



Perspective

The Grand Magal of Touba was spared by the COVID-19 pandemic

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ABSTRACT

In the context of the coronavirus disease-2019 (COVID-19) pandemic, all mass gathering (MG) events have been cancelled. The Grand Magal took place on October 6, 2020, in Touba, Senegal, which was the only MG event organized in 2020. This Muslim pilgrimage gathers about four million Muslim Mourides from Senegal and beyond. No significant increase in COVID-19 cases was therefore observed at the national level in the weeks following the Grand Magal. This successful strategy is an invitation to better promote community commitments by public authorities in their various strategies.

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Cancellation of mass gathering (MG) events as a mitigation measure against coronavirus disease-2019 (COVID-19) pandemic is diversely considered by experts. WHO proposed that risk assessment tools should be used to help in making cancellation decisions [<https://www.who.int/news-room/q-a-detail/coronavirus-disease-covid-19-mass-gatherings>], arguing that there was no evidence base yet specific to planning and implementing an MG during the COVID-19 pandemic and that cancellations of MG have social and economic consequences (McCloskey et al., 2020). Other experts were more categorical and advocated for the suspension of any MG during the pandemic because social distancing is impossible to enforce in this context (Memish et al., 2020). Emblematic MGs, including the Umrah in Saudi Arabia and the Olympic Games in Japan, have been cancelled or postponed, while the Hajj did take place in 2020 but international pilgrims were banned as well as domestic pilgrims with chronic diseases or aged 65 years and older (Hoang et al., 2020a, 2020b). Access to the holy sites was limited to not more than 1,000 persons, wearing of face masks was mandatory, participants were checked for fever, a social distance of 1.5 m between pilgrims was applied, and all pilgrims were quarantined for 14 days after the event (Zumla et al., 2020). Under these conditions, no COVID-19 outbreak occurred at the 2020 Hajj (Zumla et al., 2020).

There is now published evidence of transmission of severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) at relatively small gatherings of people, including weddings (Yusef et al., 2020), religious meetings (Gerbaud et al., 2020; Aherfi et al., 2020; Che Mat et al., 2020), and festivals (Brandl et al., 2020; Cuschieri et al., 2020) (Table 1). The Grand Magal took place on October 6, 2020, in Touba, Senegal. This Muslim pilgrimage gathers about four million Muslim Mourides from Senegal and beyond. Syndromic surveillance data from recent years have demonstrated that respiratory tract infections are among the most frequent causes of consultations at health care units during the event (Sokhna et al., 2020). Respiratory tract infection symptoms affected 42% of individuals in a cohort of pilgrims during the 2017 Grand Magal, with common coronaviruses being the most frequently acquired respiratory viruses (Hoang et al., 2019). Recommendation that individuals at risk for severe COVID-19 because of their age or because of chronic medical conditions should refrain from participating in the 2020 Grand Magal was proposed (Gautret et al., 2020). As part of an ongoing research project, we sampled 109 patients with respiratory tract infection symptoms who presented at a health care center in Mbacké near Touba between October 4 and 8, 2020. According to PCR test results, none were infected with SARS-CoV-2 (Goumballa et al., 2020). In addition, by using the PCR test we screened 189 inhabitants from two rural villages in South Senegal before and after the Grand Magal took place. The protocol was approved by the National Ethics Committee for Health Research in Senegal (SEN17/62). Pre-Magal sampling performed from September 25 to September 29, 2020 resulted in three (1.6%) individuals being infected with

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Table 1
Transmission of SARS-CoV-2 at relatively small gatherings, some examples.

Date of event	Place of event	Number of participants	Number of COVID-19 cases	Reference
March 13, 2020	Wedding in northern Jordan	Approximately 360 guests	86 cases (1 index case patient, 76 attendees, and 9 persons in close contacts with confirmed cases)	[7]
February 17 to 21, 2020	Religious meeting in Mulhouse, France	Over 2,000 participants	237 cases among 1,516 individuals from households in which one member at least participated in the event	[8]
March 10, 2020	Purim celebration in the Jewish community in Marseille, France	Approximately 400 persons	63	[9]
February 27 to March 01, 2020	Moslem missionary movement in Kuala Lumpur suburb, Malaysia	Over 19,000 participants	1,701	[10]
March 3 to 7, 2020	Local beer festival in the district of Tirschenreuth, Germany	Not reported	14	[11]
July 17 to 19, 2020	Island festival hotspot in Malta	Approximately 800 persons	20	[12]

SARS-CoV-2 (two were asymptomatic and one had a cough). Post-Magal sampling conducted from October 13 to October 15, 2020 in 106 returned Grand Magal pilgrims resulted negative despite 43.4% pilgrims who reported respiratory symptoms on return. Similarly, 71 villagers who stayed at the village tested negative on 6 October and 12 were lost to follow-up.

