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Original Research Paper

Health Science

Comparison of Fatality Rates of Top 201 COVID-19 Countries and Its Enlightenment on How to Fight the Pandemic Better

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ABSTRACT

Background: China has controlled the COVID-19 pandemic through 110 days of the vigorous anti-COVID-19 campaign since January 20. China has provided the world with rich experience in combating the COVID-19 epidemic.

Objectives: COVID-19 fatality rates in the world were different. An epidemiological investigation on top 201 COVID-19 countries was conducted to analyze the reasons and provide the world with its enlightenment on how to fight the pandemic better.

Methods: The investigation populations were the COVID-19 cases and deaths in the world. The total confirmed cases and deaths collected were based on data released by the National Health Commission of China and the WHO on May 10.

Results: The top 28 COVID-19 countries in order were USA, Spain, Italy, UK, Russia, France, Germany, Brazil, Turkey, Iran, China, Canada, Peru, India, Belgium, Netherlands, Saudi Arabia, Mexico, Switzerland, Pakistan, Ecuador, Portugal, Chile, Sweden, Singapore, Belarus, Ireland, and Qatar. China ranked as 11th.

The top 10 countries with a high fatality rate in order were Belgium 16.31%, France 14.89%, UK 14.67%, Italy 13.93%, Netherlands 12.76%, Hungary 12.66%, Sweden 12.25%, Spain 10.06%, Mexico 10.02%, and Algeria 8.89%.

The fatality rate in China was 5.50% with 84435 confirmed cases and 4643 deaths, ranking 57th in the world, while the fatality rate in the United States was 5.94% with 1349599 confirmed cases and 80101 deaths, ranking 47th in the world.

The fatality rate lower than that in China were Russia 0.91%, Germany 4.44%, Turkey 2.73%, Peru 2.79%, India 3.30%, Saudi Arabia 0.63%, Pakistan 2.17%, Portugal 4.12%, Chile 1.12%, Singapore 0.09%, Belarus 0.57%, and Qatar 0.06%.

Conclusions: China's successful anti-epidemic experience provides enlightenment on how to fight the pandemic better for the world. Social distancing, quarantine, lockdown, detection, isolation, treatment are all vital to control the epidemic by reducing COVID-19 confirmed cases and the fatality rate.

KEYWORDS : SARS-CoV-2; COVID-19; Ecological study; Cross-sectional study; Epidemiological investigation.

BACKGROUND

As of May 10, more than 4 million people worldwide have been infected, affecting people in 211 countries and causing more than 280,000 deaths. The world economy has suffered heavy losses. It seems China has controlled the COVID-19 pandemic through 110 days of the vigorous anti-COVID-19 campaign since January 20. Although there were delays in Wuhan for some reasons[1], and COVID-19 were not well understood at the beginning[2], China has taken the most comprehensive and strict measures to mobilize people [3]. China has provided the world with two months of preparation time and rich experience in combating the COVID-19 epidemic[4,5].

Objectives

COVID-19 fatality rates in the world were different. The COVID-19 pandemic was mainly addressed by the corresponding country itself. The different measures taken by different country resulted in a different situation and fatality rate. An epidemiological investigation on Top 201 COVID-19 countries was conducted to analyze the reasons and provide the world with its enlightenment on how to fight the pandemic better.

METHODS

Investigation Population and Data Collection

The investigation populations were the COVID-19 cases and deaths in the world. The total confirmed cases and deaths collected were based on data released by the National Health Commission of the People's Republic of China and the World Health Organization on May 10.

Data Analysis

Input data into SPSS 25 for data processing and statistical analysis, Microsoft Office 2019 Excel was used for drawing table and figures.

Ethical Considerations

The COVID-19 data used in this paper were extracted from China and WHO, which were available for public use. No patient was directly involved in this investigation. No ethical approval or patient consent was required.

RESULTS

The top 28 COVID-19 countries with more than 20000 confirmed cases in order were USA, Spain, Italy, UK, Russia, France, Germany, Brazil, Turkey, Iran, China, Canada, Peru, India, Belgium, Netherlands, Saudi Arabia, Mexico, Switzerland, Pakistan, Ecuador, Portugal, Chile, Sweden, Singapore, Belarus, Ireland, and Qatar. China ranked as 11th. (**Table 1:** Confirmed Cases and Deaths of Top 201 COVID-19 Countries on May 10)

Excluding countries with fewer than 1,000 confirmed cases whose fatality rate does not accurately reflect the epidemic situation, the top 10 countries with a high fatality rate in order were Belgium 16.31%, France 14.89%, UK 14.67%, Italy 13.93%, Netherlands 12.76%, Hungary 12.66%, Sweden 12.25%, Spain 10.06%, Mexico 10.02%, and Algeria 8.89%.

