has put forth regarding its interventions if they are true.

In the researcher's conclusions, there is emerging empirical research about people's attitudes and responses to the measures. However, there are no studies yet that investigate whether people comply with or violate the measures. Some studies have systematically assessed the factors or determinants of health that may result in such compliance to no avail (Azlan et al., 2020; Saba et al., 2020). The question remains but what could the government do to encourage compliance to COVID-19 protocols?

Knowledge of COVID-19 Prevention

Different people perceive COVID-19 as life-threatening or severe depending on the available information at a particular point in time. Zegarra-Valdivia, Vilca, and Guerrero (2020) researched people's perceptions. The age of the respondents was ranging from 15 to 70 years. The findings suggested that how an individual perceived the disease was the problem and not necessarily the impact of the disease. The study further concluded that the level of education significantly contributed to the number of people infected by coronavirus. This was attributed to the assumption that those who were more educated were more knowledgeable about COVID-19.

This meant that they understood the repercussions of non-compliance and were more likely to adhere to the recommended safety protocols resulting in fewer incidences. On the other hand, it was revealed that apart from knowledge of COVID-19, the way Peruvian people trusted the initiatives of the ruling party greatly negatively impacted several people in the region.

The World Health Organization launched safety protocols to prevent the spread of COVID-19 that included frequent proper hand washing. However, knowing the disease and its symptoms was also important. Knowledge is gained through information dissemination, and this was the strategy used to campaign and create awareness among the public.

Some scholars undertook a study among public transport operators (people who drive taxis) in Kombolcha town and the city of Dessie, in Northeastern Ethiopia (Natnael, Adane, Alemnew, Andualem, and Hailu, 2021) and the findings showed that there was a correlation between good knowledge of COVID-19 and adhering to safety protocols particularly frequent proper hand washing. The participants reported that frequent hand washing was done before they could wear their facial masks, before eating, and after using the toilet.

Sanitation and Hygiene Practices

Good sanitation and hygiene have been associated with positive health outcomes and vice versa. Mwai et al. (2022) purported that poor sanitation attracts various infections including that of COVID-19. Moreover, the findings of the study indicated that even though some counties (Kilifi and Mombasa) had water, the infections were still soaring higher because of poor hygiene practices. The washing stations lacked hand-washing soap and did not have segregated waste dust bins.

In addition, many people were sharing toilets within a large, gated community yet there was no soap to use while washing their hands after using the toilet. This was evident as the participants reported that only 67 % of the residents owned toilets implying that the remaining 33 % had no toilet which translated to poor sanitation. This phenomenon contributed significantly to the increase in the prevalence of COVID-19. It is possible that poor sanitation resulted from poor service delivery from sanitation service providers who did not prioritize their services. This also could be attributed to the fact that the government allocates less budget to sanitation services (Mwai et al., 2022).

In Nepal people in some remote areas of Achham and Dailekh districts had poor hygiene, sanitation and irregular water supply leading to high cases of infectious diseases (Shrestha, Kunwar, and Meierhofer, 2022). Having little or no access to clean water, sanitation and hygiene services exposes people to easy infection of COVID-19 as evidenced by a study done in Bangkok slums in Thailand (Nguyen and Pattanarsi, 2022). Only people who had a high level of self-efficacy in this slum area were determined to comply with safety protocols.

A clean environment is a key component in reducing the disease burden including COVID-19. Mwai et al. (2022) in his study concluded that poor hygiene and sanitation influenced several infectious diseases including COVID-19. To add on, the findings also revealed that the area residents had challenges in obtaining clean water for their domestic use. They also indicated that hygiene and sanitation were rampant because they did not have modern toilets. Most of the households were using pit latrines and lacked piped water hence there were no hand washing stations. Neither did they have taps elected outside their houses so that it could be easy for someone to wash their hands immediately after using the toilet.

This situation exacerbated the transmission of COVID-19 because the disease could also be transmitted by getting into contact with infected objects. The fact that hand washing was a challenge may have aggravated the spread of the disease because if an individual was infected and touched various surfaces, others were more likely to be infected also. These resonate with other scholars who revealed that the majority of the people who did not practice proper hand washing reported high cases of infectious diseases including COVID-19 (Lippke, Keller, Derksen, Kötting, and Dahmen, 2022).

In most countries, it is the responsibility of the government to provide clean and safe water to its citizens. However, people have a responsibility to play when it comes to hygiene and sanitation. Personal hygiene contributes significantly to positive health outcomes. For example, Desye (2021) and Nazlı, Yığman, Sevindik, and Deniz Özturan (2022) stress that it is imperative to observe good hygiene practices to prevent the spread of COVID-19. Therefore, they urge that good hygiene and sanitation should be always given top priority. The scholars lamented that this is a global problem as more than 30 % of the population globally reported having poor sanitation and hygiene, especially in developing countries. According to Nguyen and Pattanarsi (2022), there has been a history of poor hygiene practices in some regions emanating from homelessness, not working, and having no money to pay for water bills.

Countries mostly consider natural resources and human resources as bases for a good economy. However, from the public health perspective, other factors play a significant role including clean water, good sanitation, and hygiene. WHO (2020a) asserts that the availability of water, good sanitation, and hygiene is an investment which can be considered as having “no regret”. The analogy of water, sanitation, and hygiene (WASH) considered as an investment is true because the availability of

toilets, and implementing better hygiene practices like frequent hand washing can keep diseases at bay. Proper use of hand sanitiser, availability of water for flushing toilets, and general cleanliness result in better health outcomes for the people and the economy. Moreover, the government is considered the key stakeholder in the provision of hand wash station facilities especially at the gates of any government facility to enable easy hand wash. Furthermore, it is not only treated potable water which is necessary for the prevention of COVID-19, skilled water management personnel are also important (WHO, 2020a).

Previous Programs Addressing COVID-19 Protocols

The health safety WASH program has proved effective worldwide. Programs under Bangladesh Rural Advancement Committee (BRAC) have worked in the following countries: Afghanistan, Bangladesh, Pakistan, Uganda, Myanmar, Liberia, Tanzania, Sierra Leone Philippines, and South Sudan. The program targeted communities at large including high school students (BRAC USA, 2017). Among other intervention facilities provided were hygiene facilities and empowering people through education on how and why they should practice good hygiene.

Previous literature indicates that 41.6 million beneficiaries were educated from 2006 to 2015 (BRAC USA, 2017). However, the Health Safety (WASH) program for stunting and diarrhoea in Zimbabwe and Kenya in 2018 was not effective probably due to little supply of water unlike the one carried out in Bangladesh (WHO, 2019). In another effective program, 10 countries, with Lesotho and Zambia as beneficiaries were funded to the tune of \$149.8 and \$292.5 million respectively (Millennium Challenge Corporation, 2021).

They targeted mostly educating the community and proposed that in a health safety (WASH) program, objectives should be realistic as the availability of data, and availability of water are paramount (Millennium Challenge Corporation, 2021). Even though these programs did not specifically target COVID-19 they have relevant information which may benefit intervention programs focused towards COVID-19.

Theoretical Framework

This study was anchored in the health belief model (HBM). The model was developed in the 1950s and it was used as a tool to explain behaviour. The model has proved to be a useful framework for investigating health behaviours and identifying key health beliefs. It has shown moderate success in various studies in predicting a range of health behaviours (Costa, 2020; Mahindaratne, 2021; Mirzaei et al., 2021). The model proposes that an individual's attitude influences health-related behaviours and perceptions. Embracing the positive factors described in the model enhances one to be proactive along with health issues. The belief that contracting COVID-19 will have serious consequences for the individual motivates one to undertake preventive measures.

Perceived susceptibility is influenced by COVID-19 knowledge, while perceived severity comes with the thought of considering how COVID-19 will impact their life if they are infected. Additionally, perceived susceptibility is attributed towards using public transport which makes people more prone to infection than using private cars (Costa, 2020). The component of perceived benefits is exercised when individuals understand and appreciate that complying with COVID-19 safety protocols will prevent them from being infected with COVID-19. The cues to action component can be realized when students have confidence that they can implement the recommended preventive measures to curb COVID-19.

For every public health issue, there are some requisites considered to ameliorate the problem. Researchers have proposed that in the event of a pandemic like COVID-19, perceived susceptibility, perceived severity, perceived benefits, perceived barrier, and self-efficacy are key issues to be considered in an intervention program (Costa, 2020; Jose et al., 2021; Mirzaei et al., 2021). The same scholars hypothesized that there was a correlation between the attitude and knowledge people had on COVID-19 and practising preventive measures in the population. It is believed that if people see COVID-19 as a threat it enables them to overcome any barriers that may hinder them from practising preventive measures. For example, a shortage of protective gear and tools like disinfectants, masks, soap, and sanitisers should not be a hindrance. Instead, they should find other strategies and ways to practice the recommended preventive measures. The following diagram highlights the framework used during the project implementation.

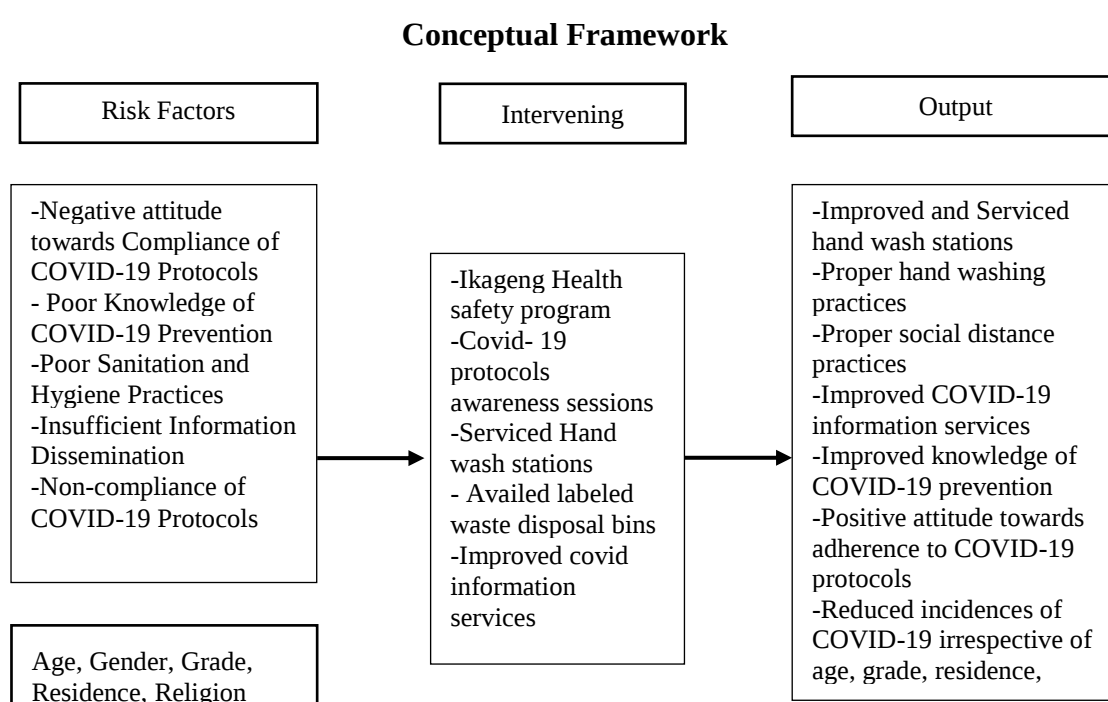


Figure 1. Conceptual Framework

CHAPTER 3

METHODOLOGY

A research methodology was used to help the program planners devise a way of systematically resolving the problem under study. For this intervention project, the planner intended to educate students on the importance of complying with COVID-19 safety protocols set by WHO to reduce the incidences of COVID-19. The project was done at Ikageng JSS in Mogoditshane Thamaga sub-district which lies in the Kweneng region one of the districts in Botswana. The school accommodates students from both rural and urban regions within a radius of 10 kilometres. The program carried out intended to benefit approximately 55 students aged 12-17 years.

