TEACHER AND LEARNER KNOWLEDGE OF COVID- 19 AND ITS MITIGATION STRATEGIES IN SELECTED SECONDARY SCHOOLS IN KAPIRI- MPOSHI DISTRICT, ZAMBIA

Rachel Mabuku Kabeta (PhD), Givers Chilinga and Leonard Sakakombe

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Rachel Mabuku Kabeta (PhD)
Lecturer: School of Education, Mulungushi University
*Corresponding Author's E-mail:rachelmabuku@yahoo.com or rkabeta@mu.ac.zm
Givers Chilinga
Lecturer: School of Education, Mulungushi University
Co- Author's Email: gchilinga@mu.ac.zm or chilingagievers@gmail.com
Leonard Sakakombe
Lecturer: School of Education, Mulungushi University
Co- Author's Email: leosaka2004@yahoo.com or lsakakombe@mu.ac.zm

Abstract

Purpose: This study examined the knowledge of teachers and learners of COVID-19 and further determined their awareness levels of the mitigation measures that were put in place by the government of the Republic of Zambia in order to ensure a safe and conducive environment for teaching and learning amidst the COVID – 19 pandemic.

Methodology: The study employed a descriptive cross-sectional survey design, both qualitative and quantitative data were collected using a questionnaire consisting of 34 items, and focus group discussions were also done. Ten schools were selected using simple random sampling from the urban and rural parts of the district, from which fifty (50) grade and fifty (50) 12 learners and one hundred ten (110) teachers, giving a grand total of 210, were selected through simple random sampling. SPSS version 22 was used to analyze the data to generate descriptive statistics and other measures. Both quantitative and qualitative data collection methods were used. Qualitative data was collected through face-to-face interviews and focus group discussions, while a questionnaire was used to collect quantitative data. The results were presented using frequencies and percentages. Further statistical independent (2 tailed) Mann-Whitney U- tests were carried out to show whether there were differences in the research variables.

Findings: The findings revealed that the participants were knowledgeable about the COVID-19 pandemic with a percentage of between 98% and 67%. In particular, participants indicated that they knew the various COVID-19 symptoms, methods of how COVID-19 spread, and that there was no vaccine at the time of the study. Further, this study showed that the participants were aware of the majority of the mitigation measures that the government through the Ministry of Health and Ministry of General Education put in place to curb the spread of the corona virus with a percentage of 99.5% to 67.5 %. Notably, participants showed that they were aware of mitigation measures such as social distancing, closure of schools, alternative ways of learning like online learning, television and radio education channels and, in some cases, homeschooling. Results from the U-test suggest that there was homogeneity between the participants across the various socio-demographic factors in terms of their COVID-19 knowledge and mitigation measures. These findings were also confirmed through the information obtained qualitatively through face- to- face interviews and focus group discussions.

Unique Contribution to Theory, Practice and Policy: The study contributes to literature by providing more insight on the importance of teachers and learners being knowledgeable about what COVID-19 is, how it spreads and the mitigation measures. This is because when people are knowledgeable and aware of something, it becomes easier to prevent and control its transmission. Knowledge is important in ensuring successful implementation of many programmes such as preventing and controlling the spread of a pandemic. This study recommends that schools through the Ministry of Education and Ministry of Health should come up with viable strategies and permanent plans that should be used during emergencies such as the COVID-19 by ensuring that supplies such as face masks, sanitizers and other accessories are always available. Cleanliness and washing hands and general hygiene should become part of the school cultures. Both the Ministry of Education and Health should enhance, maintain and continue their awareness and mitigation strategies on the Covid-19 pandemic.

This study has been guided by the school adaptation model which comes from the perspective of Social Learning theory by Albert Bandura. According to Bandura (1997) school adaptation could be considered as the process in which students learn how to act in a way suited to a new environment. This theory guided this study and provided deeper understanding of the process of teaching and learning during the COVID-19 pandemic. It further gives insights on how both teachers and learners needed to adapt to the changing environment of learning and teaching amidst the corona virus pandemic

KEY WORDS: *COVID-19 Pandemic, Knowledge, Awareness, Mitigation Measures, Reduced Transmissions, Teachers, Learners*

INTRODUCTION

Arguably, nobody expected the outbreak of COVID-19 and, of course, nobody was prepared for it. The COVID-19 pandemic was first identified in December 2019 in Wuhan, China. In January 2020, the World Health Organization (WHO) declared COVID-19 a public health emergency of international concern. (WHO, 2020). The COVID-19 pandemic is first and foremost a health crisis whose public care strategies include handwashing, wearing masks, physical distancing, and limitation of huge gatherings. Lockdown and staying home strategies have also been put in place as the needed action to flatten the curve and control the transmission of the disease (Sintema, 2020). The COVID-19 pandemic has created the largest disruption of education systems in human history, affecting 1.6 billion learners in more than 200 countries. The COVID-19 pandemic has affected education systems worldwide, leading to a near total closure of schools, universities and colleges. Most governments decided to temporarily close learning institutions to reduce the spread of the pandemic. However, many countries realized that there was need to prioritize learning during Covid- 19 by keeping schools fully open. Further governments should ensure that teachers and learners were knowledgeable about any new interventions in the Covid- 19 pandemic. The Global Education Evidence Advisory Panel (2022) recommended the need to adjust instruction to reflect the new reality so that there was focus on important foundational skills, providing additional instructional support to teachers, leverage technology that is suitable for to the educational context of a given country and finally fostering parental engagement because some parental engagement approaches can increase children's learning at a lower cost.

