Understanding the cumulative distribution, implication and progress on Covid -19 pandemic as at 7th of February 2022 across different countries of the world: An update report.

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Abstract:

Background and Objective: **There has been conflicting report on the disproportionate impact of Covid -19 on the globe. This work is aim at Understanding the cumulative distribution, implication and progress on Covid -19 pandemic as at 7th of February 2022 across different countries of the world.**

Material and Method: **Data from one hundred and seventy seven (177) countries and regions of the world were gotten from United Nations Geoscheme. Results were collated and subsequently compared to the values obtained for USA.**

Result: Europe has higher incidence comparism factor and almost same factor value when compared to that of USA. America continent has same factor value range as that of USA. Asia has both lower case and mortality value while Africa is the least affected in terms of incidence and mortality value.

Conclusion: **Despite various variant, like delta and omicron variant, Africa appears to developed a natural survival mechanism. There is therefore need for the rest of the globe to further investigate the reason for this spared onslaught and develop vaccine based on Africans COVID-19 antibody make up so as to develop a more robost immunity**

Keywords: **Africa, USA, COVID-19, America, Nigeria, Europe, year 2022**

I. INTRODUCTION

Currently, there almost four hundred million globally reported cases of COVID-19 and about four million reported deaths (1,2). The USA account for 5 percent of world population but has 16 percent cases of the pandemic (3). There has been lots of speculation and expectation that Africa will be the most severely affected (4,5). But this seems not to be case, though, there is still a global alarm and fear on the possibilities of another outbreak of African origin. Coronaviruses are a family of viruses that can cause respiratory illness in humans (6,7). They are called "corona" because of crown-like spikes on the surface of the virus (8). Severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS) and the common cold are examples of coronaviruses that cause illness in humans (9,10).The new strain of coronavirus — COVID-19 — was first reported in Wuhan, China in December 2019 (11). The virus has since spread to all continents. Coronaviruses are often found in bats, cats and camels (12,13). The viruses live in but do not infect the animals. Sometimes these viruses then spread to different animal species. The viruses may change (mutate) as they transfer to other species. Eventually, the virus can jump from animal species and begins to infect humans (14). In the case of COVID-19, the first people infected in Wuhan, China are thought to have contracted the virus at a food market that sold meat, fish and live animals (14). Although researchers don't know exactly how people were infected, they already have evidence that the virus can be spread directly from person to person through close contact. There is serious concern and study on the different waves of the disease has. This have been suggested to be due to change in weather and continuously mutated strain of the virus that has been identified (15,16,17). There is the need to study this cases per country and region with respect to the virulent and spreadability of the mutated strain.

Studies has been carried out on the dermographic, nature and strength of the virus, but analyzing an updated information per time is also predicated in managing and improving the trend(18,19). This work is aim at Understanding the cumulative distribution, implication and progress on Covid -19 pandemic as at 7th of February 2022 across different countries of the world

Study Area: Data as at 6th of February, 2022 were obtained from United Nations Geoscheme and WHO (WHO 2021).

II. METHODOLOGY

One hundred and seventy seven (177) nations from different continents and regions of the world were selected for this study. Data used where obtained from 29th January to 4th of February, 2022from United Nations Geoscheme and WHO(20). The Data obtained for these countriesover 7 days per 100000 populations, were analyzed and compared directlywith the values gotten for USA. USA was used as a Comparism Factor (CF) or Oyepata Factor (OF) because it is a country with one of the best health system and also has highest COVID-19 cases with a relatively large population in the world.

Statistical Analysis

In this work markers as cumulative cases and cumulative cases of death per 1,000,000 population were compared against valuesof USA. Bivariate analysis, was used and Chi-square test, to compare proportions of all variables. In reporting this study, country observations are scaled to present a comparison of two countries similar in all other respects. Thus, rate ratios less than one insinuate that lesser levels of a given characteristic are associated with lesser rates of infection or mortality and vice versa.