The fatality rate in China was 5.50% with 84435 confirmed cases and 4643 deaths, ranking 57th in the world, while the fatality rate in the United States was 5.94% with 1349599 confirmed cases and 80101 deaths, ranking 47th in the world.

Among the countries with severe epidemics, the fatality rate lower than that in China were Russia 0.91%, Germany 4.44%, Turkey 2.73%, Peru 2.79%, India 3.30%, Saudi Arabia 0.63%, Pakistan 2.17%, Portugal 4.12%, Chile 1.12%, Singapore 0.09%, Belarus 0.57%, and Qatar 0.06%.

(Figure 1: Fatality Rates of Top 201 COVID-19 Countries on May 10)

(Figure 2: Fatality Rates of Top 201 COVID-19 Countries on May 10)

(Figure 3: Fatality Rates of Top 201 COVID-19 Countries on May 10)

DISCUSSION

China is a country with a large population, making infectious diseases prone to become epidemic in China. Nevertheless, China did not have the highest confirmed cases, and the highest fatality rate, China's achievements were not easy. It is unfounded to suspect that the low fatality rate in China was the result of fraud because there were more than 150 countries lower than China. It is also unreasonable to believe that the number of confirmed cases in China should have been greater, because the outbreak in China has been controlled, and it is only a sporadic incidence and imported cases every day.

What matter is that the different measures taken by different country result in a different situation and fatality rate. China had taken the most comprehensive and strict measures to mobilize people[3]. Social distancing, quarantine, lockdown, detection, isolation, treatment were all vital to control the epidemic by reducing COVID-19 confirmed cases and the fatality rate[4,5]. USA, Spain, Italy, UK, France, Germany, Turkey, Iran are eight countries with much smaller populations than China, and geographically farther away from the epidemic centre Wuhan. They should have been less affected if appropriate anti-epidemic measures had been taken[6,7]. On the contrary, all the eight countries shared a common feature: reluctance to wear masks and maintain social distancing at the beginning, thus resulting in more confirmed cases and deaths than China. Moreover, some national leaders not only opposed wearing a mask at the outset of the epidemic, even took the lead to go to public places or to watch movies, or promoted natural immunization, or did not cancel religious public meetings, etc. which confirms the importance of China's anti-COVID-19 epidemic experiences.

The virus has no borders, and the pandemic does not distinguish between races. Exaggerating the small mistakes in the early stage of the epidemic in Wuhan[1], politicizing the epidemic internationally is not the right way to deal with this global public health crisis. The common enemy of all humanity is the virus. This is a confrontation between humans and the virus, not a confrontation between countries.

This study is a comparative study of epidemiological data in China and the World. COVID-19 originated in Wuhan, Rest of China was more vulnerable than the rest of the world at the beginning of the outbreak because of the similar geographical distribution of the population. Therefore, China's anti-COVID-19 epidemic experience is enlightenment on how to fight the pandemic better for the world in the later period.

The data used in this investigation provided only the total COVID-19 cases and deaths. No other specific information about age, gender, symptom statistics, length of hospital stay, primary disease status, medication status, etc. was provided. The conclusions drawn were based solely on the prevalence of China and the world.

CONCLUSIONS

China's successful anti-epidemic experience provides enlightenment on how to fight the pandemic better for the world. Social distancing, quarantine, lockdown, detection, isolation, treatment are all vital to control the epidemic by reducing COVID-19 confirmed cases and the fatality rate.

Footnotes

Authors' Contribution: The authors contributed equally to the article.

Conflict of Interests: We have no financial interests related to the material in the manuscript.

Funding/Support: This research is self-funded.

Ethical Approval: The article uses China's anti-COVID-19 campaign data released by the National Health Commission of the People's Republic of China every day (http://www.nhc.gov.cn/xcs/yqtb/list_gzbd.shtml), and COVID-19 data released by WHO (https://www.who.int/). These data are transparent and can be used by anyone. Therefore, our data do not require registration, consent, etc.