The Government of the Republic of Zambia reported the first confirmed cases of COVID-19 in March 2020. The government introduced various mitigation measures among which was the closure of all schools resulting in the disruption of learning for more than 4.4 million children and adolescents (WHO, 2020). The Ministry of General Education put in place some measures to ensure continuity of learning for learners through home schooling and other methods of teaching. However, according to the UN Emergency Appeal Report published in May 2020, both teachers and learners faced unprecedented challenges of ensuring continued learning. Many schools especially, in rural areas did not seem to have the necessary resources to provide support to the students' learning at home and parents were not able to support their children's learning at home. Burgess and Sievertsen (2020) state that home schooling was not only a massive shock to parents' productivity, but also to the children's social life and learning. Further, Burgess and Sievertsen (2020) stated that going to school is the best public tool available to raise skills and that being in school raises the ability of the child to learn.

Statement of the Problem

On 18th March 2020, the Minister of Health in conjunction with the Ministers of General and Higher Education in Zambia announced the closure of all learning institutions in the country. The decision was among the various measures put in place by the government in order to curb the spread of the COVID-19 virus which had already claimed thousands of lives worldwide. According to Nkwain and Simwanza (2020), by

mid-year, several countries in the Southern Africa region that had closed schools started reopening them once they felt they had sufficiently contained the spread of the virus and reduced the mortality. In Zambia, learners in examination classes were allowed to return to school on 1st June, 2020. On 11th September, 2020, a month after the World Health Organization (WHO) and United Nations International Children's Fund (UNICEF) had warned of the harmfulness of prolonged school closures, the President of the Republic of Zambia then announced the reopening of schools. This ended a local closure that had lasted longer than in most other countries in the region and had threatened to deteriorate education standards in the country (Nkwain and Simwanza, 2020). This was also in view of giving the learners' face-to- face contacts in order for them to prepare for the examinations adequately. While the UN COVID-19 Emergency Report (2020), acknowledged that there were several likely challenges to be faced by schools in Zambia; a search in the current literature did not seem to show clear evidence of the knowledge of COVID-19 among teachers and learners, and what mitigation measures were put in place by schools in order to ensure the safety of both teachers and learners while teaching and learning amidst COVID-19. It was in view of this gap that this study endeavored to find out the knowledge levels of COVID-19 among the teachers and learners in the selected secondary schools and to further determine the mitigation measures that were put in place and the awareness levels of these measures by the teachers and learners.

Purpose of the Study

The purpose of the study was to find out how knowledgeable the teachers and learners were of COVID-19 and to further determine the mitigation measures that were put in place by the government in order to ensure a safe and conducive environment during teaching and learning amidst the Covid-19 pandemic.

Objectives of the Study

1. To find out the knowledge levels of teachers and learners about COVID-19 in the selected secondary schools.

2. To determine the awareness of mitigation measures among teachers and learners put up by the government of the Republic of Zambia to minimize the spread of COVID-19 in schools.

LITERATURE REVIEW

COVID-19

Corona virus disease (COVID-19) is an infection which results from a novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Therapeutic diagnosis and findings have revealed that people infected with COVID-19 can be symptomatic or asymptomatic in the early stages usually depending on ones' immune system. The first symptoms of the infection are said to be a dry cough, fever, tiredness, shortness of breath and general body weakness (Zhong et al, 2020). The corona virus disease is a highly infectious disease which spreads through droplets (WHO, 2020).

The global outbreak of the COVID-19 pandemic has spread worldwide affecting almost all countries and territories. The outbreak was first identified in Wuhan, China in

December 2019. The public care strategies have included handwashing, wearing face masks, physical distancing, and avoiding mass gathering and assemblies. According to Sintema, (2020), lockdown and staying at home strategies have been put in place as the needed action to flatten the curve and control the transmission of the disease. The current worldwide rapid spread of the novel corona virus disease of 2019 referred to as COVID-19 led the World Health Organization (WHO) to declare it as a full global pandemic in March, 2020. At this moment, the unprecedented rapid transmission of the virus had already reached all countries in the world. According to the WHO statement on the second meeting regarding the outbreak of novel coronavirus (2019-nCov) of 2020, the spread of the corona virus had already reached all countries and all territories around the world and there were over 49 million confirmed cases and more than 1.2 million deaths worldwide as of 5th November, 2020, and as of 8th November, 2020, a total of 1,854,169 COVID-19 cases and 44, 316 deaths were reported from 53 countries in Africa. The rapid transmission of the virus from person to person coupled with the lack of effective medications and vaccines then posed serious challenges to the control of the spread of the disease. Several countries instituted various containment measures, including a range of physical and social distancing measures to flatten the epidemiological curve and avert morbidity and mortality due to COVID-19 (Viner et al., 2020; Quaife et al., 2020). Though many governments had instituted the closure of schools earlier, schools were later reopened as prolonged closure of schools were impacting negatively on the welfare of school going children. According to the Zambia Policy Report (July 2020), schools were reopened first for examination classes to ensure that end of year examinations continue as planned and later for the non- examination classes. Schools were sanitized and provided with handwashing facilities and soaps, and other health utilities in order to avert the effects of the coronavirus. The schools were further directed to ensure learners practiced social distancing in class. In general, the schools were advised to teach and learn in the "new normal" arrangements and environment. These measures were put in place by the Ministry of General Education in conjunction with the Ministry of Health. In other words the schools were required to adapt to the prevailing conditions under the Covid-19 pandemic.

Theoretical Framework

This study has been guided by the school adaptation model which comes from the perspective of Social Learning theory by Albert Bandura. According to Bandura (1997) school adaptation could be considered as the process in which students learn how to act in a way suited to a new environment. Bandura (1997) stated that environmental factors are more likely to influence one's behaviour through self-concept. In such a process, self-reinforcing functions take prominent roles when students set certain performance standards and evaluate their own behaviours. Adaptation is considered as one of the most important capacities of human behaviour and it is also a factor in human motivation and in satisfying human needs (AlZboon, 2013). Perry and Weinstein (1998) suggested that successfully adapting to the school environment and meeting new expectations and demands is marked by a variety of competencies. They further stated three main competence domains of adaptative performance that can be applied to high school students namely academic, social, and behavioural. In academic competency, students are expected to possess the meta-cognitive skills for learning; in the social

