A brief summary of authoritative high-level peer-reviewed international evidence quantifying the impact of school closures and re-openings on individual-level risks and community-level transmission rates of SARS-CoV-2

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Please note that all of the following are based on data that pre-date the emergence of new variants of concern, so the impact of those new variants upon viral virulence and transmissibility also need to be factored into current decision making.

Some choice quotes from the paper by Haug and colleagues in Nature Human Behaviour on 16th November 2020, summarizing collated data from national epidemic trajectories from 226 countries:

"While in previous studies, based on smaller numbers of countries, school closures had been attributed as having little effect on the spread of COVID-19, more recent evidence has been in favour of the importance of this NPI; school closures in the United States have been found to reduce COVID-19 incidence and mortality by about 60%. This result is also in line with a contact-tracing study from South Korea, which identified adolescents aged 10–19 years as more likely to spread the virus than adults and children in household settings."

"We showed that the most effective measures include closing and restricting most places where people gather in smaller or larger numbers for extended periods of time (businesses, bars, schools and so on). However, we also find several highly effective measures that are less intrusive. These include land border restrictions, governmental support to vulnerable populations and risk-communication strategies."

Note in particular in the online supplementary material, in Supplementary Figure 12, closing each of the following distinct categories of educational and childcare facilities reduced transmission by approximately 20% each and there was no significant difference between the three, distinguished simply as "Preschool or childcare facilities", "Primary Schools" and Secondary Schools".

All of which is consistent with key take home messages from the paper by Brauner and colleagues in Science on the 19 Feb 2021, summarizing collated data from national epidemic trajectories from 41 countries:

"Closing both schools and universities was consistently highly effective at reducing transmission at the advent of the pandemic."

"the percentage reduction in Rt (with 95% prediction interval) …[for]… both schools and universities in conjunction: 38% (16 to 54%)"

“We found a large effect for closing both schools and universities in conjunction, which was remarkably robust across different model structures, variations in the data, and epidemiological assumptions”

“…closing schools and universities in conjunction seems to have greatly reduced transmission, but this does not mean that reopening them will necessarily cause infections to soar. Educational institutions can implement safety measures, such as reduced class sizes, as they reopen. However, the nearly 40,000 confirmed cases associated with universities in the United Kingdom since they reopened in September 2020 show that educational institutions may still play a large role in transmission, despite safety measures.”

All of which chimes well with the results of Forbes and colleagues in the British Medical Journal on the 18th March 2021, reporting a “cohort study of 12 million adults in England”:

“In wave 2, among adults aged 65 years and under, living with children of any age was associated with an increased risk of recorded SARS-CoV-2 infection (hazard ratio 1.06 (95% confidence interval 1.05 to 1.08) for living with children aged 0-11 years; 1.22 (1.20 to 1.24) for living with children aged 12-18 years) and covid-19 related hospital admission (1.18 (1.06 to 1.31) for living with children aged 0-11; 1.26 (1.12 to 1.40) for living with children aged 12-18).”