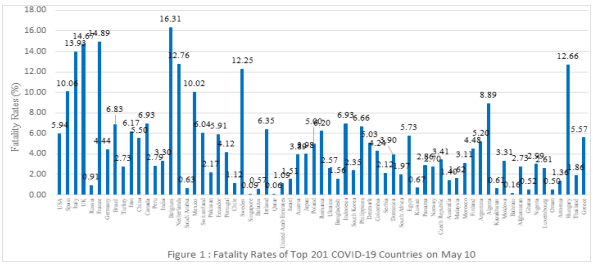

Figure 1 : Fatality Rates of Top 201 COVID-19 Countries on May 10

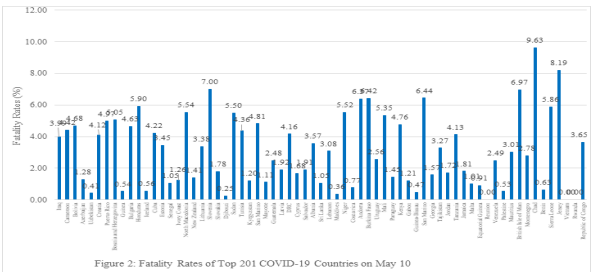

Figure 2: Fatality Rates of Top 201 COVID-19 Countries on May 10

Table1:Confirmed Cases and Deaths of Top 201 COVID-19 Countrieson May 10

Country	Confirmed Cases	Deaths	Country	Confirmed Cases	Deaths	Country	ConfirmedCases	Deaths
USA	1349599	80101	Iraq	2679	107	Zambia	267	7
Spain	264663	26621	Cameroon	2579	114	Guernsey	252	13
Italy	218268	30395	Bolivia	2437	114	Ethiopia	239	5
UK	215260	31587	Azerbaijan	2422	31	Capeverde	236	2
Russia	209688	1915	Uzbekistan	2411	10	SaoTomeand Principe	208	5
France	176658	26310	Croatia	2187	90	Liberia	199	20
Germany	172119	7646	PuertoRico	2173	108	Madagascar	193	0
Brazil	156061	10656	Bosniaand Herzegovina	2117	107	FaroeIslands	187	0
Turkey	137115	3739	Guinea	2042	11	Martinique	186	14
Iran	107603	6640	Bulgaria	1965	91	Myanmar	180	6
China	84435	4643	Honduras	1830	108	Swaziland	163	2

Canada	67702	4693	Iceland	1801	10	Guadeloupe	154	13
Peru	65015	1814	Cuba	1754	74	Togo	153	10
India	64139	2114	Estonia	1739	60	Haiti	151	12
Belgium	53081	8656	Senegal	1709	18	Guam	151	5
Netherlands	42627	5440	IvoryCoast	1667	21	Gibraltar	146	0
SaudiArabia	39048	246	NorthMacedonia	1642	91	FrenchGuyana	144	1
Mexico	33460	3353	NewZealand	1494	21	CentralAfrica	143	0
Switzerland	30305	1830	Lithuania	1479	50	Brunei	141	1
Pakistan	29465	639	Slovenia	1457	102	Cambodia	122	0
Ecuador	29071	1717	Slovakia	1457	26	SouthSudan	120	0
Portugal	27581	1135	Djibouti	1189	3	Bermuda	118	7
Chile	27219	304	Sudan	1164	64	TrinidadandTobago	116	8
Sweden	26322	3225	Tunisia	1032	45	Uganda	116	0
Singapore	23336	20	Kyrgyzstan	1002	12	Nepal	110	0
Belarus	22973	131	SanMarino	997	48	Aruba	101	3
Ireland	22760	1446	Mayotte	988	11	Guyana	97	10
Qatar	22520	14	Guatemala	967	24	Morocco	96	4
UnitedArabEmirates	18198	198	Latvia	939	18	Bahamas	92	11
Israel	16458	248	DRC	937	39	Mozambique	91	0
Austria	15871	618	Cyprus	892	15	Barbados	82	7
Japan	15847	631	Salvador	889	17	Liechtenstein	82	1
Poland	15821	791	Albania	868	31	CaymanIslands	81	1
Romania	15362	952	SriLanka	855	9	Saintmartin	76	15
Ukraine	15232	391	Lebanon	845	26	United States Virgin Islands	68	4
Bangladesh	14657	228	Maldives	835	3	Libya	64	3
Indonesia	14032	973	Niger	815	45	French Polynesia	60	0
SouthKorea	10874	256	Costarica	780	6	Malawi	56	3
Philippines	10794	719	Andorra	754	48	Syria	47	3
Denmark	10517	529	BurkinaFaso	748	48	Angola	43	2
Colombia	10495	445	Uruguay	702	18	Mongolia	42	0
Serbia	10032	213	Mali	692	37	Eritrea	39	0
Dominica	9882	385	Paraguay	689	10	Zimbabwe	36	4
SouthAfrica	9420	186	Kenya	672	32	Yemen	34	7
Egypt	8964	514	Gabon	661	8	Antiguaand Barbuda	25	3
Kuwait	8688	58	Guinea-Bissau	641	3	EastTimor	24	0
Panama	8282	237	SanMarino	637	41	Botswana	23	1
Norway	8099	219	Georgia	635	10	Grenada	21	0
CzechRepublic	8095	276	Tajikistan	612	20	Gambia	20	1
Australia	6941	97	Jordan	522	9	Laos	19	0
Malaysia	6656	108	Tanzania	509	21	Belize	18	2
Morocco	6038	188	Jamaica	498	9	Newcredonia	18	0
Finland	5913	265	Malta	496	5	Fiji	18	0
Argentina	5766	300	EquatorialGuinea	439	4	Santalucia	18	0
Algeria	5558	494	Reunion	431	0	Saint Vincent and the Grenadines	17	0
Kazakhstan	5076	31	Venezuela	402	10	Nicaragua	16	5
Moldova	4867	161	Palestine	375	2	Northern Mariana Islands	16	2
Bahrain	4856	8	Mauritius	332	10	NetherlandsAntilles	16	1
Afghanistan	4402	120	BritishIsleofMan	330	23	Namibia	16	0
Ghana	4263	22	Montenegro	324	9	Dominica	16	0
Nigeria	3912	117	Chad	322	31	Burundi	15	1
Luxembourg	3877	101	Benin	319	2	SaintKittsandNevis	15	0
Oman	3399	17	SierraLeone	307	18	FalklandIslands	13	0
Armenia	3313	45	Jersey	293	24	TurksandCaicos Islands	12	1
Hungary	3263	413	Vietnam	288	0	Vatican	12	0
Thailand	3009	56	Rwanda	280	0	Montserrat	11	1
Greece	2710	151	RepublicofCongo	274	10	Greenland	11	0

