

## A SYSTEMATIC REVIEW OF COVID-19'S IMPACT ON CHILD LABOR

### UMA REVISÃO SISTEMÁTICA DO IMPACTO DA COVID-19 SOBRE O TRABALHO INFANTIL

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#### Abstract

Systematic reviews of empirical studies comprehensively examining the relationship between being out of school and child labor during and after the COVID-19 pandemic are limited. The aim in this systematic review is to fill this gap. Empirical studies published between 2020 and 2025 in ERIC, Web of Science, and Scopus were screened according to PRISMA 2020 guidelines. Seventeen studies were analyzed using narrative synthesis. Three themes emerged: economic shock and household survival strategies, collapse of education's protective shield, and cycle of exploitation and early adulthood. Pandemic-induced income losses and school closures increased the risks for children, especially those in low-income and migrant households, to drop out of education and engage in hazardous work. Gender-based vulnerabilities increased significantly. Education functions as a protective mechanism against child labor; social protection measures and compensatory education policies play a critical role in breaking this cycle. The COVID-19 pandemic has significantly weakened progress toward SDG 4 (Quality Education) and SDG 5 (Gender Equality), undermined education systems' capacity to protect children from child labor, and exposed persistent policy gaps in efforts to eliminate child labor.

**Keywords:** Child Labor. COVID-19. Education. Out-of-school Children. Sustainable Development Goals.

#### Resumo

As revisões sistemáticas de estudos empíricos que examinam de forma abrangente a relação entre a condição de estar fora da escola e o trabalho infantil durante e após a pandemia da COVID-19 ainda são limitadas. Este estudo de revisão sistemática tem como objetivo preencher essa lacuna. Estudos empíricos publicados entre 2020 e 2025 nas bases de dados ERIC, Web of Science e Scopus foram selecionados conforme as diretrizes do PRISMA 2020. Dezessete estudos foram analisados por meio de uma síntese narrativa. Três temas principais emergiram: (1) choque econômico e estratégias de sobrevivência familiar; (2) colapso do papel protetor da educação; e (3) ciclo de exploração e entrada precoce na vida adulta. As perdas de renda induzidas pela pandemia e o fechamento das escolas aumentaram os riscos de que crianças, especialmente aquelas pertencentes a famílias de baixa renda e migrantes, abandonem a educação e se envolvam em trabalhos perigosos. As vulnerabilidades baseadas em gênero aumentaram significativamente. A educação atua como um mecanismo de proteção contra o trabalho infantil; medidas de proteção social e políticas educacionais compensatórias desempenham papel fundamental na interrupção desse ciclo. A pandemia da COVID-19 enfraqueceu significativamente os avanços rumo ao ODS 4 (Educação de Qualidade) e ao ODS 5 (Igualdade de Gênero), comprometeu a capacidade dos sistemas educacionais de proteger as crianças contra o trabalho infantil e expôs lacunas persistentes nas políticas voltadas à erradicação do trabalho infantil.

**Palavras-chave:** Trabalho Infantil. COVID-19. Educação. Crianças Fora da Escola. Objetivos de Desenvolvimento Sustentável.



## 1 INTRODUCTION

Child labor (CL) refers to work that deprives children of their childhood, potential, and dignity, harming their physical, mental, moral, or social development (International Labour Organization [ILO] n.d.). Such work may prevent school attendance, cause premature dropout, or force children to combine education with long and heavy working hours (ILO & United Nations (UN) Children's Fund [UNICEF] 2021).

Under the Sustainable Development Goals (SDG), the UN development agenda aimed to reduce the proportion of young people not in employment, education, or vocational training by 2020 (Target 8.6) and to eliminate all forms of CL by 2025 (Target 8.7). These targets position CL eradication as a fundamental component of sustainable and equitable development (UN, 2015). Nonetheless, in 2025, 138 million children were engaged in CL, including 54 million in hazardous occupations, a condition closely linked to children's exclusion from education, as nearly half of those in hazardous work do not attend school (ILO & UNICEF, 2021; ILO & UNICEF, 2025a).

Additionally, the COVID-19 pandemic affected over 1.6 billion students through school closures, leading to major learning losses (ILO & UNICEF, 2020, 2021; UN Educational, Scientific and Cultural Organization [UNESCO] 2021; UNESCO & UNICEF, 2021; UNICEF 2021a, 2021b). Global full or partial school closures lasted an average of 224 days, with these periods being even longer in low- and middle-income countries (LMICs), wherein the transition to distance learning also remained inadequate (UNESCO, UNICEF, & World Bank, 2021). Between March 2020 and September 2021, 131 million students from pre-primary to upper secondary education in 11 countries missed at least three-quarters of face-to-face class time (UNICEF, 2021a).

These educational disruptions deepened existing inequalities. Children from disadvantaged households benefited the least from distance education owing to a lack of access to basic resources such as the internet, devices, electricity, or parental support, raising the risk of unintentional student discrimination (Burkett & Reynolds 2020; Wolf et al., 2022). In the Maldives, access to digital devices and internet facilities was uneven outside the capital, Malé, and thus 11% of students were unable to attend classes owing to a lack of internet access and 6.9% owing to not having their own device (Fikuree et al.,

2021). Parental support also proved important amid the pandemic's impacts. In Ethiopia, children of illiterate parents were much less likely to have access to child-centered learning materials (Kim et al., 2021), while Pakistani mothers having secondary or higher education were associated with higher early learning scores among children (Hentschel et al., 2022).

Pandemic school closures also deprived children of important, education-related protective networks (ILO & UNICEF, 2020; UNESCO, 2021; UNICEF, 2021b). In the Democratic Republic of the Congo, after school closures, the number of children working in mining sites increased and girls became more exposed to commercial sexual exploitation (Alliance for Child Protection in Humanitarian Action, 2020). In other places, school closures increased girls' domestic workload and reduced their distance learning participation (ILO & UNICEF, 2021; UNESCO, 2021). In Côte d'Ivoire, household work–school conflict was more prominent among girls, while market work–school conflict was more evident among boys (Kembou et al., 2023). According to UNESCO (2021), there was a marked increase in child marriages during the pandemic period: in Bangladesh, the rate rose from 12% in April 2020 to 23% in September 2020. One of the main reasons was economic pressure, as the income losses of adults working in the informal economy increased households' food insecurity and financial hardships. This, in turn, accelerated families' resort to CL for survival (ILO & UNICEF, 2021). The Alliance for Child Protection in Humanitarian Action (2020) reveals that factors such as economic poverty, educational disengagement, and lack of social protection cumulatively increase CL risk. Accordingly, there seems to be a multilayered, intersecting structure of risk that deepened children's vulnerability during the pandemic: at the lowest level were household income losses and poverty; above that, education access interruptions, unequal access to distance education, and child protection service inadequacies; at the top, CL and its worst forms.

