

Storytelling and Picture-Based Educational Interventions for HIV/AIDS Knowledge and Attitudes among Early Childhood Educators: An Empty Systematic Review and Conceptual Pathway

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Abstract

Early childhood educators are well placed to shape young children's earliest health related understanding and to model nonstigmatising responses to children affected by HIV, yet their own HIV/AIDS knowledge and attitudes may be incomplete. Storytelling and pictorial approaches are common in early childhood education and are theoretically suited to communicating complex health concepts, but their effectiveness for HIV/AIDS education among early childhood educators has not been synthesised. This systematic review aimed to identify and appraise evidence on the effectiveness of storytelling and pictorial educational interventions on HIV/AIDS knowledge and attitudes among early childhood educators. The review was reported according to PRISMA 2020; no protocol was registered. On 6 October 2026, seven keyword queries in English and Indonesian were run through Google Search and supplemented by citation searching. No bibliographic database (e.g., PubMed, ERIC, Scopus, or Garuda) was searched, and screening was performed by a single reviewer; the search should therefore be regarded as preliminary. Eligible studies were randomised, nonrandomised, or pretest posttest intervention studies that delivered a storytelling, narrative, or pictorial HIV/AIDS intervention to early childhood educators and reported knowledge, attitude, or related outcomes. Risk of bias tools specific to each study design and a structured narrative synthesis were planned. A total of 66 records were identified (51 after deduplication); four reports were assessed in full and three reports identified through citation searching could not be retrieved. No study met the eligibility criteria. The closest evidence came from teacher training studies in primary and secondary schools, including a multimedia cluster randomised trial in Kenya, and from a pretest posttest evaluation of an HIV/AIDS workshop for early childhood educators in Zambia whose storytelling or pictorial components could not be verified. Within the limits of this preliminary search, the effectiveness of storytelling and pictorial HIV/AIDS education for early childhood educators remains unknown. It contributes a transparent map of this evidence gap, a theory informed conceptual pathway, and recommendations for controlled trials in early childhood education settings, including Indonesia.

Keywords: HIV/AIDS; early childhood educators; storytelling; pictorial education; systematic review; empty review; conceptual framework

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1. Introduction

HIV/AIDS remains a major global public health concern (WHO, 2025). According to the most recent UNAIDS estimates, 41.0 million people were living with HIV in 2025, and 1.2 million people newly acquired the virus in that year (UNAIDS, 2026). The global response has been further threatened by a sharp contraction in international funding, which places recent gains in prevention and treatment at risk (UNAIDS, 2025). In Indonesia, the Ministry of Health estimated that approximately 564,000 people were living with HIV in 2025; by October 2025, only 385,472 (68%%) knew their status and 259,719 were receiving antiretroviral therapy (Kementerian Kesehatan Republik Indonesia, 2025). Beyond its biomedical burden, HIV is accompanied by persistent stigma and discrimination, which global strategies explicitly target because they undermine testing, treatment, disclosure, and wellbeing (UNAIDS, 2021; WHO, 2022). Recent systematic reviews confirm that stigma remains a key barrier to ending AIDS and that rigorous evidence on how to reduce it is still limited (Boakye & Adjorlolo, 2025; Kimera et al., 2025).

Accurate HIV/AIDS knowledge and supportive attitudes are therefore central to prevention and to the reduction of stigma. International technical guidance recommends age appropriate, evidence informed learning about health, the body, and relationships, with learning objectives that begin at 5 years of age (UNESCO, 2018), and global monitoring shows that implementation depends heavily on prepared and confident teachers (UNESCO, 2021). However, educational media do not guarantee learning gains: in Indonesia, an online HIV/AIDS education session using video showed no difference in adolescents' knowledge compared with a control group (Martanti & Handayani, 2022). Teachers' own knowledge and attitudes also matter, because stigmatising attitudes among teachers can directly harm children living with HIV and may shape the attitudes of their peers (Martin et al., 2022; Nyandiko et al., 2023).

