

SYSTEMATIC REVIEW

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Knowledge transfer interventions on cancer in Africa and Asia: a scoping review

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Abstract

Background Cancer is a growing public health concern in Africa and Asia, where access to effective healthcare and resources is often limited. There is an urgent need for evidence-based cancer control policies in Africa and Asia, along with systems for prevention, early detection, diagnosis and treatment, and palliative care. This emerging issue has garnered growing interest from international institutions but there has been little visible action, and the existing knowledge remains scattered and fragmented. This scoping review aims to explore the breadth and scope of evidence regarding knowledge transfer interventions to enhance cancer care in Africa and Asia.

Methods We conducted a systematic search of Embase, Emcare, ERIC, APA PsycInfo, Medline, and Google Scholar, supplemented by expert bibliographies and references. Peer-reviewed empirical studies in English or French from January 1978 to September 2024 were included. Data were organised using the AIMD (Aims, Ingredients, Mechanism & Delivery) framework. Study quality was presented using the Mixed Methods Appraisal Tool.

Results The scoping review examined seven articles providing evidence on five unique interventions. The interventions included target both decision-makers and health professionals and aim to strengthen evidence-based cancer control policies and implementation strategies. The interventions documented have all been initiated by external actors, mainly international institutions or researchers from high-income countries, in collaboration with African and Asian stakeholders. In addition, some researchers have been involved in participatory research projects designed to enable decision-makers to implement evidence-based cancer control policies and programmes.

Conclusions This scoping review highlights a critical lack of evidence on knowledge transfer interventions in cancer care across Africa and Asia, partly due to limited funding for non-communicable diseases. It calls for the integration of knowledge transfer components into all cancer research and interventions, supported by robust evaluation strategies, to develop evidence-based, economically feasible, and culturally appropriate policies, guidelines and interventions that can be used in nations with limited healthcare resources to improve cancer outcomes.

Keywords Knowledge transfer, Cancer, Africa, Asia, Evidence, Research to policy, Research utilisation

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Background

In 2022, approximately 20 million new cancer cases and 9.7 million deaths were reported worldwide, with an estimated 53.5 million people who were alive within five years following a cancer diagnosis [1]. Cancer incidence continues to rise, particularly in low- and middle-income countries (LMICs), where Asia ranks first in terms of both incidence and mortality, while Africa though having lower incidence, faces extremely high mortality rates. These regions face specific challenges in making equity in cancer care a major concern. Striking inequities persist both between LMICs and higher-income regions and within countries in Asia and Africa. Limited resources in cancer control, younger patient ages, diagnostic delays, and high treatment costs exacerbate the burden for LMICs [2–4]. Furthermore, huge internal social inequalities intensify disparities, ranging from the individual's exposure to risk factors and the likelihood of developing cancer to access to screening, diagnosis, treatment and even to fundamental palliative care [5].

Addressing these multi-layered gaps requires evidence-based interventions tailored to the economic, social, and cultural contexts of LMICs. In response, the World Health Organization (WHO) has urged LMICs to support research that translates knowledge into public health action for cancer prevention and treatment, underpinned by evidence-based national cancer control plans (NCCP), as highlighted in Resolution WHA58.22 on Cancer Prevention & Control (2005) [6]. The adoption of this initial measure and the subsequent resolution in 2017 [7] reflects growing awareness and urgency due to the rapid rise in cancer cases, earlier non-communicable diseases (NCD) and anti-tobacco efforts, and the influence of advocacy movements. This emphasis on knowledge transfer (KT) highlights the need for LMICs to bridge gaps in cancer care by producing data and transforming research findings into accessible, effective public health interventions.

From a broader perspective of health, the use of research evidence to inform practices, decisions, and public policies is increasingly recognised as vital to achieving universal health coverage [8]. Interest has also grown since the 1970s in leveraging insights from patient and caregiver experiences to shape public policy [9]. Research has sought to identify the most effective KT strategies and interventions across various fields and has shown that interactive approaches, which encourage active engagement between knowledge producers and users, are among the most successful [10–13]. KT interventions on health in LMICs engage a variety of stakeholders, from patients to healthcare practitioners and decision-makers, yet they still predominantly target patients and providers [14]. The strategies in LMICs