However, the empirical evidence on the pandemic's effects on CL is convoluted, and because CL and schooling are influenced by the same economic factors, it is hard to clearly define causal relationships (ILO & UNICEF, 2021; ILO & UNICEF, 2025b; Kembou et al., 2023; UNICEF, 2024; UNICEF Innocenti & Population Council, 2024). In some studies, the school closures and economic vulnerabilities due to the pandemic increased CL risk, leading to challenges for children from disadvantaged socioeconomic

groups regarding continuing education (UNICEF Innocenti & Population Council, 2024). In other studies, owing to limited pre-pandemic data, CL changes could not be directly attributed to COVID-19, and strong evidence of a significant increase in rates was not obtained. These studies also noted the persistence of gender-based division of CL (Kembou et al., 2023). Meanwhile, between 2020 and 2024, the number of children in CL decreased by over 20 million globally, contrary to concerns that the pandemic and its related socioeconomic crisis would lead to further deterioration. While this progress confirms that measures against CL have been effective, it also emphasizes that the current pace needs to be increased elevenfold to achieve the SDGs (ILO & UNICEF, 2025a).

In summary, COVID-19's long-term effects on CL remain uncertain (ILO & UNICEF, 2021), and early studies were mostly predictive (Alliance for Child Protection in Humanitarian Action, 2020). Furthermore, in early reviews focusing on the relationship between COVID-19 and CL, most explored studies were not based on empirical evidence (Habib et al., 2024; Kechagia & Metaxas, 2021). This implies a lack of reviews synthesizing empirical studies on the relationship between pandemic and post-pandemic out-of-school status and CL. Even studies focusing on one of the worst forms of CL—child trafficking—have revealed the need to address severe and emerging forms of exploitation that arose during the pandemic (Ray 2024). The aim in this systematic review is to fill this gap by comprehensively synthesizing, through empirical findings, how COVID-19-related educational disruptions and economic vulnerabilities have transformed CL dynamics. Additionally, while previous studies primarily focus on developing countries (Habib et al., 2024; Kechagia & Metaxas, 2021), this study synthesizes findings among marginalized groups in high-income countries in addition to LMICs. By addressing economic, educational, and gender-based vulnerabilities within a single framework, this study originally highlights the decisive roles of education and social protection policies in preventing CL during public health crises.

## **2 MATERIALS AND METHODS**

This systematic literature review was reported following the PRISMA 2020 guidelines (Page et al., 2021).

## 2.1 Literature search

The literature search was conducted in three major education and social science databases, namely ERIC, Web of Science, and Scopus, being limited to peer-reviewed studies published in English between January 2020 and August 31, 2025. The systematic database search was conducted between September 1 and October 2, 2025.

The searches were performed using the keywords “child labor,” “COVID-19,” “pandemic,” “education,” “school attendance,” “out of school,” “schooling,” “children,” and “poverty.” These terms were searched in various combinations using Boolean operators (AND/OR). The search was restricted to journal articles, and only studies indexed under the subject headings “COVID-19” or “pandemic” were included.

## 2.2 Inclusion and exclusion criteria

The inclusion criteria were: (i) research directly linking CL with school non-attendance or dropout; (ii) examining situations such as school refusal, absenteeism, or the risk of being pushed out of education; (iii) collecting data empirically through surveys, interviews, case studies, or experimental methods from children, parents, teachers, school administrators, community members, and relevant stakeholders, or analyzing large-scale national/international household surveys; (iv) examining the pandemic’s effects on children’s living or learning conditions, and the relationship between these effects and CL.

The exclusion criteria were: (i) publications containing only theoretical or conceptual discussions; (ii) policy commentaries or reports not based on empirical data; (iii) not directly related to CL or educational dropout; (iv) primarily focused on the well-being, professional experiences, or psychological processes of parents or teachers; (v) conducted without an educational dimension related to CL.

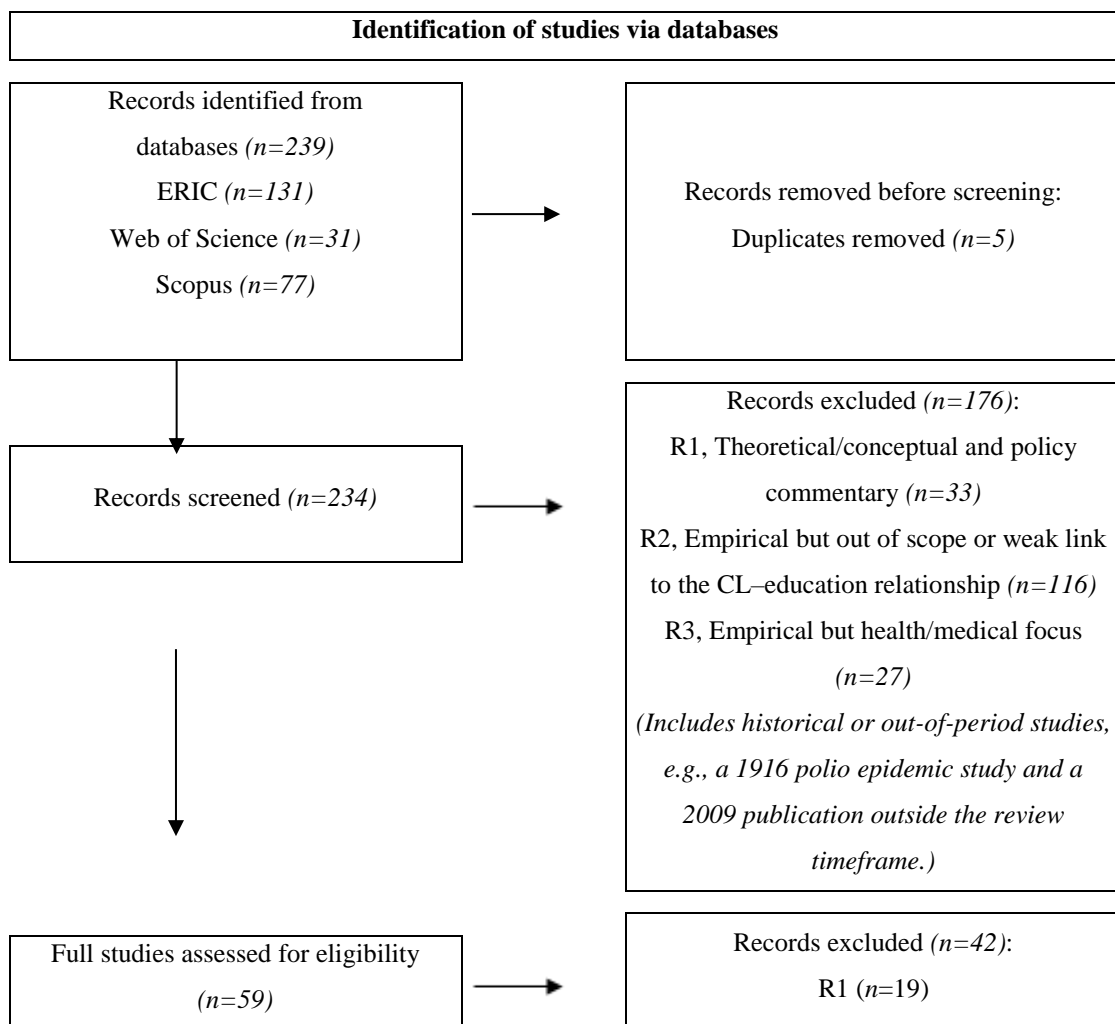
To narrow the scope of the review and ensure methodological consistency, only academic articles published in peer-reviewed journals were examined, while gray literature was excluded.

