

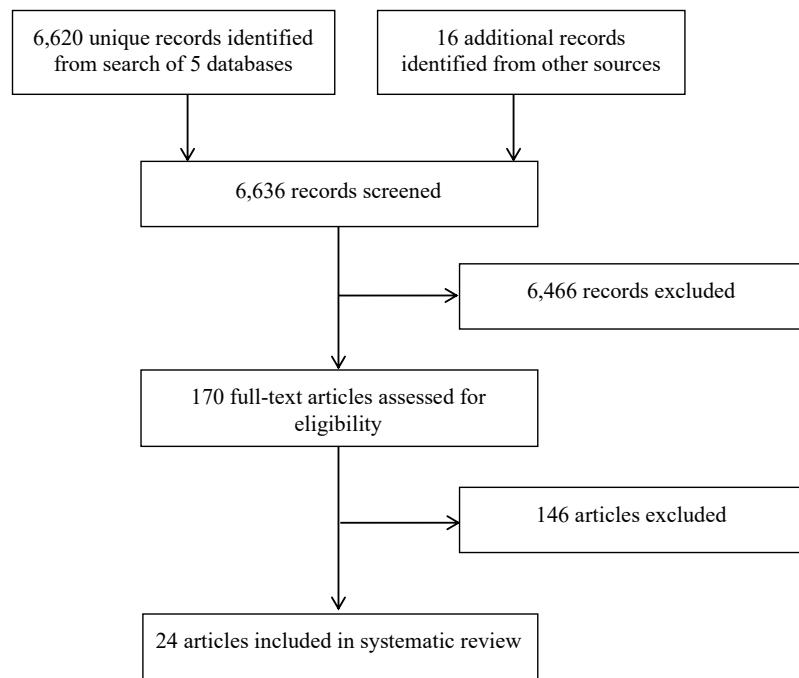
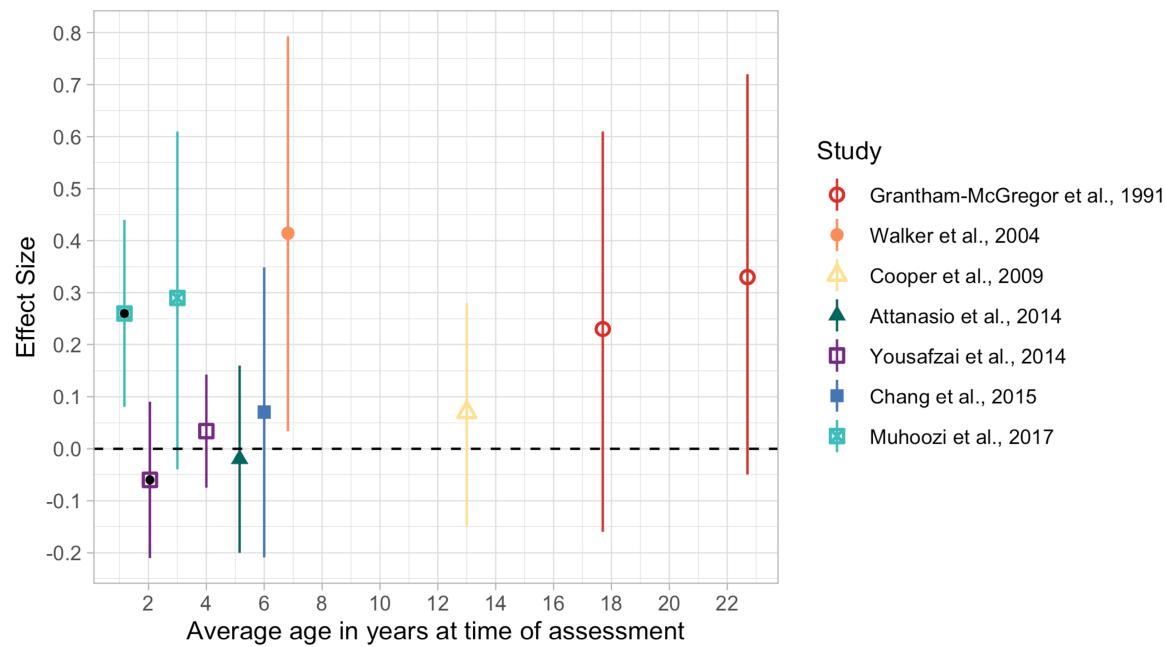
Figure S1. PRISMA flow diagram of search results and process.

Figure S2. Parenting intervention effects on behavioral development outcomes for each trial across follow-up studies



Note: Markers with black dots represent immediate post-intervention trial results.

Table S1. Search strategy.