often combine multiple activities, with training, material distribution, and local facilitators playing central roles. Many interventions make a conscious effort to adapt to local realities by integrating culturally meaningful approaches to strengthen engagement and knowledge uptake. However, despite their proven effectiveness, tailored targeted messages remain underutilised [14]. Recent studies conducted in Africa show that attitudes to research are key factors in the effectiveness of KT [15], with knowledge brokers playing a facilitating role, albeit limited in national policy influence [16]. However, the processes that facilitate KT in specific contexts are still underexplored, particularly in LMICs [15]. KT in health in LMICs faces substantial challenges [13, 16–18]. These include a lack of necessary skills and tools for policymakers and planners to effectively understand, communicate, and apply scientific knowledge, while researchers often face difficulties in clearly communicating their findings, providing actionable recommendations for specific audiences, and diversifying their KT strategies. The organisational environment in many LMICs is generally unsupportive of KT efforts, and there are limited or non-functional platforms for meaningful interaction between knowledge producers and users. In addition, the active involvement of patients remains largely absent from interventions [19].

In the area of cancer in particular, a preliminary search in JBI Evidence Synthesis found no reviews on KT interventions focused on Africa or Asia. From an international perspective, a Canadian review of systematic reviews [20] highlighted multiple challenges in cancer KT and identified some promising approaches. However, the authors noted that the quality, reporting, and outcomes of primary studies were uneven, and that many interventions, while considered promising, required further evaluation. They also pointed out that the design and execution of primary studies often fell below acceptable quality standards, limiting the ability of systematic reviews to synthesise meaningful outcomes due to gaps in the available data. Furthermore, the review of systematic reviews suggested that KT approaches for cancer remain fragmented and lack a systematic framework. Given the fragmented nature of existing research on KT interventions in cancer control and the limited number of studies on KT conducted in Africa and Asia, a scoping review is an effective method to identify the scope and breadth of relevant literature [21]. This approach is especially valuable in contexts where research is sparse and heterogeneous, as it allows for a broad exploration of the types of KT strategies, their actors, and outcomes across different settings. By synthesising the available evidence, the review can highlight key theories and frameworks guiding these interventions and provide insight into factors that

influence their success or failure. Ultimately, this scoping review aims to map the landscape of KT interventions in cancer control in African and Asian contexts, and to describe reported outcomes and evaluation approaches.

Methods

This scoping review was conducted according to the Joanna Briggs Institute (JBI) methodology [22]. The protocol was preregistered on Protocols.io on the 14th November 2023 [23] and is reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) [24] (see Supplementary Material 1 for PRISMA-ScR checklist).

Research aims

This scoping review was guided by several research questions designed to explore the landscape of KT interventions in cancer care in Africa & Asia. Specifically, we sought responses to the following questions: (i) What types of interventions have been implemented to facilitate the appropriation and use of cancer-related knowledge by key stakeholders, such as decision-makers, health professionals, caregivers and patients? (ii) How were these interventions structured in order to influence decision-making, improve health practices, and support patient and community engagement? (iii) What theories, frameworks, or models have been used to inform the design or content of these interventions? (iv) What factors have contributed to or hindered the KT process during the implementation of these interventions? (v) What have been the outcomes or impacts of these interventions reported by the original authors and what conclusions and recommendations have emerged based on these outcomes? (vi) What strategies have been employed to evaluate the effectiveness of these KT interventions?

This review was conducted to inform an intervention research project on the KT role of breast cancer patient organisations, which is part of a larger project on the experiences of breast cancer patients in Mali, Benin and Cambodia [25].

Search strategy

The search strategy for the bibliographic databases was developed by the research team in collaboration with a librarian. In consultation with the research team, we created a robust search strategy derived from the research strategy of the systematic review of reviews by L. Langer, J. Tripney & D. Gough on the Use of Research Evidence in Decision-Making [13], using their approach to define both controlled vocabulary terms and free-text terms. To this framework we added a specific focus on experiential knowledge by incorporating terms related to patient

participation and patient experience. This allowed us to broaden our search to capture not only the traditional use of research evidence but also the role of patients' lived experiences in shaping KT interventions.

We considered publications in French and English. No publication date limit was applied.

An initial limited search of Medline was carried out to identify articles on the topic. The text words contained in the titles and abstracts of relevant articles, and the index terms used to describe the articles were used to develop a full search strategy for Embase, Emcare, ERIC, APA Psycinfo, Medline (see Appendix II for the full search strategy). These databases were selected based on the subject areas covered by the indexed references (education/teaching for ERIC, social and behavioural sciences for APA Psycinfo, biomedical sciences for Embase and Medline and paramedical sciences for Embase) and the quality of the indexing and the references. In addition, Medline, Psycinfo, ERIC, Embase were used as reference journals to develop the search strategy. Secondly, as the number of selected references was too small, the search was extended to Google Scholar.