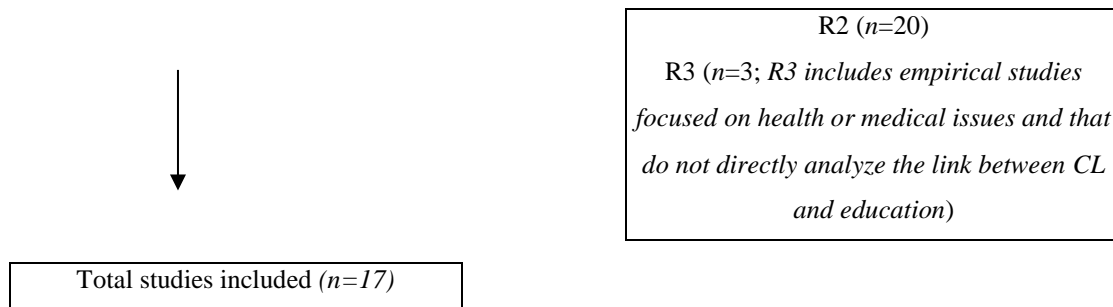
## 2.3 Search outcomes and screening

The study selection process was performed in two stages. In the initial screening phase (title–abstract), topic relevance was the main criterion; studies with unclear methodological type (empirical/theoretical) or data content were included for full-text review. During full-text review, some studies were identified as literature reviews or policy commentaries, while others were empirical studies that did not directly analyze the relationship of interest or focused on health/protection themes—all of these were excluded. Duplicate records were removed manually before screening (five in total; four from Scopus and one from ERIC; Figure 1).

**Figure 1**

*PRISMA Flow Diagram*





A total of 239 records were identified through the systematic search. After removing five duplicate records, 234 unique studies were screened at the title–abstract level. At this stage, 176 records were excluded; the remaining 59 studies were assessed for their full text, and 42 were excluded (Supplementary Table S1). Ultimately, 17 studies were included in the systematic review.

Data extraction was performed by the author using an Excel form, and the extracted information was organized by study characteristics and key findings to identify recurring thematic patterns. Owing to methodological heterogeneity in the included studies, a meta-analysis as well as calculations for effect sizes and formal publication bias were not conducted.

To assess methodological quality, Popay et al.’s (2006) narrative synthesis framework was implemented, evaluating studies for their trustworthiness (methodological rigor and data reliability), appropriateness (suitability of design and analysis to the research aim), relevance (contribution to understanding the relationships between COVID-19-related poverty, school attendance, CL, and out-of-school risks), and overall weight (combined strength of evidence; Supplementary Table S2). All records were independently screened by the researcher and cross-checked by a field expert in educational sciences to ensure data integrity and coding consistency. In cases of disagreement, the inclusion criteria were revisited and consensus was reached.

### 3 RESULTS

#### 3.1 Study characteristics

Seventeen studies were included in this systematic review (Table 1)

**Table 1***Summary of included studies*

Reference	Study Purpose	Method, Design, and Analysis	Sample	Location	Key Findings
Delany-Barmann et al. (2021)	To explore emerging and persistent EL educational inequities in two rural American districts during COVID-19	Qualitative (multiple-case study)	22 immigrant/refugee parents	Illinois and Iowa	During the pandemic, immigrant/refugee parents working in rigid, high-risk food industry jobs were unable to support their children's education. This led to chronic absenteeism and heightened dropout risks among EL students. Parents' survival concerns and work burdens were major factors increasing children's vulnerability to labor participation.
Nandi et al. (2023)	To estimate the pandemic's impact on adolescent literacy and schooling outcomes in India	Quantitative, quasi-experimental (using propensity score matching/inverse propensity score weighted regression)	99,930 girls and 13,714 boys (ages 15–17)	India	Post-COVID-19, girls showed 1.5–1.6% lower reading ability and completed 0.08–0.1 fewer years of schooling; boys showed no significant decline. Schooling costs rose as the main reason for dropout, affecting both girls (6%) and boys (5–6%). Economic shocks and unaffordable educational costs, rather than employment or marriage, drove educational disengagement.
Kaur and Dutt (2025)	To examine the impact of COVID-19, particularly school lockdowns and the shift from face-to-face to online education	Mixed-method (survey and interviews)	130 children aged 11–14 (boys and girls)	Chandigarh, India	School closures and economic shocks heightened educational disengagement, pushing poor urban children into CL or forced domestic work. Loss of school-based food and social support, coupled with irregular family income, triggered food insecurity. Girls faced increased burdens of domestic labor and early marriage risk (approximately 15% of girls at risk).
Bundervoet et al. (2022)	To examine the pandemic's short-term impacts on households in developing countries	Quantitative (comparative analysis using World Bank high-frequency phone surveys)	31 LMICs (over 41,000 households)	31 LMICs (SSA, LAC, EAP, ECA, MENA)	Job and income losses reduced household welfare, forcing low-income families to cut expenses or rely on CL. Educational dropout risk increased, especially in rural and poor households. Learning interruptions affected 30% of children, with the greatest impact on those from lower-income settings.
Delbiso et al. (2021)	To explore the effects of COVID-19-related school feeding program interruption on beneficiaries' well-being	Qualitative (interview study; thematic analysis)	53 participants (16 students, 17 parents, 18 teachers/principals,	Addis Ababa, Ethiopia	The suspension of the school feeding program due to the pandemic triggered food insecurity in poor families. This, combined with parental job loss, increased the pressure on children to work to cover basic needs. Consequently, children were forced to engage in menial jobs and begging.

