Journal of Communicable Diseases
Volume 55, Issue 2 - 2023, Pg. No. 67-71
Peer Reviewed & Open Access Journal

Short Communication

Facing COVID-19 in Middle East Countries: Challenges and Lessons from Previous Epidemics

Mohammed Medhat[1], Enaam A Al Mowafy[2], Mohamed El-Kassas[3]

[1]Tropical Medicine and Gastroenterology Department, Faculty of Medicine, Assiut University Hospitals, Egypt.
[2]Tropical Medicine Department, Faculty of Medicine, Ain Shams University, Cairo, Egypt.
[3]Endemic Medicine Department, Faculty of Medicine, Helwan University, Cairo, Egypt.
DOI: https://doi.org/10.24321/0019.5138.202326

I N F O

Corresponding Author:
Mohammed Medhat, Tropical Medicine and Gastroenterology Department, Faculty of Medicine, Assiut University Hospitals, Egypt.
E-mail Id:
mmedhat83@gmail.com
Orcid Id:
https://orcid.org/0000-0002-3866-2283
How to cite this article:
Medhat M, Al Mowafy EA, El-Kassas M. Facing COVID-19 in Middle East Countries: Challenges and Lessons from Previous Epidemics. J Commun Dis. 2023;55(2):67-71.

Date of Submission: 2023-04-06
Date of Acceptance: 2023-06-09

A B S T R A C T

Respiratory viruses have been a major cause of endemics, epidemics, and pandemics throughout history. The initial interest in the effect of Coronaviruses (CoVs) as a human respiratory pathogen started in 2002 with the Severe Acute Respiratory Syndrome (SARS) epidemic. Another CoV virus emerged in the following decade, causing the Middle East Respiratory Syndrome (MERS). These events promoted infectious disease experts to warn against an expected catastrophic viral pandemic. Unfortunately, this expected pandemic started in China in December 2019, caused by the novel Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), which has infected and killed millions of people. Many activities held in the Middle East, especially pilgrimage, may represent a potential risk of spreading global viral infection, if not well-monitored. The lack of well-equipped laboratories and good tracking facilities in many Middle East countries may be a cause of insufficient knowledge. This review focuses on the healthcare situation in the Middle East during the SARS-CoV-2 pandemic, evaluating the authorities' measurements to limit the spread of COVID-19 infection and their success.

Keywords: COVID-19, Middle East, SARS, MERS, Epidemics

Introduction

Respiratory viruses have been a major cause of endemics, epidemics, and pandemics throughout history.[1,2] In the 20th century, the Spanish influenza pandemic caused by the H1N1 influenza A virus provoked a global pandemic that infected about 500 million and killed about 50 million people.[3] At the end of the past century and the beginning of this century, several cases infected with H5N1 (Avian flu) influenza A virus started to appear.[4] Subsequently, in the first decade of the 21st century, another type of influenza, called the Swine flu (H1N1), spread and was considered a potential pandemic virus. Swine flu killed about half a million people in 214 countries in 2009.[5]

Coronaviruses (CoVs) are single-stranded RNA viruses previously considered relevant in veterinary medicine without significant harm to humans.[6,7] The initial interest in the effect of CoVs on human health started in 2002 with the occurrence of the Severe Acute Respiratory Syndrome (SARS) epidemic.[7] SARS was documented in 29 countries on five continents, and infected 8096 people with 774

reported deaths.[8] Another CoV virus that could affect humans emerged in the following decade, causing the Middle East Respiratory Syndrome (MERS).[9] Eventually, 2519 confirmed MERS-CoV cases were reported, with 866 confirmed deaths, most of which were in Saudi Arabia.[10] These events compelled infectious disease experts to warn against an expected catastrophic viral pandemic. Unfortunately, this expected pandemic started in Wuhan, China, in December 2019, caused by the novel Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2).[11] Since that date, SARS-CoV-2 has infected more than 281 million and killed more than 5.4 million people.[12]

Factors associated with the Spread of COVID-19 in the Middle East

Many factors related to the Middle East's unique demography and particular situations which are ideal for developing a new lethal and rapidly spreading viral infection, make it difficult to control the highly contagious infection (Figure 1). All the previously emerging respiratory pathogens spread from China except MERS, which appeared for the first time in Saudi Arabia in 2012. Several cases of MERS-CoV infection then started to appear in Europe after being in one of the affected Middle East countries,[13] which was an alarm for a more dangerous future event.

