Zimbabwe in the COVID-19 Era, a Critical Reflection on Third World Nation's Management of COVID-19

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Abstract: *The research was a critical reflection on Zimbabwe as a third world country's management of COVID-19. The research was done utilizing existing data sets from the Ministry of Health and Child Welfare (2020). Assessment of the trendsin local cases in Zimbabwe after implementation of lockdown statutes, assessment of differences between and within provinces, strategies by institutions at various grassroots level that fed into the national agenda in dealing with COVID-19. The research was informed by the public health model. There were no significant differences between and within Zimbabwe's 10 provinces in terms of the spread and prevalence of Coronavirus after the 14th of July 2020. The data set, also marked this data as significant to transmission of the first local cases of coronavirus in Zimbabwe, which signifies that it took at least 7 months before Zimbabwe was impacted from the initial start of the pandemic. Evidence presented that, although Zimbabwe was not at its best, the country managed COVID-19 cases at least under 10 000 with limited health care facilities which opens doors for inquiries on how and why such phenomenon was experienced in the period under review.*

Keywords: *Coronavirus; COVID-19; public health model; cases; spread and prevalence.*

Abbreviations: *COVID-19 – Corona Virus of 2019, MERS – Middle East Respiratory Syndrome, SARS – Severe Acute Respiratory Syndrome, WHO – World Health Organisation, RDT – Rapid Diagnostic Testing, PCR – Polymerase Chain Reaction, PPE – Personal Protective Equipment Center for Diseases Control*

1. INTRODUCTION

The coronavirus has been recorded as one of the most deadliest virus of the 21st century after the spanish swine flu of the 1940s in the category of flus and the worst pandemic of 1918 that killed approximately 50 million people wolrd wide. The corona virus take 2 – 14 days and in some cases 0 - 24 days to present itself as well as trigger recovery or futility. However compared to other forms of influenza, other relatively related virus, the discrepancy with SARS is 2 -7 days, which can extend to 10, MERS takes 5 days to present but can extent from 2 – 14 days, swine flu presets in 1 – 4 days that can extend to 7 days and lastly seasonal flu which presents in 2 days but ranging from 1 – 4 days [1, 2]. Therefore the research seeks to establish the current status on corona virus projection in Zimbabwe after implementation of lockdown statutes. Assessing the trend of local cases in Zimbabwe after implementation of lockdown statutes. This further extends into evaluating how the strategies effected have influenced differences between and within provinces of Zimbabwe. And lastly explore on the support structures available institutionally, within the districts, province and national's level of effectiveness.

2. MATERIALS AND METHODS

Trends in corona virus statistics across the globe have largely contributed to classification of the pathology from laboratory confirmed to clinical confirmed cases were the two methodologies have seen differential diagnosis leading to spike in the number of new cases as of February 12th 2020[3]. The COVID-19 pandemic has ravaged the world this year virtually disturbing 'normal' lives. It is now common knowledge that the world is navigating through a deadly COVID-19 pandemic with statistics of confirmed corona virus cases worldwide as at 03 September 2020 at 25, 842, 652 confirmed cased and 858, 629 deaths as compared to 19,279,077 and Deaths at: 718,024 as at 7 August 2020 [4].

Preparedness in terms of prevention measures as well as continuous trend analysis with commensurate streamlining of these prevention strategies is of paramount importance [4]. Public health approaches applaud the government's position to allow for a 'strategic pause for thought' and temporary closure of primary, secondary and tertiary institutions to observe, assess, rethink and strategize accordingly. This was extended under a series of lockdown strategies with the intention of putting mobility at hold as well as reduce airborne/ close breath to breath contact and physical contact transmission [5]. The approach saw reduction of pollution in atmosphere by unnecessary occupation of spaces by people in and around towns. WHO (2020) recommended prevention measures that also facilitated efforts by government to curb COVID-19, such measures included wearing of masks upkeep of physical distancing, hand washing/sanitization, quarantining if one has symptoms and information dissemination to name just but these few.