			and 2 officials) from 7 primary schools		significantly raising the risk of educational disengagement and CL.
Mohammed (2023)	To examine the implications of long- term school closure due to COVID-19 on CL in Ghana	Qualitative (semi- structured interviews; inductive thematic analysis)	16 schoolchildren (8– 13 years) and 1 headteacher	Ting-sheli	Extended school closures worsened conditions for poor children, as the loss of schools' protective role led parents to involve them in farm and roadside labor. Children performed heavy and age-inappropriate work, causing total educational disengagement during lockdown.
Biscaye et al. (2025)	To assess the impact of school availability shocks during COVID- 19 on CL, childcare burdens, and adult labor supply in Kenya	Quantitative, quasi- experimental (difference-in- differences analysis using national panel data)	1,590 households (RRPS: 323 treated, 348 mixed, and 919 control)	Kenya	Partial school reopening created an exogenous shock to adolescent school attendance. Child work hours on family farms were 33% higher when schools were closed (2020) than open (2021). Returning adolescents reduced household CL, while adult weekly work hours rose by 4.3 h (27%), mainly in agriculture.
Bashar et al. (2022)	To examine COVID-19- induced child entrepreneurship ("Kidpreneur") in Bangladesh's shrimp value chain, and its implications for CL and educational sustainability	Qualitative (exploratory field observation)	About 300 child entrepreneurs (ages 8–15)	Southwest Bangladesh	Prolonged school closures, loss of stipends, and declining family livelihoods pushed children into income-generating roles within the shrimp trade. This "Kidpreneur" activity reduced students' willingness to continue schooling, posing risks to educational sustainability, especially among high school learners.
Maliao et al. (2023)	To describe COVID- 19's socioeconomic and psychosocial effects on artisanal fishing communities, and examine CL and education during lockdown	Quantitative (descriptive household survey using semi- structured questionnaire)	400 fishing households with 792 children	Aklan Province, the Philippines	Pandemic-related disruptions in fishing and marine tourism deepened poverty, with households below the poverty line rising from 78% to 91%. Economic hardship, especially in larger families, increased CL and led 5% of children to leave school to support family income, confirming that school absence heightens CL risk.
Musoke et al. (2024)	To examine the social and economic impacts of stringent COVID-19 lockdown measures in urban (Kampala) and rural (Wakiso) areas of Central Uganda	Qualitative (phenomenological study; FGDs and key informant interviews)	14 FGDs, 40 household interviews, and 31 KIIs (policymakers, NGOs, and health professionals)	Kampala and Wakiso	Widespread job and capital losses caused by strict and prolonged lockdown measures led to a major economic crisis. This severely harmed children's welfare by increasing CL, as parents took advantage of them being at home to engage them in income-generating activities. Economic difficulties, lack of access to educational materials, and children getting accustomed to earning money led to

					increased school dropout rates, raising the risk of children permanently disengaging from education.
Boruchowicz et al. (2022)	To examine the pandemic's effects on youth schooling and work in Mexico by analyzing time-use changes among adolescents aged 12–18	Quantitative, quasi-experimental (difference-in-differences regression using national time-use data)	ENOE dataset comprising adolescents (12–18 years, N=158,371)	Mexico	The pandemic caused a sharp decline in time spent on education among youth, with study engagement dropping by 14% (reaching 20%) and weekly study time by 11 hours (reaching 30%). Vulnerable groups showed increased work hours, particularly youth aged 12–14 in rural areas (+6,7 hours/week) and those aged 15–18 in urban areas (+2,9 hours/week), heightening the risk of permanent school dropout.
Arnold et al. (2024)	To describe and contextualize Latine youth farmworkers' experiences of work and work safety during the first 2 years of the pandemic (March 2020–March 2022)	Qualitative (community-based participatory research; in-depth interviews and reflexive thematic analysis)	24 Latine youth (10–17 years), and 10 service providers	North Carolina, USA	The economic insecurity and school uncertainties exacerbated by the pandemic led Latine youth farmworkers to work more to support their families. The declining appeal and challenges of online learning, particularly among older adolescents (15–17 years), pushed many to prioritize earning money over continuing their education. This resulted in permanent educational disengagement, academic setbacks, and increased risk of dropping out of school.
Bharaj et al. (2023)	To explore Indian parents' views on the emotional, psychological, and academic impacts of the pandemic on their children	Mixed-method (online survey and interviews; thematic analysis)	165 parents/caretakers (6–14 years)	Punjab and Tamil Nadu	Economic shocks and resource scarcity in low-income families shifted parental priorities from education to household survival. Some parents redirected daughters toward domestic chores, limiting their academic focus. Families struggled to afford tutoring, and 70% cited a lack of internet access, revealing severe class-based digital inequality and educational barriers, such as in device sharing.
Hossain et al. (2025)	To explore the challenges faced by Rohingya and host community children in relation to CL and well-being during the pandemic	Qualitative (in-depth interviews; thematic analysis)	20 children (11–17 years) and 20 key informants (stakeholders and leaders)	Cox's Bazar, Bangladesh	Poverty was the primary driver of CL, intensified by the pandemic. After lockdown, CL activities (e.g., shop work and driving three-wheelers) increased as families relied on children's income owing to economic instability and the illnesses of primary earners. Dropout causes differed: host children cited poverty and work demands, while Rohingya children attributed withdrawal to completing Level-4 education and a lack of further schooling opportunities.
Jibon et al. (2025)	To examine the combined impacts of climate change, local hazards, and the	Mixed-method (FGDs and household survey)	96 households and 60 FGD participants	Kolkanda Union, Bangladesh	The pandemic worsened the financial conditions of vulnerable char communities through layoffs, income reduction, and price hikes. This socioeconomic pressure forced families to cut children's educational expenses,

	pandemic on char communities, focusing on the effects on the economy, education, and child marriage				leading to a surge in dropouts: boys were forced into the workforce to support their families and girls into early marriage.
Nuwematsiko et al. (2022)	To assess the pandemic's unintended socioeconomic and health consequences and mitigation measures among slum dwellers to inform future pandemic response strategies	Mixed-method (cross-sectional design combining quantitative interviews, FGDs, and Photovoice)	425 households (quantitative), 6 FGDs, and 8 CHWs (Photovoice)	Kampala, Uganda	Strict lockdowns led to severe income (86.1%) and job losses (63.1%), resulting in food insecurity (71.1%). Economic stress pushed children into forced labor to supplement family income. School closures (77.1% disruption) heightened the risk of permanent dropout as children engaged in petty trade and became unwilling to return. Children also faced increased CL, teenage pregnancies, and sexual violence risks, particularly girls.
Coyle et al. (2023)	To examine how families coped during two phases of the pandemic, focusing on household labor, childcare, and parental stress	Quantitative (comparative cross-sectional survey with two independent samples analyzed using ANOVA and t-tests)	479 families (280 Spring 2020; 199 Summer 2021)	USA, Canada, and Western Europe	Gender disparities in domestic labor widened during the pandemic. Daughters spent more time on chores ( $p=.050$ ), including cleaning ( $p=.003$ ), laundry ( $p=.029$ ), and sibling care ( $p=.029$ ), while sons spent more time on yardwork ( $p=.030$ ). One year later, sibling care increased significantly ( $F_{(1,247)}=54,07$ , $p<.001$ ). Daughters were also more likely to receive no parent-provided educational activities ( $p=.023$ ), indicating heightened educational loss due to increased domestic workload.