domain, students should be capable of building up harmonious relationships with their peers and teachers; and in the behavioral domain, emotional self-regulation is highlighted. Spencer (1999) regarded school adaptation as a kind of school acculturation with the aim being to maximise the fit between a student's characteristics and the expectations of the learning environment. Successful adaptation can only be achieved when students respond appropriately to the environment and thus benefit from it (Kaya and Akgün, 2016). Pulakos et al. (2000) also defined adaptation as human beings' active modification of their own behaviors, to adjust themselves to meet the requirements of a new environment. Building on this definition, they constructed the taxonomy of different types of adaptive performance. Adaptation to high school puts higher demands on adolescents to change their own behaviors in three highly related aspects of this taxonomy, including learning adaptability, stress-handling, and interpersonal adaptability. This theory guided this study and provided deeper understanding of the process of teaching and learning during the COVID-19 pandemic. It further gives insights on how both teachers and learners needed to adapt to the changing environment of learning and teaching amidst the corona virus pandemic. The synergy between the knowledge levels and awareness of mitigation measures of COVID-19 were further explained using the conceptual framework (Figure 1)
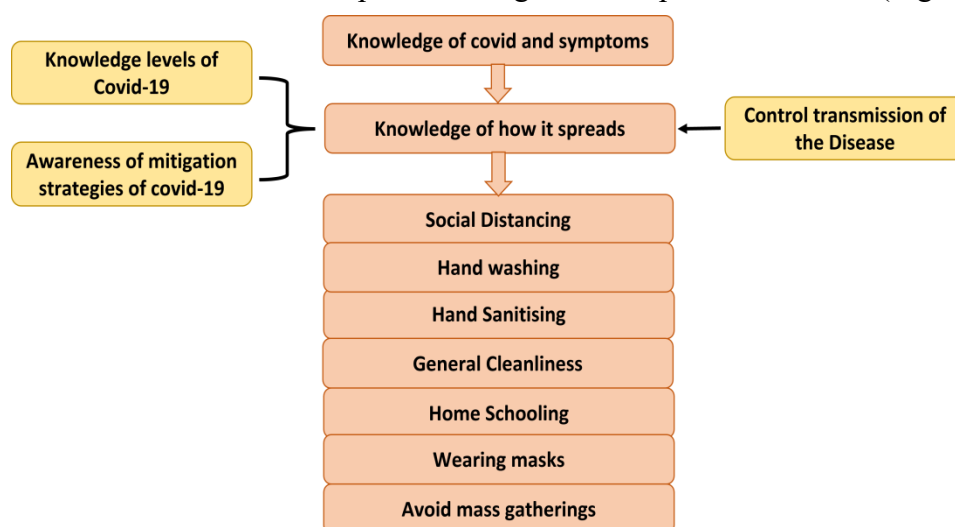

Figure 1: Conceptual Framework

Source: Author, 2022.

According to Nkwain and Simwanza (2020), by mid-year, several countries in the Southern Africa region that had closed schools started reopening them once they felt they had sufficiently contained the spread of the virus and reduced the mortality. In Zambia, learners in examination classes were allowed to return to school on 1st June, 2020. On 11th September, 2020, a month after the World Health Organization (WHO) and United Nations International Children's Fund (UNICEF) had warned of the harmfulness of prolonged school closures, the President of the Republic of Zambia then announced the reopening of schools. This ended a local closure that had lasted longer than in most other countries in the region and had threatened to deteriorate education

standards in the country (Nkwain and Simwanza, 2020). This was also in view of giving the learners' face-to- face contacts in order for them to prepare for the examinations adequately. However, the reopening of schools came with the backdrop of schools being not ready for the teaching and learning process. Some teachers and parents were skeptical of their safety and that of their children. There was uncertainty on how prepared the schools were to teach amidst the Covid- 19 pandemic. There was not much information on how knowledgeable the teachers and learners of Covid- 19 and the mitigation measures. Thus, the need to carry out this research.

METHODOLOGY

This study adopted a descriptive cross-sectional survey research design. Both quantitative and qualitative approaches were used. The Likert type closed questionnaire was the major tool used. The Likert scale type of questionnaire was adopted for this study because of its power to allow researchers to easily quantify and operationalize traits like ability, perceptions, qualities and outlooks, which is the requirement of social sciences and educational research (Cook and Beckman, 2006; Shea, and Fortna, 2002; Willits, et al., 2016). The population of this study comprised all secondary school teachers and learners in Kapiri- Mposhi district, while the study targeted teachers (including administrators) who were teaching grade 9 and grade 12 learners, and grade 9 and grade 12 learners, both from the rural and urban areas of the district. The choice of these populations was based on the fact that, at the time of the study, these were the grades that were in school long enough to have had experienced the effects of learning under the COVID-19 pandemic. At the time, the other grades had stayed home even after the examination grades had resumed lessons. As such, the researchers were of the view that non-examination learners may not have had enough experience of learning under the COVID-19 pandemic conditions.

This study's total population size was 210, consisting of 50 grade 9 and 50 grade 12 learners, and 110 teachers (100 class teachers and 10 school administrators) from the ten selected secondary schools. Both non-probability and probability sampling techniques were used. A total of ten schools were sampled using simple random using a list of schools in the district that was obtained from the office of the District Education Board Secretary (DEBS). Purposively, the examination grades i.e., grade 9s and 12s of 2020 were sampled in all the five selected rural and five urban secondary schools where data was obtained for use in this study.