Project Design

In a project, the design is key to executing a successful intervention. The design serves as a guide to help planners achieve desired project goals. This project utilized a quantitative approach using a pre-test and post-test design. In this type of design, the same assessment measure is given to the respondents both before and after they have received treatment in this case health education. This measure is then used to determine if there is any behaviour change.

The assumption is that this change is attributed to the treatment given. There are three important elements in this type of design. a) administering a pre-test measuring the variables, b) applying the treatment (health education) to the participants, and c) administering a post-test, again measuring the variables. A calculation was done to ascertain the difference.

Population and Sample

Purposive sampling was used where only class monitors were chosen. The researcher considered different influential groups in the school such as bullies, academic high-fliers, drug users, and Student Representative Council as potential participants. However, considering the weight of the matter, the project planner decided to choose class monitors so that each class was represented.

The school management provided the names of all class monitors and the same were enrolled in the project. There was only one inclusion criterion that is being a class monitor/representative for that academic year. Class monitors were called for a meeting to explain what the project was about, and they were each given consent and assent forms to authorise participation in the study. These 51 students were to model compliance behaviour and encourage other students to comply.

Research Setting

The research project was carried out in Ikageng JSS, a junior secondary school run, governed and fully sponsored by the government of Botswana. It is 15 km west of the capital city of Botswana, Gaborone. The school was one of those that registered high cases of COVID-19 in the region. These served as relevant background information for this project. The results of the project acted as a base to inform public health professionals and other allied health workers how similar challenges can be combated in case of another pandemic in the future.

Methods of Implementation and Strategies

To reach the stated goal, an intervention program was designed and tailored for Ikageng junior secondary school. It aimed at reducing the risk factors for contracting COVID-19 and consequently reducing the prevalence of COVID-19 in the school. The program assessed the participant's knowledge and attitude toward

COVID-19 safety protocols. Also, it investigated how information about the safety protocols was disseminated in the school. The assumption was that proper information combined with knowledge influences behaviour change. Compliance with safety practices is key to positive health outcomes. The following is a detailed program of the intervention program.

Ikageng JSS Health Safety Program

A one-month intervention program was carried out mainly to educate and train Ikageng JSS class monitors on COVID-19 safety protocols to help them and other classmates comply. The program focused on at least 55 students within Ikageng JSS because this school recorded high incidences of COVID-19 in 2020. The researcher collaborated with school management in charge of the students' leadership team. The main goal of the program was to reduce incidences of COVID-19 cases among students attending Ikageng JSS Junior Secondary School in Botswana. This was done through training and educating students on risk factors for COVID-19 and the importance of complying with the recommended safety protocols in the student population at Ikageng JSS, (Metsimotlhabe).

The program enabled participants to have knowledge of safety protocols and enlighten them on how to implement the safety protocols. Furthermore, participants were taught about the consequences of not complying and they were also shown videos of people suffering from COVID-19. The education and awareness campaigns were meant to build capacity among class leaders. The leaders in return also educated other students about COVID-19 risk factors and the recommended safety protocols. To add on, the leaders were empowered to promote compliance with COVID-19 safety protocols within the school and at their homes.

Lectures on proper health safety practices were offered. Mostly on proper hand washing, proper wearing and removing of facial masks, and safe social distancing where there are no marks. The students were also encouraged to report immediately in case one suspects that someone had contracted COVID-19 or after COVID-19 testing. An outlined table of intervention strategies, specific dates and activities for the project are highlighted in the following table:

Table 1. Dates, Strategies and Activities

Dates	Strategies	Activities
20 - 24 June 2022 WEEK 1	A questionnaire assessing attitudes, and knowledge of COVID-19 protocol compliance among Ikageng JSS students. Assess wash stations around the school.	Questionnaires were distributed on COVID-19 protocol compliance among Ikageng JSS students. Inspection of wash stations around the school. -Note-taking
27 June- 01 July 2022 WEEK 2	Lecture on COVID-19 safety protocols. Video show and discussion on safety protocols especially non-compliance to hand washing and social distance.	Group discussion COVID-19 safety protocols Demonstrate -How to wash hands, social distance where there are no markings, wearing and removing the facial mask. Activity –Distribute pamphlets on COVID-19 and then practise safety protocols. -Summary of video - Quiz - Group discussion - Note-taking
4 -8 July 2022 WEEK 3	Video on social distancing and its implications -Practicing social distance where there are no markings.	- Demonstrate -How to do social distance if there are no marks for social distance.
11 -15 July 2022 WEEK 4	-Nurse teaching on the effectiveness of facial masks. -Lecture on the importance of separating waste. -Summary -Feedback through post survey from students and ending of the project	-Demonstration of proper wearing and removal of facial mask. - Demonstration of separating waste -Reflection by participants -Note taking.

Logic Model for COVID-19

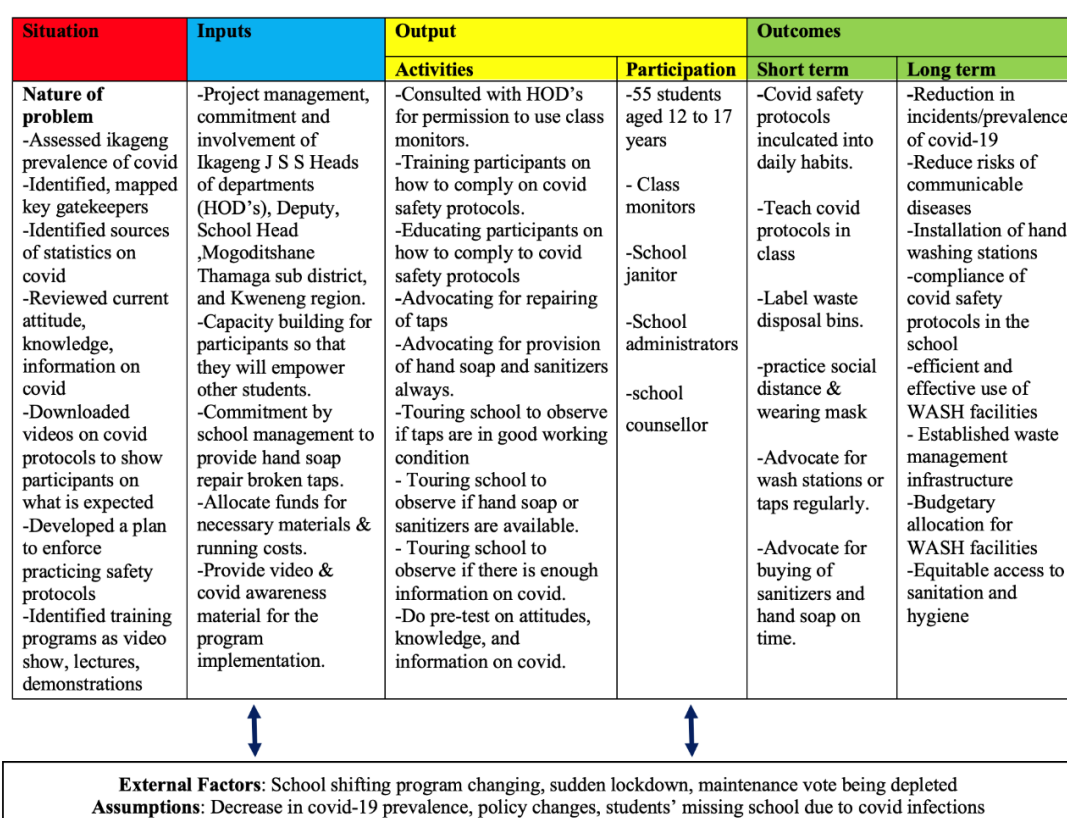


Figure 2. Logic Model for COVID-19

Evaluation Designs

The goal of the evaluation was to measure the effectiveness of the intervention. Moreover, it enabled proper judgment or decision-making. In addition, the program had to be cautiously monitored and evaluated. It also measures the impact and outcomes or objectives of the program. Four types of evaluation were done.

Formative Evaluation

Formative evaluation is diagnostic in nature. It ensures that the proposed project activities are feasible, appropriate, and acceptable before starting the project. The school management was consulted on eligible participants. The formative

evaluation aimed to identify specific school needs as regards COVID-19 prevention. It was intended to guide program planners during the planning process. It gave information on the needs and progress rate within the stages of implementation. The researcher used formative evaluation to assess the viability of the program.

This evaluation helped me as the researcher adjust and make improvements before initiating the implementation of the program. The researcher met with the school management to agree on meeting times. Also, a meeting with the participants was arranged and all logistics were agreed. Permission for the venue was sought from the school librarian.

Finally, sanitisers and hand-washing soap were requested from the procurement officer. This was intended to aid practical demonstrations and ensure the success of the project. Thus, establishing how and when the objectives can be achieved. The evaluation was done as good practice because it was not common. The previous programs done in the school were never evaluated. So, this evaluation was necessary as it explained and measured the whole process of the project. These made the school management appreciate the entire process.

Process Evaluation

A process evaluation aims to determine whether the laid down program activities have been carried out or rather implemented as intended/planned and the results are as expected. This type of evaluation is conducted throughout the program life, and it involves reviewing activities and output components of the logic model. In this project, the evaluation focused on program implementation and follow-up on all the stages throughout the project. All the processes were evaluated. For example, timelines, when the lessons, videos, and demonstrations were done, were checked against the recorded ones. Checked the tools available like washing stations, masks,

and washing soap were available before demonstrations activities etc. It helped the program leaders effectively evaluate how successfully the project framework and logic model was followed. This was done to determine the success of the project as it was used to check if the strategies laid down in the program framework and the logic model were followed specifically the input and activities of the program.

This evaluation was to aid as a tool to check if the program was delivered accordingly as per the design and standards. To add on, it enabled timely assessment to monitor the program and measure output indicators in line with the project schedule. It enabled project managers to identify the pros and cons of the program which led to improvements contributing to the success of the program. Process evaluation helped program developers adjust and improve intervention strategies before initiating the program and during the process of implementation.

Outcome Evaluation

The outcome evaluation is intended to establish how the program influenced behavioural change in the participants. It also checked if the program objectives were achieved. These results from the program were the yardstick of the effectiveness and efficiency of the program in general. This was done by comparing the pretest questionnaire results and the posttest questionnaire results. Moreover, it empowers program managers to see that there is an initiative that can be beneficial in similar health issues which calls for compliance. Hand wash stations were not all working before the project started. However, knowledge of correct washing of hands, and correct use of hand sanitisers improved as well as adhering to social distance protocols improved.

