Young children at Miyana Primary School & Early Childhood Development Center, Uganda. Credit: GPE/Livia Barton

Literature search protocol: Mapping country-based early childhood development research outputs by researchers located in sub-Saharan Africa

REAL
Research for Equitable Access and Learning

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Education Sub Saharan Africa

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The writing of this mapping protocol was led by Eunice Mueni Williams, who developed the protocol, adapting it from the overall mapping protocol co-developed with Daniel Hawkins Iddrisu. Pauline Rose provided oversight of the process, together with guidance and review of the protocol.

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List of abbreviations

AJOL: Africa Journal Online

ECD: Early Childhood Development

SSA: sub-Saharan Africa

UNICEF: United Nations International Children's Emergency Fund

UNESCO: United Nations Education Science and Cultural Organisation

WASH: Water, Sanitation and Hygiene

WHO: World Health Organization

Summary

This protocol provides an overview of the literature search criteria and methodology as part of the 'Mapping education research in sub-Saharan Africa' project. It presents the methodology and search criteria for mapping and evaluating research outputs on early childhood development conducted by researchers from sub-Saharan Africa in the following countries: Ghana, Kenya, Mozambique, Tanzania, and Uganda. This protocol complements two additional literature search protocols: a) mapping publications related to foundational literacy and numeracy in sub-Saharan Africa in English and French (Binesse, H., Rose, P., & Silva, R. (2023); and b) Mapping African-led Early Childhood Development research in four academic databases: Dimensions, Scopus, Web of Science, and PubMed (Iddrisu *et al*, 2024).

1. Overview

Early childhood development (ECD) involves the creation of favourable conditions to facilitate the cognitive, social, emotional, linguistic, and physical development of young children (WHO, 2018). This protocol includes the following six components of ECD identified in the Mapping African-led Early Childhood Development research protocol (Iddrisu et al, 2024):

- Health
- Nutrition
- Early education/learning
- Play
- Responsive caregiving/parenting
- Environment and protection.

It is possible that a considerable amount of research by sub-Saharan African researchers is available in national and regional journals and institutional repositories rather than in international journals or indexed in international academic databases. This protocol therefore identifies approaches for mapping ECD research outputs from in-country and regional sources. Given this work requires detailed scoping of websites as well as connecting directly with researchers, this analysis is limited to five countries: Ghana, Kenya, Mozambique, Tanzania, and Uganda. These countries were chosen based on both the presence and contextual knowledge of ESSA and Conrad Hilton's strategic interests.

2. Identifying research for inclusion in the database

Relevance criteria

Detailed relevance criteria for the selection of publications on ECD are outlined in the overall ECD protocol (Iddrisu et al, 2024). In summary, this literature search protocol includes research conducted by at least one researcher in the countries of interest, using the following criteria:

- Published from January 2010
- Addresses at least one of the six ECD components (health, nutrition, early education/learning, play, responsive caregiving/parenting, and environment and protection)
- Focusing on children aged 0-8 years (with a particular focus on the 0-3 age group).

The Nurturing Care Framework for Early Childhood Development (2018) was used as the starting point for identifying and categorising sub-groups of ECD research in Africa (World Health Organization & United Nations Children's Fund (UNICEF) 2023). We developed this further based on other related frameworks by international organisations, including a specific category for play and an extension of 'early learning' (0–3 years) as used in the Nurturing Care Framework to 'education,' focusing on the pre-primary age group (0–8). (see Table 1). Figure 1 depicts the six components of ECD adopted for this protocol and to guide the searches.

We focused on 0–3 years and extended this to include research outputs focusing on children up to 8 years, provided they were related to early childhood development. This was to ensure we captured early childhood education along with other components of early childhood development. In most countries, the pre-primary education age range is 4-6 years but could extend to age 8 (particularly where children are over age). The cutoff age was also informed by other related frameworks drawn from various institutions, as shown in Table 1.

Table 1: Keywords/Components describing ECD by selected institutions

	UNICEF/WHO	ECDAN	UNESCO	World Bank
Education	Early Learning	Learning	Education/learning	Learning
Nutrition	Nutrition	Nutrition	Nutrition	Nutrition
Health	Health Care	Health	Health	Health
Caregiving	Responsive Caregiving	Responsive Caregiving	Parental/family support	Nurturing care
Play	Play, sing etc	Playful parenting		
Environment/ Protection	Protection from Harm	Safety and Security	Social Protection	Protection from exposure to stress
Age group	0 – 3 years	0 – 3 years	0 – 8 years	0 – 5 years

Source: Compiled from the institutions' websites.