The study employed various techniques, namely, a pretested-structured self-administered questionnaire, Focus group discussions (FGDs) and semi-structured interview guides for both teachers and learners to collect data. Within the scope of this research, one questionnaire was designed and used to collect data and information from both the teacher and learner participants. A total of 210 structured survey questionnaires were administered to a total of 210 learner and teacher respondents from the ten selected secondary schools in the district between 1st October 2020 and 16th October, 2020. The structured survey questionnaire was divided into four parts, namely, Sections A, B, C and D that contained a total of 45 sets of statements that described respondents' demographic profiles, knowledge, awareness of mitigation measures, and perceptions about effects of COVID-19 on the teaching and learning processes, respectively. The

complete questionnaire is reproduced in Appendix 1. Section A of the questionnaire contained three nominal demographic categories of questions concerning gender (male or female), category of respondent being either as a learner or a teacher, and status of the school being either rural or urban. There was also one interval category of age in section A of the survey questionnaire. Quantitative data was analyzed using SPSS Version 22 while the qualitative data was analyzed based on the categorization of responses into themes generated from the objectives of the study.

FINDINGS AND DISCUSSION

The findings of the study are presented in line with the objectives of the study as follows:

1. To find out the knowledge levels of teachers and learners about COVID-19 in the selected secondary schools.
2. To determine the awareness of mitigation measures among teachers and learners put up by the government of the Republic of Zambia (Ministry of Health) to minimize the spread of COVID-19 in selected secondary schools.

Study Demographics

Table 1: Summaries the Composition of the Participants of this Study.

Table 1: Participants' Demographic Characteristics (n = 197)

Characteristic		Value	
		Frequency (n)	Percent (%)
Gender	male	114	57.9
	female	83	42.1
Age in Years	≤ 18	90	45.7
	19 - 39	74	37.5
	≥ 40	33	16.8
Social Status	Learner	100	50.8
	Teacher	97	49.2
School Status	Rural	107	54.3
	Urban	90	45.7

Source: Authors' Field Data (2020)

Knowledge about COVID-19 among Teachers and Learners in Kapiri- Mposhi District

One aspect that was measured in this study, is how much knowledge the secondary school teachers and learners had about the novel corona virus in Kapiri- Mposhi district. Table 2 is a summary of the information about the knowledge variable obtained from the survey questionnaire for both the secondary school teacher and learner respondents in Kapiri -Mposhi district.

Table 2: Frequency and Percentage Analysis of knowledge about COVID-19 Information among teachers and learners in Kapiri- Mposhi District n =*197*

Question/Statement	Unknowledge able	Neutral	Knowledgeab le	TOTAL
	1	2	3	*n (%)*
	n (%)	*n (%)*	*n (%)*	
COVID-19 is a disease caused by a new strain of corona virus.	9(4.6%)	21(10.6%)	168 (84.8%)	197(100%)
Symptoms of COVID-19 include, fatigue (tiredness), fever, dry cough, and shortness of breath.	1 (0.5%)	7 (3.6%)	189 (95.9%)	197(100%)
COVID-19 may be transmitted: respiratory droplets which occur when infected people cough and/or sneeze, and touching virus contaminated surfaces and then touching my face (nose, mouth, or eyes).	2 (1%)	2 (1.0%)	193 (98%)	197 (100%)
I can catch COVID-19 from my pet	97 (49.2%)	49 (24.9%)	51 (25.9%)	197 (100%)
COVID-19 does not affect children but affects only the adults.	4 (2.0%)	8 (4.1%)	185 (93.9%)	197 (100%)
Pregnant women are more susceptible to COVID-19 infection than non-pregnant women	137(69.5%)	31 (15.7%)	29 (14.8%)	197 (100%)
There is a vaccine and medicine for preventing and treating COVID-19.	21 (10.7%)	30 (15.2%)	146 (74.1%)	197 (100%)
In order to kill COVID-19, I should wash my hands with soap for at least 20 seconds	23 (11.7%)	15 (7.6%)	159 (80.7%)	197 (100%)
COVID-19 is the same as flu	35 (17.8%)	30 (15.2%)	132 (67.0%)	197 (100%)
COVID-19 can be transmitted in both hot and cold temperature.	22 (11.2%)	31 (15.7%)	144 (73.1%)	197 (100%)
Hand rubs (sanitisers) and disinfectants should have at least 60% alcohol to effectively kill COVID-19	10 (5.1%)	23 (11.7%)	164 (83.2%)	197 (100%)
COVID-19 is real	0(0.0%)	12 (6.1%)	185 (93.9%)	197 (100%)
Older adults and those with serious chronic illnesses, such as heart and lung disease, diabetes, are at increased risk of developing more serious complications from COVID-19.	6 (3.0%)	10 (5.1%)	181 (91.9%)	197 (100%)
Close contact or eating wild animals causes COVID-19	72 (36.6%)	56 (28.4%)	69 (35.0%)	197 (100%)

Source: Authors' Field Data, (2020)

Table 2: shows that the teachers and learners from both the rural and urban secondary schools in Kapiri Mposhi district were generally knowledgeable about the various basic information regarding the novel COVID-19 at the time. In this regard, out of the 197 respondents, the percentage of respondents who were knowledgeable about COVID-19 ranged from 67.0% for item B9 *(COVID-19 is the same as flu)* to 98.0% for item B3 *(COVID-19 may be transmitted through: respiratory droplets which occur when infected people cough and/or sneeze, and touching virus contaminated surfaces and then touching my face, nose, mouth, or eyes)* for the 11 out of the 14 statements on the survey questionnaire. Meanwhile, only three items recorded relatively very low percentage of the respondents who were knowledgeable about certain aspects of COVID-19, namely, 14.9% for statement B4 *(I can catch COVID-19 from my pet)*, 25.9% for statement B6 *(pregnant women are more susceptible to COVID-19 infection than non-pregnant women)* and 35.0% for statement B14 *(close contact or eating wild animals causes COVID-19).*

The findings evidently showed that most of the respondents were aware of most of the mitigation measures that the government of Zambia was implementing. For example, for most of the 16 items used to measure this variable on the survey questionnaire, 67.5% to 99.5% of the 197 respondents, averaging about 83.5% per questionnaire item showed

that the participants of this study were aware of the many ways on how COVID-19 pandemic would be mitigated from spreading. This implies, like for the knowledge variable, that the government had used appropriate publicity measures about many aspects of COVID-19, including how well to mitigate its spread.

