



An audit of the impact of Covid-19 pandemic on the emotional wellbeing of children and parents with problematic severe asthma

Abstract

COVID-19 pandemic and the associated redeployment of healthcare infrastructure had significant impact on normal services. Amongst a cohort of with severe asthma children and young persons, attending a regional service, this questionnaire explored the impact of the pandemic and associated lockdown on emotional well-being.

Our findings suggest that there were significant anxieties associated with the ability to access primary and secondary care services, medication during the pandemic – lockdown, as well as the psychological impact of social distancing and missing school work for this cohort. There was a common perception that this had adversely impacted their asthma control, although this was not clinically correlated.

Our results indicate the need for health care providers to be aware of the psychological impact on emotional wellbeing of the pandemic and offer appropriate help and counselling as needed. A correlation with deteriorating asthma control may need to be explored.

Keywords

Paediatric asthma; COVID-19, pandemic; emotional impact

Introduction

The clinical features of acute SARS-COV-2 infection in children are generally mild; accounting for <2% of cases that have required hospitalization¹. Furthermore, children with asthma have not been severely affected, with a reduction in admissions due to wheeze attacks having been observed during the pandemic period². These epidemiological characteristics were not clear early in the course of the pandemic. Indeed, children with asthma were perceived to be at a higher risk of suffering from

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severe disease; a prospect that would reasonably be associated with high levels of anxiety in both children and parents.

Anxiety and stress, are associated with poor asthma control and can trigger wheeze attacks³. Moreover, parental stress can exacerbate a child's asthma

Method

Children and young persons (CYP) diagnosed with severe asthma⁴, currently attending a tertiary level multidisciplinary difficult asthma clinic serving South London and South East England were identified.

Two questionnaires were developed to assess themes related to the COVID-19 pandemic which were considered important influences on emotional wellbeing and potentially on asthma control. One questionnaire was designed to be answered by parents and the other to be answered by CYP. Answers to each question were recorded on a categorical scale; never/sometimes/ often/always.

Printed copies of the questionnaires were sent by recorded delivery to the address of each patient on 5th of June 2020. The questionnaires were completed anonymously and returned by post in pre-paid envelopes to the investigators. Questionnaires returned by 29th of June 2020 were included in the analysis.

These questionnaires were registered with the local audit department as a service evaluation project.

Results

Questionnaires were sent by post to the households of the 58 CYP identified. 20 questionnaires completed by parents, and 14 questionnaires completed by CYP were returned. The median age of CYP was 11 years (range 4 to 18), 39 of 58 were males. A summary of the responses to each question are presented in table 1 and table 2 (appendix)

Parental Questionnaire

The majority of parents 17/20 (85%) were worried about their child having an asthma attack during the pandemic, with a particular contributory factor being concerns around access to normal healthcare services. Indeed, 16/20 (80%) were concerned about accessing primary care services, 15/20 (75%) were concerned about accessing hospital services and

symptoms³. We hypothesized that the effect of social distancing measures and uncertainties around the SARS-COV-19 infection during the peak of the pandemic would result in detrimental effects on the emotional wellbeing of children with problematic severe asthma, impacting symptom control.

14/20 (70%) were concerned about accessing regular prescriptions.

Parents reported that the emotional wellbeing of their child was impacting on asthma symptoms. The main contributory influences affecting asthma control were the impact of social distancing 14/20 (70%), worry about school work 12/20 (60%), and their child's anxiety around COVID-19 12/20 (60%).

Parents' perception of the emotional wellbeing of their children was explored in further detail. 14/20 (70%) reported observing feelings of sadness and irritability in their child, and 16/20 (80%) observed increased levels of anxiety and lack of concentration. Changes in physical behaviors reflective of emotional changes were also reported; low energy 18/20 (90%), restlessness 17/20 (85%) and difficulty in sleeping 12/20 (60%).

Children's Questionnaire

The majority of CYP 9/14 (64%) were worried about an asthma attack during the pandemic. Accessing healthcare during an attack was of concern with 11/14 (78%) worried about the prospect of a hospital visit. In contrast to their parents only 4/14 (28%) were concerned about accessing regular prescriptions.

In common with their parents, CYP reported that their emotional wellbeing had influenced asthma symptoms. Factors reported to be impacting symptoms included impact of social distancing 7/14 (50%), and concerns regarding school work 7/14 (50%). A minority 4/14 (29%) felt that concerns regarding COVID-19 had influenced their asthma symptoms.