Figure 1: Integrated approach to Early Childhood Development
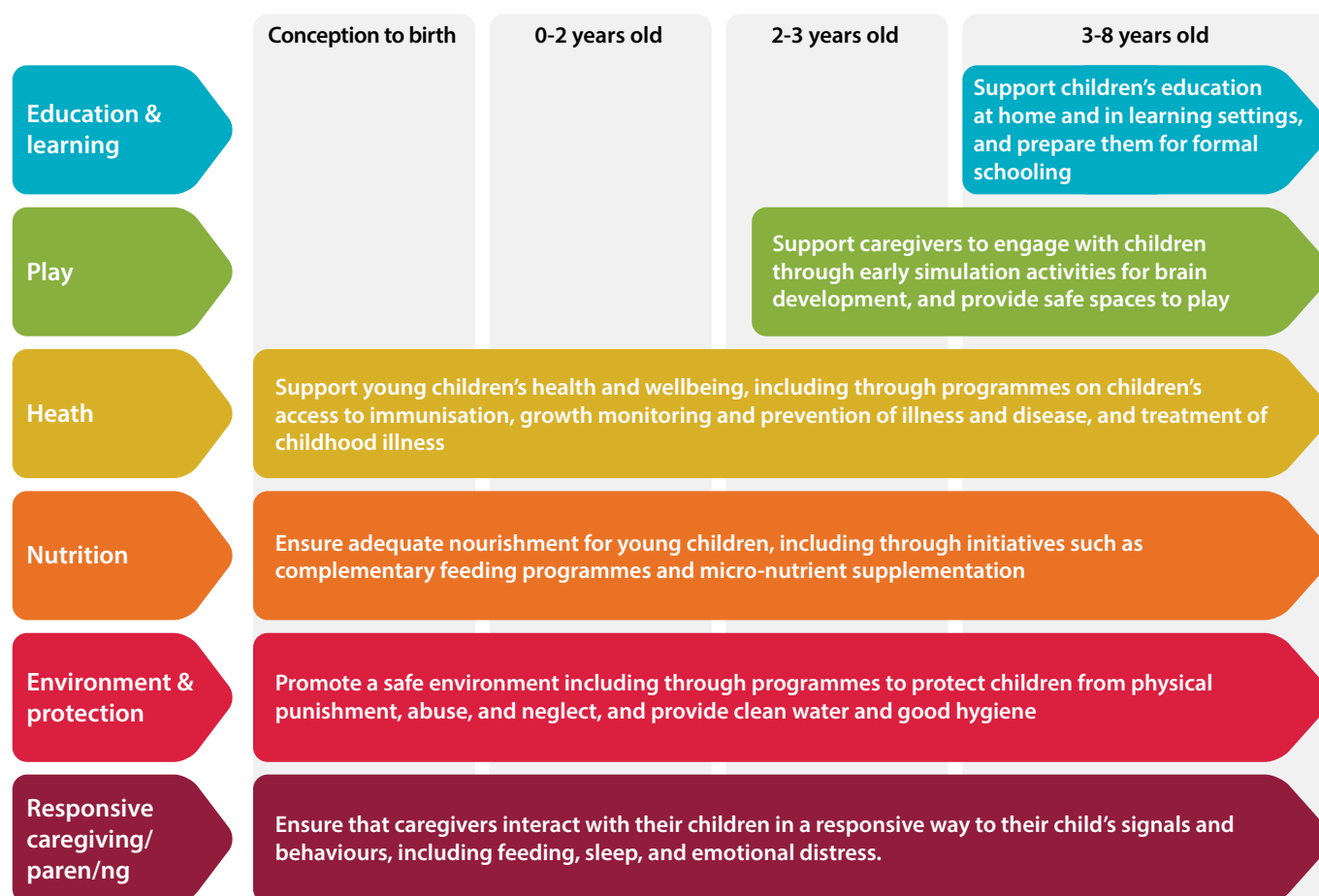
Source: Adapted from Zubairi & Rose, 2021, and WHO, UNICEF & World Bank Group, 2018.

