

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Evaluating the controlled reopening of nightlife during the COVID-19 pandemic: a matched cohort study in Sitges, Spain, in May 2021 (Reobrim Sitges)
AUTHORS	Cunillera Puértolas, Oriol; Contreras-Martos, Sara; Marzo-Castillejo, Mercè; López Gallegos, Darío; Acedo Anta, Mateo; Almeda Ortega, Jesús; Colom, Joan; Basora, Josep; Salvador-Gonzalez, Betlem

VERSION 1 – REVIEW

REVIEWER	Drury, J University of Sussex, School of Psychology
REVIEW RETURNED	18-Nov-2021

GENERAL COMMENTS	<p>This paper describes a study in which a matched sample attended (or didn't attend) nightclubs and then were tested for Covid infection. Fourteen days later there were no infections among participants and a couple in the control group, suggesting that with mitigations safe reopening of bars/ clubs is possible (at least pre-Delta). The researchers did extremely well to retain the test the volunteers – far better than the Liverpool studies (UK Events Research Programme) earlier this year. This should be mentioned in the authors' own evaluation of the study. Overall the study seems well designed. The analysis is appropriate. The reporting is generally clear and the authors cite up to date literature. For these reasons, this study is a useful contribution to the literature on re-opening live events and venues.</p> <p>I have some suggestions on how to improve the paper.</p> <p>The abstract could be a lot clearer. It refers vaguely to 'the local nightlife' and then to an 'event', and later 'nightclubs'. The results section of the abstract mentions a control group – this should have been mentioned in the methods.</p> <p>The authors call the design 'observational' but is not really. The design is more black box: measures taken before and after people attended night clubs but no data on what people did in those clubs. I would remove the word 'observational'.</p> <p>p. 5 line 37 'Currently, some restrictions on capacity limitations and opening hours still prevail.'</p> <p>Statements like this need to be dated or updated.</p> <p>p. 5 line 59 'Mask was mandatory (quirurgical or FFP2). Drinking was allowed indoors'</p> <p>Clarify. When/ where did people have to wear masks?</p> <p>p. 7 line 8 The control group differed not only in not attending the clubs (as far as we know?) but also in not having tests before the club night. Is that an issue?</p> <p>p. 7 line 15 'capacity limitations fixed'</p> <p>Fixed by who? If you avoid passive voice, the meaning will be clearer.</p>
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	<p>Discussion</p> <p>I was surprised there was no mention of ventilation among the different measures. (And how much of the interaction was outdoors?)</p> <p>The authors need to explain the practical value of the study. If it means that nightclubs can safely re-open if all patrons are tested and wear masks then say so. Otherwise, what is the recommendation?</p> <p>Other relevant research that could be cited (the authors' is not the first paper on covid and bars, though the following had a very different design. It is a properly observational study): Fitzgerald N, Uny I, Brown A, Eadie D, Ford A, Lewsey J & Stead M (2021) Managing COVID-19 transmission risks in bars: an interview and observation study. <i>Journal of Studies on Alcohol and Drugs</i>, 82 (1), pp. 42-54. https://doi.org/10.15288/jsad.2021.82.42</p>
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REVIEWER	Linkov, Igor US Army Engineer Research and Development Center
REVIEW RETURNED	28-Nov-2021

GENERAL COMMENTS	<p>My main concern is that in May 2021 the background rate of COVID in SPain was low and declining. Obviously if you have low and declining case load you are not expected to see much difference in case and control groups (in the extreme, if people are disease free they will not get COVID). I think the result would be very different if case load would be higher and on the rise. This should be clearly articulated in the paper and conclusions should be more moderate</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Dr. J Drury, University of Sussex

Comments to the Author:

This paper describes a study in which a matched sample attended (or didn't attend) nightclubs and then were tested for Covid infection. Fourteen days later there were no infections among participants and a couple in the control group, suggesting that with mitigations safe reopening of bars/ clubs is possible (at least pre-Delta).

The researchers did extremely well to retain the test the volunteers – far better than the Liverpool studies (UK Events Research Programme) earlier this year. This should be mentioned in the authors' own evaluation of the study. Overall the study seems well designed. The analysis is appropriate. The reporting is generally clear and the authors cite up to date literature. For these reasons, this study is a useful contribution to the literature on re-opening live events and venues.