Impact Evaluation

Impact evaluation is the last thing to be done in the program. It was intended to see if the goals and objectives of the program were attained. For instance, to find out if the participants' attitudes positively improved towards complying with COVID-19 safety protocols. Also, to find out if participants' knowledge of COVID-19 safety protocols had improved as well as impacted the institution's ability to furnish participants with relevant information on COVID-19 safety protocols. Thus, capitalizing on the impact brought in by the intervention used, for both expected and unexpected results. In general, the participant's attitudes and knowledge had improved.

Impact evaluation is a sign that the intentions of the researcher were achieved as seen in the results of the intervention. Furthermore, an impact evaluation can be used as a basis for change or as a blueprint for policy makers to advocate for policy change or development regarding behavioural change. It was evident that students needed education and awareness to help them practice the recommended COVID-19 safety protocols. Part of the practical lessons was to monitor students as they correctly washed their hands, wore and took off their facial masks, and practice social distance. This helped to correct students if they blunder.

Data Analysis

After collecting data from participants and educating them, the collected data was analyzed in line with individual outcomes or objectives. They were analyzed in this order: demographic data in frequencies and percentages. Health outcomes are analyzed through statistical analysis. A post-test was done and was compared with the pre-test.

This formula was used in analyzing the pre-test and post-test results.

$$\text{Cumulative \% of increase} = \frac{\text{post-test} - \text{pre-test}}{\text{pre-test}} \times 100$$

The results of the percentage decrease or increase in knowledge of preventing COVID-19 infections and their attitudes towards COVID-19 compliance were used to evaluate the success of the program. Behavioural outcomes used pre-test and post-test. Before starting the program, a list of resources needed and activities to be done was outlined. The following was done in preparation for implementation; downloading videos, requesting COVID-19 pamphlets from the Ministry of Health, and developing a checklist of resources to observe during the intervention. Physical structures were checked before the program and after the program in the form of just ticking what is working or not working as well as those present or not.

The pre-test and post-test for health objectives measured if the participants knew and understood COVID-19 risk factors. The sort was to investigate if the participants were aware of the safety protocols and if they adhered to the recommended isolation regulation. The participants were also assessed if they knew the COVID-19 signs and symptoms and prevention practices that were effective to curb the spread of the disease.

Behavioural objectives were measured by pre-test and post-test. Descriptive statistics were used to explain the participant's practices. The participants were assessed if they practised proper hand washing and wearing masks. They were also assessed if they observed social/physical distance in the classroom and other places in the school. This objective also described the risk associated with participating in social gatherings and the resultant behaviours. A sense of responsibility was analyzed by describing the motive behind the reward system that motivated their compliance.

Social objectives were measured by pre-test and post-test. Descriptive statistics were used to describe the level of compliance with safety protocols. This

objected measured if the participants had acquired knowledge and skills during the project that empowered them to teach others about the safety protocols. It also measured if the participants had learned correct waste disposal methods and proper labelling of the waste bins in the school. With the gained skills the participant became ambassadors and role models to the entire school. The same formula used in health objectives was also used to analyze the pre-test and post-test results.

Before starting the program for physical objectives, a checklist of which resources or physical structures to observe as soap availability and wash stations was done. To add on, what is working or not working as well as those present or not there. The same formula used for the other objectives was used.

Information dissemination cuts across all the objectives. This was measured using the pre-test and post-test. How information was relayed to the students and which mode was the most used was described. It was clear that information dissemination in rural and urban areas was different. Whereas participants from rural areas had limited information about COVID-19 safety protocols, their counterparts in urban areas had most of the information. It was evident that the school administration was at the forefront in providing health information to the students although they were not able to convince the students to practice it.

CHAPTER 4

RESULT AND DISCUSSION

Study findings were discussed in this section, logically organized as per the study objectives. Pre-test had 51 study participants whose age range was 12 to 17 years, while post-test had 55 study participants. The additional participant missed the pre-test because some were either absent or sick during the first meeting. Participants' socio-demographic factors are described and graphically presented. Tables, graphs, and pie charts show the sex, age, form, residence, and religion of the participants.

Pseudonyms were used to maintain the privacy of the respondents. African Traditional Religion is abbreviated ATR in the following socio-demographic table.

Socio-demographic Profile

The socio-demographic profile of the respondents is shown in Table 2. This is a summary of all the demographic profile. Later the demographic profile variables are described individually. The names used are pseudonyms and not the actual names.

Table 2. Socio-Demographic Profile

Name	Sex	Age	Form	Residence	Religion
Pretty	F	15	3	Village	Christianity
Bone	M	15	3	Village	Christianity
Charitable	F	15	3	Village	ATR
Kaboyaone	M	15	3	Village	ATR
Atlasaone	M	15	3	Village	Christianity
Kgomotsego	M	16	3	Village	ATR
Tebogo	M	15	3	Town	Christianity
Amasha	M	15	3	Village	ATR
Mphonyana	F	15	3	Village	ATR
Kabo	M	17	3	Village	Christianity
Gorata	F	17	3	Village	Christianity
Opelo	F	16	3	Town	Christianity
Junior	M	15	3	Village	Christianity
Dineo	F	16	3	Village	Christianity
Thabo	M	17	3	Village	ATR
Neo	M	15	3	Village	ATR
Atang	M	14	3	Village	Christianity
Johnson	M	16	2	Village	Christianity
Thatayotlhe	M	15	2	Village	Christianity
Onalethata	M	15	2	Village	Christianity
Anodi	M	14	2	Village	ATR
Karabo	F	14	2	Town	Christianity
Rotlhe	M	15	2	Village	Christianity
Petunia	F	14	2	Village	Christianity
Setsoaone	M	14	2	Village	Christianity
Agisanang	F	15	2	Village	ATR
Mogorosi	M	14	2	Village	Christianity
Betty	F	15	2	Village	Christianity
Matshelo	F	15	2	Village	Christianity
Tsame	F	14	2	Village	Christianity
Kagisanyo	M	14	2	Village	Christianity
Baboloki	F	14	1	Missing	Missing
Boitshelo	F	14	1	Town	Christianity
Pako	M	12	1	Village	ATR
Rose	F	13	1	Village	Christianity
Phenyoyame	M	13	1	Village	Christianity
Gracious	F	14	1	Village	Christianity
Tumiso	M	13	1	Village	ATR
Mary	F	14	1	Town	Christianity
Puleng	M	13	1	Village	ATR
Thabo	F	13	1	Village	Christianity
Alphred	M	13	1	Village	Christianity
Baone	F	14	1	Village	ATR
Masa	F	13	1	Village	Christianity
Brilliant	M	13	1	Village	ATR
Lilly	F	13	1	Village	Christianity
Tshiamiso	M	14	1	Village	Christianity
Loago	F	13	1	Village	ATR
Tebogo	M	15	1	Village	ATR
Maano	F	14	1	Village	ATR
Thandiwe	M	13	1	Village	ATR

The total number of students who were enrolled in the program was fifty-five (55), however only fifty-one (51) of them participated in the pre-test but all 55 participated in the post-test. This translated to a 92.7% response rate during the pre-test and 100% during the post-test. The following is a graphic representation of the demographic profile. Most of them 28 in number (55%) were male and 23 (45%) were female, as seen in Figure 3.

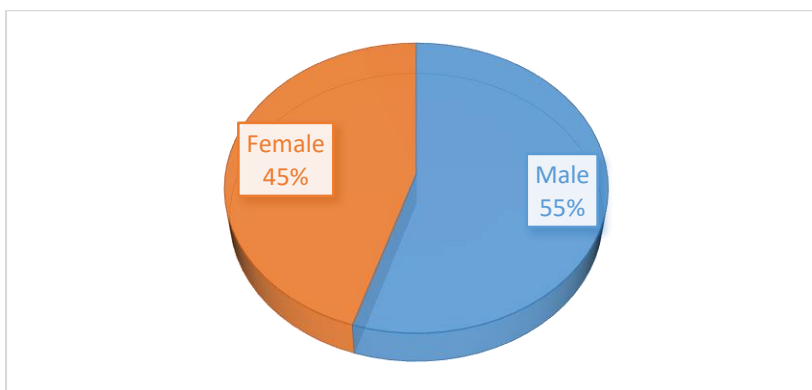


Figure 3. Sex of Participants

Most of the respondents were aged 14 to 15 years (63%). Those aged 12 to 13 years were 23%. The last category was age 16 to 17 years, see Figure 4.

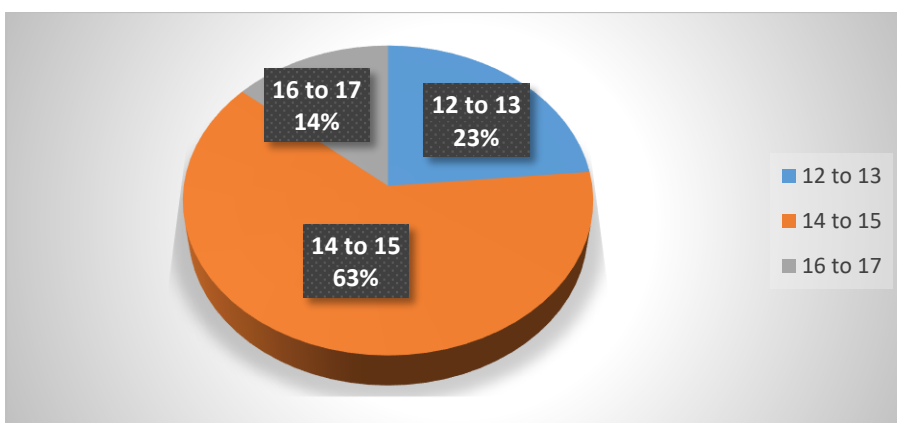


Figure 4. Age of Participants

Majority of the respondents were in form one (39%), followed with those in form three (33%). Form two had the list number of respondents.

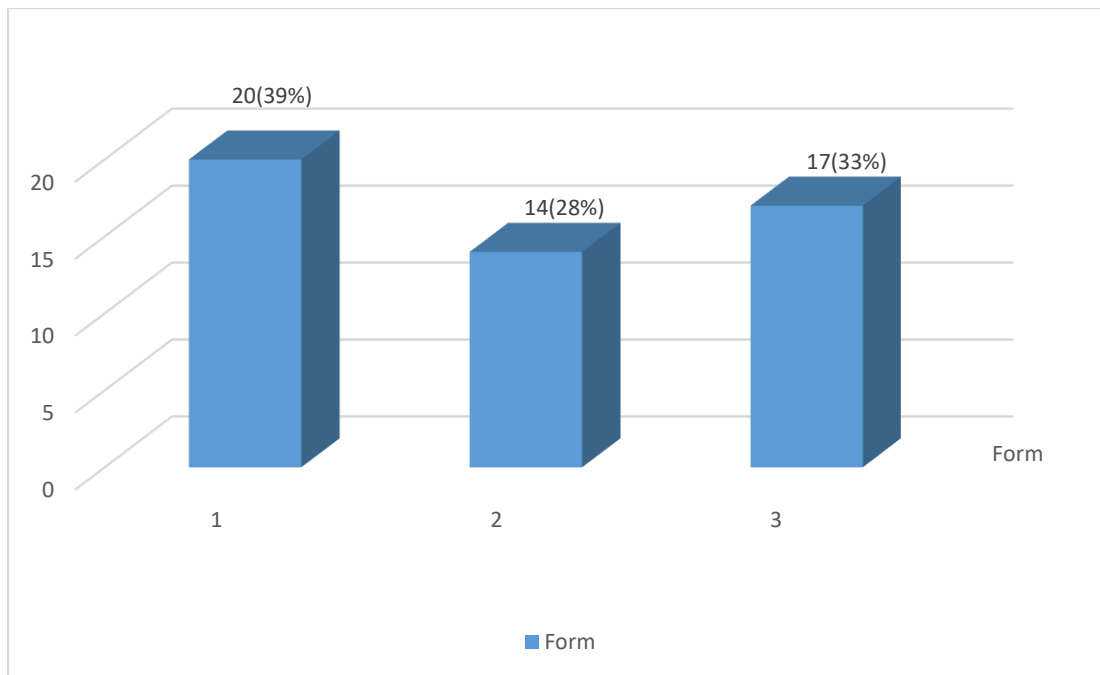


Figure 5. Form of Participants

Many participants (88.2%) resided in the village at the time of the study while approximately 10% resided in the town region, see Figure 6. There were two missing values in this category.