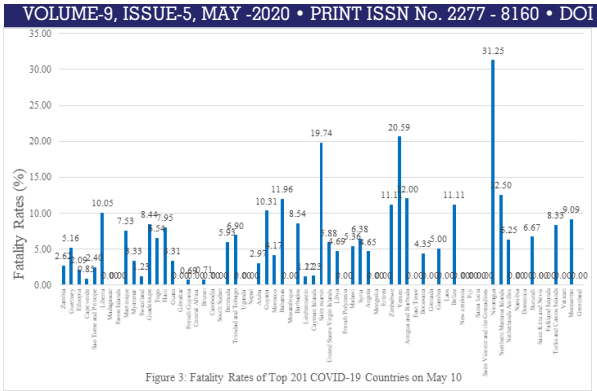

Figure 3: Fatality Rates of Top 201 COVID-19 Countries on May 10

REFERENCES

1. Wang FS, Zhang C. What to do next to control the 2019-nCoV epidemic? Lancet. 2020;395(10222):391-393. doi: 10.1016/S0140-6736(20)30300-7. [PubMed: 32035533].[PubMedCentral:PMC7138017].
2. Lu H, Stratton CW, Tang YW. The Wuhan SARS-CoV-2-What's next for China.JMedVirol.2020.doi:10.1002/jmv.25738.[PubMed:32115732].
3. Wilder-Smith A, Freedman DO. Isolation, quarantine, social distancing and community containment: Pivotal role for old-style public health measures in the novel coronavirus (2019-nCoV) outbreak. J TravelMed.2020;27(2).doi: 10.1093/jtm/taaa020.[PubMed:32052841].[PubMedCentral:PMC7107565].
4. Ke Y, Chen Z, Peng B. Cross-Sectional Study of SARS-CoV-2 Epidemic in China and Implications for the World, Iran Red Crescent Med J. Online ahead of Print; 22(4):e102685.doi:10.5812/ircmj.102685.
5. Youfu Ke, Zemin Chen, Bo Peng, Hoyan Wong, Yunkeung Wong, and Zhichao Yuan. Comparative analysis of COVID-19 epidemic in Hubei province and rest parts of mainland China. International Journal of Scientific Research. 2020; 9(3): 12–14.doi:10.36106/ijsr/7835401.
6. Hellewell J, Abbott S, Gimma A, Bosse NI, Jarvis CI, Russell TW, et al. Feasibility of controlling COVID-19 outbreaks by isolation of cases and contacts. Lancet Glob Health. 2020;8(4):e488–96. doi: 10.1016/S2214-109X (20)30074-7. [PubMed: 32119825].[PubMedCentral:PMC7097845].
7. Rothan HA, Byrareddy SN. The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak. J Autoimmun. 2020; 109:102433. doi:10.1016/j.jaut.2020.102433.Epub2020Feb26.Review.[PubMed:32113704]. [PubMedCentral:PMC7127067].