We really thank the reviewer for these kind words and have incorporated his suggestion in discussion: *“On the other hand, both the volunteers and the control group evidence of infections at 14 days was obtained through EHR, and we may not have detected asymptomatic or mild symptomatic cases that were not consulted by health systems. This fact was minimized in the intervention group with the performance of the Ag-RDT follow-up test 6 days after the intervention, with an acceptable loss rate of 12% (as compared to similar studies in the UK earlier this year [27]).”*

I have some suggestions on how to improve the paper. The abstract could be a lot clearer. It refers vaguely to 'the local nightlife' and then to an 'event', and later 'nightclubs'. The results section of the abstract mentions a control group – this should have been mentioned in the methods.

We cannot but agree that the presence of a control group cannot be ignored in the methods section of the abstract. That's why we have decided to include this information in the Design:

*“Design: **Observational Black box study with a paired control group (1:5 ratio)**”*

It is also true that the mentioned terms could be homogenised. We have slightly modified the text in the abstract to adhere to that recommendation:

“Background: (...). This study aims to assess the health impact of reopening the local nightlife under controlled conditions.

*Methods: **Black box design study with a paired control group (1:5 ratio)***

Setting: A nightlife restricted area in Sitges on May 20th 2021. 5 nightclubs with interior areas and exterior terraces, wearing masks was mandatory, drinking was allowed, and social distance was not required.

Results: (...)

*Conclusions: Attendance to ~~nightclubs~~ **nightlife** under controlled conditions and previous negative Ag- RDT did not show an increased transmissibility of SARS-CoV-2. Secure aperture of nightlife sector is possible (...).”*

The authors call the design 'observational' but is not really. The design is more black box: measures taken before and after people attended night clubs but no data on what people did in those clubs. I would remove the word 'observational'.

We totally comprehend the reviewer point of view and share his thoughts on that matter. Although all similar studies developed in the matter defined themselves as observational, presenting close designs, we have modified the definition of the design to black box design in all the text:

*Abstract: “Methods: **Observational Black box** design study with a paired control group (...).”*

*Methods section: “This is ~~an observational~~ **black box** study with a paired control group (1:5 ratio), performed in a nightlife restricted area in Sitges (Barcelona, Spain) on May 20th 2021.”*

p. 5 line 37 'Currently, some restrictions on capacity limitations and opening hours still prevail.' Statements like this need to be dated or updated.

The reviewer is absolutely right in that the sentence needs to be placed in time. We have modified the sentence as follows:

'Currently-At the moment of writing this paper, September 2021, some restrictions on capacity limitations and opening hours still prevail.'

p. 5 line 59 'Mask was mandatory (quirurgical or FFP2). Drinking was allowed indoors'
Clarify. When/ where did people have to wear masks?

It is undeniable that this point was not clear enough. We have added some information regarding that aspect:

*'Mask was mandatory (quirurgical or FFP2), **except for drinking or smoking**. Drinking was allowed indoors'*

p. 7 line 8 The control group differed not only in not attending the clubs (as far as we know?) but also in not having tests before the club night. Is that an issue?

We appreciate reviewer's comment, which highlights a relevant issue we had not taken into account. It is absolutely true, it is an issue, not only for not necessarily having tests at baseline but at follow-up as well. However, we did only think on the possible effect of not having follow-up tests rather than baseline tests, in page 12 lines 23-31:

"On the other hand, monitoring new infections through EHR may not have detected asymptomatic or mild symptomatic cases that were not consulted by health systems. This fact was minimized in the intervention group with the performance of the Ag-RDT follow-up test 6 days after the intervention, with an acceptable loss rate of 12%. Despite the lower sensitivity and specificity of the Ag-RDT test, this follow-up increased the likelihood of measuring the impact of the intervention on the onset of new infections, at risk of overestimating the negative impact of the intervention."

As the reviewer suggests, the one we presented is only a partial vision of the problems of using EHR data, as not presenting baseline tests could generate a bias in the contrary direction. Thus, we have added the following sentence at the ending of the aforementioned paragraph:

"However, not presenting baseline tests could lead to another bias in the contrary direction; we expect that those crossed biases would minimize overall bias"

p. 7 line 15 'capacity limitations fixed'. Fixed by who? If you avoid passive voice, the meaning will be clearer.

