



Closing schools is not evidence based and harms children

Keeping schools open should be the UK's top priority

Sarah J Lewis,¹ Alasdair P S Munro,² George Davey Smith,¹ Allyson M Pollock³

¹ MRC Integrative Epidemiology Unit, University of Bristol, Bristol, UK

² NIHR Southampton Clinical Research Facility and Southampton Biomedical Research Centre, University Hospital Southampton NHS Foundation Trust, Southampton, UK

³ Institute of Population Health Sciences, Newcastle University, Newcastle upon Tyne, UK
Correspondence to: S J Lewis

Cite this as: *BMJ* 2021;372:n521

<http://dx.doi.org/10.1136/bmj.n521>

Published: 23 February 2021

Some 8.8 million schoolchildren in the UK have experienced severe disruption to their education, with prolonged school closures and national exams cancelled for two consecutive years. School closures have been implemented internationally¹ with insufficient evidence for their role in minimising covid-19 transmission and insufficient consideration of the harms to children.

For some children education is their only way out of poverty; for others school offers a safe haven away from a dangerous or chaotic home life. Learning loss,² reduced social interaction, isolation, reduced physical activity,³ increased mental health problems,^{3 4} and potential for increased abuse, exploitation, and neglect⁵ have all been associated with school closures. Reduced future income⁶ and life expectancy⁷ are associated with less education. Children with special educational needs or who are already disadvantaged are at increased risk of harm.³ The 2019 report of the children's commissioner for England⁸ estimated that 2.3 million children in England were living in unsafe home environments with domestic violence, drug or alcohol abuse, or severe mental problems among parents. These long term harms are likely to be magnified by further school closures.³

The overall risk to children and young people from covid-19 is very small,⁹ and hyperinflammatory syndrome¹⁰ is extremely rare. Studies are under way to gauge the effect of post-covid syndrome among children.¹¹

Although school closures reduce the number of contacts children have, and may decrease transmission, a study of 12 million adults in the UK found no difference in the risk of death from covid-19 in households with or without children.¹² Only 3% of people aged over 65 live with children.

In-person learning increases teachers' exposure and might be expected to increase their risk of becoming infected,¹³ but accumulating evidence shows that teachers and school staff are not at higher risk of hospital admission or death from covid-19 compared with other workers.^{14 15} Teacher absence because of confirmed covid-19 in England was similar in primary and secondary schools in the autumn term,¹⁶ despite secondary schoolchildren having much higher rates of SARS-CoV-2 infection.¹⁷ Moreover teacher absence decreased in tier 3 regions during the November lockdown despite schools remaining open.¹⁶

Transmission

The role of children in community transmission is not clear. Recent infection surveys using PCR tests,^{17 18} show that around 0.5-1% of children have a positive result, and school closures mean it has not

been possible to obtain evidence regarding the spread of the new variant in schools. However, earlier studies, including from Australia, Norway, Switzerland, Italy, and Germany,¹⁹⁻²³ in which all individuals were tested regardless of symptoms found transmission rates to be low, particularly among primary schoolchildren.¹⁹⁻²³ Ecological studies and descriptive studies of viral prevalence within schools show that it reflects community prevalence but is not higher.²⁴

International modelling studies²⁵ which estimate that school closures have a meaningful effect on reducing transmission rates are all confounded by the near simultaneous introduction of multiple interventions (including lockdowns, curfews, closures of bars and restaurants). Moreover, they do not account for indirect effects of school closures which prevent parents from working outside the home. A systematic review²⁶ of observational studies showed that in those studies with lowest risk of bias, school closures had no discernible effect on SARS-CoV-2 transmission.

Children have least to gain and most to lose from school closures. This pandemic has seen an unprecedented intergenerational transfer of harm and costs from elderly socioeconomically privileged people to disadvantaged children. The UN convention on the rights of the child and the duty on the government to respect, protect and fulfil those rights have largely been overlooked.

The UK children's commissioners have all pointed out the harms of closing schools to the wellbeing of children and young people.²⁷⁻³⁰ Many pupils may never be able to catch up on lost time in school, and vulnerable teenagers are falling through gaps in the school and social care systems. There is no substitute for face-to-face learning.³⁰ In the absence of strong evidence for benefits of school closures, the precautionary principle would be to keep schools open to prevent catastrophic harms to children.

