

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)	Impact of COVID-19 lockdown on asthmatic children in Jordan: a parental questionnaire
AUTHORS	Al-Iede, Montaha Mohammed Waters, Karen Aleidi, Shereen M. Alqutawneh, Basim Sulieman Nawaiseh, Halla Z. Alshraideh, Araek Almaaitah, Sara Ismail, Raghad Abusaud, Raya Kiswani, Arwa Al-Zayadneh, Enas AL-Motasseem, Yousef

VERSION 1 – REVIEW

REVIEWER	Reviewer name: Dominic Fitzgerald Institution and Country: United Kingdom of Great Britain and Northern Ireland Competing interests: None
REVIEW RETURNED	24-Apr-2021

GENERAL COMMENTS	<p>This was an interesting and pragmatic review of the impact on asthma exacerbations, adherence with preventer medications and parental/carer drivers of adherence in uncertain times from an academic paediatric asthma clinic in Jordan. It provides some novel observations which add to knowledge toward divers of adherence and parental fears in the midst of a pandemic.</p> <p>The paper is well written, provides interesting observations and draws reasonable conclusions based upon the data collected.</p> <p>Further clarifications of the following would be helpful:</p> <ol style="list-style-type: none"> 1. The Questionnaire. How many questions were included and how long would it have taken a responder to complete? 2. Definitions. Both allergic rhinitis and hayfever are listed in Table 1 and in the text on demographics at around 40-45% each
-------------------------	---

REVIEWER	Reviewer name: Dr. Ross Langley Institution and Country: Royal Hospital for Children, United Kingdom of Great Britain and Northern Ireland Competing interests: None
REVIEW RETURNED	30-Apr-2021

GENERAL COMMENTS	<p>This article provides a parental view of life in lockdown with an asthmatic child. Without the use of remote inhaler use monitoring I do not think parental reporting alone on adherence is enough to suggest this played a role in reduced attacks. Have the authors considered using this technology in future practice?</p> <p>The authors do acknowledge the role that non pharmaceutical interventions (social distancing, handwashing, masks etc) were used</p>
-------------------------	--

	during lockdown but do not detail the extent to which these measures were used in Jordan. Please can you explain to the reader what was actually done during the Jordanian lockdown. I agree the reduction in pollution is also likely to have had an effect.
REVIEWER	Reviewer name: Dr. Conrad Kabali Institution and Country: 2264 Spence Lane, Burlington, Canada Competing interests: None
REVIEW RETURNED	08-May-2021
GENERAL COMMENTS	<p>General comments:</p> <p>The importance of this paper in public health needs to be articulated better. Clearly, no one wishes for COVID-19 to persist in order to control asthma. So, how are these findings useful to public health professionals dealing with asthma control?</p> <p>The authors should elaborate which statistical analyses were used to compared proportions and medians. They should also report the precision around the point estimates.</p> <p>Specific comments:</p> <p>Page 7, line 37: For the comparison of proportions, how did the dependency due to repeated measurements (pre- versus post-lockdown) accounted for during the analysis? If nothing was done to account for dependency, I would advise the authors to do so e.g. by using appropriate methods for dependency such as GEE</p> <p>Page 7, line 39: In order for the readers to get a sense of precision around the point estimates, the authors should state that they will report the point estimates along with 95%CI.</p> <p>Page 8, line 40: The authors should report 95%CI for the point estimates throughout the manuscript</p> <p>Page 17, Table 3: Unclear which statistical method was used to compare proportions. Also the column for the difference in proportions along with 95% CI needs to be added</p> <p>Page 18, Table 4: Which statistical method was used to compare medians? Did the method account for dependency due to repeated measurements? The relevance of the p-value column is unclear given that this is used by the authors to determine whether the results are significant. For example, it treats the difference between 18 and 18 as significant, but not between 86 and 97.5! Better to report the median difference and 95% CI instead. The values in the brackets in the 4th row (the row for N) are not representing range, contrary to what is stated in the footnote. Please correct.</p>

VERSION 1 – AUTHOR RESPONSE

Response to reviewers

Editor in Chief (Prof Imit Choonara) Comments to Author:

Title: replace "adherence to therapy and reduction of the hospitalization rate" with "a parental questionnaire"

Thank you for your valuable suggestion. The title has been modified.

Add the questionnaire as an appendix.