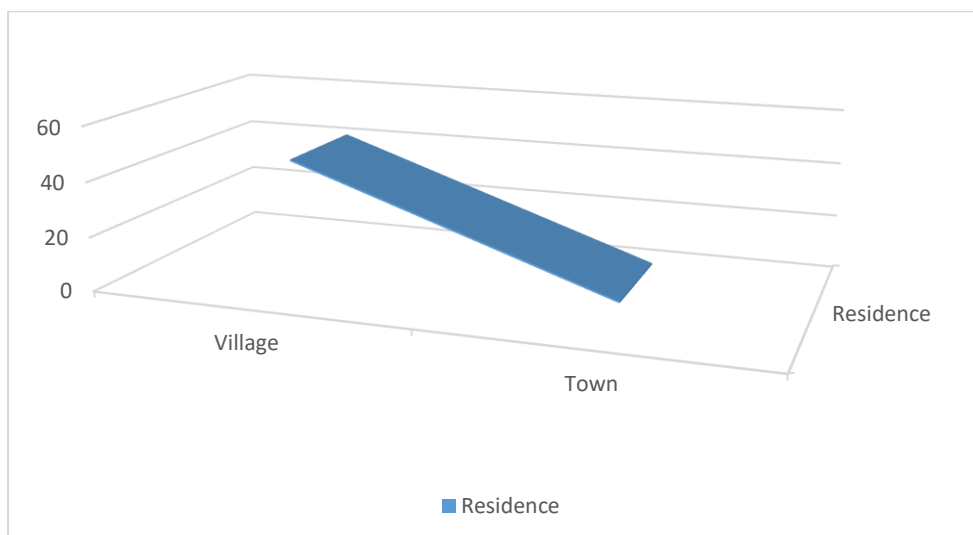


Figure 6. Residence of Participants

It was noted that a good number, 32 (62.7%) were practicing Christianity while 18 (35%) were practicing other religions see Figure 7. There was one missing value for religion.

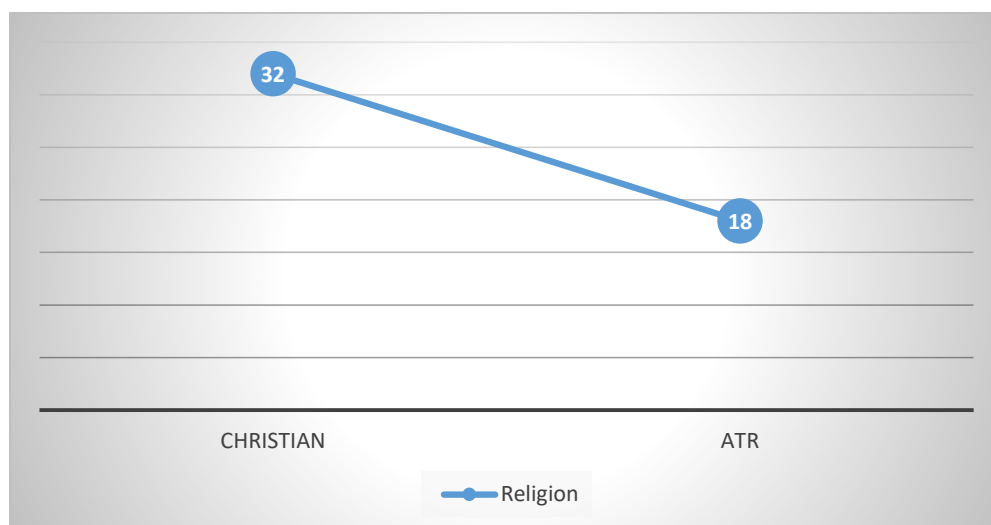


Figure 7. Religion of Participants

Health Outcomes

This project was developed to help students navigate through school during the COVID-19 pandemic period. It aimed at reducing the incidences of the disease as students were educated on the importance of adherence to isolation rules and regulations. The students were also informed about the role their attitude and knowledge played in the spread of COVID-19 disease. It is assumed that a good attitude and proper knowledge about COVID-19 disease may contribute to good health outcomes. Further noncompliance to COVID-19 safety protocols results in bad health outcomes.

Pre-test

A pre-test was done to assess the participant's attitude and level of knowledge concerning compliance of the recommended safety protocols. See table 3.

Table 3. Pre-test Health Outcomes: Attitude and Knowledge on COVID-19 Compliance

Attitude	S/Disagree	Disagree	Agree	S/Agree	M/values
I adhere to COVID-19 isolation regulations	0	4 (7.4%)	29 (53.7%)	15 (27.8%)	6 (11.1%)
I do not see any need to comply with COVID-19 safety protocols.	35 (64.8%)	12 (22.2%)	1 (1.9%)	2 (3.7%)	4 (7.4%)
I comply with COVID-19 protocols if they are rewarded.	11 (20.4%)	15 (27.8%)	18 (33.3%)	7 (13%)	3 (5.6%)
Belief in traditional medicine influences non-compliance to COVID-19 protocols.	12 (22.2%)	24 (44.4%)	9 (16.7%)	3 (5.6%)	6 (11.1%)
Knowledge					
I can list at least 4 facts on preventing COVID-19 infections	1 (1.9%)	5 (9.3%)	19 (35.2%)	25 (46.3%)	4 (7.4%)
I know COVID—19.	1 (1.9%)	3 (5.6%)	26 (48.1%)	19 (35.2%)	5 (9.3%)
COVID-19 is a sign of infection with the Coronavirus.	4 (7.4%)	10 (18.5%)	22 (40.7%)	13 (24.1%)	5 (9.3%)
Closing schools reduces COVID-19 infections.	5 (9.3%)	15 (27.8%)	15 (27.8%)	11 (20.4%)	8 (14.8%)
Being in contact with a crowd when having flu symptoms exposes one to COVID-19 infections.	0	2 (3.7%)	21 (38.9%)	24 (44.4%)	7 (13%)

Post-test

After carrying a health intervention program where participants were educated about the importance of adhering to the safety protocols, a post-test was done. The post-test indicated that there was some level of improvement regarding attitude and knowledge. Table 4 highlights the results of the post-test.

Table 4. Post-test Health Outcomes: Attitude and Knowledge on COVID-19 Compliance

Attitude	S/Disagree	Disagree	Agree	S/Agree	M/values
I adhere to COVID-19 isolation regulations	0	1 (1.8%)	26 (47.3%)	28 (50.9%)	0
I do not see any need to comply with COVID-19 safety protocols.	35 (63.6%)	18 (32.7)	1 (1.8%)	1 (1.8%)	0
I comply with COVID-19 protocols if they are rewarded.	11 (20%)	17 (30.9%)	14 (25.5%)	13 (23.6%)	0
Belief in traditional medicine influences non-compliance to COVID-19 protocols.	18 (32.7%)	16 (29.1%)	17 (30.9%)	2 (3.6%)	2 (3.6%)
Knowledge					
I can list at least 4 facts on preventing COVID-19 infections	1 (1.8%)	0	21 (38.2%)	33 (60%)	0
I know COVID-19.	0	4 (7.3%)	26 (47.3%)	24 (43.6%)	1 (1.8%)
COVID-19 is a sign of infection with the Coronavirus.	3 (5.5%)	0	30 (54.5%)	21 (38.2%)	1 (1.8%)
Closing schools reduces COVID-19 infections.	4 (7.3%)	14 (25.5%)	25 (45.5%)	12 (21.8%)	0
Being in contact with a crowd when having flu symptoms exposes one to COVID-19 infections.	1 (1.8%)	3 (5.5%)	14 (25.5%)	37 (67.3%)	0

Comparison

To assess the impact of the intervention, a comparison was done between the pre-test and the post-test. This was done to measure the impact of the program. Table 5 shows the difference between the two tests.

Table 5. Health Outcomes: Pre-test and Post-test Comparison

	Pre-test		Post-test		
Attitude	Disagree	Agree	Disagree	Agree	Difference
I adhere to COVID-19 isolation regulations	4 (7.4%)	44(81.5)	1(1.8%)	54(98.2%)	10 (18%)
I do not see any need to comply with COVID-19 safety protocols.	47 (87%)	3(5.6%)	53(96.3%)	2(3.6%)	6 (11%)
I comply with COVID-19 protocols if they are rewarded.	26 (48.2%)	25(46.3%)	28(50.9%)	27(49.1%)	2 (4%)
Belief in traditional medicine influences non-compliance to COVID-19 protocols.	36(66.6%)	11(22.3%)	34(61.8%)	19(34.5%)	7 (13%)
Average					6.25 (11.5%)
Knowledge					
I can list at least 4 facts on preventing COVID-19 infections	6 (11.2%)	44(81.5%)	1(1.8%)	54(98.2%)	10 (18%)
I know COVID—19.	4 (7.5%)	45(83.3%)	4(7.3%)	50(90.9%)	5 (9%)
COVID-19 is a sign of infection with the Coronavirus.	14 (25.9%)	35(64.8%)	3(5.5%)	51(92.7%)	16 (29%)
Closing schools reduces COVID-19 infections.	20 (37.1%)	26(48.2%)	18(32.8%)	37(67.3%)	10 (18%)
Being in contact with a crowd when having flu symptoms exposes one to COVID-19 infections.	2 (3.7%)	36(83.3%)	4(7.3%)	51(92.7%)	15 (27%)
Average					11.2(20.5%)
Difference (average)					17.5(32%)

The health outcome objectives aimed at educating and creating awareness of the negative health impacts resulting from non-adherence or non-complying with the COVID-19 safety protocols. The education was geared towards helping the students understand that individual attitudes and poor knowledge about COVID-19 risk factors can indirectly result in contracting the disease. Moreso, it is important to adhere to the set regulations to mitigate the resulting negative health outcomes. On the other hand, the students should understand that complying with the safety protocols is a protective factor not only against COVID-19 infection but also against other infectious diseases.

A pre-test and post-test were done, and a formula was used to determine the change in attitude and knowledge as follows.