Further, a statistical independent (2 tailed) samples Mann-Whitney U-test was carried out to find out if the socio-demographic (gender – male or female, category of respondent being either a teacher or a learner, and category of the school being either rural or urban) factors influenced the responses of participants on the various variables (knowledge, awareness of mitigation measures and perceptions about the effects of COVID-19) of this study. The specific hypotheses for each variable are stated under each of the three variables that were measured in this study.

The significance (alpha) level used was 0.05. The hypotheses (null - H_0, and alternative - H_1) were stated as follows:

H_0: There is no significant difference in knowledge about COVID-19 information between the male and female respondents across the fourteen (14) items that were aggregately used to measure the knowledge variable.

H_1: There is a significant difference in knowledge about COVID-19 information between the male and female respondents across the fourteen (14) items that were aggregately used to measure the knowledge variable.

Following the independent (two tailed) samples Mann-Whitney U-Test that was conducted to evaluate if there were differences between the male and female respondents across the fourteen (14) items that were aggregately used to measure the knowledge variable, the independent (two tailed) samples Mann-Whitney U-Test revealed significant differences in only two out the fourteen items. The two items were: knowledge item 1, where there was a significant difference in the distribution in knowledge of '*COVID-19 is a disease caused by a new strain of corona virus'* of the males (mean ranks = 105.10, n = 114) and females (mean ranks = 90.63, n = 83), U= 4036.000, Z = -2.218, *p*= 0.005; and knowledge item 7, where there was a significant difference in the distribution in knowledge of '*there is a vaccine and medicine for preventing and treating COVID-19,*' of males (mean ranks = 92.72, n =114), and females (mean ranks =107.63, n=83), u-test = 4015.000, z = -2.363, *p* = .018. However, across the twelve items out of the fourteen knowledge items, there was no significant difference in knowledge about COVID-19 information between the male and female respondents.

An independent (2-tailed) samples Mann-Whitney U-test was also carried to find out if there were differences in knowledgeability of COVID-19 information between the rural and urban respondents across the fourteen (14) items that were aggregately used to measure the knowledge variable. The significance (alpha) level used was 0.05.

The null and alternative hypotheses learner -teacher profile grouping variable were stated as follows:

H_0: There is no significant difference in knowledgeability of COVID-19 information between the learner and teacher respondents across the fourteen (14) items that were aggregately used to measure the knowledge variable.

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H₁: There is a significant difference in knowledgeability of COVID-19 information between the learner and teacher respondents across the fourteen (14) items that were aggregately used to measure the knowledge variable.

The Independent (2-tailed) samples Mann-Whitney U-test carried out to evaluate if there were differences between the learner and teacher respondents across the fourteen (14) items that were aggregately used to measure the knowledge variable, revealed that there was a slight mix of significant and insignificant differences between the learner and teacher respondents. In this regard, four out of the fourteen items that aggregately measured the knowledge variable, revealed significant differences between the learner and teacher respondents, while ten items, revealed no significant differences. The U-test revealed significant differences in:

(a) Knowledge item 2, about *Symptoms of COVID-19 include, fatigue (tiredness), fever, dry cough, and shortness of breath*, of learners (mean ranks = 102.02, n = 100) and teachers (mean ranks = 95.89, n = 97), $u = 4548.000$, $z = -2.208$, $p = .027$.

(b) knowledge item 4, about *I can catch COVID-19 from my pet*, of learners (mean ranks =91.43, n = 100) and teachers (mean ranks = 106.94, n = 97), $u = 4093.000$, $z = -2.055$, $p = .040$

(c) Knowledge item 5, about *COVID-19 does not affect children but affects only the adults,* of learners (mean ranks =94.93, n = 100) and teachers (mean ranks = 103.20, n = 97), $u = 4443.000$, $z = -2.455$, $p = .014$.

(d) Knowledge item 13, about *older adults and those with serious chronic illnesses, such as heart and lung disease, diabetes, are at increased risk of developing more serious complications from COVID-19*, of learners (mean ranks = 94.19, n = 100) and teachers (mean ranks = 103.96, n = 97), $u = 4368.500$, $z = -2.542$, $p = .011$.

Further, an independent (2-tailed) samples Mann-Whitney U-test was carried to find out if there were differences in knowledgeability of COVID-19 information between the rural and urban respondents across the fourteen (14) items that were aggregately used to measure the knowledge variable The significance (alpha) level used was 0.05.

The null and alternative hypotheses were stated as follows:

H₀: There is no significant difference in knowledgeability of COVID-19 information between the rural and urban respondents across the fourteen (14) items that were aggregately used to measure the knowledge variable.

H₁: There is a significant difference in knowledgeability of COVID-19 information between the rural and urban respondents across the fourteen (14) items that were aggregately used to measure the knowledge variable.

Findings from the independent (2-tailed) samples Mann-Whitney U-Test that was carried out to find out if there were differences in knowledge of COVID-19 information between the rural and urban respondents across the fourteen (14) items that were aggregately used to measure the knowledge variable, revealed that there were insignificant differences in all the fourteen items of the rural and urban respondents. This result implies that the rural school or urban school status did not show how

knowledgeable the respondents were about COVID-19

Information was also collected using face to face interviews and FGDs regarding the knowledge variable between the rural and urban respondents. The other methods that were used to gather information regarding knowledge about COVID-19 among males and females were the face-to-face interviews using interview schedules, and FGDs. Several questions were asked based on the objectives of the study. The responses from the interview questions were written down and recorded. The responses were further categorized into themes according to the objectives of the study. One theme on the knowledge variable was: knowledge about COVID-19 among teachers and learners in Kapiri- Mposhi District. The major findings regarding this thematic area were as obtained from the interviews and FGDs are presented below.