UK governments' failure to prioritise children is reflected in the absence of systematic evaluations of school closures and mitigation measures in schools. Schools reopened in Scotland and Wales on the 22 February for children aged 3-7 years. Despite cases falling steeply across England and Northern Ireland, schools will not return until 8 March. The UK must protect the rights of children, ameliorate the harms, and ensure that school closures are only ever enacted as a last resort, for the benefit of children.

Competing interests: We have read and understood BMJ policy on declaration of interests and declare the following interests: SL has campaigned for schools to be reopened during the pandemic. AM was the lead fellow in commercial studies of vaccines and antibiotics funded by Merck Sharpe and Dohme, GlaxoSmithKline, Johnson & Johnson, Janssen, AstraZeneca, Novavax, and Valneva.

Provenance and peer review: Commissioned; not externally peer reviewed.

- 1 Buonsenso D, Roland D, De Rose C, et al. Schools closures during the covid-19 pandemic: a catastrophic global situation. *Pediatr Infect Dis J* 2021. [Epub ahead of print.] doi: 10.1097/INF.0000000000003052 pmid: 33464019
- 2 Cooper H, Nye B, Charlton K, Lindsay J, Greathouse S. The effects of summer vacation on achievement test scores: a narrative and meta-analytic review. *Rev Educ Res* 1996;66:227-68. doi: 10.3102/00346543066003227 .
- 3 Viner R, Russell S, Saull R, et al. Impacts of school closures on physical and mental health of children and young people: a systematic review. *MedRxiv* 2021.02.10.21251526 [Preprint]; doi: 10.1101/2021.02.10.21251526
- 4 NHS Digital. Mental health of children and young people in England, 2020: Wave 1 follow up to the 2017 survey. <https://digital.nhs.uk/data-and-information/publications/statistical/mental-health-of-children-and-young-people-in-england/2020-wave-1-follow-up>
- 5 Interpol. Threats and trends child sexual exploitation and abuse. Covid-19 impact. 2020. <https://www.interpol.int/en/News-and-Events/News/2020/INTERPOL-report-highlights-impact-of-COVID-19-on-child-sexual-abuse>
- 6 Institute for Fiscal Studies. The crisis in lost learning calls for a massive national policy response. <https://www.ifs.org.uk/publications/15291>
- 7 Davies NM, Dickson M, Davey Smith G, van den Berg GJ, Windmeijer F. The causal effects of education on health outcomes in the UK Biobank. *Nat Hum Behav* 2018;2:117-25. doi: 10.1038/s41562-017-0279-y pmid: 30406209
- 8 Children's Commissioner. Childhood vulnerability in England 2019. <https://www.childrenscommissioner.gov.uk/report/childhood-vulnerability-in-england-2019/>
- 9 Spiegelhalter D. Use of "normal" risk to improve understanding of dangers of covid-19. *BMJ* 2020;370:m3259. doi: 10.1136/bmj.m3259 pmid: 32907857
- 10 Riphagen S, Gomez X, Gonzalez-Martinez C, Wilkinson N, Theocharis P. Hyperinflammatory shock in children during COVID-19 pandemic. *Lancet* 2020;395:1607-8. doi: 10.1016/S0140-6736(20)31094-1 pmid: 32386565
- 11 Simpson FK, Lokugamage AU. The elephant and the blind men: the children of long covid. *BMJ* 2021;372:n157. doi: 10.1136/bmj.n157 pmid: 33468452
- 12 Forbes H, Morton CE, Baco S. Association between living with children and outcomes from COVID-19: an OpenSAFELY cohort study of 12 million adults in England. *MedRxiv* 2020.11.01.20222315 [Preprint] doi: 10.1101/2020.11.01.20222315
- 13 Vlachos J, Hertegård E, B Svaleryd H. The effects of school closures on SARS-CoV-2 among parents and teachers. *Proc Natl Acad Sci U S A* 2021;118:e2020834118. doi: 10.1073/pnas.2020834118. pmid: 33574041
- 14 Fenton L, Gribben C, Caldwell D, et al. Risk of hospitalisation with Covid-19 among teachers compared to healthcare workers and other working-age adults. A nationwide case-control study. *medRxiv* 2021.02.05.21251189 [Preprint.] doi: 10.1101/2021.02.05.21251189.
- 15 Lewis SJ, Dack K, Relton C, Munafo MR, Davey Smith G. Risk of death among teachers in England and Wales during the Covid19 pandemic.
