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Protocol

Interventions to support early childhood development in times of COVID-19: A systematic review protocol.

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Abstract

Background: Coronavirus Disease 2019 (COVID-19), which came as an emerging disease, was announced as a pandemic by the World Health Organization in March 2020. In an attempt to limit this virus's spread, strict measures were taken, amongst which closure of schools and child care facilities were also present. This impacted the holistic well-being of the children. This systematic review aimed to identify early childhood development (ECD) interventions conducted and reported during the COVID-19 pandemic in low and middle-income countries and identify the barriers and facilitators to taking up ECD activities during the COVID-19 pandemic.

Methodology: A systematic literature explores all published and pre-print studies done during this pandemic starting from 31st December 2019 onwards using PRISMA guidelines. Databases such as MEDLINE, Embase, ERIC, CINAHL, the Cochrane Central Register of Controlled Trials (CENTRAL), Google Scholar, and the WHO COVID-19 database would be searched. All types of studies that are reporting ECD interventions and outcomes will be considered.

Discussion: The review will be one of the initiatives to support and provide directions for the programmatic agencies and academia to support post-Covid-19 interventions for the young children living in lower middle-income countries. By gathering the data pertinent to the interventions that were done during the times of lockdown for early childhood will also provide evidence to the programs of what has worked and how well it has worked for the nurturing care of children and their families.

Systematic review registration number: PROSPERO CRD42020202541

Keywords

COVID-19, Early Childhood Development, Childhood Interventions.

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Introduction

The human race has faced the worst of its pandemic coronavirus diseases termed as COVID-19. It has transformed the way human beings live and function across the globe. To contain the virus widespread and respond to its urgency, countries worldwide have taken strict measures to prevent and contain the spread of the virus. These containment measures include the closures of schools and child care facilities, which have impacted children's holistic well-being, particularly those aged 0 to 8 years[1]. The disruptions have resulted in many children staying at home and being reliant on caregivers for their nurturing care and to meet their holistic needs, which means focusing on all child development domains, i.e. physical, cognitive, and psychosocial. Children from different settings have faced different levels of vulnerability. However, those most affected live in vulnerabilities, multi-dimensional poverty, or live in lower-middle-income countries (LMICs).

Before the pandemic, 43% of children under five (globally) were projected to be at a high risk of not reaching their core potential[2]. With the closure of schools, young children, especially in LMICs, have reduced access to learning materials that will significantly impact their gross and fine motor skills. This is due to the closure of childcare centers, agencies working on the ground level to provide primary child care services, home health visits and educational institutions. It worsened with the lockdown of public parks, amusement parks and other social gatherings, which completely home bound children and their families. These closures and lockdowns have resulted in herculean disruptions for young children and their families. The young ones were deprived of psycho-social support, interactions with the peers and learning environment, and cognitive stimulation beyond their homes. Additionally, children and families who were part of inclusive child care programs were deprived of meals, nutritional supplements and other healthcare services provided to them by various ECD agencies[3]. Hence, it was deemed necessary for the global agencies to accelerate ECD interventions to cater to the young children and their families' developmental needs. We intend to review those interventions and their outcomes in times of COVID in our systematic review investigation. For this review, we intended to conceptualize ECD interventions based on a framework provided by nurturing care framework that caters to five significant areas of holistic child development, mentioned in the figure below[4].

Figure 1: Nurturing Care Components of the Early Childhood Development
Adapted from the World Health Organization[4]

As per the United Nations (UN) policy statement, the COVID-19 pandemic will potentially cause further push 42 to 62 million children in moderate to severe poverty due to their families' financial

crisis and economic distress[5]. Consequently, families with middle to low incomes or daily wages will also be primarily affected in the pandemic and post-pandemic. These families will have to bear the additional and increased cost of healthcare and food insecurity. In addition to it, unemployment and wage cut downs will further aid their poverty index and living standards. This will further drive migration and displacement and might also impact family dynamics, potentially causing separation, divorce, and domestic violence, which will adversely impact the young children and their development. Due to the increase in poverty, reduced food security, loss of guardians, amplified stress, and diminished health care, the pandemic will negatively affect young children's development on a global scale[6]. These adversative realities can have a lasting and transgenerational impact on the child's entire life course and their families, causing psychological and epigenetic alterations. Hence, early childhood development interventions with COVID-19 have too become an emergency for the global aid agencies.

Considering the vital importance of early childhood development, global agencies working on ECD got occupied in ensuring that children worldwide get some support in times of pandemic. Many educational institutions, healthcare agencies, and civil society organizations planned interventions to support the children's mental health, nutritional, and well-being needs[7]. In this global pandemic, all the key actors were engaged in ensuring care to basic care and providing the maximum amount of awareness and sensitization to the communities to contain the virus. The knowledge contribution was also fast-tracked and accelerated to share the findings globally of what works on the ground. This did not give the scientist much time to share the impact of those interventions on the child development components. However, there have been initial findings quoted in various platforms regarding how interventions have supported children and their families during this time. However, there is a lack of systematic literature reviews that talk about the interventions in the LMICs in context with early childhood development[8]. A preliminary search in different database informed the similar stand[9].

Methodology

Review Objectives

The range of interventions planned in times of COVID-19 might have supported the components of a nurturing care framework for ECD. Studies generally conclude that interventions in settings with limited resources may improve outcomes and provide opportunities for young kids to thrive. This systematic review aims to compile and assess the initiatives undertaken by local, national, and international authorities to address the ECD needs of children living in LMICs. The following review questions were considered:

1. What are the interventions undertaken for ECD during the COVID-19 pandemic in LMICs?
2. What are the barriers and facilitators to taking up ECD activities during the COVID-19 pandemic?