We also hand-searched the reference lists of included papers to identify additional records.

The same databases were monitored between March 2023 and September 2024 (the monitoring strategy is developed in Supplementary Material 2). To identify relevant studies, we developed inclusion and exclusion criteria based on the population, concept, and context mnemonic recommended by the JBI's methodology.

Eligibility criteria

This scoping review applies the definition of KT provided by the Fonds québécois de recherche sur la société et la culture (FQRSC), encompassing "all efforts made to publicise and recognise research activities and results with the aim of their use by practitioners, decision-makers, and the general public, regardless of whether or not the process is interactive" [26].

On this basis, the question of interest for this review was structured using the acronym PCC, which then guided the eligibility criteria as follows:

- P (Participants): Patients, caregivers, health managers, decision-makers, civil society organisations, and the general population.
- C (Concept): The focus is on KT interventions related to cancer control. KT, as a concept, varies across scientific disciplines. Consequently, there is a multiplicity of angles and points of view from which to approach this process [19]. This diversity led to occasional imprecise or unexpected uses of the term during the screening process, prompting us to pro-

gressively refine the exclusion criteria to ensure the relevance of the results. Only interventions explicitly designed to facilitate the transfer of research-based and experiential knowledge from patients and health-care professionals to practice and decision-making settings were included.

Additionally, we included Integrated Knowledge Translation Research (IKTR) studies, recognising their potential contribution to KT in settings with limited data on cancer, such as those in Africa and Asia. IKTR involves a collaborative process where patients, caregivers, and policymakers work alongside researchers throughout the entire research cycle. This participatory approach fosters a shared understanding and ensures that research findings are actionable, particularly in contexts where cancer data is limited, and direct application of strategies from better-resourced regions is challenging. We selected only IKTR studies that yielded specific recommendations or guidance that directly contributed to systemic changes, such as improving cancer care delivery or influencing cancer policy reforms. See Review terms in Supplementary Material 3.

- C (Context): this review covers Africa and Asia. Other regions are excluded.

Based on the assumption that there is a paucity of scientific literature on this topic in Africa and Asia, the research team decided not to limit the review to references that evaluated the effectiveness of the interventions implemented. Pertinent references that do not include an evaluation of the strategy implemented may be included and discussed with the authors at a later stage if relevant.

We considered both qualitative and quantitative studies reported in peer-reviewed empirical publications. In addition, systematic reviews that meet the inclusion criteria were considered, depending on the research question.

Articles on fundamental, translational, and clinical research — such as clinical trials and biobanks — are beyond the scope of this review. Academic clinical research aims to define and validate optimal strategies for diagnosing and treating cancer, while translational research focuses on finding practical applications for the latest fundamental discoveries. This approach allows new knowledge and innovative technologies to be quickly translated into diagnostic and therapeutic applications for the benefit of patients [27]. KT, as defined in this review, occurs downstream of this process, in the phase of integrating validated treatments, devices and practices in the health care system, scaling up to a wider population.

This review does not consider studies on skills or technology transfer, medical education, or traditional health-care professional training programs. Health education, health promotion, and therapeutic education interventions that did not include knowledge transfer actions are also not within its scope, nor are abstracts, commentaries, or editorials.

Evidence selection

We exported the search results from each database and imported them into the systematic review management software Covidence in order to identify and remove duplicate records and to facilitate title/abstract and full-text selection.

Titles and abstracts were screened and the full text of selected citations was assessed in detail by two independent reviewers for assessment against the inclusion criteria for the review. We recorded reasons for exclusion of full-text evidence that does not meet the inclusion criteria directly in Covidence. Any disagreements between the reviewers at any stage of the selection process was resolved by discussion, or by a third reviewer.

Data extraction & synthesis

The lead reviewer adapted, tested, and calibrated a data-extracting tool in Excel used by Brouwers et al. [20], who conducted a review of systematic reviews of KT interventions in cancer control. Although their inclusion criteria and geographical scope were different, their extraction model served as a valuable framework that inspired the design of our own extraction process for KT interventions.

To address the first two research questions, data were extracted on intervention characteristics (citation details, country of origin of the author and co-authors, review and year of publication), aim, methodological characteristics, and underpinning theories. The authors' findings and discussions were used to answer research questions three (influencing factors) and four (effectiveness and impact).

During the extraction process, we deemed it necessary to distinguish between the study objectives and the KT intervention objectives, as the latter was not always the primary focus of the article. This differentiation allowed us to accurately capture the specific goals of the KT interventions, which were sometimes embedded within broader research agendas.