Early childhood educators occupy a distinctive position in this regard. They interact daily with young children, some of whom are living with or affected by HIV; they are expected to maintain safe and inclusive classrooms; and they often serve as trusted sources of information for parents and communities. Systematic reviews show that early childhood settings are important sites for health education and health literacy development, although HIV related topics are rarely addressed (Bánfai-Csonka et al., 2022; Fináncz et al., 2023). Training kindergarten teachers in other health topics has proved feasible at scale and has improved teachers' perceived understanding (Hui et al., 2025). An evaluation of an early childhood teacher training workshop in Zambia found that educators began with misconceptions about HIV transmission and its effects on child development, and that many feared having a child with HIV in the classroom (Zesch, 2009). These observations suggest that the HIV/AIDS knowledge and attitudes of early childhood educators deserve explicit attention rather than being assumed to follow from general teacher preparation.

Storytelling and pictorial approaches are plausible candidates for such education. Storytelling contextualises health information within recognisable situations, and a systematic narrative review identified ten storytelling studies in public health, five of which concerned HIV/AIDS, concluding that storytelling can influence knowledge and attitudes although evaluation remains limited (McCall et al., 2021). Visual materials can also support understanding: a meta analysis found that visual based interventions improved adults' comprehension of health related material compared with traditional formats (Galmarini et al., 2024), and a scoping review reported that visual aids, particularly when developed with intended users, improved health literacy outcomes among people with low literacy (Mbanda et al., 2021). These findings are consistent with multimedia learning theory, which holds that information presented in words and pictures is better understood than words alone (Mayer, 2021). In early childhood contexts, pictorial or narrative messages supported by illustrations are recommended for building health literacy (Bánfai-Csonka et al., 2022), and read along videos of pictorial storybooks improved young children's knowledge of rational medicine use (Bakaruddin et al., 2022). Because storybooks and picture books are already core pedagogical tools in early childhood education, these formats may be particularly acceptable to early childhood educators and readily transferable to their classroom practice.

Theoretical rationale and conceptual pathway. Drawing on the storytelling, multimedia learning, visual aid, and HIV stigma literature, a hypothesised pathway was developed to make explicit how storytelling and pictorial education might influence the outcomes targeted by this review (Figure 1). Narrative and visual exposure is expected first to increase attention and engagement by placing health information within recognisable situations (link L1; McCall et al., 2021). Combined verbal and visual presentation is then expected to support comprehension (L2) and knowledge acquisition (L3) (Galmarini et al., 2024; Mayer, 2021; Mbanda et al., 2021). Links L1 to L3 are supported by evidence among adults, learners, or patients, but none has been tested among early childhood educators. The remaining links are hypothetical for this population. Knowledge gains are expected to enable the correction of misconceptions, notably fear of casual transmission (L4), which an uncontrolled evaluation documented among early childhood educators (Zesch, 2009). Corrected beliefs are expected to support more favourable attitudes (L5), although controlled evidence among primary and secondary school teachers is mixed (Nyandiko et al., 2023). Stories may in turn reduce stigma by exposing audiences to other perspectives and eliciting understanding for people who are stigmatised (L6; Vegt et al., 2024), a proposition that remains theoretical. Reduced stigma and improved communication with children and parents are finally expected to make educators accurate, nonstigmatising sources of HIV/AIDS information (L7), in line with global stigma reduction targets (UNAIDS, 2021). Cultural

and linguistic fit, intervention dose and delivery mode, baseline knowledge and prior training, and institutional and community norms are proposed as moderators. Each link is therefore a testable hypothesis rather than an established causal chain.

