Innocenti Research Brief

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Covid-19 & Children

Evidence and Gap Map Research Brief

UNICEF STRATEGIC PLAN 2018–2021: COVID-19 SPECIAL EVIDENCE BRIEF

What this research brief is about

This research brief is a new addition to an annual series of five briefs that provide an overview of available evidence shown in the Campbell-UNICEF Mega-Map of the effectiveness of interventions to improve child well-being in low- and middle-income countries (LMICs).

This brief provides an overview of available evidence syntheses that may inform COVID-19-specific or other pandemic-specific and epidemic-specific responses to improve the well-being of children and the socio-economic impacts emerging as a result of it.

The purpose of the research brief is to:

- Make potential users aware of the map and its contents
- Identify areas in which there is ample evidence to guide policy and practice, and so encourage policymakers and practitioners to use the map as a way to access rigorous studies of effectiveness
- Identify gaps in the evidence base, and so encourage research commissioners to commission studies to fill these evidence gaps.

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Thanks to additional funding support from the Bill and Melinda Gates Foundation, this forms part of our commitment to make the Mega-Map and associated briefs a 'living product', updated annually and made openly available as relevant evidence evolves over the lifetime of UNICEF's Strategic Plan 2018–2021.

Box 1: *What is the Campbell-UNICEF Child Well-being Mega-Map?*

The Campbell-UNICEF Child Well-being Mega-Map maps evidence-synthesis studies – evidence and gap maps and systematic reviews – which report studies of the effectiveness of interventions to improve child well-being. The evidence is structured by intervention categories, such as education or nutrition and outcome domains, such as school attendance and learning outcomes.

Systematic reviews help establish which programmes are effective, for who, and in what circumstances. Evidence and gap maps guide users to the evidence from systematic reviews and impact evaluations. The Mega-Map is an evidence and gap map (EGM) of 484 reviews and 25 EGMs organized into six intervention categories and six outcome domains. For this 2020 update of the map, recognizing the need for quick, evidence-synthesis products of relevance to tackling the impacts of COVID-19 on children, we have also included rapid reviews, which are nine in number.

https://campbellcollaboration.org/funding/global-funds/child-welfare-global-fund.html

What evidence is included for global response to COVID-19?

COVID-19, with its triple hit to health, education, and income, presents an enormous challenge for reaching the 2030 Agenda and the sustainable development goals (SDGs). Millions of children, particularly vulnerable children – migrants and refugees, the poor, those affected by violence and exploitation – are being exposed to even higher levels of risk during the pandemic.

UNICEF's response to COVID-19 focuses on the following two strategic priority areas:

- Strategic priority 1: Public health response to reduce coronavirus transmission and mortality
- Strategic priority 2: Continuity of health, HIV, nutrition, education, WASH, child protection, gender-based violence, social protection and other social services; assessing and responding to the immediate socio-economic impacts of the COVID-19 response

This brief includes studies on:

1. **Pandemics and epidemics: regional or global outbreak of a contagious disease**
    i. COVID-19
    ii. SARS
    iii. MERS
    iv. H1N1
    v. Ebola Virus Disease
    vi. HIV/AIDS

2. **Financial crises and natural disasters: which, similarly to the COVID-19 crisis, are rapid in onset, have wide-ranging geographical reach, and result in disruption of social services and economic sectors without affecting governance systems**
    i. The Indian Ocean tsunami (2003–2004)
    ii. Major earthquakes
    iii. The global financial crisis (2007–2008)
    iv. The food- and fuel-price increases in 2007–2008

3. **Response measures to pandemics and epidemics:**
    i. Quarantine and social isolation
    ii. Social and physical distancing
    iii. Movement restrictions within and across borders
    iv. Closure of school and daycare centres
    v. Suspension or restriction of health, protection and social services
    vi. Closure of non-essential businesses and working from home
    vii. Other context-specific containment measures: alcohol sale ban, deportation and forced returns of migrants
    viii. Human surveillance and case reporting

Box 2: *What is included in this COVID-19-specific brief?*

This brief includes evidence-synthesis studies on interventions to improve child well-being during COVID-19 or other pandemics and epidemics given the need to learn from previous pandemics/epidemics to inform potential COVID-19 responses in low- and middle-income countries. Given the global social, economic and health impacts of the COVID-19 pandemic, we relaxed the inclusion criteria for this update to include "rapid reviews" on interventions and impact on child well-being that are related to the COVID-19 pandemic.

Study design: Systematic reviews, evidence and gap maps, as well as rapid reviews on the Covid-19 pandemic.

Study status: Both published and ongoing (protocols) studies are included.