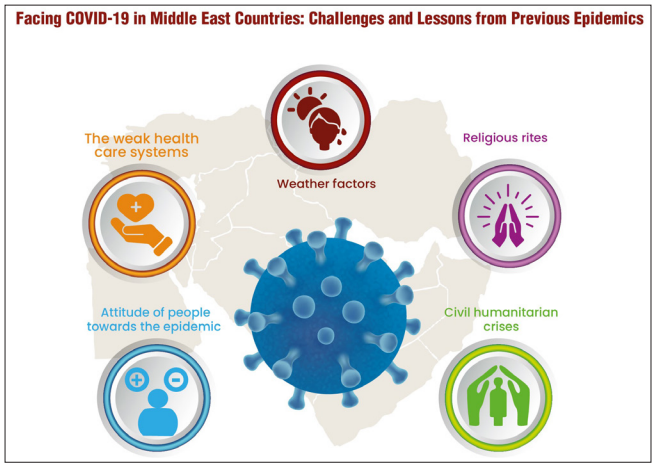

Figure 1.Factors associated with the Middle East's Unique Demography and Situation

Religious Rites

Islam, Christianity, and Judaism, i.e., the three major religions, are represented mainly in the Middle East.[14] Many religious rites in these religions depend on gatherings, where close contact can easily spread infections, especially those associated with the respiratory system. In Islam, many worshipers gather in mosques five times daily and at the congregational prayer every Friday. Moreover, millions of Muslims visit Saudi Arabia annually to do Hajj and Umrah.[15,16] Similarly, thousands of Christians and Jews visit Jerusalem annually to practice their religious rites at the church of the Holy Sepulcher and the Wailing Wall, respectively.[17,18]

The common denominator between the pilgrims is that they concentrate on doing their religious rituals, during which they are in close contact with insufficient self-protective measures.[17] Viral infection can quickly occur among worshipers who can spread it globally after returning to their countries.

Civil Humanitarian Crises

At the end of 2017, it was estimated that there were about 60 million refugees worldwide due to different causes like wars, climate catastrophes, or human rights violations.[18] Refugees are often exposed to difficult living and housing conditions in improvised camps, shelters, and reception centres. These situations usually persist for a long duration. In some communities, refugees who suffer from such situations and other immigrants may experience similar conditions due to crowded households, missing financial resources, unsanitary housing, and a lack of hygiene.[18,19] These situations make respiratory infections a significant reason for healthcare-seeking among refugees and immigrants.[19,20]

The Middle East has a large-scale humanitarian crisis. Because of the Syrian Civil War, 13.5 out of 22 million Syrian citizens require humanitarian assistance; five million have been placed in refugee camps established in Turkey, Lebanon, Jordan, Egypt, and other countries.[21] The conditions in Yemen have continuously deteriorated since violence broke out in early 2015. Over four million people have been forced to flee their homes, and more than 20 million persons require humanitarian aid.[22] Since 2016, Yemen has experienced a large-scale cholera epidemic, affecting more than 1.2 million cases and causing over 2500 deaths.[23]

Viral infections can rapidly develop and spread among refugees. Furthermore, combating such viral infections may be impossible as these conditions will prevent the delivery of healthcare and required facilities to the affected areas, and there will be no options for social distancing and good sanitation.

Imbalanced and Weakened Healthcare Systems

Early detection of viral infections is crucial to prevent their spreading. This requires specific diagnostic capabilities that differ tremendously among different healthcare systems.[24] It is essential for the authorities in the areas with newly developed viral infections to ensure equal and rapid access to diagnosis and treatment, regardless of nationalities, ethnicities, religions, and beliefs.[24]

In the Middle East, the healthcare systems are wildly varied in terms of quality, capacity, and accessibility. The Persian

ISSN: 0019-5138
DOI: https://doi.org/10.24321/0019.5138.202326

and Gulf countries gained their wealth from the oil industry, developing strong public and private healthcare facilities.[25] However, socioeconomic sanctions affect the delivery of healthcare facilities and medications in Iran.[26] On the other hand, the healthcare systems in some Middle East countries are primarily underdeveloped and affected by prolonged wars and conflicts. Violent attacks on healthcare systems and medical staff during conflicts affect the essential needed health services that are most needed during pandemics.[27] Palestine represents an example where the healthcare system is faced with geopolitical issues and economic instability.[28]