*Note:* CHWs=community healthcare workers; EAP=East Asia and Pacific; ECA=Europe and Central Asia; EL=English learner; ENOE=Mexican National Occupation and Employment Survey; FGDs=focus group discussions; KIIs=key informant interviews; LAC=Latin America and the Caribbean; MENA=Middle East and North Africa; NGOs=non-governmental organizations; RRPS=Rapid Response Phone Survey; SSA=Sub-Saharan Africa

## 3.2 Themes and subthemes

### 3.2.1 Theme 1. Economic shock and household survival strategies

This theme examines how the economic shock caused by COVID-19 transformed families' livelihood strategies and children's labor roles within households.

### 3.2.2 Severity of income loss

In a study examining the short-term socioeconomic effects of COVID-19 in 31 LMICs, 36.2% of participants reported losing their jobs, 65% of households reported a reduction in income (Bundervoet et al., 2022), and interruptions in learning activities were experienced unequally across socioeconomic groups: among those from low-income households and with less-educated parents, school attendance was significantly less likely; in households where income earners lost their jobs after the pandemic, this likelihood decreased by approximately 3.9%. Economic stress may therefore indirectly increase CL risk by deepening learning inequalities (Bundervoet et al., 2022). Similar trends were observed at the micro level. In urban slum areas of Uganda, 86.1% of household heads reported income/wage reductions and 63.1% reported job loss (Nuwematsiko et al., 2022). In Filipino fishing communities, the proportion of households living below the poverty line rose from 78% before to 91% during the pandemic (Maliao et al., 2023). Accordingly, the pandemic's economic shock weakened household income security, turning CL into a survival strategy.

### 3.2.3 Labor substitution

With children's return to school, an increase in adults' working hours was observed. For example, in Kenya, following adolescents' return to school, adults' average weekly working hours increased by 4.3 hours (27%), showing that adults took over the roles in domestic and agricultural work that were designated to children during the pandemic. The effect was particularly evident in less affluent agricultural households (Biscaye et al., 2025).

### 3.2.4 *Children becoming the primary source of household income*

During the lockdown period, there was a sharp increase in CL rates, and some children became the primary household income providers (Musoke et al., 2024). In qualitative interviews with young agricultural workers in the USA, almost all participants stated that their reason for starting to work was their families' financial needs. A 13-year-old girl expressed:

I started working because I decided, I made a choice about helping my parents since they were having [financial] difficulties. I saw my mom always come tired at home, and like she needed a break...and I talked to my brother...And we said let's work with mom. Let's help her. She says she needs help and we need help on family too. So, that's how we started to work, because of family (Arnold et al., 2024, p.1127).

In another study, a parent described how his son dropped out of school and started working owing to economic hardships: "We were unable to afford the educational expenses of my son who was studying at a higher secondary level. Now he is working in a factory to support our family" (Jibon et al., 2025, p.7).

These results depict that the pandemic-triggered economic shock (job loss, income reduction, and capital depletion) made the most vulnerable households more dependent on children's labor contributions. This situation led children to assume roles as primary household income sources or as unpaid labor substitutes to sustain their families' livelihoods.

### 3.2.5 *Theme 2. Collapse of education's protective shield: digital, linguistic, and gender-based inequalities*

This theme addresses the weakening of education's protective functions following school closures and the resulting digital, linguistic, and gender-based inequalities.

### *3.2.6 Impact of school meal loss on labor participation*

In Ethiopia, owing to the suspension of the school meal program and parents' job losses, children were pushed into begging to meet their basic needs. A teacher explained:

Believe it or not students are begging on the street because they don't have anything to eat. I ran into my old friend last week and she said "your students are on the street begging" which is a very sad thing for a teacher to hear (Delbiso et al., 2021, p.4).

Similarly, in India, a parent stated that their child was deprived of the school meals owing to school closures (Bharaj et al., 2023, p.5).

### *3.2.7 Academic performance decline*

During the pandemic, study time and academic performance significantly declined. In Mexico, young people aged 12–18 experienced a sharp decline of about 11 hours per week in study time (an approximately 30% reduction vs. pre-pandemic period) (Boruchowicz et al., 2022). In India, low-income girls' reading skills declined by 3.1–3.8% (Nandi et al., 2023). In the Philippines, India, and Bangladesh, students were unable to make progress in online learning, and parents observed a regression in their children's academic skills (Bharaj et al., 2023; Jibon et al., 2024; Kaur & Dutt, 2025). Among migrant and low-income students in the USA, access problems to distance education, increased absenteeism, and incomplete assignments led to higher rates of failing grades (Arnold et al., 2024; Delany-Barmann et al., 2021). In Ghana's rural areas, a 10-year-old girl stated that she could not participate in any learning activity during school closures: "Now I don't learn again. I like reading and drawing. But they closed the school and I don't do it again..." (Mohammed, 2023, p.10).

### *3.2.8 Digital and economic inadequacies in access to education*

In India, children in urban poor populations faced fundamental barriers to online learning (Kaur & Dutt, 2025). In river island communities in Bangladesh, students stated

that owing to the financial crises, they lacked the purchasing power to buy internet packages and could not access online classes because of the absence of smartphones; a girl explained, “We were unable to afford money to buy internet packages. Moreover, we had problems with the internet connection. Many of us did not have smartphones and could not afford to buy one. Now, we have lagged in our studies” (Jibon et al., 2025, p.7). A 10-year-old girl living in rural Ghana explained her inability to participate in distance education, “We don't have light [electricity] and TV at home” (Mohammed, 2023, p.10). Among Latine youth, the slow adaptation of rural schools to online education and weak internet infrastructure appeared to be associated with an increase in agricultural work; an 11-year-old student in a rural area described this, saying, “It was pretty difficult, ‘cause we couldn’t learn anything. And peoples’ internet was probably bad” (Arnold et al., 2024, p.1126).

### *3.2.9 Parents’ lack of language proficiency and support*

In the USA, rural multilingual students’ parents faced serious challenges with online learning. A Latina mother expressed her inability to help her child owing to her limited English proficiency:

My English is very bad. How am I going to teach my daughter the musical notes, when I hardly speak English?...I’m not a teacher and I cannot teach my girl because of my pronunciation. In Spanish I can try, but it was in English and I could not. I would teach it in the wrong way (Delany-Barmann et al., 2021, p.195).