The emotional wellbeing of the CYP was explored in further detail. In common with their parents the majority of CYP reported feelings of irritability 11/14 (78%), anxiety 9/14 (64%), and difficulty with concentration 10/14 (71%). Changes in physical behavior reflective of emotional changes were also

reported, 9/14 (64%) felt restless, and 7/14 (50%) reported difficulty with sleeping.

Discussion

Main findings

The emotional impact of the COVID-19 pandemic on CYP with severe asthma appears significant. Our questionnaires have highlighted that anxiety around the challenges of accessing appropriate healthcare services, impact of social distancing measures and worry about school work impacted on emotional wellbeing. In turn these influences appeared to manifest as physical symptoms including reported worsening asthma control.

Interpretation

The role of stress and anxiety on asthma control is well described⁵. The emotional impact of COVID-19 on children is beginning to emerge and themes identified using this questionnaire have been reflected in other reports. As access to support networks at school and within the wider community of family and friends have been disrupted, stressors have accumulated and become amplified. Uncertainty about the future including worries about health, cancellation of exams, applications to college and financial security have all been reported as contributing to the experience of anxiety.

The charity, Young Minds, identified 83% of CYP as having experienced a worsening of their mental health⁶. Furthermore, specific concerns regarding accessing healthcare became apparent early on in the course of the pandemic with a sharp decline in paediatric emergency department attendances recorded, and concerns raised regarding delayed presentation of severe illness⁷.

Limitations

We acknowledge important limitations to this study. The sample size was small with a low response rate and the patients identified were all from the same tertiary regional clinic. It is possible the results may have differed in different parts of the UK. In addition there was no measurement of adherence or asthma control test score.

Conclusion

There has been a significant emotional impact of the COVID-19 pandemic on CYP with severe asthma, which is associated with a perception of worsening asthma control. An improved understanding of these factors amongst professionals involved in caring for these CYP may help with recognition of how the pandemic may be influencing asthma symptoms. Further research of a larger population, taking in to consideration correlation with asthma control, adherence to therapy, the additional impact of socio-economic factors and demographics would be important.

References

1. Annemarie D, Ewen H, Christopher G et al. Features of 20 133 UK patients in hospital with covid-19 using the ISARIC WHO Clinical Characterization Protocol: prospective observational cohort study. *BMJ* 2020; 369 doi: <https://doi.org/10.1136/bmj.m1985>
2. Elissa A, Stanley S. Managing Asthma during Coronavirus Disease-2019: An Example for Other Chronic Conditions in Children and Adolescents. 2020 Apr 21. doi: 10.1016/j.jpeds.2020.04.049
3. Caroline H, Courtney D, Leonard B et al. Daily global stress is associated with nocturnal asthma awakenings in school-age children. April 20, 2016. DOI:10.1016/j.jaci.2016.01.054
4. Management of severe asthma: a European Respiratory Society/American Thoracic Society guideline. *European Respiratory Journal* 2020 55: 1900588; DOI: 10.1183/13993003.00588-2019 <https://erj.ersjournals.com/content/55/1/1900588>
5. Ryan L, Glenda M. Psychological Factors in Asthma. 2008 Mar 15. doi: 10.1186/1710-1492-4-1-12
6. Coronavirus: Impact on young people with mental health needs. COVID-19 March 2020 survey youngminds.org.uk
7. Richard L, Jacob A, Simon L et al. Delayed access to care and late presentations in children during the COVID-19 pandemic: a snapshot survey of 4075 paediatricians in the UK and Ireland. 2020 Jun 25. doi: 10.1136/archdischild-2020-319848

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Contribution

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Appendix

Appendix 1:

COVID-19 SURVEY FOR CHILDREN AND ADOLESCENTS ATTENDING SPECIALIST ASTHMA SERVICE

We are getting in touch with you because you attend our service at Kings College hospital and we wanted to know how you have been during the COVID -19 pandemic.