III. RESULT

Europe has higher incidence comparism factor and almost same factor value when compared to that of USA. America continent has same factor value range as that of USA. Asia has both lower case and mortality value while Africa is the least affected in terms of incidence and mortality value (Table 1).

Table 1: Cases and Death of COVID-19

S/N	Country, Other	Total Cases	Total Deaths	Tot Cases/ 1M pop (A)	Deaths/ 1M pop (B)	A/233512 ©	B/2772 (D)
1	USA	78,017,402	926,029	233,512	2,772	1.00	1.00
2	India	42,272,014	502,905	30,158	359	0.13	0.13
3	Brazil	26,536,597	632,289	123,441	2,941	0.53	1.06
4	France	20,758,371	132,506	316,901	2,023	1.36	0.73
5	UK	17,803,325	158,318	260,070	2,313	1.11	0.83
6	Russia	12,982,023	336,023	88,897	2,301	0.38	0.83
7	Turkey	12,238,501	88,734	142,658	1,034	0.61	0.37
8	Italy	11,621,736	148,771	192,669	2,466	0.83	0.89
9	Germany	11,059,873	119,366	131,334	1,417	0.56	0.51
10	Spain	10,274,653	94,235	219,620	2,014	0.94	0.73
11	Argentina	8,589,879	122,684	187,313	2,675	0.80	0.97
12	Iran	6,619,085	132,934	77,226	1,551	0.33	0.56
13	Colombia	5,966,706	135,757	115,300	2,623	0.49	0.95
14	Poland	5,188,184	106,607	137,325	2,822	0.59	1.02
15	Mexico	5,151,525	309,546	39,296	2,361	0.17	0.85
16	Netherlands	4,892,041	21,332	284,496	1,241	1.22	0.45
17	Indonesia	4,542,601	144,636	16,332	520	0.07	0.19
18	Ukraine	4,307,437	101,392	99,447	2,341	0.43	0.84
19	South Africa	3,623,962	95,835	59,897	1,584	0.26	0.57
20	Philippines	3,616,387	54,538	32,315	487	0.14	0.18
21	Peru	3,363,489	206,984	99,791	6,141	0.43	2.22
22	Japan	3,300,589	19,324	26,225	154	0.11	0.06
23	Belgium	3,296,038	29,227	282,431	2,504	1.21	0.90
24	Czechia	3,243,698	37,478	302,000	3,489	1.29	1.26
25	Israel	3,196,548	9,180	342,757	984	1.47	0.35
26	Canada	3,125,330	34,722	81,663	907	0.35	0.33
27	Portugal	2,915,971	20,222	287,311	1,992	1.23	0.72