To structure and summarise the extracted data, we initially explored existing or commonly used taxonomies for KT or implementation science interventions. Ultimately, we selected the AIMD framework (Aims, Ingredients, Mechanism & Delivery) [28], because of its flexibility and ability to capture the multifaceted nature of knowledge

transfer interventions, aligning with the diverse data available in the reviewed studies. For further information, see the extracted data of the seven studies included in the scoping review in Supplementary Material 4.

Data analysis

For our data analysis, we applied the analytical framework of Langer et al. [29] to examine the effects of interventions designed to support the use of evidence in decision-making. This framework provides a structured approach to identifying the mechanisms that drive the use of research evidence in decision-making and assessing their impact on behaviour change. This framework highlights six key mechanisms that promote the integration of evidence into decision-making processes. This categorisation provides a global perspective so as to better understand how evidence was integrated and, where

appropriate, applied in the different contexts of the interventions. In addition, the analytical framework of Langer et al. incorporates the COM-B system by Michie et al. [30], which evaluates behavioural outcomes based on decision-makers' capability, opportunity, and motivation to use research evidence. We used this framework to characterise the interventions through a common and well-established analytical model.

The Mixed Methods Appraisal Tool (MMAT) [31] described the methodological quality of studies included in this scoping review.

Results

A PRISMA scoping review flow diagram (Fig. 1) details the screening process and reasons for exclusion at the full text review stage. Database searches and reference checking returned a total of 988 records, with 941 identified