The underdeveloped countries in the Middle East also lack the essential input resources needed to implement simple preventive campaigns as suitable sanitation protocols. Furthermore, these countries lack adequate healthcare workers who can respond to communicable diseases, and they could be infected, leaving more defects and strain on the health system, as occurred during the COVID-19 pandemic.[29]

People's Attitude towards the Epidemics

Social media is now the leading source of information for most people, particularly in times of lockdown during pandemics.[30] Many rumours and unfounded opinions spread virally on a wide scale when published on social media. Some of these rumours affected work, food, and drug stock during the COVID-19 pandemic.[31,32] Wrong information among populations hinders actions taken by the authorities to control viral spread. In a study conducted in the Middle East, 63% of the study population reported that they thought that SARS-CoV-2 is a biological weapon. Such thought decreases precautions to prevent probable future viral infection, leading to more cases and more rapid spread rates.

Vaccination Hesitancy

Vaccination is the most crucial factor in preventing viral infections. Vaccination hesitance is a common problem found in almost all previous vaccination programmes. Many factors influence the rate of vaccination hesitancy, such as the knowledge about the risk and severity of infection, trust in vaccines, as well as environmental and social considerations.[33] During the COVID-19 pandemic, the Middle East populations showed low rates of vaccination acceptance.[34] The beliefs in conspiracy theories in the Middle East will increase the rates of vaccination refusal for future viral infections, as they did during the COVID-19 pandemic.[33] This behaviour would hasten the global spread of viral infections if they developed in the Middle East.

Tips for Future Implementation

Effective surveillance programmes should be adopted to detect new or emerging cases locally, nationally, and internationally, with feasible action plans to deal with reported cases. Surveillance requires robust systems that can continuously collect information about the population's health status and quickly compile, interpret, and pay attention to possible threats. It also requires a well-trained and dedicated medical team and workforce. Care and protection for medical staff against violence are mandatory to ensure continuous achievement and avoid expected shortages. These programmes require economic support from officials to enrich medical services and scientific research and make screening tools, prophylactic drugs, and treatment available for all populations. Laboratories with high safety levels should be established in the Middle East and supervised centrally by WHO or CDC. These laboratories are required to isolate viruses to study them and develop potential treatments and vaccines.

Social media should be monitored to prevent false information about any developed infection, as this can hinder the healthcare activities provided in this critical period. Authorities can also benefit from social media by publishing recommendations to prevent the spreading of infection as done during the COVID-19 pandemic. Social media was an excellent platform to encourage people to take protective measures like distancing, wearing masks, and washing hands.[35-37] Still, social media can encourage people to take suitable treatments and vaccines.

Conclusion

All the previously mentioned factors make the Middle East a paradise for the spread of viral infections. It is time to pay attention that these factors will not harm the Middle East locally, but this harm will be global. Middle East countries should be convinced to take responsibility for protecting themselves and the world from catastrophic epidemics and should try to solve the problems that may lead to the spread of viral infections. Vigorous efforts should be made to terminate wars and political struggles in the Middle East and improve the refugees' health situations. Improving the medical research capabilities in the Middle East and encouraging people to volunteer to participate in clinical trials are mandatory. At last, the COVID-19 epidemic taught us difficult lessons, and we should strive to avoid similar epidemics in the future.