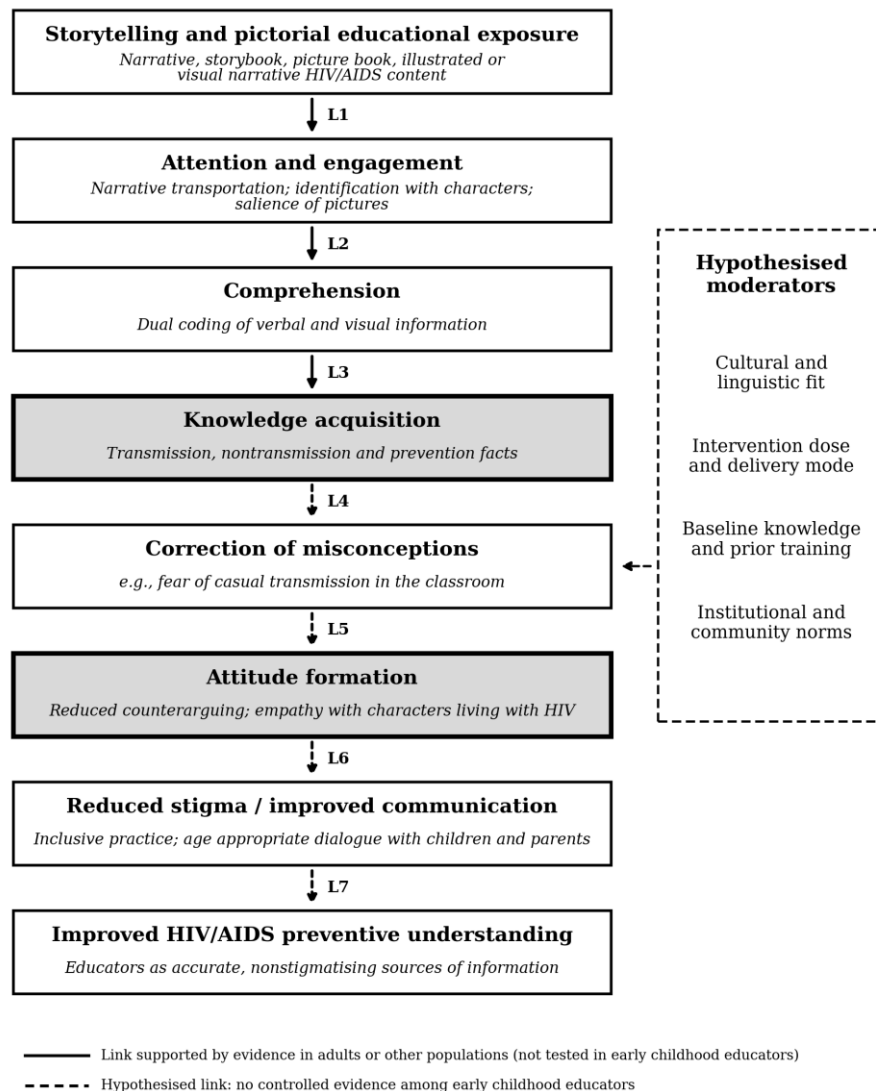


Figure 1

Hypothesised conceptual pathway through which storytelling and pictorial education may influence HIV/AIDS related outcomes among early childhood educators. Original framework developed for this review from storytelling, multimedia learning, visual aid, and HIV stigma literature (Galmarini et al., 2024; Mayer, 2021; McCall et al., 2021; UNAIDS, 2021; Vegt et al., 2024); it has not been empirically tested. Shaded boxes indicate the primary outcomes of this review. Solid arrows (L1 to L3) denote links supported by evidence in adults or other populations but not tested among early childhood educators; dashed arrows (L4 to L7) and the moderators denote hypothesised links without controlled evidence in this population.

Despite this rationale, the evidence base appears fragmented. Reviews of teacher focused HIV interventions have concentrated on primary and secondary school teachers and have identified very few studies (Martin et al., 2022), whereas evaluations of storytelling and visual media have largely targeted children, adolescents, or patients rather than educators. To the authors' knowledge, no systematic review has examined whether storytelling or pictorial HIV/AIDS education improves the knowledge and attitudes of early childhood educators. This gap is relevant to countries such as Indonesia, where early childhood education (*pendidikan anak usia dini*, PAUD) educators could serve as accessible channels for accurate and nonstigmatising HIV related messages. The objective of this systematic review was therefore to identify, appraise, and synthesise evidence on the effectiveness of storytelling and pictorial

educational interventions on HIV/AIDS knowledge and attitudes among early childhood educators. The review question was: among early childhood educators, do storytelling and/or pictorial HIV/AIDS educational interventions, compared with no intervention, usual training, an alternative educational approach, or the preintervention condition, improve HIV/AIDS knowledge and attitudes? The review is intended to provide the first systematic mapping of this intersection and a theory informed basis for future intervention research.

