

Acceptability of Hygiene, Face Covering, and Social Distancing Interventions to Prevent Exacerbations in people living with Airways Diseases

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Abstract

Interventions to prevent the spread of SARS-CoV-2 have been associated with substantial reductions in exacerbations of airways diseases, likely through reduced transmission of other respiratory viruses. We surveyed 4442 people with airways disease (asthma=3627, bronchiectasis=258, COPD=557) to gauge attitudes and intentions towards continuing such measures after the COVID-19 pandemic. 47% intended to continue wearing a facemask in indoor public spaces and 61% thought everyone should be required to do so during the 'flu season. Women, those with bronchiectasis and older people were generally more cautious. Respiratory virus infection control measures should be considered in clinical guidelines and public health recommendations.

Introduction

Chronic airway diseases are common[1-3]. People living with these conditions are susceptible to 'exacerbations' which drive much of the morbidity, mortality, and cost[1-3]. Most exacerbations are caused by respiratory viruses.

During the COVID-19 pandemic, a range of measures to reduce the transmission of SARS-CoV-2 were introduced including encouraging hand hygiene, social (physical) distancing, wearing face coverings and isolation of suspected and/or confirmed cases. People with airway diseases were considered particularly vulnerable[4] and advised to take additional precautions including 'shielding' (maximal reduction of social contact). Recommendations varied within and between countries, and over time.

Multiple studies subsequently reported a substantial reduction in hospitalisations due to asthma and chronic obstructive pulmonary disease (COPD) exacerbations, temporally associated with introduction of COVID-19 infection control measures[5], likely because people avoiding SARS-CoV-2 were also avoiding viruses that cause exacerbations[6].

Current guidelines such as the Global Initiative for Asthma (GINA[1]), Global Initiative for Chronic Obstructive Lung Disease (GOLD[3]) and European Respiratory Society (ERS) guidelines on bronchiectasis[2] focus on exacerbation prevention but do not recommend respiratory virus infection control measures. This is despite a Cochrane review demonstrating efficacy[7]. Whilst the COVID-19 pandemic has demonstrated that individuals are accepting of measures to reduce the transmission of infection, understanding on-going intentions of people with respiratory disease would be an important first step in developing future guidance in this area.

Methods

An online survey of people with airway diseases was conducted by the Asthma UK–British Lung Foundation (AUK-BLF) partnership, seeking their views about measures to reduce respiratory virus transmission. Questions were framed to cover a future period after the COVID-19 pandemic, based on the possibility that such measures could reduce the risk of exacerbations.

Data were analysed in SPSS (version 25). Proportions were compared with Chi Square. $p \leq 0.05$ was considered statistically significant. Ethical approval was obtained from the Imperial College Research Governance and Integrity Team (RGIT) (ICREC Ref:20IC6625). Survey respondents consented to use of their responses.

Results

The survey was distributed via social media and mailing lists (164285 recipients) and open 3rd-10th March 2021. 4442 people completed the survey: 3627(81.7%) with asthma, 258(5.8%) with bronchiectasis and 557(12.5%) with COPD. The commonest age categories were 50-59(n=1165) and 60-69 years(n=1200). 3381(76%) were female. 4260(96%) reported their ethnicity as 'white'.

Responses on the longer-term acceptability of respiratory virus infection control measures in this population are presented in Table 1. A substantial proportion of respondents expected to continue to take some steps to reduce their future risk of exacerbation, for example 79.5% would continue increased handwashing and 68.6% would continue social distancing indoors. 46.9% would continue

to wear a face mask in indoor public places. There was little support for wearing face coverings or social distancing outdoors.

Regarding policy for people more generally, responses were generally lower when considering what the population should do “at all times” compared to “during the ‘flu season’”. Around half of the respondents wanted healthcare professionals to continue wearing a mask when seeing patients.

There were differences between the three respiratory conditions with the suggestion that people living with bronchiectasis were most cautious (Table 1). Women were more likely to continue measures than men (Supplementary Table 1).

We examined the effect of age on respiratory virus infection control measures in people with asthma (Supplementary Table 2). There were statistically significant differences and differences of more than 10% points between age groups for five interventions (Figure 1). In general, older people were more cautious, with the exception of not visiting unwell friends and family.

Discussion

Substantial proportions of people living with airway diseases report that they would continue infection control measures adopted during the COVID-19 pandemic to reduce their future risk of exacerbations. There was also support for the adoption of measures in the general population, especially during the influenza season, which should prompt discussion about behaviours in enclosed public spaces. The findings were consistent across different airways diseases, although older people, women and those with bronchiectasis were most willing to adopt a more cautious approach.

The reduction in hospitalisations for exacerbations during the pandemic is of greater magnitude than ever previously achieved with optimisation of care[1-3]. Given the evidence base supporting the effectiveness of measures to reduce exacerbations, consideration should be given to including such measures in future guidelines.

Frequent hand washing would be the simplest measure to encourage as it is already part of social behaviour. If measures other than hand hygiene are most effective, further work will be required to support people in making behaviour changes. Understanding differences in effectiveness of interventions together with willingness for people to adopt them will be critical in informing policy change. Compliance with recommendations in the general population is related to confidence in the source of advice[8]. Acceptability of interventions is dependent on many factors including cultural norms and, as here, age and gender. In some jurisdictions, face coverings have become politicised which may further affect implementation, and some people with respiratory disease have been exempt from wearing face coverings which could limit future adoption. The potential benefits of measures must be balanced against potential harms including costs and psychological harms such as stigma[9,10]. It is possible that by reducing regular exposure to common respiratory viruses there could be increased risk of more severe disease over time.