Thank you , the questionnaire has been uploaded as an appendix

Round up % to whole numbers in text and tables

This has been adjusted, thank you

What this study adds 2nd sentence replace with "Adherence to asthma therapy appeared to increase during the pandemic"

Many thanks for your valuable suggestion, it has been modified

Associate Editor:

Comments to the Author:

Thank you for submitting this manuscript.

Both reviewers were of the opinion that the findings are of interest, especially re. reports of adherence with treatment and the reduced admissions

Please respond to the reviewers comments fully

The inherent limitations of the study could be discussed a little further, especially the reliance on retrospective parental reports

This is an excellent point to suggest, we have added some further discussion to the limitation part.

The lung function data are based on a much smaller number of children and do not add to the findings of the paper, these should be removed

Thank you for your comment, we do agree and all the lung function data has been deleted, including table number 4

This recent paper describing presentations in Scotland, UK, during the pandemic is a useful reference to cite, see Williams TC et al Arch Dis Child 2021 <https://pubmed.ncbi.nlm.nih.gov/33451994/>

Many thanks for providing a new reference. This reference has been added to the text and the list of references..... Reference number 15

Reviewer: 1

Dominic Fitzgerald

Comments to the Author

This was an interesting and pragmatic review of the impact on asthma exacerbations, adherence with preventer medications and parental/carer drivers of adherence in uncertain times from an academic paediatric asthma clinic in Jordan. It provides some novel observations which add to knowledge toward drivers of adherence and parental fears in the midst of a pandemic.

The paper is well written, provides interesting observations and draws reasonable conclusions based upon the data collected.

Further clarifications of the following would be helpful:

1. The Questionnaire. How many questions were included and how long would it have taken a responder to complete?

Thank you so much for your comment. The questionnaire had 45 questions, and as the parents reported at the asthma clinic following the distribution of the questionnaire, it took them 7-10 minutes to complete the questionnaire.

This information has been added to the manuscript.

2. Definitions. Both allergic rhinitis and hayfever are listed in Table 1 and in the text on demographics at around 40-45% each

Thank you for your valuable comment, we defined allergic rhinitis and hayfever as following, and the definitions have been added to the methodology section:

Allergic rhinitis: was defined as recurrent rhinitis that is non-infectious and/or watery discharge with or without eye itching on allergen exposure or at pollen season.

Hayfever was defined as recurrent non-infectious itching and watery eye discharge on aeroallergen exposure at pollen seasons.

Reviewer: 2

Dr. Ross Langley, Royal Hospital for Children

Comments to the Author

This article provides a parental view of life in lockdown with an asthmatic child. Without the use of remote inhaler use monitoring I do not think parental reporting alone on adherence is enough to suggest this played a role in reduced attacks. Have the authors considered using this technology in future practice?

Thank you for this excellent point. Home monitoring devices could bridge the current lack of medical care due to the COVID-19 pandemic. Monitoring asthma parameters at home could facilitate early medical intervention with inhalers at home rather than by a nebulizer in the hospital. This is important as aerosolization enhances the spread of the COVID-19 virus. We strongly believe that future steps to accelerate eHealth implementation in pediatric asthma care include using home monitoring devices and further development of eHealth platform technologies. In Jordan, there are many challenges that we face including, a lack of technology and financial support. However, authors consider using home monitoring devices in future practice.

The authors do acknowledge the role that non-pharmaceutical interventions (social distancing, handwashing, masks etc) were used during lockdown but do not detail the extent to which these measures were used in Jordan. Please can you explain to the reader what was actually done during the Jordanian lockdown. I agree the reduction in pollution is also likely to have had an effect.

Thank you for the good comment. Non-pharmacological interventions (NPI) have been used in Jordan to address the COVID-19 pandemic. Unfortunately, we did not include specific questions in the questionnaire to address these measures. However, we have mentioned some of these measure in the introduction:

"To support the health system's requirements, Jordan enforced strict public health infection control measures for ten weeks from March 17 till May 24, 2020. The measures included social distancing, banning all national and international travel and enacting the Defence Law."

Reviewer: 3

Dr. Conrad Kabali

Comments to the Author

General comments:

The importance of this paper in public health needs to be articulated better. Clearly, no one wishes for COVID-19 to persist in order to control asthma. So, how are these findings useful to public health professionals dealing with asthma control?

Thank you for your comment. We anticipate that the findings may inform health promotion intervention. Regularly supported self-management and remote medical consultations and advices should be provided during the COVID-19 pandemic.

The authors should elaborate which statistical analyses were used to compared proportions and medians. They should also report the precision around the point estimates.

Thank you for your valuable comment.