Statutory instruments of 2020 have been passed on mandatory wearing of face masks in and around public and private spaces to curb intentional and unintentional spread of corona virus [6]. Although the measure targeted individuals of all categories, anomalies have been realized in compliance, which translates to the socio-economic standing of the majority of the nation in accessing some of these basic essentials [7]. Discrepancies in urban and rural population on the utilization of such facilities has left a mark on the nation in terms of public health and affordability of health promoting behaviors [8]. Wear and tear effects that these masks have endured calls for a relook into other sustainable methodologies that target improving health related behaviors, approaches into provisions of the Ministry of Health and other donor organizations and institutions to provide masks for marginalized and underprivileged groups of society. Evidence articulates that compliance on the use of these masks also is none satisfactory across communities, and the general state. A significant number of people are not properly wearing masks, with some in remote areas not obliging to the general statutory requirement which creates loopholes in the country state of affairs management [9]. Similar cases have been noted in the high density suburbs of Harare, Matebeleland, Midlands and other provinces across the country. Most notable challenges have been associated with hygiene and etiquette that is, people take off masks to talk, eat, in buses, public inns and so forth.

According to WHO (2020) physical distancing was ascribed as one of the key strategies to curb the transmission and spread of corona **v**irus**.** Physical distancing within venues, public spaces, decongestion of social and private offices amongst other areas was done through categorization of essential services and no-essential [10, 11]. General unsatisfactory upkeep of distancing in these areas has remained a challenges, with most people failing to acculturate to the new norms and values of living that stray from the general way of living accustomed to people of diverse backgrounds (Center for Disease Control, 2020). The pandemic has inspired cultural uniformity across the globe and significantly impacted the way of life for various people and entities.

All local public and private institution instituted personnel to manage exit-entrance upkeep with hand hygiene and all other prevention and screening measure[12]. The approach was really a huge and worthy investment that reaped rewards and proved very efficient. However, the idea at individual level of sanitization and hand-washing is not yet being taken with the importance it deserves amongst the general populace of Zimbabweans. Major challenges have been noticed in our public toilets, generally they do not have liquid soap dispensers this greatly limits effective hand-washing in these ablution facilities. This has been coupled with the poor and limited supply of water in and around major cities, towns and rural areas. Water remains a challenge in particular, unavailability and inaccessibility of water presents a challenge for other water borne disease epidemics over and above the COVID-19 risk [13].

Great mileage has been made on this front mainly through electronic platforms as gatherings are not recommended at local and international platforms [14]. However, it remains an ongoing process rather than an event and the hope is that all stakeholders do visit these electronic sites routinely [15]. There also need for actual citizen participation in this process to promote ownership of all initiatives recommended for prevention. The glaring area is on the surveillance processes being carried out by our country as an institution. People have lacked compliance simply because they have a false sense of comfort that there is no one suspected among them [16].There is no one tested among them or there is no one who is a contact among them when in actual case there will be some. Empowering all

members with this information allows the institution to gain respect, promote individual buy in and definitely improved compliance. Life matters above anything else, there is need to think about this really and seriously.

A snapshot at the current statistics is as briefly alluded to a variety of factors playing at individual, micro and macro level. Honestly, nationally these statistics are just but a tip of the iceberg as only about 5% of the population has been tested for COVID-19 through PCR (only 81 000 PCR tests to date against a 15 million+ population by September 2020) [17]. A significant number of people are not accessing the tests within health facilities; some symptomatic people are actually not presenting to health facilities for various reasons [18] some are asymptomatic thereby have no push factor to seek care and some are actually concealing their illness due to the fear of stigma and discrimination. Basing on these daily updates which are a small portion of the actual available cases, the numbers are increasing daily.

Locally, there is a worrisome increase in the number of confirmed COVID-19 cases now at 6, 559 with Harare, Bulawayo and Midlands Provinces being amongst the highest contributors to these statistics in the period March to December2020. The number of locally transmitted cases is even more worrying especially in Harare, Midlands, Bulawayo and Matebeleland provinces where there has been a significant increase in Corona Virus cases [19]. The geo-aspect contribution has been noted amongst the key factors contributing towards the rapid increase in number of cases in these provinces. Harare being the capital, Bulawayo being the second capital city as well as its proximity to South Africa where corona virus has been on the rise and lastly the Midlands province being drive through from each of the capital areas. Over and above this as a country we have drawn our citizens from all over Africa and abroad under the notion of returnees.

