

Exploring the scope of gatherings in the causation of corona virus disease 19 outbreaks

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ABSTRACT

The ongoing corona virus disease 19 (COVID-19) pandemic has changed the dynamics of all sectors and has significantly impacted the functioning of the healthcare delivery system. The purpose of the current review was to explore the significance of gatherings in COVID-19 outbreaks and the strategies to be implemented prior to organize a gathering to minimize the potential risk of a COVID-19 outbreak. An extensive search of all materials related to the topic was carried out in the PubMed search engine and a total of 14 articles were selected. Keywords used in the search include COVID-19 and gathering in the title alone only. As COVID-19 infection spreads via close contact, a gathering of any size carries the definite potential to amplify the risk of transmission and initiate a new chain of disease outbreaks. The findings of different studies have reported emergence of new outbreaks subsequent to a gathering in different nations. In addition, we cannot ignore the reality that any kind of gathering enhances the risk to strain the local health services. In conclusion, the COVID-19 pandemic is far from being yet over, and the decision to organize a gathering has to be based on the risk evaluation, risk mitigation, and establishment of a risk communication strategy. Even with all this, zero risk does not exist, and the best approach will be to strictly implement all the prevention and control measures and be responsible in all the gatherings.

Key words: COVID-19 pandemic, gathering, World Health Organization

INTRODUCTION

The ongoing corona virus disease 19 (COVID-19) pandemic has changed the dynamics of all sectors and has significantly impacted the functioning of the healthcare delivery system. The global estimates depict that as of 28 November, in excess of 260 million

confirmed cases and close to 5.2 million deaths have been attributed to the infection.^[1] The very fact that the disease spreads from one person to another by means of close contact reinforces the need to maintain physical distancing and strictly adhere to the infection prevention and control measures.^[2] The purpose of the current review was to explore the significance of gatherings in COVID-19

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outbreaks and the strategies to be implemented prior to organize a gathering to minimize the potential risk of a COVID-19 outbreak.

METHODS

An extensive search of all materials related to the topic was carried out in the PubMed search engine. Relevant research articles focusing on COVID-19 and gatherings published in the period 2020 to 2021 were included in the review. A total of 16 studies similar to current study objectives was identified initially, of which, two were excluded due to the unavailability of the complete version of the articles. Overall, 14 articles were selected based upon their suitability with the current review objectives and analyzed. Keywords used in the search include COVID-19 and gathering in the title alone only (viz. COVID-19 [ti] AND gathering [ti]; COVID-19 pandemic [ti] AND mass gathering [ti]). The articles published in only the English language were included in the review (Figure 1). The collected information is presented under the following sub-headings, namely Gathering, COVID-19 infection and gathering, COVID-19 outbreaks originating from gatherings, organizing gatherings during the COVID-19 pandemic, and additional considerations.

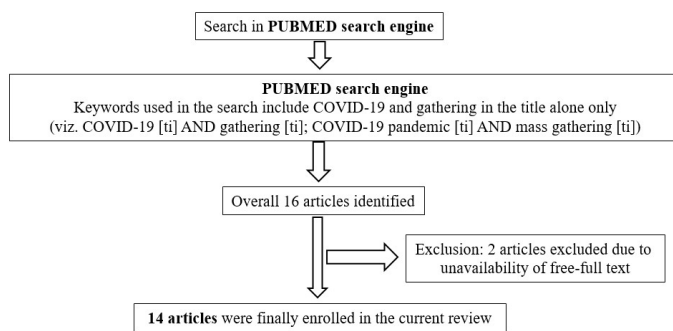


Figure 1: Flowchart for selection of research articles

GATHERING

Gatherings refer to the events wherein people aggregate with a specific intention for a fixed duration of time, and these can be either public or private events, planned or sudden events, or once a while or repetitive.^[3,4] These gatherings have been observed in the domains of sports (cricket or football match, etc.), social (birthday or wedding, etc.), religious (temple or mosque, etc.), entertainment (theatres), cultural, political rallies or events, business meetings, health-related meetings, etc.^[3-5] Upon a significant increase in the number of people attending the event, these are termed as mass gatherings, such as Olympics, Hajj pilgrimage, etc.^[5-7] These events are often linked with international travel of the involved people, organization of events in different locations, and are of relatively long duration, which also has some kind of political or socioeconomic consequences.^[3-7]