Health Outcomes: Attitude and Knowledge

$$\text{Cumulative \% of increase} = \frac{17.5}{55} \times 100 = 32\%$$

Overall, there was a positive increase of about 32% in attitude and knowledge.

The results showed that at least 10 (18%) students changed their attitude about adhering to isolation regulations after they had participated in the program. Six (11%) students saw the need to comply with COVID-19 safety protocols at the end of the awareness campaign done as part of the education. However, a few of the students felt that if they were rewarded, they would be more likely to follow the set regulations irrespective of the fact that the regulations were for their good. On the other hand, seven (13%) students changed their beliefs concerning traditional medicine and COVID-19. They understood that subscribing to traditional medicine which influenced their compliance with COVID-19 protocols was a significant risk factor for contracting the disease.

This implies that most of the students generally had a positive attitude to compliance with COVID-19 safety regulations. However, they were not ready to be isolated as they associated compliance with seclusion or isolation from others. These meant that they were confined in one place for a period of two weeks or more hence not able to carry on with their daily activities including learning. These may have also been the reason for demanding compensation in the form of rewards if they were to comply with isolation regulations. On the same note, it was clear that customs and traditions play a substantial role in an individual's life. The students had faith that traditional medicine was good enough to treat the COVID-19 infection irrespective of the fact that these were educated adolescent children. Maybe they attributed these to

‘concussion’ preparation consisting of mixed garlic, lemon, ginger, and herbal tea that was believed to possess healing properties for flu and colds and to some extent COVID-19 by many people.

It was evident that knowledge increased after the completion of the program. 10 (18%) more students could easily name several facts about COVID-19 and their prevention measures. This was important because the knowledge could help students engage in preventive measures consequently reducing further infections. Five (9%) students indicated that they had better knowledge concerning COVID-19 as a disease and these served as a reminder to observe the safety guidelines more strictly.

By the end of the program. At least 16 (29%) students would recognize the signs and symptoms of COVID-19 and that the symptoms meant that one had contracted the deadly coronavirus which could lead to serious health problems including death. Therefore, the students understood that the closure of schools was necessary if the incidences of COVID-19 were to reduce and at the same time stop it from spreading. Even though this closure meant disrupting the normal learning activities, still it could be beneficial to individual health. It was also evident that mingling with other students who exhibit flu-like symptoms could expose healthy students to COVID-19 infection because the symptoms were similar, and one could not differentiate them easily.

Behavioural Outcomes

This project aimed to reduce the prevalence of COVID-19 among students at Ikageng Junior Secondary School which had been closed due to the high incidences of the disease and now had just re-opened. Behavioural measures such as hand washing, social/physical distancing, and attitude are crucial to the prevention and spread of COVID-19 infections. However, sometimes students have difficulty complying

because of various reasons and myths concerning the disease. Therefore, health education and awareness are needed to promote compliance. The following table displays the pre-test results of the behavioural outcomes.

Pre-test

Table 6. Behavioural Outcomes: Pre-test

Attitude	S/Disagree	Disagree	Agree	S/Agree	M/Values
I practice proper hand washing	0	10 (18.5%)	25 (46.3%)	16(29.6%)	3 (5.6%)
I practice correct face mask wearing	0	5 (9.3%)	19 (35.2%)	26 (48.1%)	4 (7.4%)
I practice social distance	1 (1.9%)	14 (25.9%)	23 (42.6%)	13 (24.1%)	3 (5.6%)
The need to attend funerals and weddings influences non-compliance to COVID-19 protocols.	5 (9.3%)	17 (31.5%)	20 (37%)	6 (11.1%)	6 (11.1%)
The government offering people rewards can make them comply with COVID-19 protocols.	14 (25.9%)	8 (14.8%)	19 (35.2%)	7 (13%)	6 (11.1%)
Knowledge					
COVID-19 can be prevented through the correct wearing of a face mask	0	0	22 (40.7%)	28 (51.9%)	4 (7.4%)
COVID-19 can be prevented through frequent washing of hands or the use of sanitiser.	0	0	23 (42.6%)	27 (50%)	4 (7.4%)
COVID-19 can be prevented through 1-2m social/ physical distancing	0	2 (3.7%)	19 (35.2%)	29 (53.7%)	4 (7.4%)

Table 7. Behavioural Outcomes: Post-test

Attitude	S/Disagree	Disagree	Agree	S/Agree	M/Values
I practice proper hand washing.	0	3 (5.5%)	25 (45.5%)	27 (49.1%)	0
I practice correct face mask wearing.	1 (1.8%)	1 (1.8%)	19 (34.5%)	32 (58.2%)	2 (3.6%)
I practice social distancing.	0	8 (14.5%)	30 (54.5%)	15 (27.3%)	2 (3.6%)
The need to attend funerals and weddings influences non-compliance to COVID-19 protocols.	13 (23.6%)	14 (25.5%)	24 (43.6%)	2 (3.6%)	2 (3.6%)
The government offering people rewards can make them comply with COVID-19 protocols.	13 (23.6%)	6 (10.9%)	18 (32.7%)	17 (30.9%)	1 (1.8%)
Knowledge					
COVID-19 can be prevented through the correct wearing of a face mask	0	3 (5.5%)	18 (32.7%)	34 (61.8%)	0
COVID-19 can be prevented through frequent washing of hands or the use of sanitiser.	0	2 (3.6%)	17 (30.9%)	36 (65.5%)	0
COVID-19 can be prevented through 1-2m social/ physical distancing	0	1 (1.8%)	19 (34.5%)	35 (63.6%)	0

Comparison

A comparison was done to ascertain the difference between the pre-test and post-test. This comparison was done to assess the impact of the program in terms of behavioral outcomes. Table 8 illustrates the findings.

Table 8. Behavioural Outcomes: Comparison Pretest and Posttest

	Pre-test		Post-test		
Attitude	Disagree	Agree	Disagree	Agree	Difference
I practice proper hand washing	10 (18.5%)	41(76%)	3(5.5%)	52(94.6%)	11(20%)
I practice correct face mask wearing	5 (9.3%)	45(83.3%)	2(3.6%)	51(92.7%)	6 (11%)
I practice social distance	15 (28%)	36(66.7%)	8(14.5%)	45(81.8%)	9 (16.4%)
The need to attend funerals and weddings influences non-compliance to COVID-19 protocols.	22(40.8%)	26(48%)	27(49.1%)	26(47.2%)	3 (5.5%)
The government offering people rewards can make them comply with COVID-19 protocols.	22 (40.8%)	26(48%)	19(34.5%)	35(63.6%)	9 (16.4%)
Average for attitude					7.6 (14%)
Knowledge					
COVID-19 can be prevented through the correct wearing of a face mask	0	50(92.6%)	3(5.5%)	52(94.6%)	2 (3.6%)
COVID-19 can be prevented through frequent washing of hands or the use of sanitiser.	0	50(92.6%)	2(3.6%)	53(96.4%)	3 (5.5%)
COVID-19 can be prevented through 1-2m social/ physical distancing	2 (3.7%)	48(88.9%)	1(1.8%)	54(98.1%)	6 (11%)
Average for knowledge					3.67 (7%)
Difference (average)					11.2(21%)

The behavioural outcomes objectives purposed to educate the students on the role their behaviour played in the prevention or spread of the COVID-19 virus. The education focused on reminding the students that their behaviour was key to either increasing or reducing the incidences of COVID-19 in the school and the consequences thereafter.

The students needed to know that they had a significant role to play and that their practices contributed significantly to reducing the prevalence of infectious diseases including COVID-19. For example, wearing a face mask, especially in public indoor spaces would protect them not only from COVID-19 but also from other coronaviruses and influenza. Other practices like maintaining at least a two-meter

physical distance, avoiding large gatherings, and outdoor socialization were good behaviours that should always be practised. The following were the results of the pretest and posttests that were done.

Behavioural Outcomes: Attitude and Knowledge

$$\text{Cumulative \% of increase} = \frac{11.2}{55} \times 100 = 21\%$$

Generally, there was an increase of more than 21% in knowledge and attitude after the project was completed. 11 (20%) students started practising proper hand washing because now they understood the consequences of not doing it better. Six (11%) more students would wear their masks properly and nine more embraced the recommended social/physical distance as a safety protocol. The students must have understood that their behaviours within and outside the school compound determined their well-being. They now understood that they were vulnerable and at high risk of contracting the coronavirus whenever they were in big gatherings like weddings and funerals.

Although most of them cherished the socialization, expectations, and responsibilities attached to attending weddings and funerals, they were aware that proper mask-wearing and social distancing should be always observed. Nine (16.4%) agreed that their government should offer some kind of reward as compensation to support them if they were to be confined or isolated. This may be because they felt that they were not able to carry on with their day-to-day activities including participating in livelihood activities that earned them money for their upkeep and other necessities hence the need to be facilitated by the government.

Most students knew that wearing a face mask properly could prevent them from contracting the coronavirus. Only a few of them disagreed with that fact. Maybe

they could not access a mask, or they were lucky not to have contracted the virus even though they didn't use a mask and didn't contract the disease. The majority of the students also understood the importance of frequent hand washing or sanitization as a preventive measure. At least six (11%) more students started practising the recommended social distance after the education. Social distance may be difficult in a school setting because of the nature and physical location of some classes. Also, during break time and playing time, it can be difficult to maintain a physical distance because the students need to interact closely.

These results imply that the students had a positive attitude towards adherence to safety protocols. However, social responsibility and a sense of belonging pushed them to participate in social gatherings even though it was dangerous. Moreover, the students had sufficient knowledge that proper hand washing, wearing masks, and social distancing were preventive measures. Nevertheless, these proved challenging in a school setting.

Social Outcomes

This project was designed with a social component attached to it. This is because socialization is part of every person's life. The COVID-19 pandemic disrupted daily normal human activities. For example, the rise in COVID-19 cases interrupted normal activities. Social gatherings were no longer acceptable in the hope that this restriction translated to avoidance of contracting the virus. The deadly nature of the disease caused people to experience fear and anxiety.

To mitigate such fears, many governments and non-government organizations indavoured to create awareness about the impact of COVID-19. They focused on educating people about preventive strategies and the importance of complying with the recommended safety protocols. However, individuals also had a responsibility to

practise the said regulations and extend the same to other peers. This was to ensure that everyone participated in minimizing and avoiding further spread of the virus. The following table displays the pre and post-test results of the social outcome component.