In-country publications are identified from a variety of sources. These include journal articles published in national and regional journals and databases, working paper series, PhD theses, book chapters, and evaluation and intervention reports. Relevant sources to retrieve these include the African Journals Online (AJOL), institutional repositories, national and regional journals, as well as 'grey' (unpublished) literature databases, and websites of international charities and

organisations implementing ECD interventions. Google Scholar are searches undertaken to identify additional research outputs potentially missed in the other sources. Searches are undertaken of relevant research outputs available from different in-country organisations, such as universities, research and policy think tanks, non-governmental organisations, government departments and international aid agencies, and foundations. In addition, publications have been identified through engaging with ECD researchers in each of the countries, searching academic and online profiles of identified researchers as well as via an online survey.

Because many documents available as working papers, policy briefs and evaluation reports, for example, may not have been peer reviewed in the same way as journal articles and other academic publications, there is a need to assess the quality of the publications for inclusion. To achieve this, publications are selected that have undergone elements of peer review, or that include a rigorous methodology section.

Literature search strategy

In line with the wider ECD protocol (Iddrisu et al, 2023), several keywords for each ECD component are used. As long search strings are not supported, only a few of these keywords are used at any one time. In addition, searches are run separately for each country of interest. The search process is detailed for each source below, including AJOL, regional and institutional repositories, research networks and portals, and select organisations' websites.

African journals online

TAJOL is a growing database with over 250 Africa-based journals, and therefore most likely to capture national journals not indexed in international databases. The AJOL database provides a basic search platform with a limited number of search terms. This means that the comprehensive search string developed for international databases cannot be used (Iddrisu et al, 2023). Instead, keywords for the six ECD components are searched each time, or two separate search strings for a single component if necessary. Each search string also includes the country and year (within a 2010-2022 date range).

Search strings include:
- "early childhood development" OR "child growth" OR "child development" AND (country) AND (year)
- "early childhood education" OR "pre-primary" OR "pre-school" OR "early learning" AND (country) AND (year)
- "responsive parenting" OR "responsive care-giving" OR "parenting" OR "caregiving" AND (country) AND (year)
- "early stimulation" OR "play" OR "play space" AND (country) AND (year)
- "child health" OR "child wellbeing" OR "child well-being" OR "child growth" AND (country) AND (year)
- "child nutrition" OR "supplement" OR "child feeding" OR "child food" OR "breastfeeding" AND (country) AND (year)
- "malnutrition" OR "malnourish" OR "stunting" OR "wasting" OR "underweight" AND (country) AND (year)
- "child safety" OR "child protection" OR "water, sanitation and hygiene" OR "WASH" OR "water and sanitation" OR "hygiene" AND (country) AND (year)

Initially, the searches conducted had no restriction on year of publication, because AJOL does not have filters for this. This resulted in too many publications, especially those published before 2010. For more targeted results, the searches were repeated and limited to one year. Therefore, each set of keywords was repeated for the years 2010 to 2022.

Searches on health and nutrition retrieved the most results. Many of the identified publications were not relevant, so those which focused on 0–8-year-old children were extracted, as well as those related to their parents/caregivers (provided there was a link to early childhood outcomes). For example, research on pregnant mothers was only included if it explored how events/activities during pregnancy affected the child. Studies on nutrition of pregnant mothers, for example, with no link to pregnancy outcomes were therefore excluded.

A technical challenge accessing search results on AJOL meant that although the search returned hundreds of relevant publications, only the first one hundred were accessible. The AJOL developers reported that they were aware of the issue and were working to resolve it. To reduce the number of potentially missed articles the search results were ranked by relevance and date of publication (month and year), firstly those published earlier in the year, and secondly those published later in the year. Searching articles for each year also helped reduce the number of search results retrieved for each search string.

Regional research repositories

The African Digital Research Repositories lists most of the research and academic institutions in African countries and provides a link to their institutional repository. This portal is a starting point to identify institutions and search relevant publications in each country. The repository does not however, collate the repositories in one portal. Therefore, all academic institutions in the countries of interest listed in this repository were searched for relevant publications.

Institutional repositories

These include universities and national research institutions in each of the five countries. For each institutional repository, various categories were identified: PhD theses, books and book chapters, research articles, working papers and research reports. These were then searched for relevant publications. In some categories, for example, working papers, the total number of publications listed were less than 50. In such cases, all the titles were read to identify relevant publications. For larger lists, for example, research articles and PhD theses, keywords and search strings were used, and only the titles of the search results were read to identify relevant articles.