(Infant[Mesh] OR "Child, Preschool"[Mesh] OR infant[tiab] OR "Child Development"[Mesh:NoExp] OR "Child Behavior"[Mesh:NoExp] OR infan*[tiab] OR neonate[tiab] OR neonates[tiab] OR neonatal[tiab] OR newborn*[tiab] OR new born*[tiab] OR baby[tiab] OR babies[tiab] OR toddler[tiab] OR toddlers[tiab] OR toddlerhood[tiab] OR preschool*[tiab] OR pre school*[tiab] OR early childhood[tiab] OR young children*[tiab] OR "Perinatal Care"[Mesh] OR perinatal[tiab] OR antenatal[tiab] OR ante natal[tiab] OR postnatal[tiab] OR post natal[tiab] OR age 0[tiab] OR aged 0[tiab] OR age zero[tiab] OR aged zero[tiab] OR age 1[tiab] OR aged 1[tiab] OR age one[tiab] OR aged one[tiab] OR age 2[tiab] OR aged 2[tiab] OR age two[tiab] OR aged two[tiab] OR 1 year old*[tiab] OR one year old*[tiab] OR 2 year old*[tiab] OR two year old*[tiab] OR 3 year old*[tiab] OR three year old*[tiab] OR 3 years of age[tiab] OR 2 years of age[tiab] OR 1 year of age[tiab] OR under 2 years[tiab] OR under 1 year[tiab]) AND ("Parenting"[Mesh] OR "Child Rearing"[Mesh] OR "Maternal Behavior"[Mesh] OR "Parent-Child Relations"[Mesh] OR "Parents"[Mesh] OR "Caregivers"[Mesh] OR parents[tiab] OR parenting[tiab] OR mother[tiab] OR mothers[tiab] OR maternal behav*[tiab] OR parental behav*[tiab] OR paternal behavior[tiab] OR parent infant[tiab] OR infant parent[tiab] OR father[tiab] OR fathers[tiab] OR caregiv*[tiab] OR care giv*[tiab] OR child rearing[tiab] OR parent child[tiab] OR child parent[tiab] OR parent training[tiab] OR parent education[tiab] OR parental training[tiab] OR parental education[tiab] AND ("Child Behavior"[Mesh] OR "Child Development"[Mesh] OR "Cognition"[Mesh] OR "Executive Function"[Mesh] OR "Emotional Intelligence"[Mesh] OR "Emotions"[Mesh] OR "Motor Skills"[Mesh] OR attachment[tiab] OR attention[tiab] OR behavior[tiab] OR behavioral[tiab] OR behaviors[tiab] OR behaviour[tiab] OR behavioural[tiab] OR behaviours[tiab] OR child development[tiab] OR cognition[tiab] OR cognitive[tiab] OR communication[tiab] OR communicative[tiab] OR compliance[tiab] OR conduct problem*[tiab] OR executive function*[tiab] OR emotional[tiab] OR emotions[tiab] OR empathy[tiab] OR fine motor[tiab] OR language[tiab] OR mastery[tiab] OR motivation[tiab] OR motor skill*[tiab] OR peer relation*[tiab] OR play skills[tiab] OR prosocial[tiab] OR reading[tiab] OR social[tiab] OR socialization[tiab] OR socio emotion*[tiab] OR socioemotion*[tiab]) AND ("Evaluation Studies as Topic"[Mesh:NoExp] OR "Program Evaluation"[Mesh] OR "Feasibility Studies"[Mesh] OR "Clinical Trial" [Publication Type] OR "clinical trials as topic"[mesh] OR "random allocation"[mesh] OR "double-blind method"[mesh] OR "single-blind method"[mesh] OR "comparative study"[pt] OR "evaluation studies"[pt] OR "follow-up studies"[mesh] OR trial[tw] OR random*[tw] OR "control"[tw] OR "controls"[tw] OR program evaluation[tiab]) AND ("Developing Countries"[Mesh] OR developing countr*[tiab] OR under developed countr*[tiab] OR lmic*[tiab] OR ((less developed[tiab] OR low income[tiab] OR lower income[tiab] OR low and middle income[tiab] OR low middle income[tiab] OR resource poor[tiab] OR resource constrained[tiab] OR low resource[tiab] OR limited resource*[tiab] OR resource limited[tiab])) AND (country[tiab] OR countries[tiab] OR region[tiab] OR regions[tiab] OR setting*[tiab] OR area[tiab] OR areas[tiab])) OR "Africa South of the Sahara"[Mesh] OR "Central America"[Mesh] OR "South America"[Mesh] OR "Latin America"[Mesh] OR "Caribbean Region"[Mesh] OR "Mexico"[Mesh] OR "Asia"[Mesh:NoExp] OR "Asia, Central"[Mesh] OR "Asia, Northern"[Mesh] OR "Asia, Southeastern"[Mesh] OR "Asia, Western"[Mesh] OR "China"[Mesh] OR "Korea"[Mesh] OR "Mongolia"[Mesh] OR Afghan*[tiab] OR Africa[tiab] African[tiab] OR Algeria*[tiab] OR American Samoa*[tiab] OR Angola*[tiab] OR Argentin*[tiab] OR Bangladesh*[tiab] OR Barbad*[tiab] OR Belorussian[tiab] OR Beliz*[tiab] OR Benin*[tiab] OR Bhutan*[tiab] OR Bolivia*[tiab] OR Botswan*[tiab] OR Brazil*[tiab] OR "Burkina Faso"[tiab] OR Burkinabe[tiab] OR Burund*[tiab] OR Cambodia*[tiab] OR Cameroon*[tiab] OR "Cape Verde"[tiab] OR "Cape Verdean"[tiab] OR "Central African Republic"[tiab] OR Chad*[tiab] OR Chile*[tiab] OR China[tiab] OR Chinese[tiab] OR Colombia*[tiab] OR Comoros[tiab] OR Comorian[tiab] OR Congo[tiab] OR Congolese[tiab] OR Costa Rica*[tiab] OR "Côte d'Ivoire"[tiab] OR "Ivory Coast"[tiab] OR Ivorian[tiab] OR Croatia*[tiab] OR Croat[tiab] OR Cuba*[tiab] OR Djibouti*[tiab]