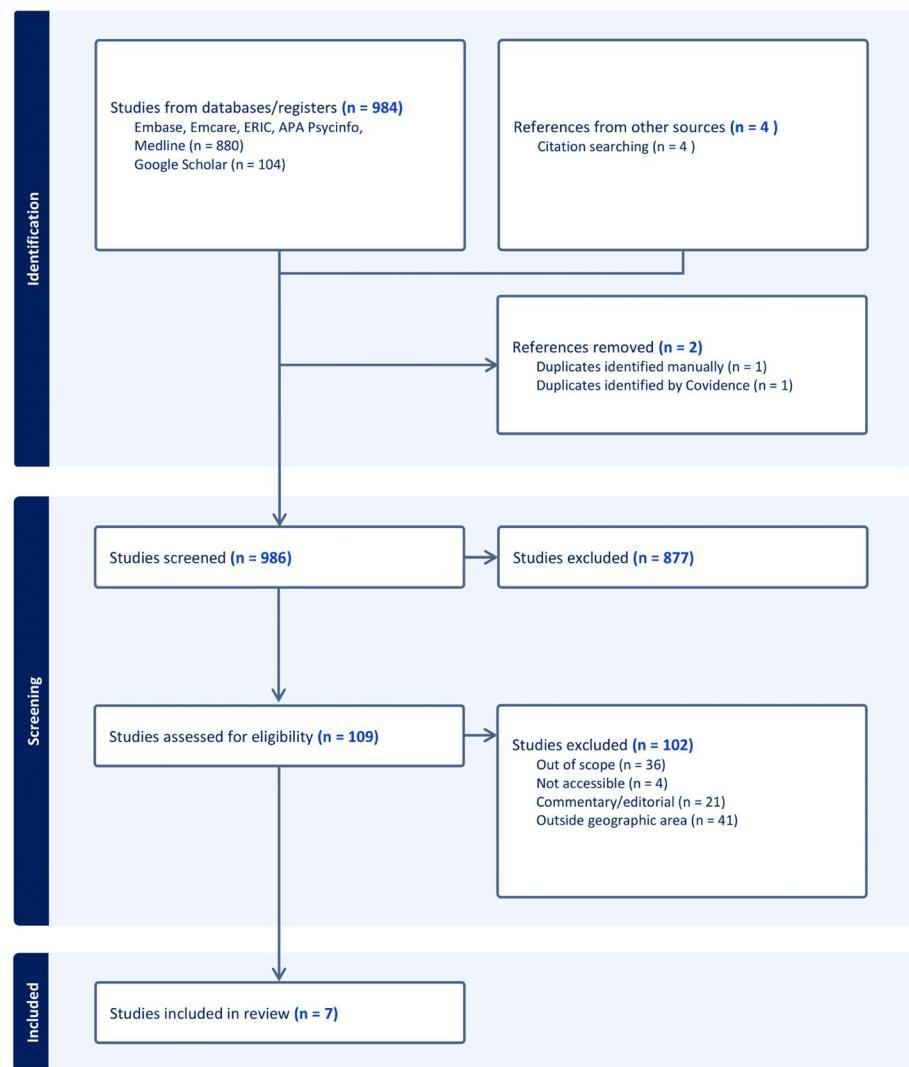


Fig. 1 PRISMA scoping review flow diagram

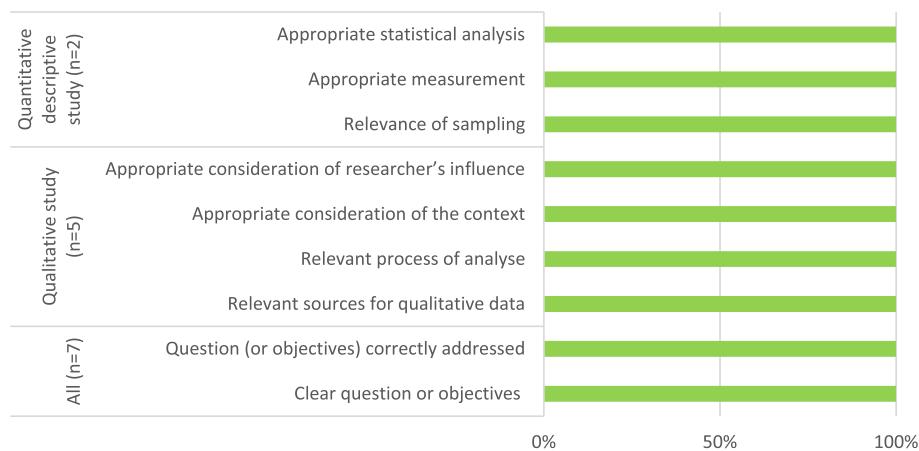


Fig. 2 Analysis of methodologies in the corpus with MMAT

in the initial search and an additional 47 found during ongoing monitoring of these databases.

After removing duplicates, 986 titles and abstracts were screened, and the full text of 109 records were screened. 102 records were excluded, resulting in seven eligible records.

Notably, for two of the documented KT interventions, two different periods/components of the same intervention were addressed in two separate references, which were included as distinct records to capture the full scope of the intervention. A detailed description of each intervention is available in Supplementary Material 4.

Qualitative studies [32–36] were assessed based on the relevance of sources and analysis processes, as well as the appropriateness of contextual considerations and researcher influence. For quantitative descriptive studies [37, 38], the evaluation focused on sampling relevance, appropriate measurements, and statistical analysis. Based on the MMAT analysis, the assessment indicates a generally high methodological rigour across both qualitative and quantitative descriptive studies in the corpus (Fig. 2).

Characteristics of sources of evidence

Except for one study from 2005, the remaining studies are recent, with publications dating between 2014 and 2021. Three articles focus on Kenya [32, 35, 36] but have a Canadian first author, with one or more Kenyan co-authors. One article, with an American first author, focuses on South Africa and includes South African co-authors [33]. Two articles discuss an American programme open to multiple African countries: one is authored by an American researcher [37], and the other by a Ugandan researcher [38]. Only one reference was selected for the "Asia" region: it concerns India and was authored by an Indian researcher [34].

Two articles address the entire continuum of cancer care across all cancer types [37, 38] whereas the other five concentrate on specific cancers: two on cervical cancer [32, 33], one on breast cancer [34], and two on retinoblastoma (paediatric cancer) [35, 36].

Five of the seven references are qualitative studies, specifically case studies [32–36]. The remaining two are quantitative surveys [37, 38].

Synthesis of evidence

Aim

The interventions target both decision-makers and health professionals. Despite differences in geographical focus and specific objectives, the overarching aim is to strengthen evidence-based cancer control policies and implementation strategies.

All interventions consistently targeted decision-makers at various levels (national, local, and health facilities). Health professionals were involved in only two cases, particularly for interventions focused on breast cancer screening and retinoblastoma care [34–36]. In each case, the interventions aimed to ensure that decision-makers & health professionals could use evidence-based approaches to cancer control, highlighting the critical need for KT at the policy-making level Table 1.

Ingredients

The authors identified both facilitating and constraining factors affecting KT in three out of the five interventions [33, 35–38] Table 2.

