



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Vacunas

www.elsevier.es/vac



Review article

How will the second wave of the dreadful COVID-19 be with the increasing number of the infected cases and mortality in Iraq?



A.A. Dawood^{a,*}, Z.A. Dawood^b

^a Department of Anatomy, College of Medicine, University of Mosul, AlJameaa 34, St. 1, Build 1, R.3, Mosul, Iraq

^b Department of Poultry, College of Veterinary Medicine, University of Mosul, Alsedeeq 5, St. 12, Build 1, Mosul, Iraq

ARTICLE INFO

Article history:

Received 10 September 2020

Accepted 30 September 2020

Keywords:

Dreadful
Coronavirus
Quarantine
Pandemic
Infection

ABSTRACT

Since the first period of the virus's emergence in Iraq, the government and health-related authorities have rushed to impose home quarantine and suspend work in all facilities of the country besides prescribed the sear measures for doubtful cases. From that time, the detected cases elevated with the number of mortality. Our study aims to take an overview of the disease during the past seven months, and a general review of the effects of quarantine measures that have resulted in an altitude graphic curve for both injuries and deaths. Data were analyzed using statistical software with significant values. The number of cases and mortality was elevated in a linear curve. The quarantine has been a factor for containing the virus in the early stages, but on the contrary, no impact was observed recently. The World Health Organization has warned that Iraq will face a second wave of coronavirus next fall, due to the lack of commitment of citizens to the comprehensive implementation of the ban and shortcomings rules of social spacing, proceed to hold special events, and increased activity in the markets. To see the country free from COVID-19, the responsible necessity to focus on the indigence to meet the public health requirements at a proper time.

© 2020 Elsevier España, S.L.U. All rights reserved.

¿Cómo será la segunda ola de la terrible COVID-19 con el número creciente de casos infectados y mortalidad en Irak?

RESUMEN

Desde la primera aparición del virus en Irak, el gobierno y las autoridades sanitarias se apresuraron a imponer cuarentena domiciliaria y suspender el trabajo en todas las instancias del país, además de prescribir medidas de búsqueda para casos dudosos. Desde ese momento, los casos detectados se elevaron, al igual que el número de muertes. El objetivo de nuestro estudio es establecer una visión de la enfermedad durante los últimos siete meses, así como una revisión general de los efectos de las medidas sobre cuarentena, que

Palabras clave:

Terrible
Coronavirus
Cuarentena
Pandemia
Infección

* Corresponding author.

E-mail address: aad@uomosul.edu.iq (A.A. Dawood).

<https://doi.org/10.1016/j.vacune.2020.09.003>

2445-1460/© 2020 Elsevier España, S.L.U. All rights reserved.

han derivado en una curva gráfica de incremento de lesiones y muertes. Se analizaron los datos utilizando *software* estadístico con valores significativos. El número de casos y muertes se elevó en una curva lineal. La cuarentena ha sido un factor de contención del virus en las primeras etapas, pero, por el contrario, no se ha observado impacto alguno recientemente. La Organización Mundial de la Salud ha advertido que Irak se enfrentará a una segunda ola de coronavirus el próximo otoño, debido a la falta de compromiso de los ciudadanos con la implementación amplia de la prohibición y la carencia de normas sobre distanciamiento social, celebración de eventos especiales e incremento de actividad en los mercados. Para ver al país libre de COVID-19, existe la necesidad responsable de centrarse en la indigencia para satisfacer los requisitos sobre salud pública en el momento adecuado.

© 2020 Elsevier España, S.L.U. Todos los derechos reservados.

Introduction

Based on the news, reports, and official press releases, many countries have successfully restrained the first wave of the outbreak. Although most people have achieved distinct approaches and committed to home quarantine in the pandemic, they expect that the second wave will return, exacerbating local transmission of the virus.¹

Till now, the transmission routes of the novel coronavirus from animals to humans do not fully comprehend. It is not always possible to recognize patients with SARS-CoV-2 early without testing because the clinical features and symptoms may be none set or may emerging late. It has been assured that people with diabetes, renal and heart failure, chronic lung disease, and immunocompromised persons are considered to be at a high risk of viral infection.^{2,3}

From the beginning of the outbreak, most of the world business dealings, flights, education, social activities, and entire works have been stopped. In addition to that, cities have become lockdown, streets that were populated with people are empty and restricted to their home quarantine, and self-isolation. Protection against imported diseases takes place under the local and state jurisdiction. The government municipalities enacted several sear regulations the arriving foreigners.⁴