OR Dominica*[tiab] OR "Dominican Republic"[tiab] OR Ecuador*[tiab] OR Egypt*[tiab] OR "El Salvador"[tiab] OR Salvadorian[tiab] OR "Equatorial Guinea"[tiab] OR Guinean[tiab] OR Eritrea*[tiab] OR Ethiopia*[tiab] OR Fiji*[tiab] OR Gabon*[tiab] OR Gambia*[tiab] OR Gaza[tiab] OR Gazan[tiab] OR Ghana[tiab] OR Ghanaian[tiab] OR Grenad*[tiab] OR Guatemala*[tiab] OR Guinea[tiab] OR Guyan*[tiab] OR Haiti*[tiab] OR Hondura*[tiab] OR Hungar*[tiab] OR India[tiab] OR Indian[tiab] OR Indonesia*[tiab] OR Iran*[tiab] OR Iraq*[tiab] OR Jamaica*[tiab] OR Jordan*[tiab] OR Kenya[tiab] OR Kenyan[tiab] OR Kiribati[tiab] OR Korea*[tiab] OR Kyrgy*[tiab] OR Laos[tiab] OR Laotian*[tiab] OR Lebanon[tiab] OR Lebanese[tiab] OR Lesotho[tiab] OR Liberia*[tiab] OR Libya*[tiab] OR Macedonia*[tiab] OR Madagasca*[tiab] OR Malawi*[tiab] OR Malaysia*[tiab] OR Maldives[tiab] OR Maldivian[tiab] OR Mali[tiab] OR Malian*[tiab] OR "Marshall Islands"[tiab] OR Mauritania*[tiab] OR Mauritius[tiab] OR Mauritian[tiab] OR Mayotte[tiab] OR Mexic*[tiab] OR Micronesia*[tiab] OR Moldov*[tiab] OR Mongolia*[tiab] OR Morocc*[tiab] OR Mozambique[tiab] OR Mozambican[tiab] OR Myanmar[tiab] OR Namibia*[tiab] OR Nepal*[tiab] OR Nevis[tiab] OR Nicaragua*[tiab] OR Niger*[tiab] OR "Northern Mariana Islands"[tiab] OR Oman*[tiab] OR Pakistan*[tiab] OR Palau*[tiab] OR Panama*[tiab] OR "Papua New Guinea"[tiab] OR Paraguay*[tiab] OR Peru*[tiab] OR Philippine*[tiab] OR Filipino*[tiab] OR Poland[tiab] OR Polish[tiab] OR Rwanda*[tiab] OR Samoa*[tiab] OR Sao Tome*[tiab] OR Principe[tiab] OR Senegal*[tiab] OR Seychell*[tiab] OR Sierra Leon*[tiab] OR Solomon Island*[tiab] OR Somali*[tiab] OR South Africa*[tiab] OR Sri Lanka*[tiab] OR "Saint Kitts"[tiab] OR "St Kitts"[tiab] OR "Saint Lucia"[tiab] OR "St Lucia"[tiab] OR "Saint Vincent" [tiab] OR "St Vincent"[tiab] OR Sudan*[tiab] OR Suriname*[tiab] OR Swaziland Or Swazi[tiab] OR Syria*[tiab] OR Tajik*[tiab] OR Tanzania*[tiab] OR Thailand[tiab] OR Thai[tiab] OR "Timor Leste"[tiab] OR Togo*[tiab] OR Tonga*[tiab] OR Trinidad[tiab] OR Trinidadian[tiab] OR Tobago[tiab] OR Tobagonian[tiab] OR Tunisia*[tiab] OR Turkey[tiab] OR Turkish[tiab] OR Uganda*[tiab] OR Uruguay*[tiab] OR Vanuat*[tiab] OR Venezuela*[tiab] OR Vietnam*[tiab] OR "West Bank"[tiab] OR Yemen*[tiab] OR Zambia*[tiab] OR Zimbabwe*)