2.1. Public Health Modelling

The research was basically guided under the provisions of WHO (2020) and CDC (2020) health guidelines that emanated from the public health model. Under the public health model, the country at large took upon three of the strategies enlisted in the public health model as was observed in India. The major tenant to the approach was prevention, thus inclusive of primarily, secondary and tertiary prevention strategies. Evidence to this at primary prevention level was the utilization of sanitization, quarantining, self-isolation, temperature check at a national wide level and statutes to support these initiatives without compromise. At primary level, the major intention was to remove all at risk group individual from circumstances that would make them succumbed to the Corona Virus. The approach also target those already exposed through secondary prevention approaches were the infected where encourage to self-isolate at home bearing in mid the degree of severity of the symptomatology presented by the patients in question. The approach also made sure that all contact traces were established and quarantined for the 21 day period. More so, for those in the affected and infected category, tertiary prevention strategies were employed. The government instituted a rapid response team, to address and advice on all corona virus related, disability, morbidity and mortalities to reduce the degree of severity of the affected and infected citizens of the nation. These approaches are still being instituted through statutes passed to safe guard greater good for greater majority approaches to self and others' life preservation.

2.2. Methodology

The researchers took a quantitative approach under the guidance of a positivism paradigm. The data gathering methodology was two fold, the research used a trend analysis as well as a desktop research approach. These methodologies were simultaneously applied in the data collection process. The research utilized government published research finding on the testing and case recoding on COVID-19 that were done across the 10 provinces in the Republic of Zimbabwe. The data was collected from the 8th of June when Covid 19 tests were now being done at large scale across Zimbabwean provinces. The approach is still continuous as the data is collect on a daily basis and with that same information utilized to inform policy on how the nation can handle and manage COVID-19. The data was also collected on travel terminal portals where case stressing was done, through Mars and Econet services on mass scale testing and through voluntary submissions by persons who were either directly affected, infected or had an indirect contact with person that may have been report to have contracted the corona virus. On the other hand, general observation on the uptake of the policy changes and regulations that the government of Zimbabwe had put in place also assisted in developing an

understanding of the general appreciate of the trend within which the pandemic. Therefore the general public was at the center of the pandemic and their general responses to the COVID-19 regulations and guidelines on handling corona virus as passed by WHO (2020) and CDC (2020).

3. RESULTS
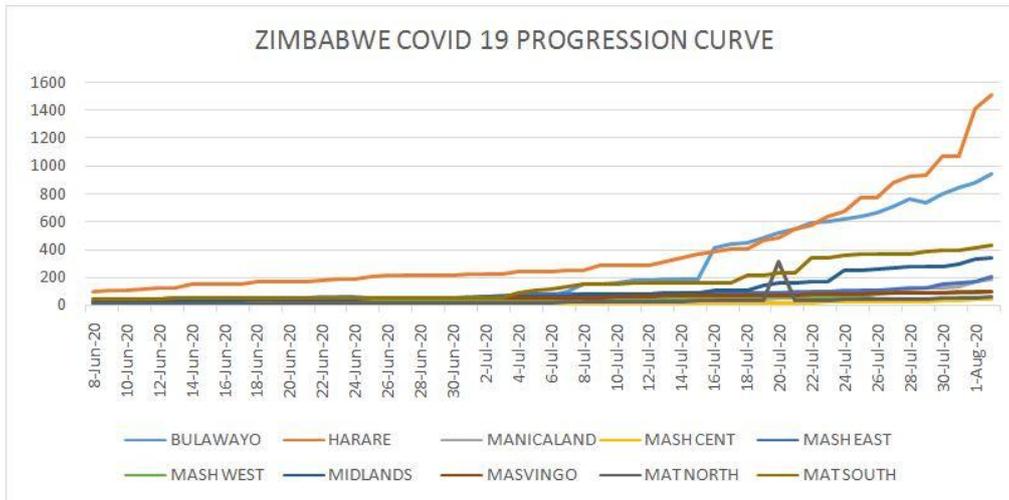
Current status on coronavirus projection in Zimbabwe after implementation of lockdown statutes