The safety of people is taken into consideration earnestly in the quarantine, so without proper strategies being available and transaction with people can be a challenge during the prospect pandemic.⁵ But, with quarantine, improving the abilities and fitted alertness of ultimate importance are required for the aim of public safety. The elevation of the patient's number in most countries is due to the problem of executing quarantine has always proved extremely difficult.^{6,7}

The history of quarantine

Quarantine means separation of people who are not yet symptomatic signs but may expose to a contagious person or believed to be at risk of developing an infection. Quarantine is an old tactic that has been deliberated for the first time since the 14th century in Italy to protect seaboard cities from plague epidemics.^{8,9} The origin of the word (quarantine) derived from the Italian words *Quaranta Giorni* which means forty days.

The actual concern of quarantine has become from the scare of transmission after a patient's recovery which may create earnest challenges for state and society. Thus, the WHO concentrated on quarantine as a gauge for public health in which the healthy individuals have to separate from others who have symptoms started and early detected cases.¹⁰ Measures have been put in place alongside the implementation of quarantine instructions by the second edition of the Public Health Guidelines for the community to face the pandemic. Through the outbreaks period, the elevation of the isolation rate contributes to the prevention of epidemics. Experimental results in some cities showed that the suggested strategies had a great impact on the control of the disease.¹¹ In addition to that, the improvement of the isolation rate in the latent infection period is key to the surveillance dispersal of the disease. Quarantines can be volitional or voluntary. In common, the long-time quarantine equals the length of the incubation period of a disease that a person may expose.¹²

The first wave of COVID-19 in Iraq

Since the first emerging of COVID-19 was discovered on the 24th of February, in Iraq by an Iranian student who was visiting the Najaf city. The Ministry of Health announced the registration of new cases almost daily. At the first wave of imported cases, most cities and villages followed the health instruction. All public or private congregations, non-fundamental services, gyms, and recreation facilities have ceased. Schools, universities, and cinemas were sealed. Iraq still goes about their daily activities without the use of a mask, unless they were unwell. The government has dramatically reversed their commendations on the use of masks because they may confer additional protection.

Iraq is among the few countries with high rates of death related to the virus, which reached 2.6%, and it is twice the rate compared with other countries. The impact of preventing roving at the beginning of the outbreak had a limit circulation of the virus but without the serious obligation to the healthy instructions for struggling the prevalence of the epidemic led to an increase in the number of cases. The quarantine has been a main factor for curbing the virus in the early stages, but on the contrary, no leverage was observed recently.

Few points are highlighted here. Among them, the main snag for entering a quarantine was the loss of income of

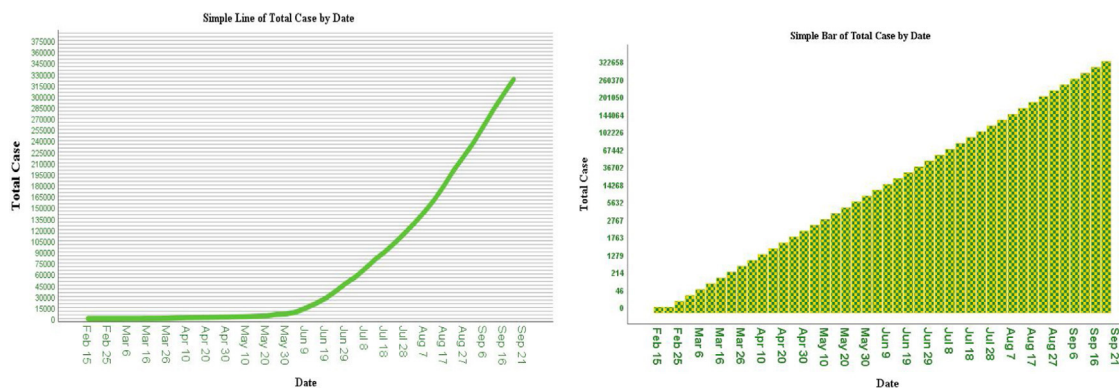


Fig. 1 – Total coronavirus cases by date.

most jobs during the period of the outbreak. Furthermore, there was a reduction in collaboration between people, most of them rejected entry to quarantine places, and some of them returned illegally.¹³ As it is difficult to predict pandemics, COVID-19 has brought economic, financial, health, and social issues to people in Iraq. Thus, people have to accept and understand that public health is the priority above all. Some people in quarantine felt like they were in prison while others felt this is a kind of retribution, but as they are safely discharged, their spirits are promoted, being is much better and they wish to follow the quarantine practices and protocols.

