

Major sports events and the transmission of SARS-CoV-2: analysis of seven case-studies in Europe

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Sir, the World Health Organization defines mass gatherings as “concentration of people at a specific location for a specific purpose over a set period of time and which has the potential to strain the planning and response resources of the country or community” (1). During February and March 2020 some sports events may have played a role in the spread of the Coronavirus disease 2019 (COVID-19) epidemic in Europe (2-4), before health and political authorities decided to suspend them.

We have considered seven major sports events scheduled before the onset of COVID-19 epidemic outbreak in Europe: the soccer Champions League matches Atalanta-Valencia (19th February and 11th March), Atlético de Madrid-Liverpool (18th February and 11th March) and Lyon-Juventus (26th February), the “Final-eight” of the Italian Basketball Cup in Pesaro (13 matches from 13th through 16th February with a total of 32,000 attendees) and the Biathlon World Championships in South Tyrol (from 12th through 23rd February, with 165,000 overall attendees). The health indicator we have assessed is the increase in SARS-CoV-2 infection notifications between the 14th and the 21st day after the event (5), considering the mean incubation period, the timing of test execution and the notification of results (7-10).

In four out of five Champions League matches, all with over 40,000 attendees, (Valencia, Madrid, Lyon and Liverpool) no COVID-19 incidence increase was reported in the cities hosting the matches,

during the study period. Only after Atalanta-Valencia, match held in Lombardy (first European area affected by the epidemic), there was a significant increase in cases reported in the host team’s city (Bergamo) (11, 12). Nevertheless, a recent study claims that this increase started before the event (13) and, therefore, could not be directly related to it, if not to a small extent. Noteworthy is also the news reported on a Spanish newspaper on February 27th, that the COVID-19 index case in the city of Valencia was a journalist who attended the Atalanta-Valencia match on February 19th (14).

With respect to the Biathlon World Championships, an increase in cases was observed in the host province of Bolzano, congruent with possible infections transmitted during the event. The attendance of SARS-CoV-2 positive German tourists from Niedersachsen was confirmed. Moreover, on March 6th, a report of Robert Koch Institute linked around 60 German cases of COVID-19 (around 10% of all positive cases at that time) to their stay in South Tyrol in the previous days, but without mentioning the sports event or investigating about it (15).

In Pesaro a similar occurrence was observed with a COVID-19 incidence increase starting from March 2nd, 15 days after the conclusion of the tournament attended by about 500-1,000 supporters coming from Cremona and Brescia, the areas of the first COVID-19 outbreaks in the Lombardy region (11, 12). Pesaro’s health authorities have carried out anamnestic investigations from which no evidence of

contagion in the Basketball Cup's attendees emerged. The experts concluded that other mass gatherings taking place in the same days (Carnival of Fano, Rimini Ice-cream Fair, Beer festival) may have contributed, in the same way, to the possible spread of the infection (16).

In conclusion, we can say that single sports events (one-day matches), even with a high number of attendees, do not seem to have influenced the general evolution of the COVID-19 epidemic; this is coherent with the low infection transmission risk in the context of outdoor events, the small number of visiting supporters and the typical separation of the fans in the stadiums. On the other hand, our initial analysis of multi-day events (championship and tournaments) suggests that close and prolonged social contacts of supporters (17), coming from different areas, may have played a role in the epidemic chain, mainly by contributing to local transmission of the virus. In any case the confirmation of our initial statements would require an accurate contact tracing and the anamnesis of the infected persons, in particular in the geographical areas of Pesaro and Bolzano.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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