2. Methodology

Review design and registration. This systematic review was conducted with reference to the *Cochrane Handbook for Systematic Reviews of Interventions* (Higgins et al., 2024) and reported in accordance with the PRISMA 2020 statement and its explanation and elaboration document (Page, McKenzie, et al., 2021; Page, Moher, et al., 2021). Reporting of the search follows the PRISMA-S checklist (Rethlefsen et al., 2021) as far as the information sources allowed, and the respects in which the initial web search does not meet PRISMA-S expectations of reproducibility are stated explicitly below. The review protocol was not registered in PROSPERO or any other registry, and no protocol was published in advance. Because only publicly available information was used, ethical approval and informed consent were not required.

Eligibility criteria. Eligibility was defined with the PICOS framework (Table 1). Studies were eligible if they evaluated an HIV/AIDS educational intervention containing a storytelling, narrative, storybook, picture book, illustrated, comic, or other visual narrative component; delivered it to early childhood educators (preschool, kindergarten, childcare, preprimary, PAUD, or equivalent educators of children aged 0 to 8 years); and reported at least one quantitative outcome on HIV/AIDS knowledge or attitudes. Awareness, misconceptions, stigma, willingness to communicate about HIV/AIDS, and educator self efficacy were secondary outcomes. Randomised, nonrandomised controlled, and uncontrolled pretest posttest designs were eligible because sparse evidence was anticipated. Studies limited to learners, health workers, or primary and secondary teachers were excluded unless results for early childhood educators were reported separately. No language or date restrictions were applied.

Table 1
Eligibility criteria (PICOS)

Element	Inclusion	Exclusion
Population	Early childhood educators: preschool, kindergarten, childcare, preprimary, PAUD, or equivalent educators of children aged 0 to 8 years (inservice or preservice)	Learners; parents only; health workers; primary or secondary teachers without separately reported early childhood data
Intervention	HIV/AIDS education with a storytelling, narrative, storybook, picture book, illustrated, comic, or visual narrative component	No narrative or visual component; clinical HIV treatment interventions
Comparator	No intervention, usual training, alternative education, or preintervention baseline	Not applicable
Outcomes	Primary: HIV/AIDS knowledge and attitudes. Secondary: awareness, misconceptions, stigma, willingness to communicate, self efficacy	No quantitative HIV/AIDS related educational outcome
Study design	Randomised and cluster randomised trials, nonrandomised controlled studies, quasi experimental and pretest posttest studies	Cross sectional surveys, studies using qualitative methods only, reviews, editorials, commentaries, letters, abstracts without data, duplicates

Note. PICOS = Population, Intervention, Comparator, Outcomes, Study design; PAUD = *pendidikan anak usia dini* (Indonesian early childhood education).

Information sources and search strategy. Searches were conducted on 6 October 2026. No bibliographic database was searched in this initial round, although several relevant databases are freely accessible; this was a shortcoming of the initial review process. Instead, seven queries in English and Indonesian were entered into Google Search. Six of the seven queries (queries 1 to 4, 6, and 7) were keyword strings, and only query 5 used a Boolean operator (OR); all queries are reported verbatim in Table 2. Google Search ranks results with proprietary algorithms that may personalise them or make

them location dependent, and the personalisation and location settings in use were not documented. More than one page of results was screened for each query, but the exact number of pages screened and the total number of hits returned by each query were not documented; the 9 or 10 records per query in Table 2 are the results that were logged for screening. The reference lists of two key reports (Mohammad Hoseinpour et al., 2015; Martin et al., 2022) were also examined. Because results from a web search engine cannot be reproduced reliably by another team, this initial search does not meet the PRISMA-S expectation of a repeatable search (Rethlefsen et al., 2021). The search should therefore be regarded as preliminary rather than exhaustive.

Table 2
Web search engine queries executed on 6 October 2026

No.	Query as executed	Language	Records logged
1	HIV/AIDS education intervention preschool teachers knowledge attitudes	English	10
2	kindergarten teachers HIV/AIDS training intervention knowledge attitude pre-post	English	9
3	storytelling HIV education teachers early childhood picture book intervention	English	9
4	guru PAUD HIV/AIDS pengetahuan sikap penyuluhan media gambar cerita	Indonesian	9
5	"preschool teachers" OR "kindergarten teachers" HIV stigma intervention study	English	10
6	ECD practitioners HIV/AIDS training evaluation knowledge attitudes South Africa early childhood development centres	English	10
7	illustrated comic fotonovela HIV education teachers knowledge attitudes randomized	English	9
Total before deduplication			66

Note. Records logged = results logged for screening per query before deduplication; more than one results page was examined per query, and the total number of hits returned by Google Search was not documented.