Mechanism

Three out of the five selected interventions [32–34] utilised theoretical models or frameworks (TMFs) to identify factors influencing implementation and to shape

Table 1 KT targets and objectives of selected interventions

References	Targets	Objective
Duncan 2019 & Nakaganda 2021	Decision makers, health facilities, and non-governmental organisations	Increase the capacity to initiate or enhance evidence-based cancer control planning and implementation in Africa
Podolak 2017	Local decision-makers	Enabling local decision-makers to collectively make informed, practical, culturally sensitive strategic decisions on how best to implement a Cervical Self-Sampling Program (CSSP) in Kenya
Mosavel 2005	Decision-makers	Negotiate a mutual agenda with regard to cervical cancer between communities and researchers in an under-resourced community in Cape Town, South Africa
Kathrikolly 2020	Decision-makers & health workers	Enabling decision-makers and health workers to develop evidence-based strategies to promote the uptake of breast cancer screening and diagnosis in India
He 2014 & Hill 2016	Decision-makers (including health administrators)	Enabling stakeholders involved in the treatment of retinoblastoma to develop evidence-based strategies for providing appropriate care to patients in Kenya

their strategies, whether within research studies or during analysis workshops. The Participatory Action Research (PAR) [39] and Community-Based Participatory Research (CBPR) [40] methodologies served as process models [41], promoting active involvement of community members and allowing their insights and experiences to guide the design and adaptation of interventions. In addition, the Scenario-Based Planning (SBP) method [42], Shiffman and Smith's Framework [43], and the Existential Phenomenology (EP) method [44] were used as determinant frameworks [41], offering valuable insights into the logistical, contextual, and cultural factors impacting the feasibility and relevance of these interventions.

All the interventions were inclusive because they involved a significant number of stakeholders. This means that various actors, such as local or national policymakers, healthcare administrators and professionals, researchers, patient associations and local communities, were consulted and engaged throughout the process. To further understand the effectiveness of the selected interventions, we applied the analytical framework by Langer et al. [29], which examines the mechanisms supporting evidence use in decision-making. Table 3 categorises the evidence mechanisms of each intervention according to this framework, providing a comprehensive view of how evidence was utilised and, where applicable, applied across various contexts within the interventions.

Four out of the five initiatives were led by researchers and organisations based in high-income countries (HIC) [32, 33, 35–38]. Three of these interventions were initiated by academic researchers from institutions such as Brock University (Canada) [32], Case Western Reserve University (USA) [33], and Kasturba Medical College (India) [34]. Two of these interventions also involved collaborations with civil society organisations: one with

Action Africa Help International [32], an African NGO in Kenya, and another with the Network on Violence Against Women [33], a coalition of civil society organisations and activists in South Africa.

The remaining two interventions were driven by international agencies and organisations, including the Center for Global Health at the U.S. National Cancer Institute (NCI/CGH) [37, 38] and Daisy's Eye Cancer Fund (England) [35, 36].

From a funding perspective, these three studies received research funding from high-income countries (HICs). One study received support from a National Cancer Institute-designated Cancer Center and a fellowship from the National Institutes of Health (NIH) [33]. Another was funded by the Scottish Funding Council [34], while a third received grants from the Canadian Institutes of Health Research (CIHR) and Grand Challenges Canada [32]. The two other interventions were financially supported by distinct sources: one by the Daisy's Eye Cancer Fund (currently World Eye Cancer Hope) [35, 36], a British NGO focused on eye cancer, and another by federal funds from the National Cancer Institute-National Institutes of Health [37, 38].

Delivery

The tools mobilised in these interventions encompass a range of interactive and participatory approaches designed to enhance learning and stakeholder engagement: i) a community of practice based on a telementoring platform facilitated remote interaction and knowledge sharing between participants [37, 38]; ii) iterative multi-method data collection and analysis workshops allowed for systematic data collection and interpretation by different stakeholders, ensuring that diverse perspectives are taken into account [32]; iii) a community-based participatory qualitative study engaged