Pre-test

Table 9. Social Outcomes: Pretest

Knowledge	S/Disagree	Disagree	Agree	S/Agree	M/Values
I have taught other students correct waste segregation	3 (5.6%)	23 (42.6%)	21 (38.9%)	2 (3.7%)	5 (9.3%)
I teach other students the importance of COVID-19 safety compliance	0	20 (37%)	23 (42.6%)	7 (13%)	4 (7.4%)
How often do you role model the correct use of face masks?	1 (1.9%)	13 (24.1%)	19 (35.2%)	12 (22.2%)	9 (16.7%)
I often role model social distancing.	1 (1.9%)	13 (24.1%)	21 (38.9%)	12 (22.2%)	7 (13%)
I often role model correct washing of hands.	1 (1.9%)	13 (24.1%)	27 (50%)	8 (14.8%)	5 (9.3%)

Post-test

Table 10. Social Outcomes: Posttest

Knowledge	S/Disagree	Disagree	Agree	S/Agree	M/Values
I have taught other students correct waste segregation	3 (5.5%)	18 (32.7%)	23 (41.8%)	11 (20%)	0
I teach other students the importance of COVID-19 safety compliance	2 (3.6%)	9 (16.4%)	30 (54.5%)	14 (25.5%)	0
How often do you role model the correct use of face masks?	1 (1.8%)	1 (1.8%)	40 (72.7%)	12 (21.8%)	1 (1.8%)
I often role model social distancing.	1 (1.8%)	11 (20%)	32 (58.2%)	11 (20%)	0
I often role model correct washing of hands.	0	9 (16.4%)	29 (52.7%)	16 (29.1%)	1 (1.8%)

Comparison

Table 11. Social Outcomes Comparison of Pretest and Posttest

Knowledge	Pre-test		Post-test		Difference
	Disagree	Agree	Disagree	Agree	
I have taught other students correct waste segregation	26 (48.2%)	23(42.6%)	21(38.2%)	34(61.8%)	11 (20%)
I teach other students the importance of COVID-19 safety compliance	20 (37%)	30(55.6%)	11(20%)	44(80%)	14 (25.5%)
How often do you role model the correct use of face masks?	14 (26%)	31(57.4%)	2(3.6%)	52(94.5%)	21 (38%)
I often role model social distancing.	14 (26%)	33(61.1%)	12(21.8%)	43(78.2%)	10 (18%)
I often role model correct washing of hands.	14 (26%)	35(64.8%)	9(16.4%)	45(81.8%)	10 (18%)
Difference (average)					13.2(24%)

The social outcomes aimed at creating awareness of the social responsibility each student had. It was the participant's duty to ensure that other students were educated about the importance of adhering to the safety guidelines that were put into place. The class monitors who were participants in the project were specifically chosen because they were the student leaders and hence could be entrusted with the responsibility of educating other students. Being a student leader signified great responsibility. The assumption here was that training the leaders (class monitors) was beneficial as they could train other students in their respective classes. The following was the comparison of the pretest and posttest.

Social Outcome: Knowledge

$$\text{Cumulative \% of increase} = \frac{13.2}{51} \times 100 = 26\%$$

In general, there was a 24% increase in the level of knowledge of the participants. Approximately 20% (11) of the participants had gained more knowledge

regarding correct waste segregation and disposal. The trained participants were willing to teach other students who did not attend the program how to practice it.

Moreover, 25.5% (14) participants who attended the program were boldly able to teach other students in the class they represented the importance of complying with the COVID-19 safety protocols. This is because the students understood that it was for their good and that they had a responsibility as leaders to educate others about the importance of compliance. About 38% (21) of the participants were confident in modelling proper mask-wearing to their fellow students because they had gained skills from the program. Further, 18% (10) of the students were assertive enough to model both social/physical distance and proper hand washing as stipulated in the COVID-19 safety protocols. This was possible because they had learned the skill from the program.

This implies that even though the participants knew, they needed to be thought how to translate knowledge to practice. Peer education has been found successful especially among adolescents as they value their peer's opinions. In addition, that modelling is key to encouraging others to behave similarly.

Physical Outcomes

Embedded in the planning and intervention was an assessment component that looked at the physical environment of the school. This was done to assess the infrastructure in the school that acted as a resource for the project. The physical environment contributes significantly to the spread or diminish of COVID-19. Physical/social distancing, wearing masks, and washing hands are good preventive measures used to slow person-to-person transmission. However, an enabling environment contributes significantly to determining the impact of the disease in a given population. For instance, a well-spaced classroom that is well-ventilated can

help adhere to COVID-19 safety protocols. General school cleanliness and the provision of necessary protective equipment can contribute to good health outcomes. The following tables present the physical outcomes of the program.

Pre-test

Table 12. Physical Outcomes: Pretest

	S/Disagree	Disagree	Agree	S/Agree	M/Values
Are the wash stations in Ikageng JSS in good working condition?	8 (14.8%)	14 (25.9%)	22 (40.7%)	6 (11.1%)	4 (7.4%)
Do the hand wash stations of Ikageng JSS have hand soap?	4 (7.4%)	17 (31.5%)	19 (35.2%)	9 (16.7%)	5 (9.3%)
Do classrooms have labelled waste disposal waste bins?	15 (27.8%)	20 (37%)	15 (27.8%)	1 (1.9%)	3 (5.6%)

Post-test

Table 13. Social Outcomes: Posttest

	S/Disagree	Disagree	Agree	S/Agree	M/Values
Are the wash stations in Ikageng JSS in good working condition?	6 (10.9%)	11 (20%)	27 (49.1%)	11 (20%)	0
Do the hand wash stations of Ikageng JSS have hand soap?	6 (10.9%)	8 (14.5%)	32 (58.2%)	9 (16.4%)	0
Do classrooms have labelled waste disposal waste bins?	10 (18.2%)	17 (30.9%)	19 (34.5%)	9 (16.4%)	0

Comparison

A comparison was done to assess the impact on the social outcomes. It was noted that there was a slight improvement in this category. Table 14 highlights the differences.

Table 14. Health Outcomes: Pre-test and Post-test Comparison

	Pre-test		Post-test		Difference
	Disagree	Agree	Disagree	Agree	
Are the wash stations in Ikageng JSS in good working condition?	22 (40.7%)	28(51.8%)	17(30.9%)	38(69.1%)	10 (18%)
Do the hand wash stations of Ikageng JSS have hand soap?	21(38.9%)	28(51.9%)	14(25.4%)	41(74.6%)	13 (24%)
Do classrooms have labelled waste disposal waste bins?	35 (64.8%)	16(29.7%)	27(49.1%)	28(50.9%)	12 (22%)
Difference (average)					11.7(21%)

The physical objective was geared towards assessing the school's infrastructure that may support the prevention of COVID-19. The available equipment was used as a resource by the project developers to train the participant during the training sessions. A clean environment with good infrastructure is key to good health outcomes. The presence of functional wash stations equipped with hand-washing soap and clean water is necessary for the prevention of COVID-19.

Of importance also is the availability of sufficient well-labelled waste disposal containers to ensure proper hygiene and sanitation. The following calculation presents the increase in physical outcomes.

$$\text{Cumulative \% of increase} = \frac{11.7}{55} \times 100 = 21\%$$

The assessment was viable as some of the students became aware of the physical facilities in the school of which they were ignorant earlier. For example, 10 (18%) of the participants were aware that the hand washing stations were available and in good condition. The participants were aware that using the wash stations would be beneficial to them. From the pretest, it was clear that the majority of the participants agreed that the wash stations were available and usable. The additional 10 participants may not have used the wash stations before the program and that made

them think that the wash stations were not available. The awareness and education from the program enlightened them and motivated them to use the wash stations.

The challenge was that although the wash stations were available and functioning, they were not equipped with soap and clean water. About 13 (24%) participants noticed that the soap was available by the end of the program compared to the time they started. Another reason that may be attributed to the increase in the number of participants who agreed is that the school administration had provided the hand washing soap and clean water as requested by the program coordinator in preparation for demonstration lessons.

Similarly, 12 (22%) of the participants indicated that the waste disposal bins in the classrooms were properly labelled. These also may be attributed to the administrators honouring their promise of providing the infrastructure necessary for the program to succeed.

Information Dissemination

The COVID-19 pandemic exposed the importance of information dissemination and how this information served as a basis for decision-making in populations. In this project, information dissemination was analyzed separately as it cut across all the objectives (health, behaviour, social, and physical). Particularly the program planners wanted to assess how COVID-19 information was circulated.

The purpose was to evaluate if students got the right and necessary information to help them take precautionary measures to reduce the prevalence of COVID-19 in the school. It is assumed that sufficient information about COVID-19 preventive measures translated to healthy behaviours. The following table highlights the results of the program regarding information dissemination.

Pre-test

A pre-test was done before the start of the program to assess the methods and ways that information was disseminated to the students.

Table 15. Information Dissemination Pretest

	S/Disagree	Disagree	Agree	S/Agree	M/Values
The school has given out a lot of information on COVID-19 safety protocols.	0	2 (3.7%)	22(40.7%)	24(44.4%)	6 (11.1%)
There is enough information on COVID-19 safety protocols in rural areas.	4 (7.4%)	21 (38.9%)	17(31.5%)	6 (11.1%)	6 (11.1%)
Information on COVID-19 signs and symptoms reduced panicking.	4 (7.4%)	10 (18.5%)	27(50%)	6 (11.1%)	7 (13%)
COVID protocols are well-described and easy to understand.	0	3 (5.6%)	27 (50%)	18(33.3%)	6 (11.1%)
Having information from television, newspapers, and notice boards influences compliance with social distancing.	1 (1.9%)	2 (3.7%)	31(57.4%)	14(25.9%)	6 (11.1%)
Having no access to the internet makes students not comply with COVID-19 protocols.	17 (31.5%)	23 (42.6%)	6 (11.1%)	2 (3.7%)	6 (11.1%)
Insufficient information on COVID-19 safety protocols makes students not follow COVID-19 protocols.	6 (11.1%)	7 (13%)	26(48.1%)	9 (16.7%)	6 (11.1%)
Sufficient information on COVID-19 is mostly found in urban areas.	4 (7.4%)	6 (11.1%)	20 (37%)	18(33.3%)	6 (11.1%)

Post-test

A post-test was done after the intervention to assess the impact of the program regarding information dissemination. It was noted that information was disseminated in various ways from various means. Table 16 shows the post-test results.

Table 16. Information Dissemination Posttest

	S/Disagree	Disagree	Agree	S/Agree	M/Values
The school has given out a lot of information on COVID-19 safety protocols.	0	3 (5.5%)	22 (40%)	30 (54.5%)	0
There is enough information on COVID-19 safety protocols in rural areas.	10 (18.2%)	24 (43.6%)	18(32.7%)	3 (5.5%)	0
Information on COVID-19 signs and symptoms reduced panicking.	6 (10.9%)	6 (10.9%)	33 (60%)	10 (18.2%)	0
COVID protocols are well-described and easy to understand.	2 (3.6%)	0	30(54.5%)	23 (41.8%)	0
Having information from television, newspapers and notice boards influences complying with social distance.	0	2 (3.6%)	30(54.5%)	23 (41.8%)	0
Having no access to the internet makes students not comply with COVID-19 protocols.	20 (36.4%)	25(45.5%)	8 (14.5%)	1 (1.8%)	0
Insufficient information on COVID-19 safety protocols makes students not follow COVID-19 protocols.	5 (9.1%)	14 (25.5%)	22 (40 %)	14 (25.5%)	0
Sufficient information on COVID-19 is mostly found in urban areas.	10 (18.2%)	5 (9.1%)	20(36.4%)	20 (36.4%)	0

Comparison

After the intervention, a post-test was done, and the pre-test and post-test were compared. This was done to assess whether there was a difference in awareness regarding information dissemination. Table 17 designates the findings.