Generally, it was clear from the discussions with participants that they were knowledgeable about COVID-19 information. More specific notable responses included the following:

One participant, when asked to say what they knew about COVID-19, said that *'there was no cure or vaccine for COVID-19; and showed many different flu-like symptoms…'*

Another participant said … *'some of the ways of avoiding catching COVID-19 are social distancing, masking, and washing hands regularly.'*

However, the question about whether COVID-19 was real or a hoax, some participants, much as they believed it existed, also felt that it could have been a hoax.

The learners admitted that they had a lot of information about COVID-19. Some learners stated, for example, teachers who had access to digital media and other sources shared more information with them in class.

Some of the participants indicated to know that COVID-19 can be spread through many ways. For example, one learner said … *'learners at boarding schools lacked trust in the teachers who commuted because frequent mobility was a super spreader avenue.'*

This study's findings about the COVID-19 knowledge of the learners and teachers in Kapiri District secondary schools are similar to the findings of a study done in Malaysia on knowledge of the general public, where average knowledge score of Malaysians in regard to COVID-19 was 80.5% (Azlan, et al., 2020). Similary, Demuyakor (2020), although dealing with non-secondary school learners, reported similar results regarding online Ghanaian international students in China, and in the Philippines, Lapada, et al., (2020) reported that most of the teachers were highly aware of the presence and consequences caused by the COVID-19 pandemic. These findings imply that the government of the republic of Zambia and its various stakeholders may have used appropriate and effective publicity messages through various media that could have enriched the teachers and learners' knowledge about COVID-19 in Kapiri- Mposhi district. In this vein, it may mean that knowledge is important in ensuring successful implementation of many programs such as making the public know about the COVID-19 pandemic. The theory about adaptation by Bandura's theory on adaptation (1997) supports this because the teachers and learners in this study seem to have acquired sufficient knowledge and useful information that enabled them to successfully adapt to teaching and learning during the COVID-19 and using the available mitigation

measures.

Teachers' and Learners' Awareness of COVID-19 Mitigation Measures instituted by the Government of Zambia (MoH)

The other aspect that this study examined was how aware teachers and learners were about COVID-19 Mitigation Measures instituted by the Government of Zambia. The findings are tabulated in table 3.

Table 3: Frequency and Percentage Analysis of Awareness of Teachers and learners about Mitigation Measures of COVID-19 Disease
n= 197

Questions/Statement	Unaware		Neutral		aware	
	f	%	f	%	f	%
Learners and staff should avoid close contact with everyone who has cold or flu-like symptoms	5	2.5	4	2.0	192	95.5
Schools should enforce the age specific and appropriate facilities for washing of hands frequently with soap and water or an alcohol-based hand rub (sanitizers)	21	10.6	6	3.0	170	86.3
Schools should ensure adequate provision of clean and separate toilets or latrines for girls and boys	4	2.0	13	6.6	180	91.4
I should avoid touching my face (hands, nose, & mouth) with unwashed hands	2	1.0	2	1.0	193	98.0
After being in a public place, after nose-blowing, coughing or sneezing, I must wash my hands with soap and water, or use hand sanitizer containing at least 60%, for at least 20 seconds.	0	0.0	1	0.5	196	99.5
I should cover my mouth and nose with flexed elbow or tissue when coughing or sneezing, and dispose of used tissue immediately	2	1.0	2	1.0	193	98.0
I should wear a mask every time I am in public	1	0.5	6	3.0	190	96.5
Healthy food and drinking water increase my body's immunity and resistance to COVID-19	34	17.3	30	15.2	133	67.5
Isolation and treatment of people infected with COVID-19, are effective ways to reduce the spread of virus	4	2.0	3	1.5	190	96.5
People in contact with someone infected with COVID-19 should be immediately quarantined, in appropriate location, for a general observation period of 14 days	3	1.5	4	2.0	190	96.5
To prevent transmission of COVID-19, I should avoid going to crowded places and avoid taking public transport	8	4.0	14	7.1	175	88.9
COVID-19 Sick learners, teachers and other staff should not come to school	2	1.0	7	3.6	188	95.4
Schools should promote social distancing i.e., learners, teachers, other staff and parents should keep a distance of at least one meter from another person when in school, staggering learners, canceling assemblies, sports, etc.	4	2.0	7	3.6	186	94.6
Schools should provide water, sanitation and waste management facilities and follow environmental cleaning and decontamination procedures	1	0.5	5	2.5	191	97.0
Schools should plan for continuity learning in case of school closures by using online/e-learning platforms, assigning reading and exercises for home study, broadcast lessons through radio, podcast or TV, and assigning teachers to conduct remote daily or weekly follow-up with learners	9	4.6	18	9.1	170	86.3
Schools should post signs encouraging good hand and respiratory hygiene practices	4	2.0	13	6.6	180	91.4

Source: Researcher Field Data (2020)

From table 3 the teachers and learners from the selected secondary schools in Kapiri-Mposhi district were generally aware of the mitigation measures of COVID-19 that the government of Zambia through the Ministry of Health had initiated and guided for implementation. In line with this, out of the 197 participants who answered the survey questionnaire, the percentage of the participants who were very aware ranged from 67.5% (statement C8 - healthy food and drinking water increase my body's immunity and resistance to COVID-19) to 99.5% *(after being in a public place, after nose-blowing, coughing or sneezing, I must wash my hands with soap and water, or use hand sanitizer containing at least 60%, for at least 20 seconds)* across all the 16 statements of the survey questionnaire. The Mann Whitney U test (2 tailed) was done to evaluate if socio-demographic variable determined the respondents' awareness of the mitigation measures of COVID-19 (the significance (alpha) level used was 0.05.)

The null and alternative hypotheses were stated as follows:

H_0: There is no significant difference in awareness about mitigation measures of COVID-19 disease between the male and female respondents across the sixteen (16) items that were aggregately used to measure this variable.

H_1: There is a significant difference in awareness about mitigation measures of COVID-19 disease between the male and female respondents across the sixteen (16) items that were aggregately used to measure this variable.

