

Closing schools has only a minor role in suppressing COVID-19^[1]

A recent review of modeling studies and data from previous coronavirus outbreaks suggests that the educational, social, and economic costs of closing schools might outweigh the benefits. However, hard evidence is lacking.

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Source: Medical News Today

Format: Article

Publication Date: 14 Apr 2020

AVAILABILITY

Access online ^[2]

EXCERPTS

By April 13, 2020, a total of 192 countries had ordered their schools to close as part of the global effort to control the spread of COVID-19. This is the disease caused by SARS-CoV-2.

According to figures from UNESCO, these school closures have affected more than 1.5 billion children and young people.

An international team of scientists has recently concluded that this measure may have only a marginal effect, however, based on a systematic review of the available evidence on school closures during past epidemics.

Writing in the journal *The Lancet Child & Adolescent Health*, the scientists warn that the economic, educational, social, and health-related costs of closing schools may outweigh the benefits.

Possible adverse effects include healthcare and other key workers being forced to take on extra childcare duties, transmission of the virus from children to grandparents, and threats to the welfare of vulnerable pupils.

Influenza pandemics

There is good evidence to suggest that school closures can reduce infection rates during an influenza pandemic. However, the review authors say that this is a poor basis for deciding whether or not to close schools during a coronavirus pandemic.

They point out that influenza transmits easily among children but less readily between adults, who generally have stronger immunity to flu viruses as a result of past infections.

By contrast, research to date suggests that the new coronavirus spreads much more easily between adults than it does between children.

The scientists cite a 2014 review commissioned by the United Kingdom Department of Health to inform planning for an influenza pandemic.

This review concluded that school closures have the greatest effect if, on average, each infection results in fewer than two additional infections, and if a greater proportion of children than adults develop the disease.

“This is the opposite of COVID-19,” says Prof. Russell Viner, of University College London (UCL), who led the new review.

Research suggests that each person who contracts the new coronavirus transmits it to more than 2.5 other people, on average, and that adults tend to get more serious infections than children.

“Data on the benefit of school closures in the COVID-19 outbreak is limited, but what we know shows that their impact is likely to be only small compared [with] other infection control measures, such as case isolation, and is only effective when other [physical] isolating measures are adhered to.”

– Prof. Russell Viner

The potential costs of national school closures are high, he adds. “Children’s education is damaged and their mental health may suffer, family finances are affected, key workers may need to stay home to look after children, and vulnerable children may suffer most.”

Coronavirus research

The review was a collaboration between scientists at UCL, the London School of Hygiene and Tropical Medicine, the University of Cambridge — all of which are in the U.K. — and the University of Sydney in Australia.

It looked at 16 studies relating to school closures:

- Nine studies focused on the 2003 outbreak of SARS, a respiratory infection caused by another coronavirus.

- One study looked at the transmission of other coronaviruses.
- Six studies analyzed the available data on COVID-19, which the new coronavirus causes.

Data from the SARS outbreak in China, Hong Kong, and Singapore suggest that school closures did not make a significant contribution to controlling the epidemic.

A recent modeling study of COVID-19, which used data from the SARS outbreak, predicts that school closures alone will prevent 2–4% of deaths. This sounds significant, but it is much less than the effects of other physical distancing measures.

Data from China, where the COVID-19 pandemic began, suggest that children are less likely than adults to contract the virus, say the review authors.

However, they concede that the evidence is mixed. Some research has found that children are as likely as adults to contract the virus, but they either do not develop symptoms or have a milder form of the disease.

Evidence as to the extent of COVID-19 transmission between children or via schools is not yet available, the review authors write.

Experts respond

There was a mixed response to the review from experts.

Dr. Samantha Brooks, a member of the U.K.'s Health Protection Research Unit in Emergency Preparedness and Response, says:

"Closing schools has been an almost universal response to the current crisis, because it seems to make sense — keeping our children safe, and all of us who are parents know just how often children return from school with some bug or other. But COVID-19 presents different challenges. Unlike with most infections, where adult immunity is greater than children's, this time no one is immune."

In addition, some worry that closing schools will harm vulnerable children.

"We're particularly concerned about the impact of school closures on autistic children and their families," says Dr. James Cusack, of the autism research charity Autistica.

"Many autistic children need increased support at this difficult time and may find the disruption to their routines especially hard. We know from parents of autistic children that the closure of schools has led to increased anxiety, particularly related to uncertainty."

However, some experts criticized the review for looking at the effect of school closures in isolation, rather than as part of the wider lockdown measures imposed by governments.

Prof. Neil Ferguson, director of the Centre for Global Infectious Disease Analysis at Imperial College London, says:

"While school closure as a measure on its own is predicted to have a limited effectiveness in controlling COVID-19 transmission, when combined with intense [physical] distancing it plays an important role in severing remaining contacts between households and thus ensuring transmission declines."

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