Statistical analysis of infected and death cases

At the first wave time, the Ministry of Health was managing the altitude of the flatten curve of the novel coronavirus, but later it has seen a rapid upward trending because citizens failed to comply with sear instructions and health safety, Fig. 1.

Between the 24th of February to 21st of September, the number of cases was elevated in a linear curve to reach 322,658 cases, Table 1. After approximately seven months from the first infected case, the number of mortality is recorded 8625 cases, Table 1 and Fig. 2. Based on the statistical analysis, the current data is spotted with significant value $p < 0.01$. The mean, standard error, and standard deviation were extracted from the SPSS software version 25, Table 2. The growing of cases amongst citizens living in the dormitories could be due to the limited space, their culture of communal and involvement in parties, and banquets led to an increase in infection cases. Given the above factors and conditions, it is difficult to properly hand out the contribution of wearing masks versus social distancing, tough tracing of human contact, and other control measures. On the other hand, there has been a noticeable increase in the number of people recovering since the beginning of the epidemic, as their number reached approximately 273,266 cases on the 21st of September, with a rate of 80% of the total cases.

Table 1 – Total number of cases and deaths upon the date.

Date	Total case	Total death	Date	Total case	Total death
15-Feb	0	0	9-Jun	14268	392
20-Feb	0	0	14-Jun	20209	607
25-Feb	5	0	19-Jun	27352	925
1-Mar	19	0	24-Jun	36702	1330
6-Mar	46	4	29-Jun	47151	1839
11-Mar	71	8	3-Jul	56020	2368
16-Mar	133	10	8-Jul	67442	2882
21-Mar	214	17	13-Jul	79735	3345
26-Mar	382	36	18-Jul	90220	3781
5-Apr	961	61	23-Jul	102226	4212
10-Apr	1279	70	28-Jul	115332	4603
15-Apr	1415	79	2-Aug	129151	4934
20-Apr	1574	82	7-Aug	144064	5310
25-Apr	1763	86	12-Aug	160436	5641
30-Apr	2085	93	17-Aug	180133	6036
5-May	2431	102	22-Aug	201050	6428
10-May	2767	109	27-Aug	219435	6814
15-May	3193	117	1-Sep	238338	7123
20-May	3724	134	6-Sep	260370	7512
25-May	5632	163	11-Sep	282672	7881
30-May	6179	195	16-Sep	303059	8248
4-Jun	8840	271	21-Sep	322658	8625

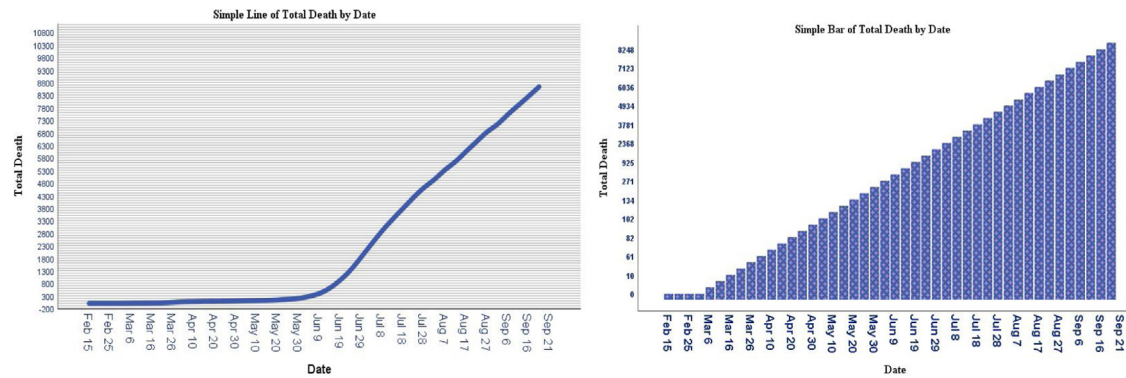


Fig. 2 – Total coronavirus deaths by date.

Table 2 – Descriptive analysis: mean, standard deviation and 2-tailed Pearson correlation.