The search strings included:
- "Early childhood education" OR "pre-primary" OR "pre-school" OR "early learning"
- "early childhood development" OR "child growth" AND "play" OR "early stimulation"
- "early childhood development" OR "child growth" AND "health" OR "wellbeing" OR "well-being"
- "early childhood development" AND "nutrition" OR "supplement" OR "feeding" OR "food" OR "breastfeeding"
- "early childhood development" AND "malnutrition" OR "malnourish" OR "stunting" OR "wasting" OR "underweight"
- "early childhood development" OR "child growth" AND "parenting" OR "caregiving"
- "early childhood development" AND "safety" OR "protection" OR "water, sanitation and hygiene" OR "WASH" OR "water and sanitation" OR "hygiene"

In some instances where the search string was longer than that enabled in the repository, "early childhood development" was dropped, and "child" or "childhood" added to each keyword as necessary.

For universities with large volumes of publications in each repository, the year of publication was added to the search string (from 2010 to 2022), for easier management of the search results and identification of relevant publications. In addition, and where applicable, publications were identified based on institutional departments in universities. For example, departments of early childhood studies, health, etc. Although this approach could exclude some relevant articles not published in core departments that focus on ECD components, this was applied only to large universities, for example the University of Nairobi and Kenyatta University in Kenya. Keywords not included in specific departments, for example, play, child protection, parenting and caregiving were also included in the search of the overall repository.

In some universities, there is no filter for sub-categories within the repositories for theses or dissertations. Identification of relevant articles therefore implied downloading the publication to distinguish between masters and PhD dissertations, as only PhD dissertations were considered. In Kenya, only Kenyatta University separates masters and PhD dissertations in their repository, which allowed a search under the PhD theses sub-category, and the titles of retrieved publications to be reviewed for relevant publications.

In some other universities, their institutional repositories list only PhD theses and dissertations. For example, Makerere University in Uganda repository does not include staff research outputs. To compensate for this, extensive google scholar searches are made.

Other research networks and repositories

Publications in other regional or national research networks were searched, targeting those likely to index relevant ECD-related publications from African researchers. These include the Pan African open access portal AfricArXiv, Open Research Africa, Science for Africa Foundation, the African Academy of Sciences, IDEAS, Council for the Development of Social Science Research in Africa, Early Childhood Development Action Networks, Early Childhood Development Research in sub-Saharan Africa Compendium and the ProQuest Theses and Dissertations Global. The search strings used in AJOL were also used for these networks. Relevance of the publications was tested against the quality criteria listed above. For example, searches on the ProQuest Theses and Dissertations Global revealed research on the relevant countries, but the research was conducted by researchers in institutions outside sub Saharan Africa, or the researchers were mostly in Nigeria and South Africa[i].

For country specific networks, the Kenya Education Research Database hosted by Kenyatta university is relevant. It includes both published and grey literature on early childhood education, and 200 articles were identified using the search string "early childhood education" AND "Kenya".

Organisational websites

Organisations that conduct research on children, both international and within countries were identified and their websites searched for publications relevant for ECD. International organisations included The World Bank Open Knowledge Repository, National Bureau of Economic Research working paper series, IDRC, USAID, UNESCO, UNICEF and Save the Children. However, many of the publications from these searches did not fit the inclusion criteria, as they were frequently written by non-African authors.

Country specific research organisations include African Population and Health Research Centre and Kenya Medical Research Institute (Kenya), Aga Khan Foundation (Kenya, Tanzania and Uganda), Infectious Disease Institute (Uganda), Navrongo Health Research Centre (Ghana) and Ifakara Health Institute and UWEZO (Tanzania). In addition to research institutions, universities and other institutions contacting research were searched. A website search returned several articles on ECD, including peer-reviewed research, reports, policy briefs and blog articles. Only the peer-reviewed and evaluation reports that had not been captured in the previous searches were included.

Publications identified through expert consultations

Between December 2022 and February 2023, an online survey circulated via social media as well as via networks to target African ECD researchers asked them to list their key publications on any of the ECD components. Many of the publications provided were likely to be journal articles already captured through AJOL or institutional repository searches.

3. Conclusion

This protocol outlines the process of identifying relevant publications from various national and regional repositories and databases in five countries within sub-Saharan Africa. It is hoped that mapping research and researchers of ECD will enhance the knowledge of relevant institutions, individual practitioners, and so support policy makers to make evidence-informed decisions on these issues.

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Endnote