The independent (2-tailed) samples Mann-Whitney U-test results revealed that only one item (item 11 - '*to prevent transmission of COVID-19, I should avoid going to crowded places and avoid taking public transport'* had a significant difference in the awareness levels of mitigation measures of COVID-19 between male (mean rank = 104.74, n = 114) and female (mean ranks = 91.12, n = 83) respondents, U = 4077.000, Z = -.3.029, *p = .002*. The rest (15 items), the independent (2-tailed) samples Mann-Whitney U-test results revealed insignificant differences in the awareness levels of the mitigation measures of COVID-19 between the male and female respondents.

The independent (2-tailed) samples Mann-Whitney U-test was carried out to find out if there were differences in the awareness about mitigation measures of COVID-19 disease that the government of Zambia through the MoH had initiated and guided for implementation between learners and teachers, across the sixteen items used aggregately to measure the awareness levels of mitigation measure. The significance (alpha) level used was 0.05.

The null and alternative hypotheses were stated as follows:

H_0: There is no significant difference in awareness about the mitigation measures of COVID-19 disease between the learner and teacher respondents across the sixteen (16) items that were aggregately used to measure this variable.

H_1: There is a significant difference in awareness about the mitigation measures of COVID-19 disease between the learner and teacher respondents across the sixteen (16) items that were aggregately used to measure this variable.

The independent (2-tailed) samples Mann-Whitney U-test results revealed that only one

item (item 7 - *I should wear a mask every time I am in public*) had a significant difference in the awareness levels of mitigation measures of COVID-19 between the learner (mean rank = 98.57, n = 100) and teacher respondents (mean ranks = 99.44, n = 97), U = 4118.000, Z =-2.213, *p = .027*. The rest (15 items), the independent (2-tailed) samples Mann-Whitney U-test results revealed insignificant differences in the awareness levels of the mitigation measures of COVID-19 between the male and female respondents

the independent (2-tailed) samples Mann-Whitney U-test was carried out to find out if there were differences in the awareness levels of mitigation measures of COVID-19 disease that the government of Zambia through the MoH had initiated and guided for implementation between the rural and urban respondents, across the sixteen items used aggregately to measure the awareness levels of mitigation measures.

The null and alternative hypotheses were stated as follows:

H$_0$: There is no significant difference in awareness about the mitigation measures of COVID-19 disease between the rural and urban respondents across the sixteen (16) items that were aggregately used to measure this variable.

H$_1$: There is a significant difference in awareness about the mitigation measures of COVID-19 disease between the rural and urban respondents across the sixteen (16) items that were aggregately used to measure this variable.

Like for the immediate previous variable, the independent (2-tailed) samples Mann-Whitney U-test results tabulated in table 4.4d revealed that only one item (item 1 - *learners and staff should avoid close contact with everyone who has cold or flu-like symptoms*) had a significant difference in the awareness levels of mitigation measures of COVID-19 between the rural (mean rank = 96.15, n = 107) and urban respondents (mean rank =102.38, n = 90), U = 4510.500, Z =-2.112, *p = .035*. For the rest (15 items), the independent (2-tailed) samples Mann-Whitney U-test results revealed insignificant differences in the awareness levels of the mitigation measures of COVID-19 between the rural and urban respondents These results again suggest that overall, the status of a respondent being either from a rural or an urban school variable did not influence a respondent's awareness level of mitigation measures of COVID-19 guided by the Government of Zambia.

It was revealed from the face-to-face interviews and focus group discussions that the participants were aware that teaching and learning sessions were altered to minimize the spread of the COVID-19 virus. The teachers went on to state that the schools were given guidelines on how to go about teaching amidst the pandemic such as the one-meter social distancing, the mandatory wearing of masks, the splitting of classes into two or three groups to avoid overcrowding. Furthermore, it was heard that schools had resorted to using e-learning platforms to enhance the teaching and learning.

From the practices that were mentioned above and others by teachers and learners, it was clear that participants were aware of the mitigation measures of COVID-19 in schools and homes. Some of the more specific mitigation measures that were mentioned by participants and said by specific are presented below.

One participant said … '*one measure the school is implementing is learners with flu,*

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coughs and other related ailments are not allowed to report to school while feeling sick'.

Another participant said *... 'the school has implemented the issue of abolishing extra-co-curricula activities during the COVID-19 period, such as sports, clubs, and jets, group work in class, to avoid the spread of COVID-19.'*

On mitigation measures awareness, other participants said the following measures:

... 'the government supplied some face masks for the learners and teachers, hand sanitizers, hand washing facilities, etc...'

... 'although masking was uncomfortable, we are adhering to it.'' These findings are similar to a study done in Malaysia where most participants reported taking precautions such as avoiding crowded places and practicing proper hand hygiene (Azlan, et al., 2020), and in Philippines, a study by Lapada, et al., (2020) showed that almost all of the teachers who accomplished the survey were aware of the COVID-19 pandemic's its effect on the studies of their learners. Further, in line with the Social Learning theory by Albert Bandura (1997), it may be inferred that participants of this study showed some acceptable levels of adaptability to the teaching and learning processes under the COCID-19 situation. In this vein, it may be argued that the various guidelines and strategies instituted and implemented by the ministries of Health and General Education, respectively, were understood and abided to by the secondary schools in Kapiri Mposhi district.

Conclusions

The results of this study have shown that teachers and learners in Kapiri Mposhi district were knowledgeable about the general COVID-19 information and aware of the mitigation measures of the COVID-19 that the Republic if Zambia through the Ministry of Health had instituted. The implication of the high levels of information may have been due to the supposedly effective COVID-19 publicity messages that the Government of Zambia had been sharing with the general public and schools that were hoped to help control the spread of COVID-19. The results of this study also showed that the respondents were not differentiated by the socio-demographic variables such as gender, being a teacher or learner, and being from a rural and urban school, in terms of their knowledge and awareness of mitigation measures. Because the respondents were not differentiated in terms of gender, teacher or learner classification, and rural and urban school classification may imply that developers of COVID-19 publicity messages and control programmes did not need to take cognizance of such micro level variable differences in order to design the effective of the COVID-19 publicity and mitigation programmes.