Population: Children/adolescents aged 18 and under and their caregivers, healthcare providers and teachers in low- and middle-income countries.

Interventions: Studies assessing impact of or covering interventions to improve child well-being during COVID-19 or other pandemics and epidemics or natural disasters and financial crisis in low and middle-income countries.

Search date: From January 2000 (January 2020 for COVID-19 specific products) to August 2020. However, while finalizing the brief, we identified 3 rapid reviews from Cochrane published after August 2020 and we have included these.

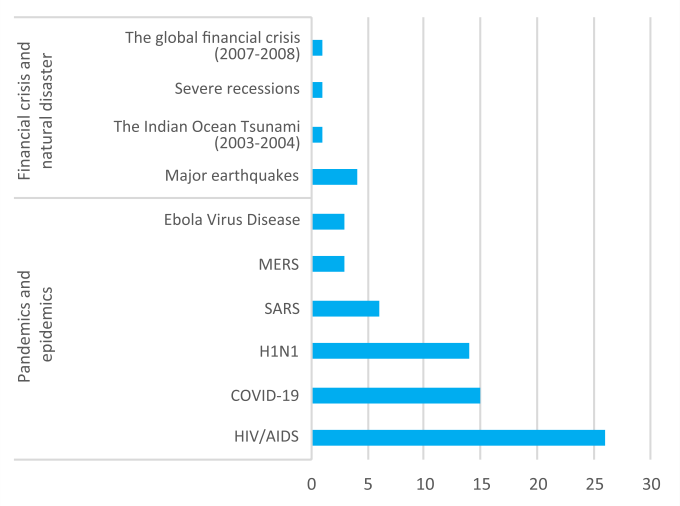
Language: Studies published in English language only

Findings

There are 50 such studies in the Mega-Map. Of these, 35 are completed systematic reviews, two are ongoing reviews, nine are rapid reviews and four are evidence and gap maps. There is a fair amount of evidence on interventions to improve child well-being from evidence synthesis on pandemics and epidemics (42), especially around HIV/AIDS (26), COVID-19 (15) and H1N1 pandemic (14). There is limited evidence synthesis around SARS (six), Ebola virus disease (three) and MERS (three).

Only three systematic reviews and one evidence and gap map were identified on financial crises and natural disasters (*see Figure 1*).

Figure 1: Number of studies (reviews and maps) by crisis context



What outcomes are reported?

The 50 evidence-synthesis products identified report a broad range of outcomes (*see Table 1*). Most of these outcomes relate to health. However, there are also a number related to risk-factor reduction, education and economic impact.

Table 1: Outcomes reported in the studies with a focus on pandemics and epidemics or financial crises and natural disaster response measures

UNICEF goal		Outcomes
Every child has an equitable chance in life	Every child survives and thrives	Mortality (19), morbidity (22), nutrition (4), disability and childhood illness (4), immunization coverage (2), mental health and psychosocial improvement (12), antenatal care including breast feeding (1), utilization of health services like immunization and child care (11)
	Every child learns	Enrolment (3), attendance (2), learning and achievement (5), drop-outs and truancy (5), quality of education (1)
	Every child is protected from violence and exploitation	Child abuse and neglect (8), gender role and decision making (10), sexual and physical violence in children (4), child rights (3), child marriage (5), child labour (5)
	Risk-factor reduction	Hand washing (5), clean environment (3), alcohol and substance abuse (1)
	Economic impact	Cost-effectiveness (9), formal savings (4), cost-benefit (2)

What COVID-19 and pandemic-specific response measures have been reported?

Table 2: COVID-19 and other pandemic- and epidemic specific studies and their response measures

COVID-19 or other pandemic- and epidemic- specific or natural-disaster- or financial-crisis-related response measures	Number of evidence synthesis in this category	Examples and links to the studies
Quarantine and social isolation	7	Quarantine alone or in combination with other public health measures to control COVID-19: A rapid review Are COVID-19 containment measures equally effective in different world regions? Systematic review of economic evaluations of preparedness strategies and interventions against influenza pandemic Impacts of pandemics and epidemic on child-protection lessons learned from a rapid review in the context of COVID-19
Social and physical distancing	6	Rapid review of physical distancing and alternative disease-control measures in South Asia School closure in response to epidemic outbreaks: Systems-based logic model of downstream impacts School closure and management practices during coronavirus outbreaks including COVID-19: A rapid systematic review

