PEER REVIEW HISTORY

BMJ Paediatrics Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	The role of children in the transmission of the COVID-19 pandemic: a rapid scoping review
AUTHORS	Rajmil, Luis

VERSION 1 – REVIEW

REVIEWER	Reviewer name: Geon Ho Bahn Institution and Country: Kyung Hee University School of Medicine, Seoul, Republic of Korea Competing interests: child psychiatry, adult ADHD, developmental delay
REVIEW RETURNED	03-May-2020

GENERAL COMMENTS	It is an interesting paper on children's role in the spread of coronavirus disease at a time of school closings as a way of social distancing. I am curious about the background of the author's leading question, "Are children more contagious than adults?" The author needs to explain why it is assumed that children's transmission power will be higher than adults. Also, it needs to describe the regional limitations of the subjects of this paper. Of the cases from nine articles in this study, cases of seven papers, excluding two cases from Korea and Vietnam, should be specified as regional limitations of the report that they are all Chinese patients. The Taiwanese authors' papers also analyzed Chinese data.

REVIEWER	Reviewer name: Bob Phillips Institution and Country: CRD, University of York, UK Competing interests: None
REVIEW RETURNED	30-May-2020

GENERAL COMMENTS	This is a single author scoping rapid review of published reports of childhood transmission rates of SARS-CoV2 infection, along with an attempt to determine what proportion are asymptomatic, up to the end of April 2020. As a formal scoping review it falls short of many methodological standards: the search is in a single database with only one textword for the 'act' of interest (transmission), it has single author assessment of papers, the inclusion of non-primary study designs weakens the attempts at understanding the data existing, and it summarises the results rather than the nature of the studies undertaken and the designs and gaps discovered. As a 'rapid review' it could be assessed as closer to the pragmatic approach which exists for this type of evidence summary. There are still some awkward points in it; the inclusion of pre-published data 'where pertinent' and no clear systematic search for this is difficult

	and needs either better explanation or a method for searching pre-prints. The Results should discuss to some extent the nature of the study design which leads to the numbers. Acknowledging the weakness of this design in the estimation of asymptomatic cases, where it has been a byproduct of the search strategy, is necessary (a better approach would be to examine 'population' level testing programmes across all ages in order to assess to some extent for detection biases).

VERSION 1 – AUTHOR RESPONSE

Reviewer reports

I would like to thank the Reviewers for their helpful comments, which have helped to improve the quality of the manuscript.

Reviewer: 1

It is an interesting paper on children's role in the spread of coronavirus disease at a time of school closings as a way of social distancing.

I am curious about the background of the author's leading question, "Are children more contagious than adults?" The author needs to explain why it is assumed that children's transmission power will be higher than adults.

> **Re**: I would like to thank the Reviewer for this specific comment. One of the first measures taken by Governments in almost all countries affected by the COVID-19 was school closure, and even in some countries such as Spain, children were confined at home more than 40 days, while in adults there were specific exceptions to go outside. The idea of children as higher transmitters than adults was based on previous influenza pandemic without any evidence on the current pandemic. Although with several uncertainties it seems that the COVID-19 is quite different, and in fact children seem to be less transmitters than adults, as it was found in the present review and other recent studies. According to this comment and also following the request from the Editor-in-Chief, this justification have been stated at the beginning of the introduction (see 3rd sentence in the Intro section):
>
> *"..This pandemic and the lack of effective treatment so far until now, highlight the need to take measures to prevent the spread of the infection. Measures adopted ~~based on the best scientific available evidence were usually according to previous knowledge mainly based on other pandemics~~ at the beginning of the pandemic in almost all countries were based on the available evidence of previous epidemics like influenza, where children were major transmitters of the disease, even more than adults.[3]"*

Also, it needs to describe the regional limitations of the subjects of this paper. Of the cases from nine articles in this study, cases of seven papers, excluding two cases from Korea and Vietnam, should be specified as regional limitations of the report that they are all Chinese patients. The Taiwanese authors' papers also analyzed Chinese data.