Recommendations

This study recommends that schools through the Ministry of Education and Ministry of Health should come up with viable strategies and permanent plans that should be used during emergencies such as the COVID-19 by ensuring that supplies such as face masks, sanitizers and other accessories are always available. Cleanliness and washing hands and general hygiene should become part of the school cultures. Both the Ministry of Education and Health should enhance, maintain and continue their awareness and mitigation strategies on the Covid-19 pandemic.

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Conflict of Interest Statement

The authors declare no conflict of interests.

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REFERENCES

AlZboon, S. (2013). Social Adaptation and Its Relationship to Achievement Motivation among High School Students in Jordan. *International Education Studies.* 6. 63-69. 10.5539/ies.v6n10p63.

Azlan, A A, Hamzah MR, Sern TJ, Ayub SH, Mohamad E (2020). *Public knowledge, attitudes and practices towards COVID-19: A cross-sectional study in Malaysia.* PLoS ONE 15(5): e0233668.https://doi.org/10.1371/journal.pone.0233668

Bandura, A. (1997). Self-Efficacy: The Exercise of Control. W.H. Freeman and Company, New York.

Burgess, S., and Sievertsen, H.H. (2020). Schools, skills, and learning: The impact of COVID-19 on education. *VOX, CEPR Policy Portal,* 1 April [online article]. Retrieved 8 August 2020mfrom https://voxeu.org/article/impact-COVID-19-education.

Cook D.A, and Beckman T..J. (2006). Current concepts in validity and reliability for psychometric instruments: Theory and application. *The American Journal of Medicine. 2006;119(2). DOI: 10.1016/j.amjmed.2005.10.036.*

Demuyakor, J. (2020). Coronavirus (COVID-19) and Online Learning in Higher Institutions of Education: A Survey of the Perceptions of Ghanaian International Students in China. *Online Journal of Communication and Media Technologies, 10*(3), e202018. https://doi.org/10.29333/ojcmt/8286

Kaya,ÖS., and Akgün, E. (2016). The study of school adjustment of preschool children in the point of some variables. *Elem. Educ.* 15, 311–1324.Google Scholar

Lapada, A. A., Miguel, F. F., Robledo, D. A. R., & Alam, Z. F. (2020). Teachers' COVID-19 awareness, distance learning education experiences and perceptions towards institutional readiness and Challenges. *International Journal of Learning, Teaching and Educational Research, 19(6), 127–144.* https://doi.org/10.26803/ijlter.19.6.8

Nkwain, A. and Simwanza, C. (2020). Understanding the Implications of the COVID-19 School Closure on Learners in Zambia[online article]. Retrieved 12 August, 2021 from https://saipar.org/wp-content/uploads/2020/12/

Perry, K. E., & Weinstein, R. S. (1998). The social context of early schooling and children's school adjustment. *Educational Psychologist, 33*(4), 177–194. https://doi.org/10.1207/s15326985ep3304_3

Pulakos, E.D. , Arad, S. , Donovan, M.A. and Plamondon, K.E. (2000), *"Adaptability in the workplace: development of a taxonomy of adaptive performance", Journal of Applied Psychology , Vol. 85 No. 4,* pp. 612-624, http://dx.doi.org/10.1037/0021-9010.85.4.61

Quaife, M., van Zandvoort, K., Gimma, A. et al. (2020). *The impact of COVID-19 control measures on social contacts and transmission in Kenyan informal settlements.* BMC Med 18, 316 (2020). https://doi.org/10.1186/s12916-020-

www.iprjb.org

01779-4

Shea, J.A., and Fortna, G.S. (2002). Psychometric Methods. In: Norman GR, Van der Vleuten CPM, Newble DI, editors. *International Handbook of Research in Medical Education.* Dordrecht: Kluwer Academic Publisher. 97-126.

Sintema, E. J. (2020). Effect of COVID-19 on the performance of grade 12 students: Implications for STEM education. Eurasia *Journal of Mathematics, Science and Technology Education, 16(7), 1–6.*

Spencer, M. B. (1999). Social and cultural influences on school adjustment: the application of an identity-focused culture ecological perspective. *Educ. Psychol.* 34, 43–57. doi: 10.1207/s15326985ep3401_4UN Emergency Appeal Report published in May 2020

Viner, V.R., Russell, S.J., Croker,H., Packer,J., Ward, J., Stansfield, C., Mytton,O., Bonell, C., and Booy, R. (2020). School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review, *The Lancet Child & Adolescent Health, Volume 4, Issue 5,2020,* Pages 397-404, ISSN 2352-4642, https://doi.org/10.1016/S2352-4642(20)30095-X.

Watts et al (2022): How do the World's leading education experts recommend the education sector should respond to Covid- 19? Worldbank.org

Willits, F.K, Theodori, G.L. and Luloff, A.E. (2016). "Another Look at Likert Scales." *Journal of Rural Social Sciences, 31(3): Article 6.* Available At: https://egrove.olemiss.edu/jrss/vol31/iss3/6

World Health Organization (2020a). Coronavirus disease 2019 (COVID-19) Situation Report - 52. Geneva: World Health Organization. March 12, https://www.who.int/docs/default-source/coronaviruse/situation reports/20200312-sitrep-52-COVID-19.pdf?sfvrsn=e2bfc9c0_4. Accessed 11 March 2021.

Zambia Policy Brief (2020): COVID-19 & its Impacts on Children's Education in Zambia, July 2020.https://www.wvi.org/publications/policy-briefing/zambia/policy-brief-COVID-19-its-impacts-childrens-education-zambia#

Zhong B-L, Luo W, and Li H-M, et al. (2020). Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. *Int J Biol Sci.* 2020;16(10):1745–1752. doi:10.7150/ijbs.45221 [PMC free article] [PubMed] [CrossRef] [Google Scholar]