28	Malaysia	2,914,220	32,034	88,234	970	0.38	0.35
29	Australia	2,750,562	4,243	105,903	163	0.45	0.06
30	Thailand	2,507,471	22,306	35,780	318	0.15	0.11
31	Romania	2,418,779	60,723	127,086	3,190	0.54	1.15
32	Chile	2,371,833	39,987	122,396	2,063	0.52	0.74
33	Switzerland	2,354,832	12,895	268,947	1,473	1.15	0.53
34	Vietnam	2,341,971	38,324	23,719	388	0.10	0.14
35	Sweden	2,287,785	16,143	224,295	1,583	0.96	0.57
36	Iraq	2,248,199	24,516	53,961	588	0.23	0.21
37	Austria	2,084,227	14,246	229,325	1,567	0.98	0.57
38	Greece	2,047,849	24,094	198,019	2,330	0.85	0.84
39	Denmark	1,914,078	3,881	328,608	666	1.41	0.24
40	Bangladesh	1,870,901	28,627	11,182	171	0.05	0.06
41	Serbia	1,768,343	13,991	203,700	1,612	0.87	0.58
42	Hungary	1,650,562	41,975	171,556	4,363	0.73	1.57
43	Pakistan	1,463,111	29,516	6,424	130	0.03	0.05
44	Jordan	1,330,107	13,320	128,327	1,285	0.55	0.46
45	Georgia	1,325,838	15,246	333,382	3,834	1.43	1.38
46	Kazakhstan	1,270,954	13,356	66,419	698	0.28	0.25
47	Ireland	1,205,914	6,228	239,940	1,239	1.03	0.45
48	Morocco	1,147,243	15,593	30,504	415	0.13	0.15
49	Slovakia	1,127,020	17,973	206,268	3,289	0.88	1.19
50	Cuba	1,053,560	8,439	93,107	746	0.40	0.27
51	S. Korea	1,044,963	6,886	20,354	134	0.09	0.05
52	Bulgaria	995,436	33,770	145,005	4,919	0.62	1.77
53	Croatia	983,780	14,137	242,024	3,478	1.04	1.25
54	Lebanon	971,774	9,711	143,402	1,433	0.61	0.52
55	Nepal	966,405	11,814	32,242	394	0.14	0.14
56	Tunisia	944,175	26,679	78,575	2,220	0.34	0.80
57	Norway	893,560	1,467	162,792	267	0.70	0.10
58	Bolivia	871,749	21,129	73,088	1,771	0.31	0.64
59	UAE	859,361	2,265	85,243	225	0.37	0.08
60	Slovenia	799,955	5,990	384,706	2,881	1.65	1.04
61	Belarus	777,391	6,147	82,313	651	0.35	0.23
62	Ecuador	766,398	34,730	42,411	1,922	0.18	0.69
63	Lithuania	756,206	7,999	284,119	3,005	1.22	1.08
64	Panama	727,413	7,844	164,453	1,773	0.70	0.64
65	Uruguay	726,042	6,637	207,858	1,900	0.89	0.69
66	Costa Rica	721,971	7,641	139,688	1,478	0.60	0.53
67	Guatemala	711,076	16,501	38,552	895	0.17	0.32
68	Saudi Arabia	708,897	8,954	19,868	251	0.09	0.09
69	Azerbaijan	698,654	8,871	67,928	863	0.29	0.31
70	Sri Lanka	618,520	15,595	28,693	723	0.12	0.26
71	Paraguay	607,947	17,605	83,595	2,421	0.36	0.87