National surveillance data indicate that more than 16,000 COVID-19 cases were reported in Senegal between March 2, 2020 and November 30, 2020 with an increase in late April, which plateaued at approximately 100–120 cases per day until the end of August and a decrease in September–November to about 30 cases per day. No significant increase in COVID-19 cases was therefore observed at the national level in the weeks following the Grand Magal (<http://www.sante.gouv.sn/>).

Although it cannot be excluded that some cases were not captured by the surveillance tools implemented by Senegal authorities and our team, these data provide no evidence that the MG triggered a drastic rise in cases in Senegal. In addition to discouraging at-risk pilgrims to participate, numbers of pilgrims were reduced at religious sites, face-masks, hand-gels, and soaps were provided, overloading in transports was prohibited and intense multimedia communication about preventive measures was organized. This successful strategy is an invitation to better promote community commitments by public authorities in their various strategies.

Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Ethical Approval

The protocol was approved by the National Ethics Committee for Health Research in Senegal (SEN17/62).

References

- Aherfi S, Gautret P, Chaudet H, Raoult D, La Scola B. Clusters of COVID-19 associated with Purim celebration in the Jewish community in Marseille, France, March 2020. *Int J Infect Dis* 2020;100:88–94.
- Brandl M, Selb R, Seidl-Pillmeier S, Marosevic D, Buchholz U, Rehmet S. Mass gathering events and undetected transmission of SARS-CoV-2 in vulnerable populations leading to an outbreak with high case fatality ratio in the district of Tirschenreuth, Germany. *Epidemiol Infect* 2020;148:e252.
- Che Mat NF, Edinur HA, Abdul Razab MKA, Safuan S. A single mass gathering resulted in massive transmission of COVID-19 infections in Malaysia with further international spread. *J Travel Med* 2020;27(3) taaa059.
- Cuschieri S, Balzan M, Gauci C, Aguis S, Grech V. Mass Events Trigger Malta's Second Peak After Initial Successful Pandemic Suppression. *J Community Health* 2020;16:1–8 Sep.
- Gautret P, Goumballa N, Hoang VT, Sokhna C. The 2020 Grand Magal of Touba, Senegal in the time of the COVID-19 pandemic. *Travel Med Infect Dis* 2020;38:101880.
- Gerbaud L, Guiguet-Auclair C, Breyse F, Odoul J, Ouchchane L, Peterschmitt J, et al. Hospital and Population-Based Evidence for COVID-19 Early Circulation in the East of France. *Int J Environ Res Public Health* 2020;17(19):7175.
- Goumballa N, Dieng M, Sokhna C, Gautret P. Lack of SARS-CoV-2 among Grand Magal de Touba pilgrims consulting for respiratory symptoms in October 2020. *Travel Med Infect Dis* 2020;39:101916.
- Hoang VT, Gautret P, Memish ZA, Al-Tawfiq JA. Hajj and Umrah Mass Gatherings and COVID-19 Infection. *Curr Trop Med Rep* 2020a;7:133–40.
- Hoang VT, Al-Tawfiq JA, Gautret P. The Tokyo Olympic Games and the Risk of COVID-19. *Curr Trop Med Rep* 2020b;1–7, doi:<http://dx.doi.org/10.1007/s40475-020-00217-y>.
- Hoang VT, Goumballa N, Dao TL, Ly TDA, Ninove L, Ranque S, et al. Respiratory and gastrointestinal infections at the 2017 Grand Magal de Touba, Senegal: A prospective cohort survey. *Travel Med Infect Dis* 2019;101410.
- McCloskey B, Zumla A, Ippolito G, Blumberg L, Arbon P, Cicero A, et al. Mass gathering events and reducing further global spread of COVID-19: a political and public health dilemma. *Lancet* 2020;395(10230):1096–9.
- Memish ZA, Ahmed QA, Schlagenhaut P, Doumbia S, Khanf A. No time for dilemma: mass gatherings must be suspended. *Lancet* 2020;395(10231):1191–2.
- Sokhna C, Goumballa N, Hoang VT, Mboup BM, Dieng M, Sylla AB, et al. Senegal's Grand Magal of Touba: Syndromic Surveillance during the 2016 Mass Gathering. *Am J Trop Med Hyg* 2020;102(2):476–82.
- Yusef D, Hayajneh W, Awad S, Momany S, Khassawneh B, Samrah S, et al. Large Outbreak of Coronavirus Disease among Wedding Attendees. *Jordan Emerg Infect Dis* 2020;26(9):2165–7.
- Zumla A, Azhar EI, Alqahtani S, Shafi S, Memish ZA. COVID-19 and the scaled-down 2020 Hajj Pilgrimage—Decisive, logical and prudent decision making by Saudi authorities overcomes pre-Hajj public health concerns. *Int J Infect Dis* 2020;99:34–6.