Study selection and data extraction. Records were logged and duplicates were removed manually. Titles, search snippets, and available abstracts were screened against the eligibility criteria, after which full texts or full records were assessed. Screening and eligibility assessment were performed by a single reviewer; independent dual screening was not undertaken, which is a limitation of this review (see Discussion). A standardised extraction form was prepared to capture author and year, country, design, sample size, participant characteristics, setting, intervention type, storytelling and picture/visual components, duration, comparator, measurement instruments, knowledge and attitude findings, effect estimates, follow up, limitations, risk of bias, and conclusions. Items not reported were to be coded as NR (not reported).

Risk of bias assessment. Tools specific to each study design were specified a priori: the Cochrane RoB 2 tool for randomised trials and ROBINS-I for nonrandomised controlled studies, as described in the *Cochrane Handbook* (Higgins et al., 2024), and the revised JBI critical appraisal tool for quasi experimental studies, including single group pretest posttest designs (Barker et al., 2024). Tools specific to each design were preferred to a single generic instrument because the principal sources of bias differ substantively between randomised, nonrandomised, and uncontrolled designs. Risk of bias judgements were to be visualised with the robvis tool (McGuinness & Higgins, 2021).

Data synthesis. Meta analysis was planned only if at least two studies were sufficiently similar in population, intervention, comparator, outcome measure, and design. In that case, standardised mean differences with 95% confidence intervals would be pooled with a random effects model, and heterogeneity would be quantified with the I^2 statistic. Otherwise, a structured narrative synthesis grouped by intervention type and outcome was planned (Higgins et al., 2024). Because no study met the eligibility criteria, the review is reported as an empty review, and the characteristics of the closest excluded studies and of studies awaiting classification are described to inform future research.

3. Results

Study selection. The seven queries returned 66 records, of which 15 were duplicates (Figure 2). Of the 51 unique records screened, 47 were excluded, most commonly because participants were children or adolescents, because the intervention did not address HIV/AIDS, or because the record was a trial registration, guideline, or review. All nine Indonesian language records evaluated video, leaflet, or lecture based HIV/AIDS education among secondary school students and were excluded on population. Four reports were assessed in full and all were excluded (Table 3): three because participants were primary or secondary school teachers rather than early childhood educators (Duflo et al., 2006; Mohammad Hoseinpour et al., 2015; Nyandiko et al., 2023) and one because it described the qualitative development of an intervention without outcome evaluation (Chory, Nyandiko, Beigon, et al., 2021). Citation searching identified three further reports: the two teacher training evaluations included in Martin et al. (2022), namely a pretest posttest evaluation of CD ROM and two day workshop training among 120 primary and secondary school educators in KwaZulu-Natal, South Africa (Chao et al., 2010), and a pretest posttest evaluation of a peer group intervention among 286 trainee primary school teachers in Malawi (Norr et al., 2007); and the Zambian evaluation by Zesch (2009). The full texts of these three reports were not obtained; the first two were nevertheless ineligible on population according to their published abstracts and the description in Martin et al. (2022). For Zesch (2009), the DigitalCommons@TMC record provides only the abstract, and its download link redirects to ProQuest Dissertations & Theses, which requires an institutional subscription or purchase, so the full text could not be obtained.