	Mean std. error	Std. deviation	Pearson correlation
Total case	5432.44 ± 12016.818	76945.178	0.858**
Total death	1893.39 ± 392.360	2512.332	0.882**

** Correlation is significant at the 0.01 level (2-tailed).

Discussion

The World Health Organization (WHO) has warned that Iraq will face a second wave of coronavirus next Autumn. This caution is concerning to the lack of commitment of citizens to thorough bans, proceed to the holding of special events, lack of application rules of social divergence, and increasing activity in the markets.¹⁴

The cooperation between WHO and affected countries coordinates the global health response to COVID-19, including the provision of updated information on the situation, assessment of potential risks, improving guidance, training for health authorities, technical health agencies on provisional surveillance recommendations,¹⁵ laboratory testing of cases, the prohibition of infections, control, and clinical management. Observation should be continued to promote between contiguous countries according to WHO guidelines, along with prohibition and facilitate cooperation in healthcare facilities. Properly worn face masks probably help fence dispersal of the virus. Other environmental and ambient factors including temperature, wind velocity, and wetness may also inspire how the respiratory droplets transmit.¹⁶

A previous study found that unless travel constraints are combined with control and prohibition of infection measures, the initial prevalence of COVID-19 will not be delayed. The researchers conducted that the travel restrictions are most beneficial in both the early and late stages of the outbreak.¹⁷ Governments, healthy institutions, and society have to make precise decisions to put out guidelines and coordinate to overcome challenges.^{18,19}

The easing of the house ban does not mean a return to banquets and gatherings, as the virus is still at its peak, and the infections have not been obstructed. At the beginning of the spreading disease, people were resented by home quarantine, so the government decided to implement partial quarantine.²⁰

In the following weeks, the number of infections and mortality began to rise unprecedented. Based on the available numbers and statistical analyzes on the virus, the region, including our country, maybe on the verge of a real disaster. It is well known that preventive measures lead to significant benefits during a pandemic crisis.²¹ The public needs to act responsibly, physical distancing measures, and pay heed to this advice.^{22,23} The adage that “prevention is better than cure” is especially relevant today, due to the given escalating medical and socioeconomic costs are associated with this pandemic. It is important to note that the high number of recovering people compared to the number of cases is a good indicator despite all the negative obstacles mentioned previously.

Conclusion

Human resource management in a crisis is difficult and full of challenges, particularly in pandemics such as COVID-19. The thoroughness of SARS-CoV-2 is affected by a few factors including the health infrastructure, health staff, availability and accessibility of the facilities, lifestyle of the people who were quarantined, and also the social culture. In the current study, we need more social consciousness and one global state-society approach for tackling the contagious disease. This approach sustains the preparedness to follow the procession of pandemics throughout the world. To see the country free from COVID-19, the responsibility has to focus on the meet of the public health requirements at a proper time. This work encourages the study estimation managements and human psychology through times of a pandemic that provides a better realization and reduces the prevalence of infectious diseases.

Funding

None declared.

Conflict of interest

The authors have declared no conflict of interest.

Acknowledgment

The authors send thanks to the University of Mosul for documenting this work.