Based on the prevailing trend analysis, data presented above illustrates a sharp spiral for Harare and Bulawayo provinces with each over 700 persons affected by corona. This gradual into sharp spiral represent inclination towards vertical lines which in turn a represents introduction of change in the environmental and social dynamics from just before the 4th of July 2020, with its consequences manifesting in changes presenting from date 4th July 2020. The rapid increase in the number of cases resembles indoor infections at household level after public exposure. Such trends speaks to an increase in transmissions based on imported case that are now fueling local transmissions. Comparisons between the actual recorded cases and the spike in local cases, notes a rapid increase in both national case and local case recordings from the 14th of July 2020, which marks a significant turn of events across all provinces. As such, there is need to understand the nature and issues around this period which may not be clear at the moment but may have a significant bearing on the observed outcomes in corona virus trends across Zimbabwe.
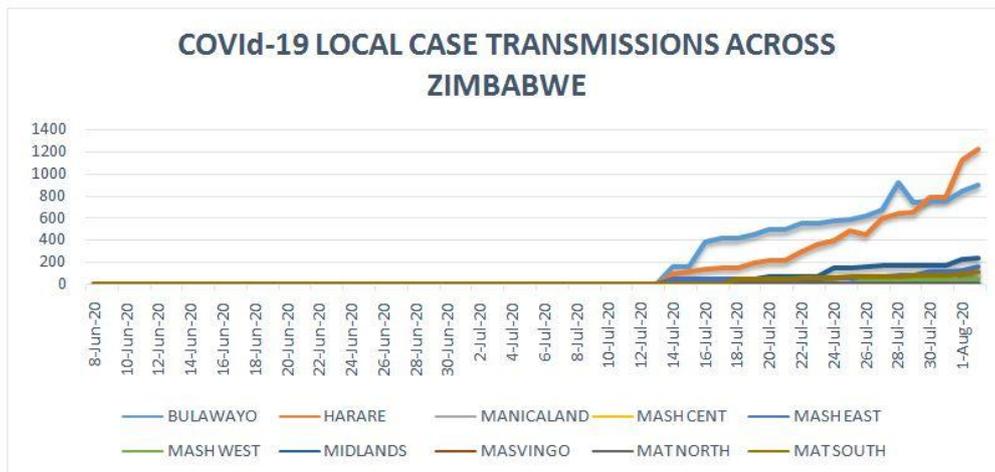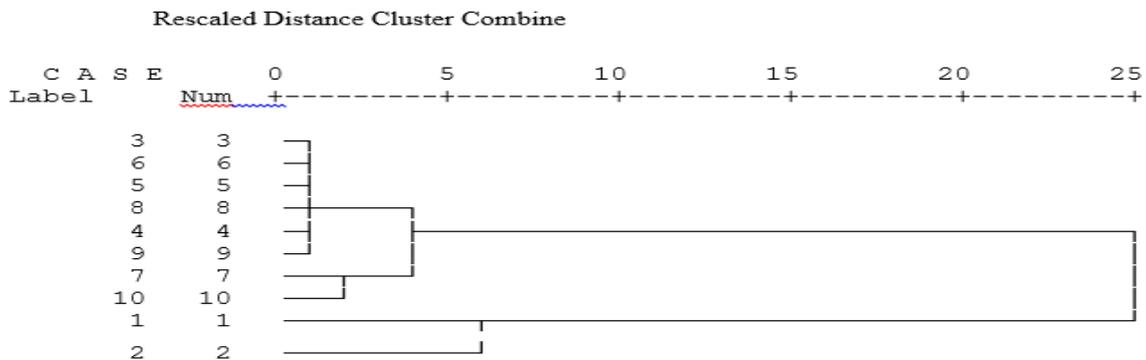

Current trends of local cases in Zimbabwe after implementation of lockdown statutes

The corona virus transmission trajectory can be observed as rapidly rising by various facets, from new cases imported into the country through returning Zimbabweans, a new wave of ideologies around communal gatherings by people around the country, misconceptions around transmission, prevalence and effects of lock-down on the experience of happiness amongst citizens The spike in Zimbabwe emerged around the 14th of July 2020 across provinces which on its on raises the question around the epidemic as uniformly identified across Zimbabwe in terms of recording. Such a question should

motivate Zimbabweans to remain vigilant, in assuming that the risk level within this regard becomes high. Within our local context, our student population came in specifically on this date, which demands us to become vigilant more than ever in terms of personal and community hygiene bearing in mind the rise in population due to student arrivals. The exponential increase at a national scale represents internal transmissions that occur within our respective communities, hence with the least level of compliance to the WHO (2020), CDC (2020) regulations on Covid 19, a sharp rise could be experienced in Zimbabwe.