> **Re**: I would like to thank the Reviewer for this comment. I agree with the Reviewer that, at the time of the initial literature search, only regional studies have been published mainly from China. Following advice from the Editor-in Chief the literature search has been updated until 05/28/2020 and some new articles on the subject have been identified during the last month from Australia, Geneva, The Netherlands, Spain, and Ireland, expanding the number of countries, and showing results consistent with previous data (see the Results section in the revised version of the manuscript).

Reviewer: 2

This is a single author scoping rapid review of published reports of childhood transmission rates of SARS-CoV2 infection, along with an attempt to determine what proportion are asymptomatic, up to the end of April 2020.

As a formal scoping review it falls short of many methodological standards: the search is in a single database with only one textword for the 'act' of interest (transmission), it has single author assessment of papers, the inclusion of non-primary study designs weakens the attempts at understanding the data existing, and it summarises the results rather than the nature of the studies undertaken and the designs and gaps discovered.

Re: I would like to thank the Reviewer for this comment. I apologise because, in addition to the limitations discussed by the Reviewer, the methods were not clearly explained. Although the main search was in PubMed, the search included Google Scholar, and moreover MedRxiv / bioRxiv were also searched, which have become important in the current pandemic given the need for immediate knowledge. Furthermore, the studies published to date on the subject are descriptive; this fact is probably associated with the urgent need to collect the available information to assist in decision-making in the immediate future regarding minors and to try to avoid unnecessary side effects. According to this comment, it has been tried to better explain the literature search and, according to the advice of the Editor-in-Chief, a figure with a search flow has been added (see Methods section and also figure 1 in the revised version):

"A rapid scoping literature review was carried out by search in PubMed using the following terms: "coronavirus or COVID-19 or SARS-CoV-2" and "neonates or pediatric or infant or children or adolescence" and "transmission" to find reports of paediatric COVID-19. Google Scholar, MedRxiv/bioRxiv and secondary hand search have also been done. The time period was restricted to the last five~~our~~ months, from December the 1rst 2019 and updated until to 0~~4~~5/2~~4~~8/2020. Available full texts and the reference lists of the relevant studies were reviewed.

On the other hand, other limitations commented by the Reviewer have been added to the discussion section (see limitations in the revised version):

"Several limitations of the present rapid scoping review should be mentioned. The inclusion of none reviewed pre-print papers, the inclusion criteria based only on one evaluation, the lack of critical analysis of the risk of bias, and the inclusion of non-primary study designs may weakens the attempts at understanding the data existing. However, the urgent need to understand the process of transmission and the results obtained provide a reasonable evidence on the process analysed. Furthermore, the results of other reviews on the process of infection in children with similar results to the present study support the strength of the results obtained. Secondly ~~Among the limitations of the present review should be mentioned~~ the current lack of reliable, valid and comparable data on epidemiologic surveillance…."

As a 'rapid review' it could be assessed as closer to the pragmatic approach which exists for this type of evidence summary. There are still some awkward points in it; the inclusion of pre-published data 'where pertinent' and no clear systematic search for this is difficult and needs either better explanation or a method for searching pre-prints. The Results should discuss to some extent the nature of the study design which leads to the numbers. Acknowledging the weakness of this design in the estimation of asymptomatic cases, where it has been a byproduct of the search strategy, is necessary (a better approach would be to examine 'population' level testing programmes across all ages in order to assess to some extent for detection biases).

Re: Thanks for these comments. I agree with the Reviewer regarding all these weaknesses of the methodology, and as it was commented in the previous answers, it has been tried to improve in the revised version. According to this comment and also a comment from the Editor-in-Chief the title of the review as well as the methods section have been modified by adding a "rapid" scoping review. One of the main changes in the revised version also consisted in updating the review until 05/28/2020, and, as it was expected, several studies have been published in the last month. At least one population-based study has been identified (a study at the general population of Spain; see the results section in the revised version of the manuscript) which in my opinion add interesting information to the current review.