Movement restriction within and across the borders	5	Non-pharmaceutical public health interventions for pandemic influenza: An evaluation of the evidence base Are COVID-19 containment measures equally effective in different world regions? Travel-related control measures to contain the COVID-19 pandemic: A rapid review
Schools and daycare centre closure	11	Closure of schools during an influenza pandemic School closure and management practices during coronavirus outbreaks including COVID-19: A rapid systematic review The impact of unplanned school closure on children's social contact: A rapid evidence review COVID-19 pandemic school closure and reopening School closure during novel influenza: A systematic review
Closure of non-essential business and working from home	4	Systematic review of economic evaluations of preparedness strategies and interventions against influenza pandemics
Other context-specific containment measures, alcohol sale ban, forced return of migrants	1	Are COVID-19 containment measures equally effective in different world regions?
Human surveillance and case reporting	5	Interventions to significantly improve service uptake and retention of HIV-positive pregnant women and HIV-exposed infants along the prevention of mother-to-child transmission continuum of care: systematic review Universal screening for SARS-CoV-2 infection: A rapid review
Child protection	5	Child protection and resilience in the face of COVID-19 in South Africa: A rapid review of C-19 legislation UNICEF Office of Research – Innocenti. (2020). Evidence Gap Map: Pandemics, epidemics and outcomes on child protection and violence Impact of pandemics and epidemics on child protection: Lessons learned from a rapid review in the context of COVID-19 Interventions for reducing violence against children in low- and middle-income countries: An evidence and gap map The impact of protection intervention on unaccompanied and separated children in humanitarian crises: An evidence-synthesis protocol
Social-protection programme	15	A rapid review of economic policy and social-protection responses to health and economic crises and their effects on children: Lessons for the COVID-19 pandemic response A cash-based approach in humanitarian emergencies: A systematic review

Educational programmes	19	Evidence review: Promoting adolescent girls' health and well-being in low-resource settings in the era of COVID-19 Online Learning: A panacea in the time of COVID-19 crisis Technology-supported personalized learning: Rapid evidence review
Access to health care	9	The uptake of integrated perinatal prevention of mother-to-child HIV transmission programmes in low- and middle-income countries: A systematic review
Tele-health	5	A systematic review of mobile phone interventions (SMS/IVR/calls) to improve adherence and retention to antiretroviral treatment in low- and middle-income countries
Hand hygiene and respiratory health	4	Which public health interventions are effective in reducing morbidity, mortality and health inequalities from infectious diseases amongst children in low-income and middle-income countries (LMICs?) Protocol for an umbrella review Approaches to promote handwashing and sanitation behaviour change in low- and middle-income countries: A mixed-method systematic review
Personal protective measures	3	Effectiveness of personal protective measures in reducing pandemic influenza transmission: A systematic review and meta-analysis
Vaccines	4	Effectiveness of 2009 pandemic influenza A (H1N1) vaccines: A systematic review and meta-analysis

Where is the evidence from?

Systematic reviews are often global in scope. We included in the map, all reviews for which studies from developing countries were eligible for inclusion, regardless of whether there were actually any studies from developing countries ultimately included after the search. The screening process did not check whether the review included studies from developing countries. An example of a global review is Lansbury LE (2017) on the effectiveness of the 2009 pandemic influenza A (H1N1) vaccines, which includes studies from both low- and middle-income countries such as India, Russia, Thailand and high-income countries such as USA.

How confident are we in the findings of the results?

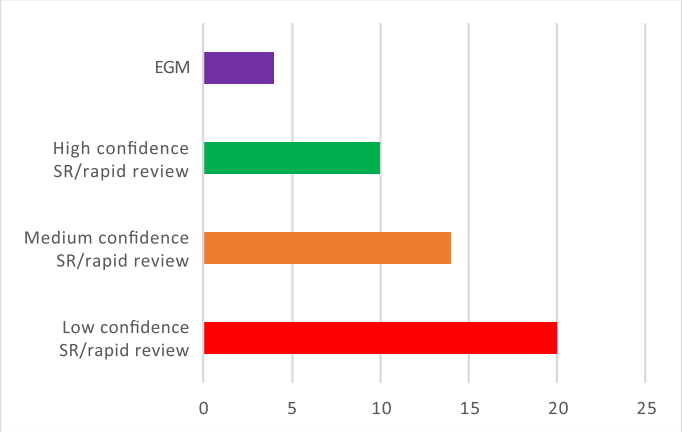
We used AMSTAR-2 to critically appraise the systematic reviews and with some adjustments, AMSTAR-2 was used as a checklist for rapid reviews to describe methodological restrictions in comparison to systematic reviews and to roughly estimate the validity of the results. It is important to note that this brief included rapid reviews on COVID-19, which have some key methodological restrictions. The key finding while appraising them using AMSTAR-2 was that the items found more frequently in rapid reviews were based on searches of "grey literature" and "list of excluded studies (in the reference list of reviews)", whereas consideration of "risk of bias" for conclusions, "conduct of meta-analysis", and "statement of conflicts of interest" were less frequently applied, which affected the overall quality assessment.