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* * * * * * * * *H I E R A R C H I C A L   C L U S T E R   A N A L Y S I S* * * * * * * *|

Dendrogram using Average Linkage (Between Groups)


                    Rescaled Distance Cluster Combine

    C A S E       0         5        10        15        20        25
    Label      Num  +---------+---------+---------+---------+---------+

      3         3     ─┐
      6         6     ─┤
      5         5     ─┤
      8         8     ─┤
      4         4     ─┼───┐
      9         9     ─┘   │
      7         7     ─────┤                                         ┐
     10        10     ─────┘                                         │
      1         1     ─────────────┐                                 │
      2         2     ─────────────┘
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*Differences between and within provinces of Zimbabwe after implementation of lockdown statutes*

The data set presents us with 5 clusters of data within which Manicaland, Mashonaland West, Mashonaland East,Mashonaland Central and Matebeleland North provinces are operating within the same relm of spread and revalence of coronavirus. Therefore their spread and prevalence projection of the pandemic is closely related. The daily updates propose that Masvingo province and Midlands province are within the same cluster, with Midlands province and Matebeleland South having an exponential growth that simulates Matebeland South province. Based on this hyrachical claster analysis, Bulawayo, Harare, Masvingo, Mashonaland East, Matebeland North, Midlands and Matebeland South are more likely to have a spiral in the number of coronavirus cases in Zimbabwe if the prevailig environmental and individual factors facilitating the spiral in numbers are mantained.

Multiple R	0.770324581				
R Square	0.593399959				
Adjusted R Square	0.268119927				
Standard Error	2.590154565				
Observations	10				
ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	48.95549665	12.23887416	1.824274	0.261808
Residual	5	33.54450335	6.708900671		
Total	9	82.5			

Regression modeling of progression of Coronavirus based on daily tests.

The model is an extract of the daily provincial statistics of corona virus updates from the 8th of June to the 28th of June 2020 from Zimbabwe's 10 provinces. The regression summary model presents a very high positive relationship between provinces and the present of corona virus ($r^2 = 0.77$). This implies that such variables such as population demographics and number of persons available in that areas significantly influence the spread and prevalence of corona within our provinces. The model also presents that provinces have a 59% explanatory power towards how corona virus is spread across Zimbabwe. Therefore, intercity travel explains 59% of both local and imported corona virus transmissions that we may experiences in Zimbabwe. Therefore in the prevailing socio-political-environmental conditions are maintained, a steady to exponential increase in the number of COVID-19 cases will be experienced across the varied provinces. The model also proposes that there are no significant differences based on province of residence in terms of the contraction level, thus (f = 0.26)