Abbreviations

MERS: Middle East Respiratory Syndrome

SARS: Severe Acute Respiratory Syndrome

SARS-CoV-2: Severe Acute Respiratory Syndrome Coronavirus 2

WHO: World Health Organization

Conflicts of Interest: None

ISSN: 0019-5138
DOI: https://doi.org/10.24321/0019.5138.202326

References

1. Rothman RE, Hsieh YH, Yang S. Communicable respiratory threats in the ED: tuberculosis, influenza, SARS, and other aerosolized infections. Emerg Med Clin North Am. 2006;24(4):989-1017. [PubMed] [Google Scholar]
2. Chatterjee P, Nagi N, Agarwal A, Das B, Banerjee S, Sarkar S, Gupta N, Gangakhedkar RR. The 2019 novel coronavirus disease (COVID-19) pandemic: a review of the current evidence. Indian J Med Res. 2020;151(2-3):147. [PubMed] [Google Scholar]
3. Martini M, Gazzaniga V, Bragazzi NL, Barberis I. The Spanish Influenza Pandemic: a lesson from history 100 years after 1918. J Prev Med Hyg. 2019;60(1):E64. [PubMed] [Google Scholar]
4. Tapper ML. Emerging viral diseases and infectious disease risks. Haemophilia. 2006;12:3-7. [PubMed] [Google Scholar]
5. Hayward AC, Fragaszy EB, Bermingham A, Wang L, Copas A, Edmunds WJ, Ferguson N, Goonetilleke N, Harvey G, Kovar J, Lim MS, McMichael A, Millett ER, Nguyen-Van-Tam JS, Nazareth I, Pebody R, Tabassum F, Watson JM, Wurie FB, Johnson AM, Zambon M; Flu Watch Group. Comparative community burden and severity of seasonal and pandemic influenza: results of the Flu Watch cohort study. Lancet Respir Med. 2014;2:445-54. [PubMed] [Google Scholar]
6. Su S, Wong G, Shi W, Liu J, Lai AC, Zhou J, Liu W, Bi Y, Gao GF. Epidemiology, genetic recombination, and pathogenesis of coronaviruses. Trends Microbiol. 2016;24(6):490-502. [PubMed] [Google Scholar]
7. Weiss SR, Navas-Martin S. Coronavirus pathogenesis and the emerging pathogen severe acute respiratory syndrome coronavirus. Microbiol Mol Biol Rev. 2005;69(4):635-64. [PubMed] [Google Scholar]
8. Shi Z, Wang LF. Evolution of SARS coronavirus and the relevance of modern molecular epidemiology. In: Tibayrenc M, editor. Genetics and evolution of infectious disease. Elsevier; 2011. p. 711-28. [Google Scholar]
9. Centers for Disease Control and Prevention (CDC). Update: severe respiratory illness associated with Middle East Respiratory Syndrome Coronavirus (MERS-CoV)--worldwide, 2012-2013. MMWR Morb Mortal Wkly Rep. 2013;62(23):480-3. [PubMed] [Google Scholar]
10. World Health Organization [Internet]. Epidemic and pandemic-prone diseases: MERS situation update, January 2020; 2020 [cited 2022 Jan 1]. Available from: http://www.emro.who.int/ar/pandemic-epidemic-diseases/mers-cov/mers-situation-update-january-2020.html
11. Wang C, Horby PW, Hayden FG, Gao GF. A novel coronavirus outbreak of global health concern. Lancet. 2020;395(10223):470-3. [PubMed] [Google Scholar]
12. World Health Organization [Internet]. WHO Coronavirus (COVID-19) dashboard; cited [2023 Mar 24]. Available from: https://covid19.who.int/
13. World Health Organization [Internet]. Middle East respiratory syndrome coronavirus (MERS-CoV); [cited 2022 Jan 6]. Available from: https://www.who.int/health-topics/middle-east-respiratory-syndrome-coronavirus-mers#tab=tab_1
14. Wikipedia [Internet]. List of religious populations; 2022 [cited 2022 Jan 6]. Available from: https://en.wikipedia.org/wiki/List_of_religious_populations
15. Benkouiten S, Al-Tawfiq JA, Memish ZA, Albarrak A, Gautret P. Clinical respiratory infections and pneumonia during the Hajj pilgrimage: a systematic review. Travel Med Infect Dis. 2019;28:15-26. [PubMed] [Google Scholar]
16. Shirah BH, Zafar SH, Alferaidi OA, Sabir AM. Mass gathering medicine (Hajj Pilgrimage in Saudi Arabia): the clinical pattern of pneumonia among pilgrims during Hajj. J Infect Public Health. 2017;10(3):277-86. [PubMed] [Google Scholar]
17. Eisenbud DK [Internet]. Record breaking 20% increase in Christmas pilgrims to Israel expected. The Jerusalem Post; 2017 Dec 21 [cited 2022 Jan 6]. Available from: https://www.jpost.com/christian-news/record-breaking-20-percent-increase-in-christmas-pilgrims-to-israel-expected-518584
18. The Jerusalem Post [Internet]. 2.5 million people visit the Western Wall during the month of Tishrei; 2019 Oct 22 [cited 2022 Jan 6]. Available from: https://www.jpost.com/israel-news/25-million-people-visit-the-western-wall-during-the-month-of-tishrei-605437
19. Ebrahim SH, Memish ZA. COVID-19: preparing for superspreader potential among Umrah pilgrims to Saudi Arabia. Lancet. 2020;395(10227):e48. [PubMed] [Google Scholar]
20. Pavli A, Maltezou H. Health problems of newly arrived migrants and refugees in Europe. J Travel Med. 2017;24(4). [PubMed] [Google Scholar]
21. Bellos A, Mulholland K, O'Brien KL, Qazi SA, Gayer M, Checchi F. The burden of acute respiratory infections in crisis-affected populations: a systematic review. Confl Health. 2010;4:3. [PubMed] [Google Scholar]
22. Eiset AH, Wejse C. Review of infectious diseases in refugees and asylum seekers—current status and going forward. Public Health Rev. 2017;38:22. [PubMed] [Google Scholar]
23. El Arnaout N, Rutherford S, Zreik T, Nabulsi D, Yassin N, Saleh S. Assessment of the health needs of Syrian refugees in Lebanon and Syria's neighboring countries. Confl Health. 2019;13:31. [PubMed] [Google Scholar]