REFERENCES

- World Health Organization. MERS situation update, December 2019 [Internet]. Geneva (Switzerland): World Health Organization; 2019. Available from: <http://www.emro.who.int/pandemic-epidemic-diseases/mers-cov/mers-situation-update-december-2019.html> [cited 01.04.20].
- Li Q, Guan X, Wu P, Wang X, Zhou L, Tong Y, et al. Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. *N Engl J Med*. 2020;82:1199–207, <http://dx.doi.org/10.1056/NEJMoa2001316>.
- Young BE, Ong SWX, Kalimuddin S, Low JG, Tan SY, Loh J, et al. Epidemiologic features and clinical course of patients infected with SARS-CoV-2 in Singapore. *JAMA*. 2020;323:1488–94, <http://dx.doi.org/10.1001/jama.2020.3204> [Epub].
- Cheng VC, Wong SC, Chuang VW, So SY, Chen JH, Sridhar S, et al. The role of community-wide wearing of face mask for control of coronavirus disease 2019 (COVID-19) epidemic due to SARS-CoV-2. *J Infect*. 2020;81:107–14, <http://dx.doi.org/10.1016/j.jinf.2020.04.024>.
- Heijmans P, Vishnoi A. Thousands of people in dorms pose new challenge to Singapore virus fight. Bloomberg; 2020. Available from: <https://www.bloomberg.com/news/articles/2020-04-09/thousands-in-dorms-pose-newchallenge-to-singapore-virus-fight>
- Al Sheikh OG, Al Samarrai JI, Al Sumaidaie M, Mohammad SA, Al Dujaily AA. Immunization coverage among children born between 1989 and 1994 in Saladdin Governorate, Iraq. *EMHJ – East Med Heal J*. 1999;5:933–40. <https://apps.who.int/iris/handle/10665/118781>
- Larry G, William J, Curran S. Legal control measures for AIDS: reporting requirements, surveillance quarantine, and regulation of public meeting places. *Am J Public Health*. 1987;77:214–8, <http://dx.doi.org/10.2105/AJPH.77.2.214>.
- Hawryluck L, Gold W, Robinson S, Pogorski S, Glaea S, Styra R. SARS control and psychological effects of quarantine, Toronto, Canada. *Emerg Infect Dis*. 2004;10:1206–12, <http://dx.doi.org/10.3201/eid1007.030703>.
- Musto FD. Quarantine and the problem of AIDS. *The Milbank Quarterly*. 1986;64:97–117, <http://dx.doi.org/10.2307/3350043>.
- O'Connor M. Hospital discharge, quarantine process for COVID-19 patients 'may need to be re-evaluated'; 2020. Available online at <https://www.healthimaging.com/topics/diagnosticimaging/coronavirus-discharge-quarantine-criteria-change> [February 28].
- Rothstein AM, Talbott KM. Encouraging compliance with quarantine: to provide job security and income replacement. *Am J Public Health*. 2007;97:49–56, <http://dx.doi.org/10.2105/AJPH.2006.097303>.
- Self-Quarantine Instructions: <https://www.nebraskamed.com/patients/covid19/self-quarantine-instructions>.
- Smith W, Freedman DO. Isolation, quarantine, social distancing, and community containment: a pivotal role for old-style public health measures in the novel coronavirus (2019-nCoV) outbreak. *J Travel Med*. 2020;27:1–4, <http://dx.doi.org/10.1093/jtm/taaa020>.
- Taylor S. The psychology of pandemics: preparing for the next global outbreak of infectious disease. Newcastle, UK: Cambridge Scholars Publishing; 2019.
- World Health Organization. Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19): interim guidance; 2020. Available online at file: ///C:/Users/rania/Downloads/20200229-covid-19-quarantine.pdf [February 29].
- Worldometer. COVID-19 Coronavirus pandemic updates; 2020. Available at <https://www.worldometers.info/coronavirus/?fbclid=IwAR2Tv3iK2jKKty3uzJZee9a0cRWJdHft364zZSSSTSONnupo-64zfORuWE#countries>
- Michelle L, Zh Q, De D, Qin X, Warren L, Wee Y. A tale of two cities: a comparison of Hong Kong and Singapore's early strategies for the Coronavirus Disease 2019 (COVID-19). *J Infect*. 2020;81:e51–2, <http://dx.doi.org/10.1016/j.jinf.2020.06.058>.
- Chinazzi M, Davis JT, Ajelli M, Giannini C, Litvinova M, Merler S, et al. The effect of travel restrictions on the spread of the 2019 novel coronavirus (COVID-19) outbreak. *Science*. 2020;368:395–400, <http://dx.doi.org/10.1126/science.aba9757>. PMC 7164386. PMID 32144116.
- The National Law Review. Helping human resources managers prepare for coronavirus pandemic; 2020 March. Available online at <https://www.natlawreview.com/article/helping-human-resources-managers-preparecoronavirus-pandemic>
- Dawood A. Mutated COVID-19 may foretells mankind in a great risk in the future. *New Microbes New Infect*. 2020;35, <http://dx.doi.org/10.1016/j.nmni.2020.100673>.
- Gensini GF, Yacub MH, Conti AA. The concept of quarantine history, from plague to SARS. *J Infect*. 2004;49:257–61, <http://dx.doi.org/10.1016/j.jinf.2004.03.002>.
- Ferguson NM, Cummings DAT, Fraser C, Cajka J, Cooley PC, Burke DS. Strategies for mitigating an influenza pandemic. *Nature*. 2006;442:448–52, <http://dx.doi.org/10.1038/nature04795>.
- Paiman A. Leading quarantines in the time of COVID-19 Case Raparin-Area Kurdistan Region of Iraq Rawand ESA. *JMIR Preprints*. 2020;19175, <http://dx.doi.org/10.2196/preprints>.