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Opinion

The Covid-19 Pandemic and Children With Recurrent Wheeze and Asthma in the UK: Parents Views on Next Steps for Research

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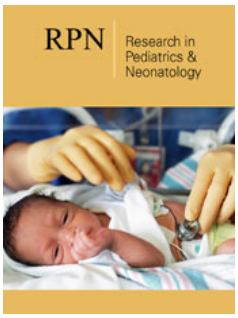

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Opinion

At the start of the SARS-CoV-2 pandemic, children who developed covid-19 infection and had a long-term condition such as asthma were up to ten times more likely to require an intensive care admission [1]. Therefore, around 44,000 children with severe asthma [2], were advised to shield for 12 weeks in England. Before the pandemic, the United Kingdom (UK) had amongst the highest rates of childhood asthma deaths in Europe [3]. Children in the most deprived areas in England were two and a half times more likely to have an emergency admission for asthma [4]. We have yet to learn how the pandemic and health system disruptions have impacted children with recurrent wheeze and asthma. As we rebuild after the covid-19 pandemic, listening to parents' and carers' experiences of inequalities and gaps in care is invaluable to ensure we leave no child behind. We conducted stakeholder consultation with the Imperial College London Preschool-wheeze Parent Advisory Group. The group consists of 12 parents of children aged 1-5 years with wheeze or asthma in the UK. As well as peer-to-peer support, they advise our researchers of experiences of caring for their child and areas for future research. Over four virtual sessions, our parent group discussed changes to children's healthcare during the covid-19 pandemic.

Perceived Benefits and Risks of Lockdown on Recurrent Wheeze and Asthma

During the lockdowns of 2020, there were fewer childhood wheeze presentations to emergency departments, amid falls of up to 90% in children's emergency department attendance in the United Kingdom (UK) [5]. Our parent group said they had not changed how they cared for their child aside from ensuring close adherence to preventive medication. Some parents experienced a shortage of inhalers during the first wave. Although timely, consultations with general practitioners for wheeze were largely conducted by phone or video. Therefore, parents found they had to be more assertive about children's conditions and emphasise symptoms. Although the lockdown message in the UK was to stay at home, delayed presentations were rare [6]. Some parents were disadvantaged by language difficulties or a lack of skills and confidence to convey their child's condition or use of digital technology to enable video consultations with health professionals [7].

Before the pandemic, parents frequently observed colds seemed to trigger hospital admissions. Parents noticed their child's wheeze improved during the pandemic, speculating this was due to fewer respiratory infections because of containment measures. Respiratory infections are known to trigger wheeze [8], and parent's observation of fewer respiratory infections on wheezing incidence during the pandemic is now supported by emerging evidence [9,10].

Parents also wanted to know of evidence that the lowering in emergency admissions for wheeze in urban areas could be due to changes in air pollution. As a result of travel restrictions, circulating nitrogen dioxide, which has been linked to asthma attacks [11], fell by 42% on average across 126 urban sites in the UK, with larger (48%) reductions at sites close to the roadside [12]. Evidence from the U.S. and China has shown no association between asthma attacks among children living in urban areas and the reduction in air pollutants during the pandemic [9,10]. However, this requires more research as studies focused on middle-and-high-income areas and report difficulties in capturing levels of air pollution.

With their children experiencing fewer wheeze attacks ascribed to containment measures, parents described a better understanding of the link between respiratory infections, air pollution and asthma attacks. Parents would have welcomed more information on potential triggers after their children's first wheeze attack pre-pandemic. Having benefitted from protracted homestay, parents wondered whether smaller nurseries and early-years settings may benefit children who suffer from recurrent wheeze. Parents whose children are under specialist care would have appreciated a call to discuss the implications of, and plan for, returning to nursery or school. This could then have been shared with the child's nursery or school.

Parents' experiences to inform future health policy and practice for children with recurrent wheeze and asthma post-covid-19

Behaviour change to reduce transmission including hand-washing, mask-wearing, and social distancing, is predicted to continue into the initial post-pandemic years [13]. This may be a welcome change for parents of children with wheeze if it can reduce infectious triggers and thereby minimise future Autumn and winter peaks in wheeze attacks observed in previous years in the UK [14]. Video-telemedicine is convenient and fits better around work and caring responsibilities for many parents [7]. However, more research is needed to ascertain health professional and parent views about the accessibility, safety and quality of video-telemedicine consulting. Questions remain about the impacts of video-telemedicine consulting on trust, empathy, and continuity of care between health professionals and parents. When reporting wheeze symptoms over the phone, parents need to be aware of their child's rate of breathing, any additional signs of abdominal muscles being used or tracheal tug, and that no audible wheeze is not necessarily positive if other symptoms are present.

The impacts of traffic diversion schemes on carbon reduction, such as Low Traffic Neighbourhoods in London [15], offer the promise of better respiratory health. However, the implementation of such schemes may have worsened inequalities in air pollution by redistributing traffic to already highly polluted areas. Potential reductions in air pollution could be very beneficial to the health of not only children with asthma but all children. Therefore, better evaluation of traffic diversion schemes and improved transport policy is needed.

It is critical to monitor the continued effects of the covid-19 pandemic on children with long-term conditions such as asthma. To ensure levelling up post-pandemic, data scientists and policymakers must listen to parents' and carers' experiences of inequalities and gaps in care.

Contributors Statement

Dr Creese and Prof. Saxena conceived and designed this manuscript. Dr Creese wrote and researched the manuscript. All authors critically revised and approved the final version. Specialist input on paediatric respiratory medicine was provided by Prof. Saglani. Input on parental perspective was provided by Valerie Pike. Expert design and facilitation of Patient & Public Involvement was provided by Esta Orchard. Dr Creese is the corresponding author. Dr Saxena is the guarantor for the article.

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