Our survey was conducted online, so required digital literacy, and non-white ethnic groups and men were under-represented despite the large sample size. Although the questions were framed to address the period “after COVID”, attitudes may change over time. Importantly, there was little enthusiasm for outdoor mask wearing suggesting that responses were measured and proportionate.

Infection control strategies are affordable and not pathogen specific[7]. Their dramatic impact during the pandemic indicates that guideline committees in asthma, bronchiectasis and COPD should consider including them in future advice on preventing exacerbations. Our data show that there is a significant level of acceptance by people with these conditions and that they are likely to be well tolerated. As well as enabling people living with airways diseases to make informed choices about modifying their own risk of exacerbation, the general public can also be informed and advised as to how they can continue to protect members of society who may be especially vulnerable to infections.

Table 1: Acceptability of respiratory virus infection control interventions in people living with asthma (n=3627), bronchiectasis (n=258) and COPD (n=557). Data are % answering yes (total n=4442). ^: p<0.05 for differences across respiratory diseases. *: p<0.05 for overall difference between policy at all times compared to only during the 'flu season.

	Thinking about the future (after the lockdown has been eased and most people have been vaccinated against COVID-19), would you <i>continue to do yourself, even if it wasn't policy...</i>	Thinking about the future (after the lockdown has been eased and most people have been vaccinated against COVID-19), which of the following do you think should carry on as policies <i>for everyone at all times?</i>	Thinking about the future (after the lockdown has been eased and most people have been vaccinated against COVID-19), which of the following do you think should carry on as policies <i>for everyone during the 'flu season?</i>
Wearing a face covering in indoor public places	Overall 46.9%^ Asthma 46.0% Bronchiectasis 56.2% COPD 48.5%	Overall 44.9%^ Asthma 43.5% Bronchiectasis 54.3% COPD 50.3%	Overall 60.7%^* Asthma 60.0% Bronchiectasis 70.5% COPD 61.0%
Wearing a face covering on public transport	Overall 45.7% Asthma 45.6% Bronchiectasis 51.6% COPD 43.4%	Overall 50.8% Asthma 50.1% Bronchiectasis 55.8% COPD 53.0%	Overall 59.5%* Asthma 59.5% Bronchiectasis 63.6% COPD 57.8%
Wearing a face covering outdoors	Overall 11.6% Asthma 11.5% Bronchiectasis 12.4% COPD 11.8%	Overall 10.9% Asthma 10.6% Bronchiectasis 11.2% COPD 13.1%	Overall 12.9%* Asthma 12.5% Bronchiectasis 14.7% COPD 15.3%
Hand sanitiser being widely available to clean hands	Not applicable	Overall 79.7%^ Asthma 80.9% Bronchiectasis 81.09% COPD 71.3%	Overall 81.7%^* Asthma 83.1% Bronchiectasis 81.4% COPD 72.3%
Washing hands more often	Overall 79.5%^ Asthma 80.7% Bronchiectasis 81.0% COPD 70.6%	Overall 73.7%^ Asthma 74.7% Bronchiectasis 76.7% COPD 65.7%	Overall 75.9%^* Asthma 76.8% Bronchiectasis 79.1% COPD 68.4%
Keeping more of a distance from others when in an indoor public space	Overall 68.6% Asthma 67.8% Bronchiectasis 73.6% COPD 70.9%	Overall 52.5%^ Asthma 50.8% Bronchiectasis 58.89% COPD 60.3%	Overall 62.9%^* Asthma 61.4% Bronchiectasis 70.5% COPD 68.6%
Keeping more of a distance from others when in an outdoor public space	Overall 38.0% Asthma 37.8% Bronchiectasis 38.0% COPD 39.5%	Not asked	Not asked
Avoiding busy public spaces	Overall 60.0%^ Asthma 58.9% Bronchiectasis 71.7% COPD 61.8%	Not asked	Not asked
Avoid seeing friends or family if they are unwell with a cold or 'flu	Overall 59.3%^ Asthma 59.9% Bronchiectasis 70.2% COPD 50.8%	Not asked	Not asked
Healthcare staff to wear masks when seeing patients	Not applicable	Overall 45.6% Asthma 45.5% Bronchiectasis 50.8% COPD 43.6%	Overall 51.5%* Asthma 51.6% Bronchiectasis 56.2% COPD 48.7%

Figure Legend

Figure 1: The acceptability of respiratory virus infection control interventions in adults living with asthma, by age (in years). n=3627.

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Competing Interests

Professor Hurst reports personal fees, and non-financial support from pharmaceutical companies that make medicines to treat respiratory disease, outside the submitted work. No other authors have any competing interests to declare.

Contributorship

The survey was designed by AC and NSH with input from JRH. Data were analysed by JRH. The first draft was written by JRH. All authors revised the manuscript for important intellectual content and approved the final version for submission.

Data Availability

The data belong to the Asthma UK – British Lung Foundation Partnership and requests for data sharing can be made to the charity.

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