ISSN: 0019-5138
DOI: https://doi.org/10.24321/0019.5138.202326

24. Al-Khateeb AA. A call for urgent, organised medical missions in Yemen. Lancet. 2016;388(10054):1877-8. [PubMed] [Google Scholar]
25. Federspiel F, Ali M. The cholera outbreak in Yemen: lessons learned and way forward. BMC Public Health. 2018;18(1):1338. [PubMed] [Google Scholar]
26. Reusken CB, Broberg EK, Haagmans B, Meijer A, Corman VM, Papa A, Charrel R, Drosten C, Koopmans M, Leitmeyer K; EVD-LabNet and ERLI-Net. Laboratory readiness and response for novel coronavirus (2019-nCoV) in expert laboratories in 30 EU/EEA countries, January 2020. Euro Surveill. 2020;25(6):2000082. [PubMed] [Google Scholar]
27. Parkash J, Younis MZ, Ward W. Healthcare for the ageing populations of countries of Middle East and North Africa. Ageing Int. 2015;40(1):3-12. [Google Scholar]
28. Aloosh M, Salavati A, Aloosh A. Economic sanctions threaten population health: the case of Iran. Public Health. 2019;169:10-3. [PubMed] [Google Scholar]
29. Haar RJ, Risko CB, Singh S, Rayes D, Albaik A, Alnajar M, Kewara M, Clouse E, Baker E, Rubenstein LS. Determining the scope of attacks on health in four governorates of Syria in 2016: results of a field surveillance program. PLoS Med. 2018;15(4):e1002559. [PubMed] [Google Scholar]
30. Nabaa HA, Shelleh N. Barriers preventing Palestinian women from having a mammogram: a qualitative study. Lancet. 2018;391:S16. [PubMed] [Google Scholar]
31. Da'ar OB, Haji M, Jradi H. Coronavirus Disease 2019 (COVID-19): potential implications for weak health systems and conflict zones in the Middle East and North Africa region. Int J Health Plann Manage. 2020;35(5):1240-5. [PubMed] [Google Scholar]
32. Kakemam E, Ghoddoosi-Nejad D, Chegini Z, Momeni K, Salehiniya H, Hassanipour S, Ameri H, Arab-Zozani M. Knowledge, attitudes, and practices among the general population during COVID-19 outbreak in Iran: a national cross-sectional online survey. Front Public Health. 2020;8:585302. [PubMed] [Google Scholar]
33. McInnes IB. COVID-19 and rheumatology: first steps towards a different future? Ann Rheum Dis. 2020;79(5):551-2. [PubMed] [Google Scholar]
34. Murthy RS. COVID-19 pandemic and emotional health: social psychiatry perspective. Indian J Soc Psychiatr. 2020;36(5):24. [Google Scholar]
35. Nossier SA. Vaccine hesitancy: the greatest threat to COVID-19 vaccination programs. J Egypt Public Health Assoc. 2021;96(1):18. [PubMed] [Google Scholar]
36. Sallam M. COVID-19 vaccine hesitancy worldwide: a concise systematic review of vaccine acceptance rates. Vaccines (Basel). 2021;9(2):160. [PubMed] [Google Scholar]
37. Abazid H, Basheti IA, Al-Jomaa EE, Abazid A, Kloub WM. Public knowledge, beliefs, psychological responses, and behavioural changes during the outbreak of COVID-19 in the Middle East. Pharm Pract (Granada). 2021;19(2):2306. [PubMed] [Google Scholar]

ISSN: 0019-5138
DOI: https://doi.org/10.24321/0019.5138.202326