72	Kuwait	578,819	2,510	132,409	574	0.57	0.21
73	Dominican Republic	562,613	4,325	51,046	392	0.22	0.14
74	Myanmar	537,901	19,310	9,781	351	0.04	0.13
75	Finland	534,790	2,095	96,281	377	0.41	0.14
76	Palestine	529,439	4,897	100,070	926	0.43	0.33
77	Venezuela	496,283	5,487	17,532	194	0.08	0.07
78	Moldova	467,271	10,768	116,266	2,679	0.50	0.97
79	Ethiopia	466,539	7,363	3,904	62	0.02	0.02
80	Libya	452,950	6,080	64,518	866	0.28	0.31
81	Latvia	450,105	4,951	242,924	2,672	1.04	0.96
82	Mongolia	449,531	2,127	133,686	633	0.57	0.23
83	Egypt	439,651	22,936	4,171	218	0.02	0.08
84	Bahrain	421,081	1,411	234,469	786	1.00	0.28
85	Singapore	397,823	871	67,156	147	0.29	0.05
86	Honduras	397,548	10,548	39,143	1,039	0.17	0.37
87	Armenia	391,588	8,097	131,755	2,724	0.56	0.98
88	Estonia	385,567	2,065	290,345	1,555	1.24	0.56
89	Oman	354,597	4,180	66,730	787	0.29	0.28
90	Bosnia and Herzegovina	354,325	14,672	109,083	4,517	0.47	1.63
91	Qatar	345,623	652	123,094	232	0.53	0.08
92	Kenya	322,096	5,621	5,787	101	0.02	0.04
93	Zambia	307,206	3,930	15,996	205	0.07	0.07
94	North Macedonia	278,182	8,578	133,534	4,118	0.57	1.49
95	Cyprus	273,634	745	224,033	610	0.96	0.22
96	Albania	264,624	3,380	92,114	1,177	0.39	0.42
97	Algeria	257,976	6,646	5,718	147	0.02	0.05
98	Botswana	256,041	2,585	105,478	1,065	0.45	0.38
99	Nigeria	253,727	3,139	1,184	15	0.01	0.01
100	Zimbabwe	230,402	5,362	15,150	353	0.06	0.13
101	Uzbekistan	229,628	1,586	6,706	46	0.03	0.02
102	Réunion	226,005	531	249,586	586	1.07	0.21
103	Mozambique	224,339	2,183	6,870	67	0.03	0.02
104	Montenegro	223,462	2,601	355,722	4,140	1.52	1.49
105	Kyrgyzstan	199,519	2,905	29,796	434	0.13	0.16
106	Afghanistan	166,924	7,442	4,139	185	0.02	0.07
107	Luxembourg	165,958	958	258,405	1,492	1.11	0.54
108	Uganda	162,273	3,557	3,378	74	0.01	0.03
109	Ghana	157,541	1,412	4,907	44	0.02	0.02
110	Namibia	156,371	3,980	59,812	1,522	0.26	0.55
111	Maldives	150,337	283	270,514	509	1.16	0.18
112	Laos	136,720	574	18,366	77	0.08	0.03
113	Rwanda	129,141	1,446	9,591	107	0.04	0.04
114	Jamaica	125,993	2,694	42,254	903	0.18	0.33

115	Cambodia	121,881	3,015	7,132	176	0.03	0.06
116	Cameroon	116,718	1,880	4,229	68	0.02	0.02
117	Trinidad and Tobago	115,270	3,460	81,942	2,460	0.35	0.89
118	Guadeloupe	113,966	795	284,749	1,986	1.22	0.72
119	China	106,419	4,636	74	3	0.00	0.00
120	Angola	98,364	1,896	2,851	55	0.01	0.02
121	DRC	85,510	1,278	911	14	0.00	0.01
122	Senegal	85,206	1,956	4,883	112	0.02	0.04
123	Malawi	84,813	2,571	4,258	129	0.02	0.05
124	Ivory Coast	80,920	786	2,951	29	0.01	0.01
125	French Guiana	76,509	383	245,981	1,231	1.05	0.44
126	Suriname	75,531	1,283	126,936	2,156	0.54	0.78
127	Iceland	73,530	49	213,265	142	0.91	0.05
128	Malta	69,175	570	156,003	1,285	0.67	0.46
129	Madagascar	61,434	1,307	2,131	45	0.01	0.02
130	Sudan	58,874	3,588	1,294	79	0.01	0.03
131	Mauritania	58,458	967	12,066	200	0.05	0.07
132	Cabo Verde	55,785	397	98,624	702	0.42	0.25
133	Syria	51,915	3,008	2,856	165	0.01	0.06
134	Barbados	48,239	286	167,533	993	0.72	0.36
135	Gabon	47,247	302	20,457	131	0.09	0.05
136	Seychelles	38,120	157	383,810	1,581	1.64	0.57
137	Burundi	37,562	38	3,016	3	0.01	0.00
138	Papua New Guinea	37,390	597	4,056	65	0.02	0.02
139	Togo	36,593	268	4,261	31	0.02	0.01
140	Guinea	36,262	428	2,647	31	0.01	0.01
141	Aruba	33,302	195	309,815	1,814	1.33	0.65
142	Tanzania	33,230	789	532	13	0.00	0.00
143	Bahamas	32,773	753	82,087	1,886	0.35	0.68
144	Lesotho	32,258	694	14,870	320	0.06	0.12
145	Mali	30,205	715	1,426	34	0.01	0.01
146	Haiti	29,715	804	2,556	69	0.01	0.02
147	Mauritius	26,584	762	20,848	598	0.09	0.22
148	Benin	26,498	163	2,098	13	0.01	0.00
149	Somalia	26,067	1,335	1,570	80	0.01	0.03
150	Congo	23,705	371	4,134	65	0.02	0.02
151	Burkina Faso	20,679	372	948	17	0.00	0.01
152	Taiwan	19,192	851	803	36	0.00	0.01
153	New Zealand	17,988	53	3,596	11	0.02	0.00
154	Tajikistan	17,347	124	1,756	13	0.01	0.00
155	South Sudan	16,833	137	1,476	12	0.01	0.00
156	Cayman Islands	15,934	15	237,981	224	1.02	0.08
157	Equatorial	15,845	182	10,731	123	0.05	0.04