COVID-19 INFECTION AND GATHERING

As COVID-19 infection spreads via close contact, a gathering

of any size carries the definite potential to amplify the risk of transmission and initiate a new chain of disease outbreaks.^[8] This is predominantly because of the conducive atmosphere (viz. high density and mobility of the people who have gathered) for the causative virus to spread, as people will be together for a longer duration, and that too close to each other.^[4-7] In fact, the available evidence suggests that the risk of infection transmission significantly enhances with the duration of exposure, location (indoor > outdoor), and non-adherence with the standard prevention and control measures.^[2,8] It is the need of the hour to employ the agglomeration scale and correlate the same with the occurrence of outbreaks and epidemics in heterogeneous settings.^[9] More often than not, it has been reported that the chances of occurrence an outbreak of the COVID-19 infection significantly increases with agglomeration of susceptible individuals, more so in cases of urban settings.

COVID-19 OUTBREAKS ORIGINATING FROM GATHERINGS

The findings of a study done in Malaysia reported that close to 35% of the new cases were linked with the Sri Petaling gathering, a religious movement that was attended by more than 19,000 people from different nations in Kuala Lumpur in the month of March 2020.^[10] Among the attendees, in excess of 1700 people were diagnosed with the new COVID-19 infection.^[10] On a similar note, a COVID-19 outbreak was reported in the month of July – August 2020 in a long gathering, wherein from one index case, 11 additional cases were reported.^[11] Similarly, a family cluster of 12 confirmed cases, along with two additional cases because of secondary transmission was reported in Hong Kong.^[12] Even in India, many cases were reported from the Kumbh Mela in Uttar Pradesh, and it became a grave cause of public health concern.^[13]

ORGANIZING GATHERINGS DURING THE COVID-19 PANDEMIC

Acknowledging the threat related to the COVID-19 pandemic, most of the nations are still advocating restrictions on gatherings.^[2] Even under circumstances where gatherings are permitted, due attention should be given to the standard infection prevention and control measures. These measures include practicing physical distancing (maintaining a distance of at least 1 meter) between people, covering the mouth & nose with masks, regular handwashing with soap & water or alcohol-based hand sanitizers, and avoiding crowded or poorly ventilated settings.^[10-15] Further, all participants should be always reminded about the need to be responsible with an intention to not only safeguard their health, but even of the other people and the community at large.^[2,7,8,10]

The agencies planning for organizing a gathering should adopt a risk-based approach, keeping in mind the attributes of the

planned event.^[2] This has to begin with risk evaluation, wherein the baseline risk of transmission of the infection is ascertained along with the preparedness of the health system to deal with a potential outbreak.^[16] This has to be supported with risk mitigation measures, which essentially refers to the implementation of standard prevention measures and the logistics required for the same.^[16] Finally, the organizers should also look to disseminate the required information about all the planned measures to everyone involved, justifying the need for each one of them. Regardless of the size of the gathering, it is always necessary that we should strongly adhere to the precautionary strategies and take efforts to minimize the potential risk, as the overall risk cannot be completely eliminated.^[14–17] In this regard, we also have to plan for strategic testing, isolation of the confirmed cases, contact tracing and their quarantine, and intensifying immunization against the infection.^[5–7]

ADDITIONAL CONSIDERATIONS

Apart from the fact that the organization of gatherings amplifies the risk of transmission of the infection, we cannot ignore the reality that it also strains the local health services.^[2] On the possibility of the emergence of a new chain of transmission, the health system has to be prepared to respond to the sudden demands, and there is a potential risk of interruption of the other health and essential delivery services. The decision to organize a gathering should also take into account the current status of the COVID-19 transmission on the global, regional, and local platform.^[10–13]

CONCLUSION

In conclusion, the COVID-19 pandemic is far from being yet over, and the decision to organize a gathering has to be based on the risk evaluation, risk mitigation, and establishment of a risk communication strategy. Even with all this, zero risk does not exist, and the best approach will be to strictly implement all the prevention and control measures and be responsible in all the gatherings.

Source of funding

None declared.

Conflicts of interest

Prateek Saurabh Shrivastava is an Editorial Board Member of the journal. The article was subject to the journal's standard procedures, with peer review handled independently of this editor and his research groups.

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