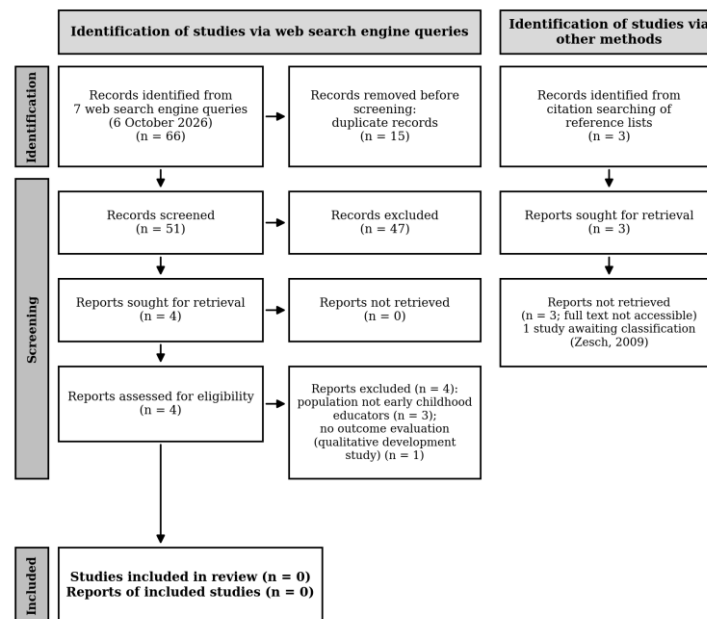


Figure 2

PRISMA 2020 flow diagram of study identification and selection (searches conducted on 6 October 2026). Original figure prepared by the authors following the PRISMA 2020 template (Page, McKenzie, et al., 2021).

Table 3

Reports assessed in full and studies awaiting classification

Study (country)	Design; sample	Participants	Intervention (narrative/visual component)	Outcomes	Decision
Nyandiko et al. (2023) (Kenya)	Cluster RCT; 20 schools (10 intervention, 10 control); n = 311 teachers	Primary and secondary school teachers	One day multimedia training with HIV films and educational animation (yes)	HIV stigma (Genberg scale); K/A/B; follow up at 6 months	Excluded: population

Study (country)	Design; sample	Participants	Intervention (narrative/visual component)	Outcomes	Decision
Chory, Nyandiko, Beigon, et al. (2021) (Kenya)	Qualitative development study; 50 stakeholders	Education sector stakeholders	Development of the same training module (yes)	Perceived acceptability (qualitative)	Excluded: design; population
Duflo et al. (2006) (Kenya)	Cluster randomised evaluation; 328 primary schools (163 allocated to teacher training); 445 teachers trained; about 74,000 pupils at baseline	Primary school teachers; outcomes measured in pupils	Teacher training in the national HIV/AIDS curriculum (NR)	Pupil knowledge, attitudes, behaviour	Excluded: population
Mohammad Hoseinpour et al. (2015) (Iran)	Quasi experimental pretest posttest; n = 1,838	High school teachers	Needs based training: lectures, question and answer, pamphlets (visual: pamphlets; narrative: NR)	Knowledge; attitude (questionnaire developed by the researchers)	Excluded: population
Zesch (2009) (Zambia)	Matched pretest posttest with qualitative components; n = 27	Educators of children aged 0 to 8 years	HIV/AIDS ECCED teacher training workshop (NR)	Knowledge; fear of a child with HIV in class; intent to use	Awaiting classification: full text not retrieved

Note. ECCED = early childhood care, education and development; K/A/B = knowledge, attitudes and beliefs; NR = not reported in the accessible record; RCT = randomised controlled trial. Mohammad Hoseinpour et al. (2015) reported pretest posttest values that differ between the abstract and the results table; values are therefore not reproduced. Sample sizes for Nyandiko et al. (2023) and Duflo et al. (2006) were completed from the published article and from the full working paper, respectively.

No study met the eligibility criteria. Consequently, no data could be entered into the planned tables of study characteristics, intervention characteristics, effects on knowledge, effects on attitudes, or risk of bias, and neither meta analysis nor narrative synthesis of effects was possible (Table 4).

Table 4

Status of planned evidence tables and analyses

Planned output	Planned approach	Status
Characteristics of included studies	Extraction of 20 prespecified items	Not applicable (no included studies)
Characteristics of storytelling and pictorial interventions	Narrative and visual components, dose, delivery, comparator	Not applicable
Effects on HIV/AIDS knowledge	SMD with 95% CI, or structured narrative synthesis by direction of effect	Not applicable
Effects on HIV/AIDS attitudes	SMD with 95% CI, or structured narrative synthesis by direction of effect	Not applicable
Risk of bias	RoB 2, ROBINS-I, or JBI checklist according to design; robvis plots	Not applicable

Note. CI = confidence interval; SMD = standardised mean difference.

Study awaiting classification. Zesch (2009) evaluated an HIV/AIDS early childhood care, education and development workshop for educators of children aged 0 to 8 years in Mongu, Zambia, using a matched pretest posttest survey of 27 participants supplemented by structured observation and interviews. The accessible abstract reported a statistically significant increase in knowledge of the workshop content (paired *t* test, $p = .004$) and a 15.5% overall reduction in participants' fear of having

a child with HIV in the classroom. Whether the workshop contained storytelling or pictorial components was not reported in the accessible record; participants recommended poems, songs, and translation of materials into the local language. The study therefore awaits classification pending retrieval of the full text.