explains the fact that provincial demarcations cannot be utilized as barriers for eradicating COVID-19 but rather for mitigating the spread and prevalence. Such evidence indicates that there are varied factors that we may have or have no control over and as such an epidemic is prone. As such, corona cases may increase and so will the mortality rate on corona related infections. At this rate, predictions can speak to at least a 50% increase in corona virus related infections and death by end of August to Mid-September 2021.
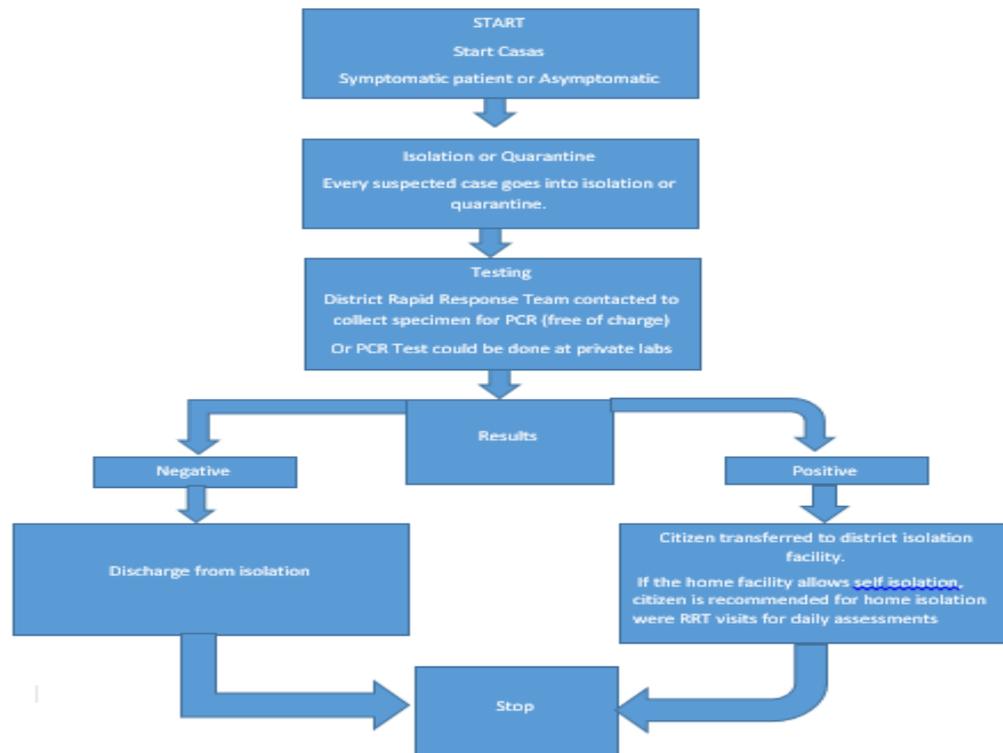
Support structures available institutionally, within the districts, provinces and nationally

The general approach by the nation in regards to handling of the novel corona virus patients has been two fold. People found positive with the virus have been subjected to WHO (2020) or CDC (2020) stipulations on self-isolation and quarantine respectively. That is for people with symptomatic corona virus and those asymptomatic suspected contacts. Quarantine centers were established at provincial level to facilitate isolation on both local and returning citizens suspected of corona virus. In regard to testing, the district rapid response team was established to collect specimens for free across the country and for those who could afford private hospitals could carry out such tests for a fee. Results for negative specimens automatically meant discharge from the medical facilities, however those who tested positive for the corona virus were further referred to the district isolation facility, and those with home facilities that allowed for self-isolation were encouraged to do so for a period of 14 days.

4. DISCUSSION OF FINDINGS

According to CDC (2020), the risk of COVID-19 in Zimbabwe has been flagged high, further arguments pointed to the notion of poor medial facilities, medical care and availability and accessibility of medical resources. This is observable in the general day to day statistics published by the Ministry of Health and Child Welfare (2020) over the past 7 months as in the findings above realities on the ground point towards access of health care abroad which is a limiting factor for most Zimbabwean residences and citizens. However based on the Travel History (THN) Level risk analysis which looks into virus transmission and the healthcare capacity and public infrastructure with in a country, Zimbabwe has been noted high risk. The risk index level presents that is a country as had more than 500 cases in the last 28 days, its risk level becomes high, 251-500 case risk level is moderate and in the event of 50-250 risk level is low. Limitation of accessing only those who voluntarily present themselves and those that choose not to report can potentially spread the virus silently up until a symptomatic individual is identified. Such efforts may explain on the slow trends in

the progression of corona virus based on the Ministry of Health and Child Welfare (2020) daily updates as presented in the findings of this study. These facilities though available, the turnaround time to get help from these is usually long resulting in aspirants giving up without getting the desired help thereby missing out potential cases. The most ideal approach is that, clients do not walk into clinics and hospitals if they think they are a COVID-19 positive suspect, but rather they kindly call the clinic or national helplines for tele-assistance.