	Guinea						
158	Djibouti	15,510	189	15,342	187	0.07	0.07
159	Hong Kong	15,408	213	2,029	28	0.01	0.01
160	CAR	14,023	110	2,825	22	0.01	0.01
161	Eritrea	9,637	100	2,659	28	0.01	0.01
162	Saint Martin	9,439	61	237,644	1,536	1.02	0.55
163	Sint Maarten	9,396	81	215,238	1,856	0.92	0.67
164	Monaco	8,770	46	220,979	1,159	0.95	0.42
165	Niger	8,686	302	339	12	0.00	0.00
166	Comoros	7,964	160	8,857	178	0.04	0.06
167	Guinea-Bissau	7,772	158	3,806	77	0.02	0.03
168	Sierra Leone	7,628	125	926	15	0.00	0.01
169	Liberia	7,276	290	1,387	55	0.01	0.02
170	Caribbean Netherlands	7,209	29	270,893	1,090	1.16	0.39
171	Chad	7,155	190	417	11	0.00	0.00
172	Antigua and Barbuda	6,853	131	69,065	1,320	0.30	0.48
173	St. Vincent Grenadines	6,705	99	60,133	888	0.26	0.32
174	Bhutan	6,092	4	7,759	5	0.03	0.00
175	Sao Tome and Principe	5,912	71	26,199	315	0.11	0.11
176	Vatican City	29		36,070		0.15	0.00
177	Western Sahara	10	1	16	2	0.00	0.00

Key:

Data used were obtained from WHO/World meter's as at 29[th]January -4thFebuary, 2022

Figures obtained for USA were used in determing the comparism factor (CF) or Oyepata Factor which is a ratio of figure obtained to that of a particular country population divided by that of the USA.

Values of CF1 (or OF1) and CF2 (or OF2) represent case/incidence and mortality index.