Inclusion Criteria

1. Participants:

This review will consider those studies which will include children and caregivers of children aged 0 months to 8 years, living in LMICs. All children will be considered, regardless of their biomarkers and physiological characteristics. The list of the LMICs would be considered as given by the World Bank in the year 2018[10].

2. Interventions:

This review will consider those studies with two of the following interventions: (1) ECD interventions: defined as programs that focus on either any one, or all aspects of the nurturing care framework, i.e., health, nutrition, responsive caregiving, security and safety, and learning and stimulation; (2) Interventions conducted in the LMICs by programmatic agencies, non-governmental organizations, governmental organizations, community-based organizations, academia, and independent researchers.

For this review, the ECD interventions will not be limited to those mentioned above; the

intervention's prime focus would be to see the factor of nurturing for the children up to 8 years.

Comparator

The review will include all the studies on whether or not there is a comparison arm.

Outcomes

This review will include studies that include the outcomes that focused on the core components of nurturing care framework. These indicators include the health of young children ages 0-8 years, including physical and mental health, education provision, nutrition and health supplementation provision and access, protection services for children and their families, and policy interventions, which are core parts of nurturing care framework. We will also be assessing some additional outcomes, such as the facilitators and barriers to taking up ECD interventions during the COVID-19 pandemic.

Types of Studies

This review will include interventional, observational, and qualitative studies. All types of interventions will be included regardless of their setting, i.e. community, clinical, etc. Interventions conducted in the LMICs by programmatic agencies, non-governmental organizations, governmental organizations, community-based organizations, academia, and independent researchers will be considered.

Systematic Review Registration

This systematic review will be performed under the JBI synthesis methodology guidelines for systematic reviews of effectiveness[11]. The protocol has been prepared using PRISMA-P guidelines. This systematic review has been registered in the PROSPERO: CRD42020202541.

Search Strategy

The search strategy is made to identify the published articles. The databases used to run the preliminary search were MEDLINE, Embase, ERIC, CINAHL, the Cochrane Central Register of Controlled Trials (CENTRAL), Google Scholar, and the WHO COVID-19. This search strategy is made with the help of the researcher librarian of the Aga Khan University. The search strategy is prepared using the Medical Subject Headings (MeSH) terms and key terms.

The studies which are published in the English language from the start of the COVID-19, i.e. 31 Dec 2019 to date, will be considered. This timeframe is selected because this review is primarily looking at the ECD interventions during the COVID-19 pandemic.

Study Selection

After running the search strategy, all the identified studies would be saved into the EndNote library X8.1, and the duplicates will be removed. These files will then be imported on COVIDENCE for the initial step of title and abstract screening by two independent reviewers in conjunction with the review's inclusion criteria. The conflicts are arising while an expert reviewer from the team would resolve screening. The studies which will qualify the title and abstract screening by both the reviewers would then move to the next stage of full-text screening. Likewise, with title and abstract screening, the conflicts presented will be resolved by an expert reviewer. At the full-text review stage, the reviewers who exclude any study against the PICO strategy will have to state a reason as a matter of justification for their exclusion. This review's results would be presented in a logical flow diagram known as Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram.

Assessment of the methodological Quality

The papers that will qualify for the full-text screening will then be moved for the data extraction and the methodology quality assessment. This will be performed by two independent reviewers using the ROBINS-I checklist for assessing the risk of bias present in the study [12]. Any conflict at this stage would pop up in the consensus table on COVIDENCE and be resolved by either a discussion between the reviewers or the team's expert. After assessing the quality, the studies which will not score well will be excluded. The studies passing the quality

assessment would then be reported in a narrative format with a table.

Data Extraction

The full text screened studies that qualify would then enter the data extraction step as mentioned above, two independent reviewers will perform this. The data extracted from these studies will include the basic study characteristics, details of the intervention, and the outcome's details. The expert reviewer will resolve any disagreements.

Data Synthesis

The review is interested in the following outcomes: ECD indicators such as health, education, protection, family engagement, caregiver engagement, etc. These would be assessed using the relative risk with 95% confidence intervals (CI) for each outcome reported categorically and the mean difference with 95% CI for continuous outcomes. Furthermore, barriers to the implementation of ECD interventions will also be recorded through a qualitative synthesis.

Risk of bias assessment and strength of evidence assessment

The study will adopt the ROBINS-I tool domain, and risk of bias assessment method, which will allow the reviewers to explore eth strength of evidence falls under which category. The seven domains that explore the bias pertinent to confounding, selection of participants, classification, deviations, missing data, measures of outcomes, and selection of reported results will be assessed on the response categories ranging from low risk of bias to critical risk of bias will be scored for each of the included studies. Based on the scores, the strength of evidence assessment for each of the studies will be determined.

Discussion

This systematic literature review will benefit the early childhood development practitioner community at large. By exploring different interventions carried out in LMICs in times of COVID-19 that address any one component of the nurturing care framework will enable practitioners and care service providers to plan interventions to support young children's developmental health. This will help plan relevant child development intervention models, assess their needs, and strategize a way forward for programs that may be planned post-pandemic for young children and their families. Exploring interventions and knowledge gap will provide insights to the care delivery agencies to ensure that children's need is streamlined in times of crisis and beyond pandemic.

In addition to it, this review will also provide reflections to the academia to plan a relevant investigation to explore the data trends and strategize their studies in accordance with the latest trends to inform knowledge.

Conflicts of Interest

None.

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