Table 2 Influencing factors of selected KT interventions

References	Factors restricting KT	Factors facilitating KT
Duncan 2019 & Nakaganda 2021	- the time-limited structure of the programme; longer-term engagement would help to highlight the ability of participants to apply acquired knowledge, to identify barriers and challenges in implementation, and to provide sustained opportunities for cross-regional knowledge exchange	- a WhatsApp group to facilitate contact and further discussion between participants - networking with potential technical and financial partners for countries
Podolak 2017	Not available	- education and mentoring to enable study participants to act as co-researchers, build their decision-making capacity, and take responsibility for co-owning the research process - the large, inclusive project team ensures that everyone is involved and has confidence in the results (researchers, decision makers, civil society organisations, private laboratory, clinicians, gynaecologists, pharmacists, administrators, community health volunteers, citizens)
Mosavel 2005	- different languages and the political significance of the choice of language and position of the focus groups in post-apartheid South Africa - prolonged history of exploitation of populations by white researchers makes it difficult to gain their trust - limited resources meant that not everyone could be involved, especially the 'husbands' - focus only on adolescents	-obvious approach for the community in the recent context of South Africa (collective action) - working closely and learning from local researchers and stakeholders who had experience with the service delivery-research dilemma - strong communication skills and cultural knowledge - go beyond the visible, well-known stakeholders with experience of research
Kathrikolly 2020 He 2014 & Hill 2016	impossibility of representing all stakeholders - difficulty in continuing work, particularly on drafting guidelines, outside the annual meetings due to communication challenges, technological limitations, particularly for collaborators in rural areas where Internet and computers were not easily accessible, and other responsibilities that distracted from this purpose	Not available - a committed group with a shared vision—multidisciplinarity: the integration of multiple, distinct disciplines into the group made many key initiatives possible by leveraging disparate skills and expertise - consistency: annual meetings hosted in different Kenyan cities to facilitate participation from members in different regions—administrative support and leadership from DECF-K for the organisation and hosting of the annual meetings - flexibility: evolution of core focus from capacity building to research and innovation & planning - reporting back to the donators for on annual meetings provided a format for setting up measurable outcomes, supporting a research approach - key technological advancements

Table 3 Evidence mechanisms of selected interventions, Langer et al. (2020)

	Awareness	Agree	Access	Interact	Ability	Institutionalising Formalising
Duncan 2019 & Nakaganda 2021	yes	yes	yes	yes	yes	no
Podolak 2017	yes	yes	yes	yes	yes	no
Mosavel 2005	yes	yes	yes	yes	no	no
Kathrikolly 2020	yes	yes	yes	yes	no	no
He 2014 & Hill 2016	yes	yes	yes	yes	yes	yes

community members in the research process, ensuring that their ideas shape the findings [33]; iv) a stakeholder workshop based on an established co-design methodology promoted collaboration and shared decision-making between stakeholders [34]; v) a coordinated national working group provided a structured approach to collectively develop evidence-based strategies for providing appropriate care to patients [35, 36].

Evaluation of the interventions

Only two interventions were evaluated, employing quantitative methods and focusing solely on short-term effects. The first intervention utilised baseline and endpoint self-evaluations for participants and partners, based on Kirkpatrick's evaluation model [37, 38]. This model aims to evaluate the program's relevance to participants, the knowledge gained, progress in applying that knowledge, and the overall impact of the programme. Additionally, an endpoint survey was conducted to gather information about participants' duration of involvement, barriers to participation in sessions, the relevance of topics to their work in cancer research and control, the acquisition and application of cancer-related knowledge, and the extent to which the ECHO initiative achieved its objectives. For the second intervention [35, 36], the assessment followed the guidelines for trans-boundary research partnerships established by the Swiss Commission for Research Partnerships with Developing Countries. This framework is designed to facilitate effective collaboration between researchers, practitioners, and stakeholders across different contexts, particularly in developing countries. It emphasises 11 key principles to underscore the process of sound knowledge generation, building mutual trust, mutual learning and shared ownership and seven questions which point to factors that hinder or enable partnerships in different contexts.

Results of the interventions & recommendations

Due to the lack of evaluation or the presence of only very limited and short-term assessments, the authors cannot provide conclusive evidence on the impact of the

interventions. However, based on the two quantitative studies' surveys and the experience and observations of qualitative studies, the authors report several intermediary results.

To summarise the results as reported by the authors, we refer to the analytical framework by Langer et al. [29] which conceptualises evidence use as a behaviour change (see Table 4). This framework identifies three key intermediate outcomes that facilitate this change: motivation, opportunity, and capacity to use evidence. Interventions aimed at promoting evidence use primarily influence these intermediate outcomes, and the final success of evidence use depends on the interaction between these three factors. While achieving all intermediate outcomes is not necessary, targeting multiple ones increases the likelihood of success.

Despite limited evaluation of the results and effects of the interventions, the authors emphasise the importance of replicating and adapting these models in different contexts, highlighting their potential while acknowledging the need for further research to validate their impact over time.