A migrant father working a 12-hour night shift described the negative impact of family separation and harsh working conditions on his children’s education, saying:

It is very difficult. Sometimes I cry because my wife is not here. I miss my wife...it is very difficult if your wife or your husband cannot come and wife and husband and children are separated...if the Biden administration could help the immigration situation [so that] all the parents could come here, it’d be very important (Delany-Barmann et al., 2021, p.192).

In poor Indian urban households, parents with low educational levels were unable to provide sufficient academic support to their children during distance learning. In total,

57.14% of literate mothers partaking in the survey had only primary-level education, contributing to child academic decline (Kaur & Dutt, 2025). Bharaj et al. (2023) also found that parents were not equipped to support their children's educational needs.

### *3.2.10 Increased domestic workload and gender-based inequalities*

Pandemic-induced economic difficulties increased girls' dropout risk, particularly in low-income households, with girls reportedly forced into domestic labor and facing increased household responsibilities. In India, a low-income mother stated that owing to financial hardship she was unable to send her daughter for online/private classes, which led her daughter to start helping with household chores (Bharaj et al., 2023). In Bangladesh, 60% of girls (vs. 40% boys) reportedly bore the burden of household chores, with a girl expressing such gender-based and educational inequalities:

We only have one smartphone at home, and my parents always let my brother use it for his online classes. I am expected to take care of the house, cook, and look after my younger siblings...It feels like my future is slipping away (Kaur & Dutt, 2025, p.401).

This gendered division of domestic workloads also seemed to prevail in the USA: girls performed more household work (9.13 hours vs. 7.65 hours for boys); took on greater responsibility for younger sibling care; were involved in traditional "female tasks"; and their time spent on household chores was negatively correlated with mothers' stress levels ( $r=-.21$ ,  $p=.001$ ) (Coyle et al., 2023). Meanwhile, boys engaged in gardening.

Therefore, the COVID-19 pandemic disrupted learning processes and weakened schools' functions in providing child protection, nutrition, and equal opportunities. Evidence from different countries unveiled that children from low-income and migrant households were similarly excluded from education owing to digital, linguistic, and gender-based barriers. This confirms prior results supporting the robust and consistent weakening of education's protective role.

### 3.2.11 Theme 3. Children's exposure to the cycle of exploitation and early adulthood

This theme covers findings regarding children being pushed into unhealthy working conditions, exploitation, and early adult roles during the pandemic.

### 3.2.12 Unhealthy and hazardous working conditions

Working children were frequently exposed to unhealthy and hazardous jobs. In Ghana, children were forced to spray foul-smelling chemical pesticides on plants, as outlined by a 9-year-old boy, "Last week when we went to the farm, my father gave me some medicine to pump on the plants. The medicine is smelling but he said it make the plants strong. I do not do this in school" (Mohammed, 2023, p.9). Rohingya refugee children in Bangladesh had to carry heavy loads (e.g., gas cylinders and rice sacks) that could impede spinal development (Hossain et al., 2025, p.6). In the USA, children engaged in agricultural labor performed exhausting tasks in intense heat and were exposed to conditions affecting their physical health, such as back and leg pain (Arnold et al., 2024, p.1130). A 13-year-old girl described the hazardous conditions in egg production facilities where dangerous substances such as rat poison were present:

The rats eat...the cracked eggs. And then, so, [the farmer] puts, like, rat poison around the period of times we're not there... So, like, you won't come across rats... Happened to me once. Traumatizing. [Laughs]... And those rats are huge... it was very scary. And then, there's, like, powdered bleach... in front of each house. So before we go in the house, we would have to put our feet in there, to like, bleach our feet... to avoid any viruses to go in (Arnold et al., 2024, p.1130).

A 17-year-old male working in a tomato field described his physical pain:

First day I got there like I couldn't no more. I was always stopping like every like two buckets for a whole half hour... And when I got home and my back was killing me. My legs were killing me. I couldn't like bend myself or anything. I remember that day I just took a shower, and I went to sleep. Like I was just really tired, and I just stayed sore for like another week and then I finally got used to it again (Arnold et al., 2024, p.1130).

### *3.2.13 Tendency toward permanent educational disengagement*

Children began to perceive education as unnecessary once they became accustomed to earning money during the lockdown; this was witnessed in Uganda and Bangladesh (Bashar et al., 2022; Nuwematsiko et al., 2022, p.13). The lack of digital infrastructure and low motivation for online education led some students to disengage from schooling and turn to work, as outlined by a 16-year-old male student, “I preferred going to work than staying home doing my schoolwork...I found working more entertaining” (Arnold et al., 2024, p.1126). One study also reported that the significant decrease in active school participation among adolescents indicated that even if these students continued studying, they would be at risk of permanently dropping out (Boruchowicz et al., 2022).

### *3.2.14 Risk of early marriage and sexual exploitation*

The pandemic-provoked financial crisis made girls more vulnerable to early marriage and exploitation after leaving school. In urban poor areas of India, girls were reportedly at a greater risk of early marriage, which increased school dropout rates (Kaur & Dutt, 2025). In Bangladesh, about half of the girls were forced into early marriage during the pandemic, most of the remaining girls were compelled to drop out of school, and a parent even expressed that he had to marry off his daughter owing to financial hardships, “My son had dropped out of school due to financial problems during COVID-19. I had to marry my daughter off for the same reason” (Jibon et al., 2025, p.7). Similarly, in Uganda, lockdown measures not only increased school dropout rates but also led to a rise in cases of pregnancy, early marriage, and sexual exploitation among girls. One participant stated that sending girls to sell goods on the street exposed them to harassment or sexual assault. A mother expressed that school closures led to early pregnancies and greater caregiving responsibilities among girls, thereby increasing household economic pressure (Nuwematsiko et al., 2022, p.13).

In Rohingya and other host communities, child marriage, human trafficking, and other forms of violence became widespread in the camps (Hossain et al., 2025). In India, even before the pandemic, adolescent girls were already at a high risk of early marriage

and school dropout, albeit wedding postponements due to economic constraints may have temporarily slowed this trend (Nandi et al., 2023).

These studies generally show that COVID-19 pandemic-related educational disengagement exposed children to age-inappropriate labor, unhealthy and hazardous working conditions, early adult roles, and sexual exploitation.