- 16 Southall E, Holmes A, Hill E, et al. An analysis of school absences in England during the Covid-19 pandemic. *MedRxiv* 2021.02.10.21251484 [Preprint]; doi: 10.1101/2021.02.10.21251484
- 17 Office for National Statistics. Coronavirus (COVID-19) infection survey, UK: 19 February 2021. <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddis-eases/bulletins/coronaviruscovid19infectionsurveyipilot/latest>
- 18 Riley S, Walters C, Wang H. REACT-1 round 9 interim report: downward trend of SARS-CoV-2 in England in February 2021 but still at high prevalence. <https://spiral.imperial.ac.uk/handle/10044/186126>
- 19 Macartney K, Quinn HE, Pillsbury AJ, et al. NSW COVID-19 Schools Study Team. Transmission of SARS-CoV-2 in Australian educational settings: a prospective cohort study. *Lancet Child Adolesc Health* 2020;4:807-16. doi: 10.1016/S2352-4642(20)30251-0 pmid: 32758454
- 20 Brandal LT, Ofitserova TS, Meijerink H, et al. Minimal transmission of SARS-CoV-2 from paediatric COVID-19 cases in primary schools, Norway, August to November 2020. *Euro Surveill* 2021;26:2002011. doi: 10.2807/1560-7917.ES.2020.26.12002011 pmid: 33413743
- 21 Ulyte A, Radtke T, Abela IA. Clustering and longitudinal change in SARS-CoV-2 seroprevalence in school-children: prospective cohort study of 55 schools in Switzerland. *medRxiv* 2020.12.19.20248513. [Preprint.] doi: 10.1101/2020.12.19.20248513
- 22 Larosa E, Djuric O, Cassinadri M, et al. Reggio Emilia Covid-19 Working Group. Secondary transmission of COVID-19 in preschool and school settings in northern Italy after their reopening in September 2020: a population-based study. *Euro Surveill* 2020;25:2001911. doi: 10.2807/1560-7917.ES.2020.25.49.2001911 pmid: 33303065
- 23 Theuring S, Thielecke M, van Loon W, et al. SARS-CoV-2 infection and transmission in school settings during the second wave in Berlin, Germany: a cross-sectional study. *medRxiv* 2021.01.27.21250517 [Preprint.] doi: 10.1101/2021.01.27.21250517.
- 24 European Centre for Disease Prevention and Control. COVID-19 in children and the role of school settings in transmission - first update- technical report. <https://www.ecdc.europa.eu/en/publications-data/children-and-school-settings-covid-19-transmission>
- 25 Haug N, Geyrhofer L, Londei A, et al. Ranking the effectiveness of worldwide COVID-19 government interventions. *Nat Hum Behav* 2020;4:1303-12. doi: 10.1038/s41562-020-01009-0 pmid: 33199859
- 26 Walsh S, Chowdhury A, Russell S, et al. Do school closures reduce community transmission of COVID-19? A systematic review of observational studies. *medRxiv* 2021.01.02.21249146. [Preprint.] doi: 10.1101/2021.01.02.21249146
- 27 Children's commissioner warns of risk to children's rights and welfare after Sturgeon's Covid school closures. *Herald* 2020 Dec 20. <https://www.heraldscotland.com/news/18958094.childrens-commissioner-warns-risk-childrens-rights-welfare-sturgeons-school-closures/>
- 28 One in six pupils may never be able to catch up on lost time in school, children's commissioner warns. *iNews* 2021 Feb 14. <https://inews.co.uk/news/education/children-never-catch-up-schools-childrens-commissioner-871377>
- 29 Children's Commissioner. Coronavirus crisis could see a lost generation of vulnerable teenagers falling through gaps in the school and social care systems. 2020. <https://www.childrenscommissioner.gov.uk/2020/07/07/coronavirus-crisis-could-see-a-lost-generation-of-vulnerable-teenagers-falling-through-gaps-in-the-school-and-social-care-systems/>
- 30 Children's Commissioner for Wales. Commissioner's response to latest schools announcement. 2021. <https://www.childcomwales.org.uk/2021/01/commissioners-response-to-latest-schools-announcement/>

This article is made freely available for use in accordance with BMJ's website terms and conditions for the duration of the covid-19 pandemic or until otherwise determined by BMJ. You may use, download and print the article for any lawful, non-commercial purpose (including text and data mining) provided that all copyright notices and trade marks are retained.