PCR is the most reliable test for diagnosis of COVID-19 but due to limited funding, it has been resorted to after RDT diagnostics and as a measure for confirmatory basis for an established RDT positive result. RDT testing is recommended only for population sampling and has been associated with incorrect results with accuracy of a 'Negative result' reported between 0-70% and this has been the major approach in corona virus testing across Zimbabwe. Most local communities continue to depend on district personnel for PCR testing of COVID-19 cases. After collecting samples, results have been unavailable until more than a week or two weeks later which makes primary and secondary prevention strategies difficult to implement at every level of society [20]. Delays have been attributed to shortages of PPE, shortages of testing cartridges at the provincial testing centers and a spike in number of cases requiring testing as observed in quarantine center for returning nationals. Testing at private laboratories is expensive with laboratories accepting only United States Dollar payments at a cost which is out of reach for many which in turn reflects a low recording of the novel corona virus across Zimbabwean provinces. Tests at these laboratories have also been reported as slow as well with CIMAS laboratories only running 10 tests a day and Lancet labs having a long waiting list for PCR tests. This means PCR testing in private laboratories is now associated with significant delays as well, challenges like these couldn't have come at a worse time than now when the country is reporting spiking number of confirmed cases [21].

The findings established through the hierarchical dendogram that there were no significant differences between and with provinces in terms of progression of the novel corona virus. These aspects may be explained by the strategies that have established in reception of returning Zimbabweans from across the boarders and beyond and some from areas that were corona virus hard hit like United States of America, Italy, South Africa and China. Therefore, such individual went through similar processes ascribed to local people that is, once a patient has received a positive result, the patient is no longer the responsibility of the local service providers and is now the responsibility of the District Health. If at home, they continue to isolate at home and contact the district team should they require further assistance. Challenges arise if COVID-19 positive patient become very ill needs to be admitted in hospital. To date, the Midlands province does not have an admission facility for severe or critically ill COVID-19 positive cases although the findings place the Midlands province at number three in terms of stagnant growth in the number of corona virus cases. Such facilities are only available in Harare and Bulawayo but are frequently overwhelmed due to the current surge in confirmed cases.

COVID-19 has caused unprecedented psychological stress and illnesses to the world population. Anxiety about the new normal, anxiety about whether one will continue with activities of daily living, fear of contracting and dying from COVID-19, fear of losing loved ones, stress from being unable to visit loved ones or attend funerals, church or usual gatherings, stress from lockdown and being required to stay home all the time leading to depression and gender based violence, stress from losing employment [22], business or death of a close relative or friend from COVID-19. As we continue to find new ways of adapting to the "new normal", it is imperative to accept the realities as we stride forward. COVID-19 might be here for a long stay, public health specialist's world over predict it will be with us for 2 years or more. There is need to adopt and adapt to the new ways of going about our lives and continue to remind our colleagues, families and relatives about the importance of preventing contracting the virus. We should strive to continue improving our institutional COVID-19 prevention strategies, as we know, we have returnees from highly infected areas across the globe. We need to acknowledge the harsh reality that COVID-19 may infect and take the life of any one of us or our loved ones. It is important that we stay strong and continue to safely undertake our daily duties, above all, exercise at least 30mins/day, eat healthy diet and ensure that those suffering from chronic illnesses such as Diabetes, Hypertension and Asthma are on treatment and well controlled during this era.

Citizens found to be with the virus have been subjected to WHO (2020) or CDC (2020) stipulations on self-isolation and quarantine respectively. Evidence suggested that people with symptomatic novel corona and those asymptomatic suspected contacts were also subjected to isolation. However, with the prevailing socio-economic challenges, most of the people subjected to the novel virus are sometimes bread winners and as such they would not come forth for 14 days of inactive income generating activities. On the other hand, some in the work fraternity did not come forth due to fears attached to losing work, loss of month salaries due to absence without notices [23]. Failures in the system were observed with delays in response from the established rapid response team, attributions from the general public established lack of facilities and medical personal willing to deal with the pandemic as central to the shortfalls in the corona virus support structure [24].

5. CONCLUSION

It is of paramount importance to note that there are confounding variables that the researchers found that have both a direct and indirect impact on the general progression of the corona virus in Zimbabwe. The researchers concluded that, there is a lot of work that needs to be done at individual, district, provincial and national level to improve preparedness on handling pandemics. The findings concluded that, lack of resources and the unfavorable socio-economic conditions were the baseline of transmission for the novel corona virus, as such lock downs and other relative measures that were put in place may not have accounted for those in less privileged positions who live on hand to mouth and daily activities of economic survival.

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