## **4 DISCUSSION**

### **4.1 Intersecting economic and educational disruptions**

The pandemic's impacts show that economic crisis and educational disengagement form a mutually reinforcing cycle. Bundervoet et al. (2022) found that in 31 LMICs, 65% of households experienced income loss and 36% unemployment, and this directly reduced the likelihood of children attending school. The present findings show that children, particularly those in low-income households, became an active part of the family economy during the pandemic. Children began working under the discourse of “helping” and “contributing to the family” in response to parental unemployment or income loss, sometimes even becoming the primary source of household income (Arnold et al., 2024; Musoke et al., 2024). In countries such as Uganda, the Philippines, and Kenya, children disengaged from school and turned to livelihood activities (Biscaye et al., 2025; Maliao et al., 2023; Nuwematsiko et al., 2022). These results are consistent with global data indicating that the risk of CL increases when household-level economic crises intersect with educational exclusion (ILO & UNICEF, 2021). The economic strains caused by COVID-19 not only reduced income but also deepened learning loss, deteriorating children's basic literacy skills (Hentschel et al., 2022; Terzi et al., 2023). Particularly among low-income households, factors such as reduced study time (Boruchowicz et al., 2022; Nandi et al., 2023), limited parental support (Bharaj et al., 2023; Delany-Barmann et al., 2021), and lack of access to digital devices weakened students' participation in education and pushed children toward work (Arnold et al., 2024; Jibon et al., 2025; Kaur & Dutt, 2025; Maliao et al., 2023). The ILO and UNICEF (2020) report also confirms this, delineating poverty, low parental education, and a lack of digital access as common determinants that accelerate the transition to CL. A regional analysis

conducted in Côte d'Ivoire corroborates this, revealing that in communities with high levels of multidimensional poverty, the likelihood of children falling into the “work” or “work and school” categories significantly increased (Kembou et al., 2023). In India, the UNICEF Innocenti and Population Council (2024) report also statistically confirmed the protective role of education, stating that the likelihood of literate or primary school graduate children engaging in paid labor was 0.45 times lower than that of their less-educated peers. That is, findings from studies conducted at different scales (multi-country, regional, and national) present an unremitting pattern pointing toward the protective effect of education against CL.

#### **4.2 Gendered and contextual vulnerabilities**

The pandemic period significantly weakened education's functions of ensuring gender equality and child protection. Especially in low-income families, girls experienced an increase in domestic workload and were exposed to gender-based inequalities, as follows: Indian girls who could not access online education were directed toward household chores (Bharaj et al., 2023); among Bangladeshi girls, 60% undertook most household chores (Kaur & Dutt, 2025); American girls performed more domestic work and took greater responsibility for younger sibling care (vs. boys), with such workload being inversely correlated with mothers' stress levels (Coyle et al., 2023). Therefore, during the pandemic, gender roles were reproduced both in low-income countries and in relatively advantaged contexts, indirectly weakening girls' right to education.

These results are congruent with those of past international studies showcasing deepening gender-based inequalities worldwide. In Bangladesh, Ethiopia, Nigeria, and Pakistan, girls assumed household responsibilities following school closures and had much more limited access to the internet and devices compared with boys (e.g., 44% vs. 93% in Pakistan) (UNESCO, 2021). Likewise, in Bangladesh, girls reportedly spent more than 21 weekly hours on household chores; when domestic labor was included in CL, the gender gap was reduced by half (ILO & UNICEF, 2021; Zohir et al., 2024).

### 4.3 Lack of social protection and policy gaps

In one past study, it was described that progress in reducing CL has slowed and that existing social protection networks have failed to withstand the pandemic's effects (ILO & UNICEF, 2024; UNICEF Innocenti, 2024). The pandemic also led to increased child poverty, which negatively affects children's nutrition, health, education, and protection (ILO & UNICEF, 2024). According to the current findings, children were exposed to chemical pesticides in agricultural areas (Mohammed, 2023), engaged in physically hazardous work (Hossain et al., 2025), and worked under extreme heat and physical exhaustion (Arnold et al., 2024). Globally, 79 million children are engaged in hazardous work, and these children are significantly less likely to attend school (ILO & UNICEF, 2021). Children in the studies included in this review were also at risk of permanent educational disengagement owing to becoming accustomed to working (Bashar et al., 2022; Boruchowicz et al., 2022; Nuwematsiko et al., 2022). This underpins a persistent global policy gap in enforcing CL standards and securing universal access to education (Habib et al., 2024).

According to this review's results, being out of school has made girls in low-income communities particularly vulnerable to early marriage (Jibon et al., 2025; Kaur & Dutt, 2025; Nandi et al., 2023), sexual exploitation, teenage pregnancies (Nuwematsiko et al., 2022), CL, and human trafficking (Hossain et al., 2025). In line with these results, past studies delineate that child abuse increased during COVID-19 (Sserwanja et al., 2021), and that the pandemic heightened the risks of gender-based violence and early pregnancy (Nyakato et al., 2024). Indian girls in rural areas face a higher risk of early work and marriage (UNICEF Innocenti & Population Council, 2024). These vulnerabilities may be even more pronounced among refugee and migrant children. For example, in Nepal, migrant children working in brick kilns are employed for long hours under dangerous conditions (Daly et al., 2021), while refugee children in Malaysia are engaged in precarious jobs and entirely excluded from education (Kong et al., 2024). Thus, the risk of CL is most intense in areas where gender-based issues, poverty, and migration intersect. In another study, interviews with teachers and parents working with refugee students indeed revealed that low income, reduced social support, and displacement conditions limited children's participation in education (Vairez et al., 2022).

These findings highlight the need for a systematic evaluation of COVID-19's effects on refugee and minority groups (Habib et al., 2024).

During school closures amid the pandemic, over 370 million children worldwide were deprived of school meals, which for many represented their only reliable source of nutrition (UNESCO, UNICEF, & World Bank, 2021). This situation exacerbated household food insecurity and financial hardship, increasing the risk of CL (ILO & UNICEF, 2021). Similarly, this study found that owing to the disruption of school feeding programs, children's basic nutritional needs were not met (Bharaj et al., 2023; Delbiso et al., 2021), which led some children to turn to begging to survive (Delbiso et al., 2021). In past studies, school feeding programs in Bangladesh and India were shown to positively affect school enrollment and participation, particularly among children from socioeconomically disadvantaged backgrounds (UNICEF Innocenti, 2024; Zohir et al., 2024). In Türkiye, teachers reported that families with low economic income faced food shortages, which negatively affected children's basic right to life, including nutrition (Dağdeviren Ertaş et al., 2022). Therefore, the pandemic may have revealed the weaknesses in the protective roles of educational institutions and teachers. Azqueta Oyarzún et al. (2021) emphasized the importance of strengthening the function of schools as protective institutions against CL. Educational incentives and conditional cash transfer programs were shown to reduce children's labor force involvement risk (Azqueta Oyarzún et al., 2021). However, despite being twice as likely to live in poverty as adults, only 28.1% of children aged 0–15 had access to child or family benefits (Azqueta Oyarzún et al., 2021). Therefore, measures such as scholarship and food support programs should not be seen as short-term aids but as essential components of long-term development policies for children (ILO & UNICEF, 2024).