Table S2. Risk of bias in randomized controlled trials of parenting interventions that conducted follow-up studies in low- and middle-income countries.

Original study	Selection bias		Performance bias	Detection bias	Attrition bias	Reporting bias
	Random sequence generation	Allocation concealment	Blinding of participants and personnel	Blinding of outcome assessors	Incomplete outcome data	Selective reporting
Attanasio et al., 2014	Low	Low	High	Low	Low	Low
Chang et al., 2015	Low	Unclear	High	Low	High (for follow up)	Low
Cooper et al., 2009	Unclear	Unclear	High	Low	High (for age 13 follow up and particularly language outcome)	Low
Grantham-McGregor et al., 1991	Unclear	Unclear	High	Low	High (for long-term follow ups)	High (for age 8 follow up)
Muhoozi et al., 2017	Low	Unclear	High	Low	High (for age 3 follow up)	Low
Walker et al., 2004	Unclear	Unclear	High	Low	Low	Low
Yousafzai et al., 2014	Unclear	Unclear	High	Low	Low	Low

Assessed using the Cochrane Collaboration's tool for risk of bias

Table S3. Outcome measures used across follow-up studies for quantitative analyses on cognitive and behavioral development.

Original trial	Timing of effects	Article with effects	Cognitive development outcome measure	Behavioral development outcome measure
Attanasio et al., 2014	Post-intervention	Attanasio et al., 2014	Bayley Scales of Infant and Toddler Development (BSID-III): cognitive development	N/A
	After 2 years	Andrew et al., 2018	Cognitive factor score (Woodcock–Muñoz Test of Cognitive Abilities and Achievement, the Spanish versions of Woodcock–Johnson Tests of Cognitive Abilities and Achievement, Spanish version of the Peabody Picture Vocabulary Test–Revised, Daberon Screening for School Readiness, and Pencil tapping task)	Strengths and Difficulties questionnaire (SDQ): total difficulties
Chang et al., 2015	Post-intervention	Chang et al., 2015	Griffith Mental Development Scales (Griffith): cognitive subscale	N/A
	After 4.5 years	Smith et al., 2021	Wechsler Preschool and Primary Scale of Intelligence (WPPSI-IV)	SDQ: total difficulties
Cooper et al., 2009	After 1 year	Murray et al., 2016	BSID-II: mental development index	N/A
	After 12.5 years	St. Clair et al., 2019	Kaufman Assessment Battery for Children Version 2: Riddles subtest	CBCL: internalizing subscale
Grantham-McGregor et al., 1991	Post-intervention	Grantham-McGregor et al., 1991	Griffiths: global developmental quotient	N/A
	After 4 years	Grantham-McGregor et al., 1997	Stanford Binet	N/A
	After 8 years	Walker et al., 2000 (cog) Chang et al., 2002 (beh)	Wechsler Intelligence Scales for Children-Revised (WISC-R): full-scale IQ	Rutter Teacher and Parent Scales *data were not presented in paper, but stated no differences between groups*
	After 14 years	Walker et al., 2005 (cog) Walker et al., 2006 (beh)	Wechsler Adult Intelligence Scale (WAIS): full scale IQ	Antisocial behaviors (measure not specified)
	After 19 years	Walker et al., 2011	WAIS: full scale IQ	Inventory on Interpersonal Problems: social inhibition
Muhozi et al., 2017	Post-intervention	Muhozi et al., 2017	BSID-III: cognitive development	ASQ: personal-social
	After 2 years	Atukunda et al., 2019	BSID-III: cognitive development	ASQ: personal-social
Walker et al., 2004	Post-intervention	Walker et al., 2004	Griffiths: global developmental quotient	N/A
	After 4.8 years	Walker et al., 2010	WPPSI: full scale	SDQ: total difficulties
Yousafzai et al., 2014	Post-intervention	Yousafzai et al., 2014	BSID-III: cognitive development	BSID-III: socioemotional development
	After 2 years	Yousafzai et al., 2016	WPPSI: full scale	SDQ: behavioral problems