Factor of more than 1 = very high infection and mortality index

Factor of approximately 1 = high infection and mortality index

Factor of ≤1 but ≥0.5 = moderately high infection and mortality index

Factor of ≤ 0.5 but ≥ 0.1 = low infection and mortality index

Factor of <0.1 = very low infection, mortality and recovery index
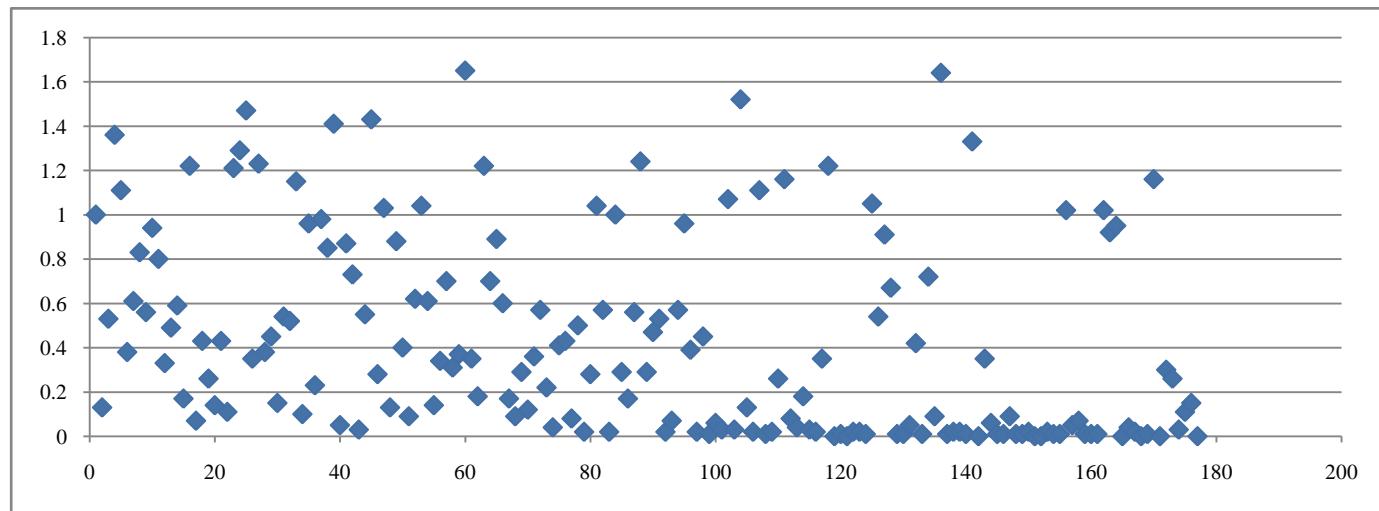
Figure 1: Graph showingcomparism factor per country relative to USA29[th]as at 6th of February, 2022.
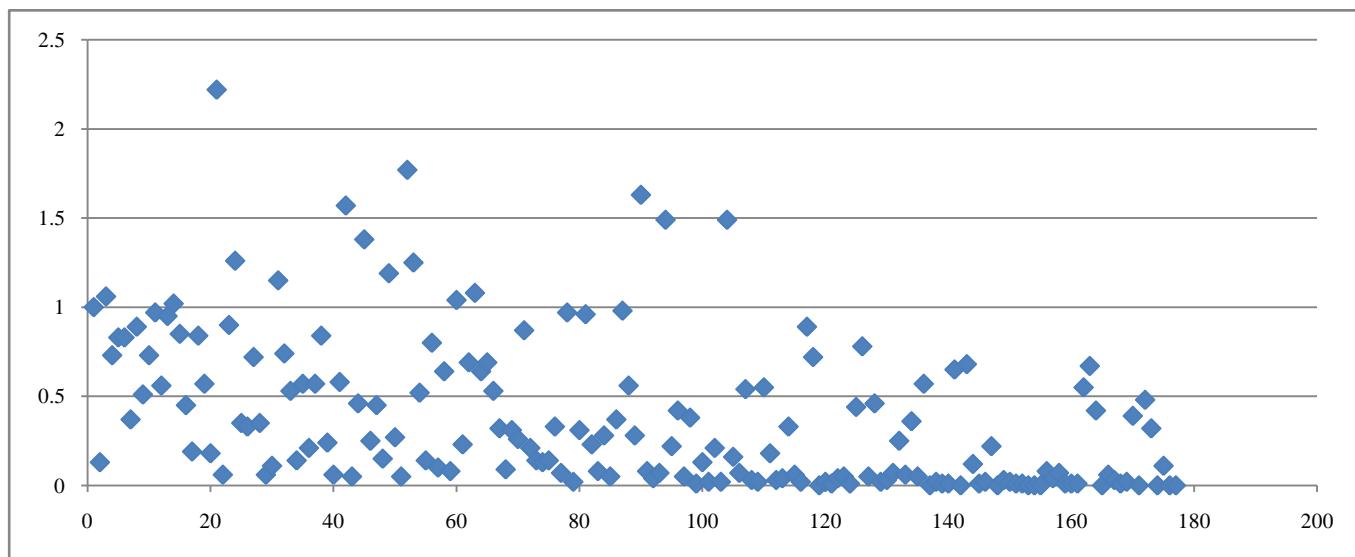
Figure 2: Graph showing death Oyepata factor caused by Covid-19 for each country relative to USA6[th] to February, 2022.