Table 17. Comparison: Information Dissemination Pretest and Posttest

	Pre-test		Post-test		Difference
	Disagree	Agree	Disagree	Agree	
The school has given out a lot of information on COVID-19 safety protocols.	2 (3.7%)	46(85%)	3(5.5%)	52(94.5%)	6 (11%)
There is enough information on COVID-19 safety protocols in rural areas.	25 (46.3%)	23(42.6%)	34(61.8%)	21(38.2%)	(9) (16%)
Information on COVID-19 signs and symptoms reduced panicking.	14 (26%)	33(61%)	12(21.8%)	43(78.2%)	10 (18%)
COVID-19 protocols are well-described and easy to understand.	3 (5.6%)	45(83.3%)	2(3.6%)	53(96.3%)	8 (14.5%)
Having information from television, newspapers, and notice boards influences compliance with social distancing.	3 (5.6%)	45(83.3%)	2(3.6%)	53(96.3%)	8 (14.5%)
Having no access to the internet makes students not comply with COVID-19 protocols.	40(74%)	8(14.8%)	45(81.9%)	9(16.3%)	(5) (9%)
Insufficient information on COVID-19 safety protocols makes students not follow COVID-19 protocols.	13 (24%)	35(64.8%)	19(34.6%)	36(65.5%)	(6) (11%)
Sufficient information on COVID-19 is mostly found in urban areas.	10 (18.5%)	38(70.3%)	15(27.3%)	40(72.8%)	(5) (9%)
Difference (average)					7.13(13%)

Governments through health care sectors and non-government organizations used information technology to improve public health by spreading news related to coronavirus to encourage compliance with safety protocols. During the project implementation, it was necessary to assess wheatear the information dispatched was correct and adequate to help students adhere to the WHO regulations. During the covid crisis information proved variable and accessibility of the information was crucial to ensure that people made the right decisions, especially in a school setting. The quality of information amid such a crisis is important as it kept students informed and calm.

Various systems like social media, radio, television, and reading materials were used to disseminate information about COVID-19. Although most of the information that was disseminated was correct, some people also used this opportunity to spread myths and incorrect information about the disease which resulted in non-compliance with the safety protocols. As media and social conversations dominated the school, students were able to express their thought and concerns about the pandemic. The calculation following presents the increase in information dissemination.

Information Dissemination

$$\text{Cumulative \% of increase} = \frac{7.13}{55} \times 100 = 13\%$$

There was a general increase of 13% in information dissemination. Most of the students both in the pre-test (85%) and post-test (94.5%) agreed that the school provided enough information about COVID-19 safety protocols. There was a slight increase of 11% of students who attested to that fact. This may have been because the students had a better understanding of the kind of information they needed to take seriously.

On the other hand, several students 46.3% during the pre-test and 61.8% on the post-test were concerned that information about COVID-19 safety protocols was scarce in rural areas compared to urban areas. This was a genuine concern because most of the students in the school hailed from the rural area. The 16% decrease may have resulted because, during the intervention, more students understood COVID-19 safety protocols and hence were able to identify the gaps in the information disseminated.

Some of the students (61%) on the pre-test and (78.2%) on the post-test agreed that having sufficient information about COVID-19 signs and symptoms reduced their

anxiety. The increase of 18% could be attributed to the intervention as participants learnt more about the signs and symptoms of the deadly disease. The majority of the students (pre-test 83.3% and post-test 96.3%) agreed that COVID-19 protocols were well-described and easy to use. They also reported that information received from television, newspapers, and notice boards influenced their compliance.

There was a slight increase of about 15% that was attributed to this fact. The students (pre-test 74% and post-test 82%) disagreed that internet access was a hindrance to compliance with safety protocols. This was true because previous results from the social outcomes indicate that the students received most of the information about COVID-19 safety protocols from social media.

As expected, most students (pre-test 64.8% and post-test 65.5%) agreed that insufficient information on COVID-19 safety protocols contributed significantly to non-adherence to COVID-19 safety protocols. Interestingly, a few students (11%) disagreed that lack of information was to blame for non-compliance. Maybe for them, it was all about responsibility and not necessarily about information that determined behaviour. The participants (pre-test 70.3% and post-test 72.8%) indicated that information was more accessible in urban areas compared to rural areas and this implied that students coming from rural areas were more vulnerable to contracting the coronavirus as opposed to those who came from the urban region.

It can be concluded that information dissemination occupied a large part and played a significant role during the COVID-19 pandemic. Social media and mass media such as Facebook, Messenger, WhatsApp, television, and radio were the main sources of disseminating information. It is clear from the findings that the participants especially those who resided in urban areas accessed the information readily. This information served as the foundation or basis for the decisions they made. The

students made choices based on accurate and relevant information received from the school and media and these influenced their behaviour. The information the students received was used to better understand the importance of adhering to the safety protocols. This implies that the students processed the information into knowledge that informed their attitude resulting in better health, social, and behavioural outcomes.

Discussion

This project aimed at educating class monitors who were student leaders representing various classes. The purpose was to train them first so that they can train and model the rest of the school the safety protocols. First, the pretest questionnaires were distributed then, the infrastructure and resources in the school were checked. This included wash stations, the presence of soap in wash stations and the availability of waste segregation bins in classes.

Health Outcomes

The project aimed to ensure an 85% increase in the health outcome objective, however, there was an increase of only 32%. This was because the participants already knew COVID-19 preventive practices though they did not translate what they knew to practice. The consequence of failure to practice was the rise in COVID-19 cases. This finding is similar to that of Motlathledi et al. (2020) which indicated that there was an increase in the prevalence of COVID-19 in a region where people ignored the safety protocols. Other scholars have also concluded that compliance with safety protocols including isolation regulations reduced incidences of COVID-19 (BRAC USA, 2017; Millennium Challenge Corporation, 2021; Sanyaolu et al., 2021).

The assessments carried out during this project indicated that the students did not comply with isolation regulations. Wright et al. (2022) study had similar findings

which revealed that younger people were not likely to comply with isolation requirements. Contrary to these findings, Bacon and Corr's (2020) study concluded that young people were agreeable with isolation regulations as these gave them time to engage in social media. The same study also denoted that compliance with isolation regulations was high when aided by rewards. Other scholars agree that there was a positive attitude toward compliance when the practice was government-guided (Olum et al., 2020; Reuben et al., 2021).

The results of the project indicated that the information relayed to the students contributed significantly to their knowledge and subsequently a change of attitude. These findings agree with those of Song and Karako (2020) who suggested that proper information reduced anxiety and panic attacks associated with COVID-19 infections. In addition, other scholars hypothesized that sufficient information dissemination mitigated COVID-19 transmission and encouraged positive behaviour change (Pakhtigian et al., 2022).

Behavioural Outcomes

The project aimed at least a 70% to 85% increase in engaging in preventive behaviour. there was a 21% increase in behavioural outcomes. As indicated earlier, for behaviour to change it requires cognitive processes and the ability to translate information gained to healthy behaviour. Brownson et al. (2007) said that information gained informs behaviour. Studies show that people's behaviour significantly depends on the information received. For example, Chen and Chen (2020) concluded that the high rise in COVID-19 cases in China was attributed to poor information dissemination on the risk factors of the disease. However, in a school setting apart from information other factors played a big role.

Maintaining social distance in a school setting is challenging. The assessment showed that students were not able to adhere to the rules about social distancing. This is so because, during lunch and playtime, it was difficult to keep physical distance. On observation, it was clear that the feeding area was small, and students had to line up for food hence impossible to practice social distancing. Literature confirms that low social distance or lack of it contributed to the rise in cases in a study done in Tanzania (Salyer et al., 2021). In the same vein, studies have indicated that physical meetings which is the case in a school setting are a risk factor for COVID-19 infection (Belingheri et al., 2020; Government of Botswana, 2020; Tiro, 2020).

Another finding was that the students practised proper wearing of maskless. Similar findings have been seen in the literature. For instance, Aravindakshan et al. (2022) indicated that individuals who used a mask most of the time were at low risk of contracting COVID-19 and that high cases were associated with mask non-users. Interestingly a study done in Asia revealed that those who were motivated or rewarded recorded higher mask usage (van Rooij et al., 2020).

Social Outcomes

An increase of 26% was realized although the target was a 65% to 80% increment. The results indicated that the students had ideas about waste disposal, but the waste bins were not sufficiently provided, and they were not clearly labelled. This result agrees with a previous study that associated the mismanagement of solid wastes with high cases of COVID-19 (Lippke et al., 2022). On the other hand, peer education specifically on COVID-19 compliance was low. This finding corresponds to a study done in Asia that indicated that peer knowledge resulted in positive outcomes including compliance with safety protocols because the young had gained more knowledge from the internet regarding COVID-19 (Pakhtigian et al., 2022).

Further, Motlhatlhedhi et al. (2020) support that sufficient information is necessary and important to peer education. Moreso, the same study states that social media had a positive effect translating to a positive attitude toward avoiding crowded areas.

The findings suggested that it was important for people to socialize hence they felt the need to attend social gatherings like weddings. Azlan et al. (2020) study also indicated that attending weddings and funerals was a social event that was esteemed by every one. The results suggested that role modelling compliance was low. Previous studies also indicated that compliance was low because compliance had financial implications (Odukoya and Omeje, 2020; Rigby, 2020; Tomczyk et al., 2020). Moreover, compliance meant working remotely and because students did not have the necessary infrastructure it became difficult. Thaba-Nkadimene's (2020) study had comparable findings in his study which indicated that lack of technical know-how was a significant challenge that forced students to continue learning face-to-face because it was not possible for them to learn online.

Physical Outcomes

The program yielded a 21% increase in physical outcomes. The program target was 90%. From the assessment, it was evident that the school had the physical infrastructure laid out well although the necessary tools were missing. For example, the washing stations were there but they were not equipped with clean water and hand washing soap. Also, the waste disposal bins were available but were not labelled or cleaned. These results concur with previous studies that postulated that poor sanitation and hygiene were associated with an increase in cases of infectious diseases (Pakhtigian et al., 2022; Shrestha et al., 2022).

On the other hand, Chen and Chen (2020) disclosed that in rural areas there was a scarcity of clean water and washing stations. This was also the case in the

current study which found out that the rural areas region scored low in sanitation and hygiene. Moreover, people in rural areas did not have sufficient information concerning COVID-19 safety protocols. Chopra and Arora's (2020) study findings indicated the effectiveness of information dissemination when behaviour changes.

CHAPTER 5

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Summary

The COVID-19 pandemic was a global public health problem that almost paralyzed the world economy. This disease emerged and disrupted the normal day-to-day functions including shutting down of schools and workplaces (Sanyaolu et al., 2021; Tabish, 2020). The pandemic contributed significantly to the disease burden as many lives were lost and productive years were lost (Government of Botswana, 2020; Tiro, 2020; Zenbaba et al., 2021; Zhou et al., 2020).

The WHO (2020b) recommended some guidelines/strategies or protocols to curb the spread of the disease. For example, mandatory wearing of masks, keeping social distance, and proper hand washing. However, the incidences of COVID-19 continued to increase in some regions although the cases were decreasing in other regions. This was the rationale behind this current project.

The goal of the project was to reduce incidences of COVID-19 among school children in the region. The project assessed attitude, knowledge, behaviour (practice), and information dissemination among students' leaders (class monitors) at a junior secondary school. Generally, it was noted that non-compliance to the recommended safety protocols contributed significantly to the spread of COVID-19 disease. The protocols were specifically put in place to minimize the risk factors associated with the disease. However, students chose to ignore them because of various reasons known to them.