Closest excluded evidence. The excluded studies shared the target outcomes but not the target population. A cluster randomised trial in western Kenya delivered a one day multimedia training, including HIV films and educational animation, to 311 primary and secondary school teachers in 20 schools; it reduced secondary school teachers' perceptions of community level stigma but did not change individual attitudes or beliefs (Nyandiko et al., 2023). A quasi experimental study of 1,838 high school teachers in Iran reported significant pretest posttest improvements in knowledge and attitude scores after lectures, question and answer sessions, and pamphlets (Mohammad Hoseinpour et al., 2015). Storytelling studies on HIV identified during screening targeted learners rather than educators, consistent with the wider storytelling literature (McCall et al., 2021).

4. Discussion

Within the limits of a preliminary web based search, this systematic review found no study that evaluated a storytelling or pictorial HIV/AIDS educational intervention among early childhood educators. The review question therefore cannot be answered from the available evidence, and the effectiveness of these approaches for improving the HIV/AIDS knowledge and attitudes of early childhood educators remains unknown. This finding extends the observation by Martin et al. (2022) that interventions addressing HIV related stigma among teachers are scarce: the scarcity appears even more pronounced for educators of young children and for narrative or visual modalities. It also mirrors broader reviews reporting that stigma reduction interventions are heterogeneous and rarely evaluated with robust randomised designs (Boakye & Adjorlolo, 2025; Kimera et al., 2025). Absence of evidence should not, however, be interpreted as evidence of ineffectiveness, and because the search was neither exhaustive nor reproducible, the empty result may reflect the limits of the search as much as the state of the literature.

The closest available evidence offers cautious, indirect signals. General HIV/AIDS training for teachers has been followed by improvements in knowledge and attitudes in uncontrolled pretest posttest designs (Chao et al., 2010; Mohammad Hoseinpour et al., 2015; Norr et al., 2007; Zesch, 2009), and the Zambian evaluation suggests that early childhood educators may hold specific misconceptions and fears that training can address (Zesch, 2009). Evidence from a controlled design is less encouraging: in the Kenyan cluster randomised trial, a single day multimedia training that included films and animation altered secondary school teachers' perceptions of community stigma but not their individual attitudes (Nyandiko et al., 2023). A subsequent survey of the same cohort found that teachers in the intervention group were less likely to report stigmatising community views about COVID-19 (Chory, Nyandiko, Ashimosi, et al., 2021), which suggests that such training may act more on perceived norms than on personal beliefs. Similarly, an online video based HIV/AIDS session for Indonesian adolescents produced no knowledge difference relative to control (Martanti & Handayani, 2022). These contrasts caution against assuming that narrative or visual media alone are sufficient to change entrenched beliefs after brief exposure. Conversely, meta analytic evidence that visual interventions improve adults' comprehension of health information (Galmarini et al., 2024), and evidence that pictorial storybooks improve young children's health knowledge (Bakaruddin et al., 2022), indicate that the components under review are promising; whether their effects transfer to HIV/AIDS education for early childhood educators remains untested.

The conceptual pathway presented in the Introduction (Figure 1) provides a framework for such testing. Its early links, from narrative and visual exposure to engagement, comprehension, and knowledge, rest on evidence from adults and other populations (Galmarini et al., 2024; Mayer, 2021; McCall et al., 2021), whereas the links from knowledge to misconception correction, attitude change, and reduced stigma remain hypothetical for early childhood educators (Nyandiko et al., 2023; Vejt et al., 2024; Zesch, 2009). Future trials could therefore measure engagement, comprehension, and misconception correction as mediators, and cultural fit, intervention dose, and prior training as moderators.