IV. DISCUSSION

With the exception of South Africa and Botswana, Africa has little to no comparism factor value. It's normal for viruses to mutate — especially coronaviruses and influenza viruses. This result is a futunate distance from global expectation. Reasons for this has puzzled the world with different theory as to possible factor for this serendipitous outcome. There has been report of mutataed strain of the virus (21). These mutations create new variants of the virus (22). Sometimes the variants are less contagious, less severe or have slightly different presenting symptoms (23,24). Unfortunately, the delta variant and Omicron of COVID-19 is more highly contagious and more likely to result in severe illness, though studies are still on still going for better understanding (24).

From above result, America continent has same effect as that of the USA. Europe has higher incidence comparism factor and almost same factor value when compared to that of USA, Africa has been least plagued by the all variant at all phases. Comparing this values to that of previous works on the cumulative effect of the virus (25,26), Africans appear to be unaffected from thisseemly uncontrollable and lethal unleash. Apart from fewer cases of the infection, Africans haveshowed potential to have much lesser mortality even when compared to case of the infection(27,28). This suggest that Africans body system have over time developed a more progressive, robust and faster immune response that reduces chances of the virus causing disease related health complication. Compared to previous cumulative observation, though mortality rate remained higher than other western countries, USA has made remarkable stride in preventing and reducing the cases of infection compared to several other countries that suffered same fate from the virus. From available data, Africa which generally is classified as third world or clearly underdeveloped(29,30,31) do not have severe medical consequences of the infection, and when infected they tends to recover faster with lower chance of complications and mortality.

As previously noted, Africanslives as a community and in dense clusters which is obviously different to most western countries that exist in solitary system (31,32). Thus, it is expected that most individuals in Africa may have contacted the virus without knowing or developing major symptoms. These has made several observers around the world to speculate that Africa may consequentially become a graveyard (33,34). Reasons for this fortunately unexpected result have puzzled many analyst around the world. Studies have shown, that because of poor health and environment, the immune systems of African children tends to develop faster and more robust compared to Dutch children(35,36). Childhood Exposure to pathogenic organism may have boasted the immune system and protect children from developing certain allergies and other infectious diseases, on later exposure to the similar allergen or pathogen(37,38). This view is also supported with data and comparism factor obtained from Haiti. Haiti is currently the poorest country in the Latin America and Caribbean region and among least developed countries in the world (39,40). They have one the least case of infection and mortality resulting in little to no significant value of comparism factor. Thus, childhood or early exposure to some diseases in poor countries may have encouraged a more robust immune response to same or related infection. Therefore, several African countriesbe both vulnerable and potentially more defensive against the coronavirus.

It is possible that the virusspread fast across African populations within a relatively short period of time resulting in a large proportion to have been exposed to the virus without showing obvious symptoms and may have possibly recovered fully. Therefore, there is need for a more robust COVID-19 testing; antibody testing, which will explain who has been exposed than the popular antigen testing which only provides

active disease state. This will significantly affect the quantity and quality time and resources that a give region need.

VI. CONCLUSION

While the world struggle to cope with changing expectation from the COVID-19 and it possibly unending variant, Africa seems to be undisturbed by the virus caused crisis. There is therefore need for the rest of the globe to further investigate the reason for this spared onslaught and develop vaccine based on Africans COVID-19 antibody make up so as to develop a more robust immunity rather attempting the reverse. Also, there is need for a more robust COVID-19 testing; antibody testing, which will explain who has been exposed than the popular antigen testing which only provides active disease state.

Conflict of Interest

The authors declare that there are not any potential conflicts of interest

ACKNOWLEDGEMENT

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