More than half (28 out of 35 completed systematic reviews) are rated as low and medium quality (see endnote on quality rating). Seven are of high quality and two are ongoing. Of the nine rapid reviews, six are of low quality and three are of high quality. EGMs were not quality rated.

However, a key consideration is that COVID-19 not only emphasizes the importance of high-quality evidence synthesis but also highlights the importance of the production of rapid reviews. This amplifies the increased need for an international organization to develop guidelines and advocate to support the production of rapid reviews that strictly adhere to the need for quality

methodological standards and reporting to make the best use of available evidence. In this regard, UNICEF Innocenti and the Campbell Collaboration are both working in support of the COVID-END consortium, which is attempting to tackle this issue.

Figure 2: Quality assessment of systematic reviews and rapid reviews



Where are the evidence gaps?

There is a reasonable amount of evidence synthesis in the areas of HIV/AIDS, COVID-19 and H1N1. Impacts of social-protection interventions, educational programmes and school and daycare closures have been the most reported.

However, there are some gaps in evidence synthesis around pandemics and epidemics as listed below:

- Lack of evidence synthesis on child-sensitive responses to natural disasters such as earthquakes, the Indian Ocean tsunami and financial crises
- Evidence-synthesis gaps on the effectiveness of response measures around specific forms of pandemics and epidemics such as Ebola virus disease, SARS and MERS. These can help identify lessons learnt from previous pandemics/ epidemics to inform potential COVID-19 responses. Since mega-maps normally only include systematic reviews and evidence and gap maps, it is worth noting that there might be key impact evaluations in these areas
- Limited evidence synthesis around the impact of response measures on child mental health, learning and development, specifically on quality of education, child abuse and neglect and other risk factors to child protection
- Impact of closure of non-essential businesses, movement restrictions between borders, human surveillance and case reporting and tele-health are some of the measures that are less reported

Since this is a map of evidence-synthesis studies, the lack of evidence synthesis does not mean there are no primary studies. In areas in which there is a reasonable amount of evidence synthesis already, evidence and gap maps need to be constructed to gain an idea of the extent of the developing country literature, and also to develop a taxonomy of approaches of potential relevance in these contexts (when combined with local political economy and other contextual data and implementation factors).

Implications of findings

There is a substantial research agenda to uncover what is known about successful – and unsuccessful – child-sensitive approaches in pandemic and epidemic situations that can be used to inform effective policy responses. This brief has identified only a few reviews that focus explicitly on this. Other reviews may also contain relevant evidence; however, it would be necessary to delve into the review contents in more detail in order to map this information.

A next step could be to produce a pandemic- and epidemic-focused evidence and gap map to allow identification of clear gaps in evidence synthesis and implementation research. More reviews are needed to support the response of UNICEF and partners to COVID-19 and to identify what works in which settings to improve child well-being in pandemic situations more broadly.

How can the map be used by UNICEF?

UNICEF staff and partners can draw on the lessons from the evidence identified in this brief. However, given the dearth of evidence in this area, the brief's main use should be to motivate staff to identify priority areas for which new evidence synthesis and new primary studies should be commissioned. New and emerging research, datasets and evidence syntheses of direct relevance to children and COVID-19 will also be gathered systematically in UNICEF Innocenti's new open-access Children and COVID-19 research library.

Endnote: How we assessed the quality of reviews

For systematic reviews, we scored each study using the 16-item checklist called AMSTAR 2 ('Assessing the Methodological Quality of Systematic Reviews' version 2; Shea et al. 2017).

The 16 items cover: (1) PICOS in inclusion criteria, (2) ex ante protocol, (3) rationale for included study designs, (4) comprehensive literature search, (5) duplicate screening, (6) duplicate data extraction, (7) list of excluded studies with justification, (8) adequate description of included studies, (9) adequate risk of bias assessment, (10) report sources of funding, (11) appropriate use of meta-analysis, (12) risk of bias assessment for meta-analysis, (13) allowance for risk of bias in discussing findings, (14) analysis of heterogeneity, (15) analysis of publication bias, and (16) report conflicts of interest.

Items 2, 4, 7, 9, 11, 13 and 15 are termed "critical". Study quality is rated high if there is no more than one noncritical weakness, and medium if there is no critical weakness but more than one non-critical weakness. Studies with one or more critical weaknesses are rated low quality.

About this UNICEF Research Brief

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