The pandemic has seriously weakened the practical realization of the SDGs. This situation is closely related to the vulnerabilities that emerged in the implementation of sub-targets under Goal 4 (Quality Education) and 5 (Gender Equality) during the pandemic (UN, 2015). The principle of ensuring that “all children complete free, equitable, and quality education” (Target 4.1) was seriously undermined by school closures and the increased risk of CL. Similarly, the growth in caregiving responsibilities and early marriage risk among girls threaten Target 4.5 and SDG 5 aimed at eliminating educational and societal gender inequalities. Furthermore, the digital and spatial

inequalities in access to education that emerged during the pandemic indicate the need for bolstering the robustness of efforts to ensure compliance with the principles outlined in Target 4.a (i.e., “safe, inclusive, and effective learning environments for all”) during crises. This discussion shows that COVID-19 has created both a pedagogical and developmental-based educational crisis, exposing a significant policy gap and how education must be repositioned at the center of sustainable development policies (UN, 2015).

#### **4.4 Implications**

This systematic review shows not only some policy and implementation gaps during the pandemic but also that policy responses to CL have remained largely temporary and reactive—despite SDG 4 and SDG 5 already being in place. Specifically, the supervision, monitoring, and sustainability deficiencies of related policies seem to have further deepened structural inequalities in the fight against CL. Although child protection systems exist at the legislative level in most countries, they did not protect vulnerable households during the pandemic (Habib et al., 2024; UNESCO, 2021). In this context, enforcing universal child benefits stands out as a key policy instrument to secure child welfare and access to education (ILO & UNICEF, 2024). Universal child benefits reduce absolute and relative income poverty and form the foundation of child-centered social protection systems, supporting school retention and CL prevention. The ILO and UNICEF (2024) emphasize that the universal inclusion of children within the scope of social protection is essential for long-term development policy sustainability. The recommendations are for universal child benefits to be modified as follows: gradually expanded without age-, income-, or region-based distinctions; set at a level that makes a meaningful difference in children’s lives; and for the system to be inclusive across different dimensions such as gender, disability, and migration. In this respect, universal child benefits represent both a short-term social assistance and long-term investment measure that strengthens the protective capacity of educational systems during crises (ILO & UNICEF, 2024). Thus, universal child benefits and school-based social support programs (e.g., school feeding schemes) can alleviate economic pressures on poor households and help maintain school attendance.

Regarding policy designs to eliminate CL, they should adopt more proactive, holistic approaches to secure better preparedness for future public health crises and safeguard children's rights. These remarks imply the need for robust policy reforms in social protection, educational inclusion, and gender equality. For example, early intervention (Dağdeviren Ertuş et al., 2022) and remedial education programs for children who lack access to distance education or are out of school can help improve learning outcomes and prevent children from dropping out and entering work at an early age (UNICEF Innocenti, 2024). The Keeping Girls in School initiative in Bangladesh, for instance, supports re-engagement in education by providing skill development opportunities for girls who have dropped out of school or performed poorly (Ainul et al., 2022). Similarly, bridge schools and rehabilitation centers facilitate out-of-school children's reintegration into the educational system (UNICEF Innocenti, 2024). Still, such complementary and preventive approaches require a holistic framework that promotes inclusive educational policy adoption at the policy level, teacher professional capacity improvement at the micro level, and all school stakeholders' active participation at the macro level. These descriptions go to show that when inclusive education policies and social protection measures (e.g., scholarships, food assistance, and child benefits) are implemented together, CL risks can be reduced and the protective function of education can be galvanized.

Strengthening digital infrastructure and addressing inequalities linked to language, location, and socioeconomic background are also critical to ensuring educational continuity during emergencies. Additionally, given the increase in domestic workload and early marriage risks faced by girls amid public health crises, targeted reintegration programs, skill development courses, and community-based support mechanisms should be prioritized. Such initiatives can enhance gender equality in education while reducing the likelihood of CL. Overall, a comprehensive policy framework that integrates inclusive education with social protection measures is essential. Rather than relying on temporary or reactive interventions, long-term structural reforms should aim to strengthen the protective capacity of educational systems and enhance the resilience of vulnerable groups—particularly low-income, migrant, and female children—against future crises.

## 4.5 Limitations

First, as most included studies were cross-sectional and focused on the short-term effects of the pandemic, conclusions regarding the persistence of CL changes or long-term re-enrollment rates of out-of-school children remain reduced. Moreover, although many studies emphasized the vulnerability of disadvantaged groups, few quantitative studies performed intersectional analyses. The quantitative research data also often focused on non-nationally representative localities, reducing the generalizability of the findings to other social and geographic contexts.

The reviewed studies featured some methodological heterogeneity, with some providing large-scale survey-based quantitative analyses and others qualitative field study data based on limited samples; this diversity restricts comparability and precludes a statistical meta-analysis. Finally, the digital divide was addressed mainly at the level of qualitative observation; considering that variables such as device ownership, internet access quality, and online learning duration were not quantitatively measured, the indirect effects of digital inequalities on educational disengagement and CL could not be adequately assessed.

## 5 CONCLUSION

This systematic review examined the effects of children being out of school during and after the COVID-19 pandemic on CL, exposing how educational disruptions intersected with economic, social, and gender-based vulnerabilities to deepen related issues in multidimensional ways. School closures and household income losses acted as mutually reinforcing processes that accelerated children's educational disengagement and employment under unhealthy and hazardous conditions, particularly among those from low-income, rural, or migrant families (Arnold et al., 2024; Bashar et al., 2022; Bharaj et al., 2023; Biscaye et al., 2025; Boruchowicz et al., 2022; Bundervoet et al., 2022; Coyle et al., 2023; Delbiso et al., 2021; Hossain et al., 2025; Jibon et al., 2025; Kaur & Dutt, 2025; Maliao et al., 2023; Mohammed, 2023; Musoke et al., 2024; Nuwematsiko et al., 2022; Terzi et al., 2023; Zohir et al., 2024). The lack of access to education and economic insecurity reinforced each other, weakening children's rights to learning and protection.

Girls were disproportionately affected. Increased domestic caregiving responsibilities, early marriage risk, and permanent dropout risk became more evident in this group. Deficiencies in digital infrastructure, limited parental support, and inadequate social protection mechanisms further exacerbated extant educational inequities. The evidence suggests that the protective function of schools is weakened during public health crises, and that a temporary educational crisis brings the risk of evolving into a long-term, systematic social issue.

While the reviewed studies provide important evidence on the pandemic's short-term effects, there is a notable void of analyses into longitudinal tracking data and post-COVID educational recovery dynamics. Future research should focus on designs that monitor children's school return rates, assess the persistence of post-pandemic CL, and examine the gender dimension in greater depth.

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### **Authors' Contribution**

All authors contributed equally to the development of this article.

### **Data availability**

All datasets relevant to this study's findings are fully available within the article.

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