Please tick the most appropriate answer (ask your parent if you need help)

Asthma Symptoms – during the COVID-19 outbreak:

1. I have been worried about:	Never	Sometimes	Often	Always
a) my asthma				
b) my asthma symptoms (cough/ wheeze/ shortness of breath/ tight chest)				
2. Because of my asthma, I am worried about:				
a) being able to see a doctor if needed				
b) being able to speak to my asthma team or specialist service				
c) getting my asthma medication prescriptions				

d) accessing the pharmacy for my asthma medications				
e) going to the hospital				
f) any other: <i>(please state)</i>				
3. My asthma has been triggered by:				
a) thinking about COVID-19				
b) worries about school work				
c) worries because of information heard on media outlets				
d) worries because of social distancing and not being able to see my friends/family				
e) worries about money				
f) worries from family disagreements				
g) worries about nurses/carers coming to visit me at home and the risk of transmitting COVID to me				
h) worries about nurses/carers coming to visit me at home and the risk of transmitting COVID to my family members				
i) any other: <i>(please state)</i>				

Mood and Behaviour – during the COVID-19 outbreak:

4. Which of these feelings or moods have you experienced during this period	Never	Sometimes	Often	Always
a) happiness				
b) irritability/moody				
c) angry				
d) sad/tearful				
e) depressed				
f) anxious/worried				
g) panic attacks				
h) thoughts of self-harm				
5. Which of these behaviours have you displayed during this period				
a) restless/fidgety				
b) lack of concentration				
c) tired with low energy levels				
d) relaxed				
e) participation in your hobbies/activities				

f) I am sleeping too little/worse than before				
g) I am sleeping too much				
h) I have lost my appetite				
i) I am eating too much				

Support:

If you would like to have support with my mood, anxiety and/or worries about my asthma care / school work and/or my family please contact the specialist nurses

Online Appendix 2:

COVID-19 SURVEY FOR PARENTS OF CHILDREN AND ADOLESCENTS ATTENDING SPECIALIST ASTHMA SERVICE

We are getting in touch with you because you attend our service at Kings College hospital and we wanted to know how you and your child have been during the COVID -19 pandemic.

Please tick the most appropriate answer

Asthma Symptoms – during the COVID-19 outbreak:

1. I have been worried about my child's:	Never	Sometimes	Often	Always
a) asthma				
b) asthma symptoms (cough/ wheeze/ shortness of breath/ tight chest)				
2. In relation to my child's asthma, I am worried about:				
a) accessing the GP if needed				
b) accessing the specialist asthma service				
c) access to his/her asthma medication prescriptions				
d) accessibility to the pharmacy				
e) accessibility to the hospital				
f) any other: <i>(please state)</i>				

3. My child's asthma has been triggered by:				
a) thinking about COVID-19				
b) worries about school work				
c) worries because of information heard on media outlets				
d) worries because of social distancing and not being able to see friends/family				
e) worries about financial pressures				
f) worries from family disagreements				
g) I am worried about nurses/carers coming to visit us at home and the risk of transmitting COVID to my child				
h) I am worried about nurses/carers coming to visit us at home and the risk of transmitting COVID to me or my family members				
i) any other: <i>(please state)</i>				

Mood and Behaviour – during the COVID-19 outbreak:

4. Which of these feelings or moods has your child experienced during this period	Never	Sometimes	Often	Always
a) happiness				
b) irritability/moody				

c) angry				
d) sad/tearful				
e) depressed				
f) anxious/worried				
g) panic attacks				
h) thoughts of self-harm				
5. Which of these behaviours has your child displayed during this period				
a) restless/fidgety				
b) lack of concentration				
c) tired with low energy levels				
d) relaxed				
e) participation in their hobbies/activities				
f) sleeping too little/worse than before				
g) sleeping too much				
h) loss of appetite				

i) overeating				
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Support:

If you would like to have support with my mood, anxiety and/or worries about my asthma care / school work and/or my family please contact the specialist nurses

Table 1:**COVID-19 SURVEY FOR PARENTS OF CHILDREN AND ADOLESCENTS ATTENDING SPECIALIST ASTHMA SERVICE****Asthma Symptoms – during the COVID-19 outbreak:**