It was clear that intervention programs geared towards educating students on the importance of adhering to the set protocols would be key to drastically reducing COVID-19 incidences in the school. In addition, it was realized that information dissemination was key to compliance with safety protocols. Proper mask-wearing, frequent washing of hands, and keeping physical distance were some of the simple strategies that contributed to the reduction of COVID-19 cases. The following is a pictorial of some barriers and enablers that contribute to non-compliance with the protocols. These should be considered in an intervention program to control COVID-19 incidences.



Figure 8. Summary of Barriers and Enablers to Mitigate the Spread of COVID-19

Non-adherence to safety protocols was seen across gender. It was noted that those aged between 14-15 years participated in the program. Form one class had the highest number enrolled in the program and the majority were Christians who resided in the village.

A health promotion program was designed to create awareness and educate students on COVID-19 risk factors. The program endeavoured to demonstrate the

safety protocols and emphasize the role of proper information dissemination. This program proved beneficial as the trained class leaders continued to train the rest of the school.

Conclusion

The project was successful because there was an increase in the level of knowledge of participants and a positive attitude towards compliance was realized. The intervention program results served as a resource and basis for creating awareness in the school and educating other students about infectious diseases. It was noteworthy that compliance with safety protocols resulted in good health outcomes.

Proper information dissemination was found to be key to an increase in knowledge and a change of attitude. In addition, it was realized that knowledge alone without practice is not beneficial. Therefore, it is important to develop skills in how to translate knowledge into practice. A sense of responsibility is key to attaining positive behaviour change. More intervention programs focusing on preventive strategies can be beneficial to the students because prevention is better than cure.

Recommendations

1. The students should have a sense of responsibility towards their health rather than depending on the government. They should endeavor to learn more about safety protocols and practice what they have learnt.
2. The school administration should be able to provide the necessary equipment and tools to enable students to practice the recommended safety protocols. It is not possible to comply when the necessary apparatus is missing. Also, arrange the management and sustainability of the equipment. This equipment includes but is not limited to mounting wash station, providing labelled waste bin etc.

3. The school administration should inculcate health education in the school curriculum to ensure that students have sound knowledge of preventive measures. This not only applies to COVID-19 but to all diseases. A non-monetary reward can be attached to it so that those who comply can receive certificates or points. Some form of penalty can also be derived for those who refuse to comply.
4. The Ministry of Skills Development and Education to provide booklets and accessible billboards on facts about COVID-19 including signs and symptoms and preventive measures.
5. Schoolteachers to encourage peer teaching. Support by providing resources and materials necessary to facilitate peer teaching and modelling.
6. Parents to contribute to their children's learning experiences. Should not entrust or wait upon the school or social media to teach their children about safety protocols. They should take an active role in training their children and modelling good behaviour themselves.
7. Public health professionals can use this resource as a basis for other intervention programs. Also, the same project can be implemented in another region to find out if similar results are realized.

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APPENDICES

APPENDIX A

STUDY QUESTIONNAIRE

Questionnaire

You are requested to help me towards my research, the title is Factors Contributing To Compliance Of COVID- 19 Safety Protocols Among Students In Ikageng JSS, Metsimotlhabe. The information provided will be kept confidential. Participation is voluntary and you can withdraw anytime. Please complete the questionnaire by ticking the appropriate box for each question below. Your participation is highly appreciated.

SECTION ONE: SOCIO-DEMOGRAPHIC QUESTIONS

AGE:

SEX:

Female

Male

GRADE

Form 1 Form 2 Form 3

RESIDENCE

Town Village Lands

RELIGION Christian ATR Muslim

ATTITUDES ON COVID-19 COMPLIANCE - Please tick what best describes you

	Strongly Disagree	Disagree	Agree	Strongly Agree
I adhere to COVID-19 isolation regulations				
I practice proper hand washing.				
I practice correct face mask wearing.				
I practice social distancing.				
I do not see any need to comply with COVID-19 safety protocols.				
I comply with COVID-19 protocols if they are rewarded.				
Are the wash stations in Ikageng JSS in good working condition?				
Do the hand wash stations of Ikageng JSS have hand soap?				
Do classrooms have labelled waste disposal waste bins?				
Belief in traditional medicine influences non-compliance to COVID-19 protocols.				
The need to attend funerals and weddings influences non-compliance to COVID-19 protocols.				

The government offering people rewards can make them comply with COVID-19 protocols.				
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KNOWLEDGE ON COVID-19 COMPLIANCE - Please tick what best describes you

	Strongly Disagree	Disagree	Agree	Strongly Agree
I can list at least 4 facts on preventing COVID-19 infections.				
I have taught other students correct waste segregation.				
I teach other students the importance of COVID-19 safety compliance.				
How often do you role model the correct use of face masks?				
I often role model social distancing.				
I often role model correct washing of hands.				
I know COVID-19.				
COVID-19 is a sign of infection with the Coronavirus.				
COVID-19 can be prevented through the correct wearing of a face mask				
COVID-19 can be prevented through frequent washing of hands or the use of sanitiser.				
COVID-19 can be prevented through 1-2m social/ physical distancing				
Closing schools reduces COVID-19 infections.				
Being in contact with a crowd when having flu symptoms exposes one to COVID-19 infections.				

INFORMATION ON COVID-19 COMPLIANCE- Please tick what best describes you

	Strongly Disagree	Disagree	Agree	Strongly Agree
The school has given out a lot of information on COVID-19 safety protocols.				
There is enough information on COVID-19 safety protocols in rural areas.				
Information on COVID-19 signs and symptoms reduced panicking.				
COVID-19 protocols are well-described and easy to understand.				
Having information from television, newspapers and notice boards influences complying with social distance.				

Having no access to the internet makes students not comply with COVID-19 protocols.				
Insufficient information on COVID-19 safety protocols makes students not follow COVID-19 protocols.				
Sufficient information on COVID-19 is mostly found in urban areas.				

APPENDIX B

PARTICIPANTS INFORMED CONSENT FORM

((ENGLISH & SETSWANA)

AUTHORISATION (by the parent)

AUTHORISATION (by the parent)

I have AGREED/NOT AGREED that my child

_____ participates in this study on **Factors Contributing to Compliance of COVID- 19 Safety Protocols Among Students In Ikageng JSS, Metsimotlhabe.** by answering the questionnaire, taking photos and to engage in Health safety (WASH) program. My signature indicates that I have read and understood the information provided above and GIVE CONSENT to participate.

Name of Researcher **EMANG M. NKADILE** Date: **30 May 2022**

Name of Parent/Guardian _____

Signature _____ Date _____

Signature of research Participant _____

THEBOLO YA GO TSAYA KAROLO

Ke DUMETSE/ GA KE A DUMELA gore ngwanake _____ a tseekarolo le go tsenelelapatlisisokasetlhogo se sereng: **Mabaka a arotloetsang go salamoragomelawanaya go itshireletsakgatlhanong le COVID-19 mobaithutingbaIkageng JSS, Metsimotlhabe.** O tsayakaroloka go araba dipotsotsapatlomaikutlo, go tsewadinepe le go rutiwaka COVID-19 .Kebadileke a tlhaloganya, Fa o dumelasupaka go bayamonwana fa _____.

Leina la mmatlisisi Letsatsi

EMANG M NKADILE 30 May 2022

Leina la motsadi le monwanawagagwe Letsatsi

Leina la ngwanayo o tsayangkarolo le monwanawagagwe.

APPENDIX C

PARTICIPANTS' ASSENT FORM

(ENGLISH & SETSWANA)

I have AGREED/NOT AGREED to participate in this study on **Factors Contributing To Compliance With COVID-19 Safety Protocols Among Students In Ikageng JSS, Metsimothabe**. by answering the questionnaire, taking photos and engaging in the WASH program. My signature indicates that I have read and understood the information provided above and GIVE CONSENT to participate.

Name of Researcher: EMANG M. NKADILE Date: 30 May 2022

Name and Signature of Student _____ Date: _____

Signature of research Participant _____

THEBOLO YA GO TSAYA KAROLO

Ke DUMETSE/ GA KE A DUMELA go tsayakarolo le go tsenelelapatlisisoka go araba dipotsotsapatlomaikutlomosetlhogong se sereng :**Mabaka a arotloetsang go salamoragomelawanaya go itshireletsakgatlhanong le COVID-19 mobaithutingbalkageng JSS, Metsimothabe**le go rutiwaka COVID-19.Ke badileke a tlhaloganya, Fa o dumelasupaka go bayamonwana fa _____.

Leina la mmatlisisi Letsatsi

EMANG M NKADILE 30 May 2022

Leina la ngwanayo o tsayangkarolo le monwana Letsatsi

APPENDIX D

PHOTO



CURRICULUM VITAE

Mrs Emang Mmaboipuso Nkadile

Postal address: P O Box 405306 Broadhurst

Email: nkadilee@aua.ac.ke Contact: 72649922

ACADEMIC QUALIFICATIONS

Final Year, Final Semester (Master's in public health)

Boitekanelo College (2017)

Bachelor of Arts (Counselling)

Modules included:

Workplace Counselling, Community Counselling, Health Psychology, Social Psychology, Motivation to Human Conduct, HIV/ AIDS Counselling, Theories of Counselling, Family and Couple Counselling, Loss and Grief Counselling, Introductions to Child Development, and Introductions to Adult Development.

Tonota College of Education (1995)

Diploma in Secondary Education (Social Studies – Major, Guidance and Counselling-Minor)

WORK EXPERIENCE

2022

Member drafting Ministry of Basic Education COVID policy

April 2020 to date

Ikageng JSS Co- COVID focal person

2019 to date

Co- running Health Expos with Mogoditshane SDA wellness department eg(Ministry of Health and Wellness, DCEC, Gaborone Main Mall)

April 2017

Hosted Mental Health and Wellness Day for the Ikageng JSS community

March 2013 to 2019

Organising Month of Youth against HIV/ AIDS

May 2017

Offering Psychosocial support during Mass Hysteria Outbreak for Lempu Secondary School Students

Oct 2017 to Feb 2019

HIV Counseling Volunteer every Sunday at Metsimotlhabe Clinic towards 90/90/90 project

December to Jan 2018, and 2020 December to 2021 January

Acting School Head Ikageng JSS

March 2017

Co running Performance Management Workshops and running HIV programs - Phuthadikobo Clinic

2022 April

Co-running Performance Management Workshops Ikageng JSS

2010 to date

Senior Teacher Guidance and Counselling and Senior Management Team member

SOCIAL RESPONSIBILITY

Volunteer in Health Expos

SKILLS

Innovative Management

Problem-Solving

Coaching

Mentoring

Critical Thinking

ATTRIBUTES

Teamwork

Time Management

REFEREES

Mr Martin Keabona

Ministry of Education

Secondary Department (HIV, & Wellness Coordinator)

71712601

AmelianMolome

HOD- Ikageng JSS

Metsimotlhabe

72 243 036

Maipelo Seretse

Counselling Department

Boitekanelo College

Tlokweneng

71 649 339

Professor Daniel Ganu

Adventist University of Africa

+254 73 66 56 43

ganud@aia.ac.ke