Data were analyzed using Statistical Package for the Social Sciences (SPSS) software version 22 (SPSS® Inc, Chicago, USA). Data were summarized as median (minimum-maximum) for FVC%; FEV% and FEV%/FVC. Alternatively, categorical data were represented as frequency (percentage). In order for the readers to get a sense of precision around the point estimates, the point estimates were reported along with 95%CI.

Comparison between emergency department (ED) visits and hospitalization of asthmatic children during the COVID-19 lockdown due to asthma exacerbations and the same period from the year before was assessed by chi square or Fisher exact test as appropriate.

The normality of distribution of pulmonary function tests (PFT) was assessed by Kolmogorov-Smirnov and Shapiro-Wilk tests. PFT before and after the lockdown were compared by Wilcoxon Signed Rank test. A p-value < 0.05 was considered statistically significant.

Median (25%-75%)

After the lockdown Before the lockdown P value1 P value2

N 18 18

FVC% 97.5 (85.8-102.3) 75 (62.8-88.3) 0.005 0.001

FEV1% 85.5 (75.5-98) 80 (71.3-91) 0.54 0.9

FEV1/FVC% 86 (79.5-91) 80 (74.8-87.3) 0.072 0.16

1 Wilcoxon Signed Rank test (0.005, 0.54, 0.072)

2 Paired t-test

Data about pulmonary function testing have been removed including table number 4 as per the associate editor's request with thanks

We have adjusted the section of statistical analysis/ methodology in the manuscript as well.

Specific comments:

Page 7, line 37: For the comparison of proportions, how did the dependency due to repeated measurements (pre- versus post-lockdown) accounted for during the analysis? If nothing was done to account for dependency, I would advise the authors to do so e.g. by using appropriate methods for dependency such as GEE

Thank you for this comment, this has been corrected.

Page 7, line 39: In order for the readers to get a sense of precision around the point estimates, the authors should state that they will report the point estimates along with 95%CI.

Done, thank you

Page 8, line 40: The authors should report 95%CI for the point estimates throughout the manuscript
Thank you for this valuable point, we have modified the manuscript

Page 17, Table 3: Unclear which statistical method was used to compare proportions. Also the column for the difference in proportions along with 95% CI needs to be added

Many thanks for this very important suggestion; we have added the 95% CI

The comparison was made by chi square

Proportions (95% CI)

91.9% (88.2-94.8) 81.1% (76.2-85.4)

6.7% (4.2-10.2) 14.5% (10.7-19)

1.3% (0.4-3.4) 4.4% (2.4-7.4)

73% (67.6-78) 53.9% (48-59.7)

17.2% (13.1-22) 30.6% (25.5-36.2)

9.8% (6.6-13.7) 15.5% (11.6-20.1)

(Using binomial exact calculation)

Page 18, Table 4: Which statistical method was used to compare medians? Did the method account for dependency due to repeated measurements? The relevance of the p-value column is unclear given that this is used by the authors to determine whether the results are significant. For example, it treats the difference between 18 and 18 as significant, but not between 86 and 97.5! Better to report the median difference and 95% CI instead. The values in the brackets in the 4th row (the row for N) are not representing range, contrary to what is stated in the footnote. Please correct.

A very good point with thanks

Because of the dependency of measurements (after lockdown vs. before lockdown) and because of lack of normal distribution of the part of the PFT data, Wilcoxon Signed Rank test was used for hypothesis testing. The median values of PFT were utilized to summarize data centrality along with the 25% and 75% values to describe data dispersion, instead of the (minimum-maximum) range. The 95% CI is customary utilized with average values rather than with the median.

We have deleted the pulmonary function data as per the associate editor's request.

VERSION 2 – REVIEW

REVIEWER	Reviewer name: Dr. Ross Langley Institution and Country: Royal Hospital for Children, United Kingdom of Great Britain and Northern Ireland Competing interests: None
REVIEW RETURNED	26-May-2021

GENERAL COMMENTS	The authors have addressed the previous comments
-------------------------	--

VERSION 2 – AUTHOR RESPONSE

Response to reviewers (second revision)

Editor in Chief Comments to Author :

A few minor points only:

Abstract Results line 22 add "(from 137 to 80)" after "There was a significant reduction in the number of presentations to the emergency department" and add "(from 56 to 24)" after "admissions to hospital".

Label the questionnaire "Appendix 1" and add "Appendix 1" to the text on page 6 line 46 after "The questionnaire"

Results page 9 line 9, add "80" before 27%

Thank you for your comments, all corrected and modified as requested.