1. I have been worried about my child's:	Never	Sometimes	Often	Always	Total
a) asthma	III	IIIIII	IIII	IIII	20
b) asthma symptoms (cough/ wheeze/ shortness of breath/ tight chest)	III	IIIIII	III	III	21
2. In relation to my child's asthma, I am worried about:					
a) accessing the GP if needed	III	IIIIII	III	III	20
b) accessing the specialist asthma service	IIIIII	IIII	III	I	20
c) access to his/her asthma medication prescriptions	IIII	IIIIII	III	III	20
d) accessibility to the pharmacy	IIII	IIIIII	III	III	20
e) accessibility to the hospital	IIII	IIIIII	III	III	20
f) any other: <i>(please state)</i>					
3. My child's asthma has been triggered by:					
a) thinking about COVID-19	IIIIII	IIII	II	I	18

b) worries about school work				I	19
c) worries because of information heard on media outlets				I	19
d) worries because of social distancing and not being able to see friends/family					19
e) worries about financial pressures					19
f) worries from family disagreements					18
g) I am worried about nurses/carers coming to visit us at home and the risk of transmitting COVID to my child					20
h) I am worried about nurses/carers coming to visit us at home and the risk of transmitting COVID to me or my family members					21
i) any other: <i>(please state)</i>					

Mood and Behaviour – during the COVID-19 outbreak:

4. Which of these feelings or moods has your child experienced during this period	Never	Sometimes	Often	Always	
a) happiness					19
b) irritability/moody					20

c) angry					19
d) sad/tearful					19
e) depressed			1		19
f) anxious/worried					20
g) panic attacks			1		19
h) thoughts of self-harm					18
5. Which of these behaviours has your child displayed during this period					
a) restless/fidgety				1	20
b) lack of concentration					20
c) tired with low energy levels			1	1	20
d) relaxed					19
e) participation in their hobbies/activities					19
f) sleeping too little/worse than before					19
g) sleeping too much					19
h) loss of appetite					20



i) overeating					19
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Table 2:

COVID-19 SURVEY FOR CHILDREN AND ADOLESCENTS ATTENDING SPECIALIST ASTHMA SERVICE

Asthma Symptoms – during the COVID-19 outbreak:

1. I have been worried about:	Never	Sometimes	Often	Always	Total
a) my asthma	III	IIIIII	I	I	13
b) my asthma symptoms (cough/ wheeze/ shortness of breath/ tight chest)	III	IIIIII	III	I	14
2. Because of my asthma, I am worried about:	Never	Sometimes	Often	Always	Total
a) being able to see a doctor if needed	IIIIII	IIII	I	I	14
b) being able to speak to my asthma team or specialist service	IIIIII	IIII	II		14
c) getting my asthma medication prescriptions	IIIIIIII	II		II	14
d) accessing the pharmacy for my asthma medications	IIIIII	III		III	14
e) going to the hospital	III	IIIIII	III	III	14
f) any other: <i>(please state)</i>					
3. My asthma has been triggered by:	Never	Sometimes	Often	Always	Total
a) thinking about COVID-19	IIIIIIII	III		I	14

b) worries about school work			I		14
c) worries because of information heard on media outlets			I	II	14
d) worries because of social distancing and not being able to see my friends/family			I	I	14
e) worries about money		II	I		14
f) worries from family disagreements		I		I	14
g) worries about nurses/carers coming to visit me at home and the risk of transmitting COVID to me			I		14
h) worries about nurses/carers coming to visit me at home and the risk of transmitting COVID to my family members			I	I	14
i) any other: <i>(please state)</i>					

Mood and Behaviour – during the COVID-19 outbreak:

4. Which of these feelings or moods have you experienced during this period	Never	Sometimes	Often	Always	Total
a) happiness					12
b) irritability/moody			II		11

c) angry	lll	lllllll			11
d) sad/tearful	lll	lllllll	l		11
e) depressed	llllllll	ll			11
f) anxious/worried	lll	lllllll	ll		12
g) panic attacks	llllllll	l			11
h) thoughts of self-harm	llllllll	l			11
5. Which of these behaviours have you displayed during this period	Never	Sometimes	Often	Always	Total
a) restless/fidgety	llll	lll	llll	ll	13
b) lack of concentration	lll	lllllll	lll	ll	13
c) tired with low energy levels	lllll	lllllll	ll		13
d) relaxed		lllllll	lllll	l	12
e) participation in your hobbies/activities		lllllll	llll	ll	12
f) I am sleeping too little/worse than before	lllll	lllllll		ll	12
g) I am sleeping too much	llllllll	llll	l		13
h) I have lost my appetite	lllll	llll	llll		13

i) I am eating too much	lllll	lllll	l		12
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