We thank the reviewer for pointing out that lacking, we have added this information as follows: "Sample size was conditioned on capacity limitations fixed on 75% of the locals' usual limits (**according to and authorized by the Health Department within the context of this study**), resulting in 400 volunteers."

Discussion

I was surprised there was no mention of ventilation among the different measures. (And how much of the interaction was outdoors?)

This comment is of great value, so we have added the following text in the methods section specifying this aspect:

*“(...) Hydroalcoholic gel and panels reminding COVID-19 safety standards and their participation in the study were distributed throughout all the area. **No special ventilation measures were required.** A follow-up Ag-RDT test on day 6 after the event was performed on participants.”*

, added to the mention in discussion:

*“Both studies obtained similar results, despite in ours a) drinking was allowed in the entire perimeter, and b) the event was developed in locals with indoor capacities below 100 people **without indoor air quality control**, and with bigger outdoor areas.”*

The authors need to explain the practical value of the study. If it means that nightclubs can safely reopen if all patrons are tested and wear masks then say so. Otherwise, what is the recommendation?

We apologize in advance for expressing our slight disagreement on that point. We understand it would be great to give clear recommendations on nightclubs reopening; however, we think we must be careful and cautious as our study is one of the different steps that need to be done (and are being done) and thus helps to complete the picture; however, for itself, it lacks in power to be conclusive enough; that's why we state in page 10 line 12: “This study adds new evidence to the other studies assessing the impact of the reopening of the social and cultural nightlife”. We think our final paragraph of the discussion:

“As a conclusion, in our study the attendance to nightclubs under controlled conditions and previous negative Ag-RDT did not show an increased transmissibility of SARS-CoV-2. These results, within the framework of health and safety, provide insight into the possibility of more secure apertures for event organizers.”

is all we can extract from our study. Moreover, the continuously changing framework the evolution of COVID variants generate calls for extra caution.

Other relevant research that could be cited (the authors' is not the first paper on covid and bars, though the following had a very different design. It is a properly observational study): Fitzgerald N, Uny I, Brown A, Eadie D, Ford A, Lewsey J & Stead M (2021) Managing COVID-19 transmission risks in bars: an interview and observation study. *Journal of Studies on Alcohol and Drugs*, 82 (1), pp. 42-54. <https://doi.org/10.15288/jsad.2021.82.42>

We thank the reviewer for sharing this paper, which adds an interesting different view: the one of adherence of bars to operating rules. It definitely is of great value when considering how difficult are some rules to implement. We have added this information in the discussion:

“Other projects have been developed in Netherlands and United Kingdom to examine how events can be reopened with reduced risk [25,26]. Fitzgerald et al [27?], explored the management of COVID-19

restrictions to operate safely in licensed premises. Physical distancing, which was not required in the present study, was one of the more challenging. A pilot study in Liverpool explored the nightclubs reopening in semi-controlled settings [28?]. Despite differences in the methodology, results were in line with ours; an exploratory modelling of transmission risks at nightclubs suggests that primary transmissions are reduced by 53% through testing on the day.”

Reviewer: 2 Dr. Igor Linkov, US Army Engineer Research and Development Center
Comments to the Author:

My main concern is that in May 2021 the background rate of COVID in Spain was low and declining. Obviously if you have low and declining case load you are not expected to see much difference in case and control groups (in the extreme, if people are disease free they will not get COVID). I think the result would be very different if case load would be higher and on the rise. This should be clearly articulated in the paper and conclusions should be more moderate.

We thank the reviewer for sharing his thoughts on our study, which are of great interest for us. We cannot but agree on that our study is absolutely conditioned on the COVID phase we were in that moment. We tried to comment this in the discussion, page 12 lines 6-14; we have modified this section in order to include reviewer’s point of view:

*“During our study, the first cases of SARS-CoV-2 Delta variant had been detected in Spain; this variant seems to be around 60% more transmissible than the Alpha variant. Thus, Delta variant is spreading worldwide as the fittest and fastest variant and it is becoming dominant in many countries. Evidence in the UK shows that 75% of infections by Delta variant are occurring in people who are not vaccinated and about 4 to 57% in people who are fully vaccinated [32], thus affecting age ranges more prone to enjoy nightlife. **Moreover, incidence rates were in regression [12]. More research is needed to ensure our results can be extrapolated to the Delta and future variants, and in different scenarios of transmissibility.**”*