For practice, programmes that wish to use storytelling or pictorial HIV/AIDS materials with early childhood educators should do so within an evaluation framework rather than on the assumption of proven effectiveness. Educators and education stakeholders value image based resources, local languages, and familiar expressive forms such as poems and songs (Chory, Nyandiko, Beigon, et al., 2021; Zesch, 2009), and visual aids are most effective when they are developed with their intended users (Mbanda et al., 2021). Materials should therefore be developed together with educators, aligned with age appropriate content guidance (UNESCO, 2018), and should address classroom safety and the inclusion of children affected by HIV. Early childhood health interventions are more effective when they involve parents and use varied, age appropriate, game based activities (Fináncz et al., 2023), and large scale kindergarten teacher training has proved feasible (Hui et al., 2025). In Indonesia, existing PAUD professional networks offer concrete entry points. The Himpunan Pendidik dan Tenaga Kependidikan Anak Usia Dini Indonesia (HIMPAUDI) and the Ikatan Guru Taman Kanak-kanak Indonesia (IGTKI-PGRI) organise inservice meetings and cluster level learning groups through which short HIV/AIDS modules could be delivered and evaluated. Although the Guru Penggerak programme was discontinued in March 2025 and replaced by a school leadership programme, its alumni and the learning communities it created remain potential peer facilitators. Given the cultural and religious sensitivity of HIV in Indonesia, content for PAUD educators is likely to be more acceptable if it is framed around child protection, health, and inclusion rather than sexuality: for example, how HIV is and is not transmitted in everyday classroom contact, standard first aid and hygiene precautions, confidentiality, and how to respond without stigma to a child or family affected by HIV. Such framing remains consistent with the age appropriate learning objectives of international guidance (UNESCO, 2018) and directly targets the fear of casual transmission documented among early childhood educators (Zesch, 2009). Involving parents, school committees, local primary health centres (puskesmas), and, where appropriate, religious and community leaders in developing the materials may further increase acceptability. These networks could also provide a platform for pilot cluster randomised evaluations. Future studies should allocate early childhood centres rather than individuals, use validated knowledge and stigma instruments, follow participants for several months, describe narrative and visual components transparently, and report outcomes in a form that permits standardised effect sizes to be computed.

This review has several limitations. The protocol was not registered. The initial search used seven queries in Google Search, six of which were keyword strings rather than Boolean strategies, and neither the number of result pages screened nor the total hits per query were documented; no bibliographic database was searched, so studies indexed in PubMed, Scopus, Web of Science, ERIC, Embase, or regional databases such as Garuda may have been missed. This is particularly relevant for Indonesian community service and intervention reports on PAUD educators, which are typically published in nationally indexed journals. Screening was performed by a single reviewer, three reports identified through citation searching could not be retrieved, and the study awaiting classification could alter the conclusions if its intervention included narrative or visual components. Nevertheless, the empty result is consistent with the scarcity reported by an earlier review of teacher focused HIV interventions (Martin et al., 2022). Repeating the search across major databases with independent dual screening is the most important next step. Because the combination of narrative or pictorial formats, early childhood educators, and HIV outcomes is very narrow, a broader scoping review of any HIV/AIDS education for early childhood educators and caregivers, including early childhood development practitioners in Southern and Eastern Africa, in which narrative and pictorial components are mapped as one dimension, would be a useful complement.

5. Conclusion

This systematic review sought evidence on whether storytelling and pictorial educational interventions improve HIV/AIDS knowledge and attitudes among early childhood educators. Within the limits of a preliminary web based search, no eligible study was identified. One evaluation of an HIV/AIDS workshop for early childhood educators awaits classification because its intervention components could not be verified, and the closest controlled evidence concerned primary and secondary school teachers. The effectiveness of storytelling and pictorial HIV/AIDS education for this workforce is therefore unknown. The principal contribution of the review is a transparent demonstration of this

evidence gap, together with a theory informed conceptual pathway that specifies how narrative and visual education could improve knowledge, correct misconceptions, and reduce stigma, and which variables future studies should measure. For early childhood education scholarship and practice, the findings support the joint development with educators and rigorous evaluation of culturally adapted storytelling and pictorial HIV/AIDS materials for early childhood educators, ideally through cluster randomised trials in settings such as Indonesian PAUD institutions. Until such evidence is available, these approaches should be regarded as promising but unproven. Future trials should measure outcomes among educators and, where feasible, the classroom climate experienced by children affected by HIV, so that the practical value of these approaches for inclusive early childhood education can be judged. Updating this review with comprehensive database searches and independent dual screening is recommended before firm conclusions are drawn.

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