Discussion

Terminological confusion and conceptual overlaps in knowledge transfer

This exploratory study was challenging because of the multiplicity of terms designating KT, with varying interpretations depending on the author. There is notable inconsistency in the use of the term "knowledge transfer" and its putative synonyms, leading to confusion. This is compounded by the overlap between KT and related concepts such as implementation research, health education, health literacy, therapeutic education and empowerment. These terms are often used interchangeably, even though they refer to distinct phenomena. As a result, what one author describes as KT may align more closely with another concept, and similar processes may be labelled differently across studies. This terminological ambiguity reflects the relatively recent emergence of KT as a research field, as well as the interdisciplinary nature

Table 4 Intermediate outcomes of selected interventions reported by authors according to the analytical framework by Langer et al. (2020)

Motivation to use evidence	[Participants feel part of a community of cancer control leaders [37, 38] Development of strategic directions and implementation strategies essential for creating a technically viable, politically supported, affordable, logistically feasible, socially acceptable, and transformative program [32] Implementation strategies identified; collaboration strengthened between the various stakeholders and launch of the "ICANTREAT" community of experts [34] Annual meetings hosted in different Kenyan cities to facilitate participation from members in different regions [35, 36]
Capability to use evidence	Increased utilisation by participants of cancer control planning resources (such as the ICCP portal, WHO cancer control planning tools, and UICC resources for cancer planning and control); acquisition of knowledge on best practices in cancer control (evidence-based strategies); development of networking and partnership skills, and identification of sources of support [37, 38] Capacities strengthened among decision-makers for informed decision-making and prescription of preferred options; enhanced ability among participants to translate data into actionable insights, acquire knowledge through impact assessment, build a robust knowledge base, and guide project participants in making appropriate choices [32] Strengthened ownership of the study results by the community, including healthcare professionals, local decision-makers, and school administrators; identification of the key concept of "cervical health" to support the development of more holistic and integrated approaches by decision-makers and practitioners, addressing critical issues such as HIV and gender-based violence [33]
Opportunity to use evidence	New partnerships with clinical/hospital partners, the Ministry of Health, and community groups [37, 38] Administrative support and leadership from an international NGO [35, 36]
Use of evidence	100% of participants applying knowledge in practice through communication about cancer and COVID-19 to colleagues, using communication and navigation techniques for patients, developing or implementing national cancer control plans based on strategies and lessons from other countries in the region, writing grants, developing programs, and using evidence in advocacy for people with cancer [37, 38] Adoption and distribution of the Kenyan National Retinoblastoma Strategy Best Practices Guidelines, adapted from the Canadian National Retinoblastoma Strategy Guidelines for Care, to all health clinics in 2014; organisation of awareness campaigns; development of family accommodation attached to the hospital; trainings in clinical and pathological expertise; updates in National Health Insurance Fund policy to cover the majority of paediatric cancer treatment costs; design of an interactive retinoblastoma genetics workshop; four health service delivery innovations, including enucleation techniques, the Retinoblastoma Collaborative Laboratory for Histopathology, and the eCancer-Care-Retinoblastoma national electronic patient database [35, 36]

of its development, involving diverse actors and perspectives that contribute to its conceptual complexity.

However, the goal is not to assert a normative definition of the concept but to emphasise the need for research teams and authors to clarify their perspectives on KT and its application [45]. This aspect is currently missing in the articles reviewed. Indeed, the choice of terminology and the central elements emphasised in the definition reflect underlying values, perspectives, and worldviews [46] and the way the concept is defined influences its implementation. Tools exist to help researchers and other stakeholders to clarify the definition of KT and its use, providing frameworks to facilitate a shared understanding and guide implementation efforts [47]. In this context, it is essential to improve researchers' training in KT and to promote tools that assist in defining this concept within the specific framework of a research project or intervention.

Limited use of conceptual and analytical frameworks for knowledge transfer

Beyond not adequately defining the concept, the authors also did not rely on established conceptual and analytical

frameworks for KT in the interventions analysed. Many of the screened studies did not provide a clear KT model, resulting in inconsistencies in terms of both understanding and implementation. Additionally, there is a notable weakness in addressing both facilitating and limiting factors, which are essential components of KT. This limited reliance on KT's theoretical, methodological, and framework (TMF) is not unique to cancer; indeed, while a wide range of frameworks and models are available, most have undergone little empirical testing. Consequently, the application and adaptation of these models across different health domains, particularly in LMICs, remain underexplored, potentially limiting the development of robust, context-specific KT practices [48]. This gap can significantly limit the effectiveness and impact of initiatives designed to enhance cancer control in LMICs.

This lacuna in the use of conceptual and analytical frameworks for KT reflects a broader issue in health policy research, where established frameworks are consistently underutilised [49].

The research community must continue to ensure that KT terminology and frameworks are shared and consistently applied, maximising their impact across studies and practices.

High-income countries researchers and international institutions: key drivers and intermediaries of knowledge transfer

Most cancer control interventions in Africa and Asia are initiated and supported by international institutions, primarily from high-income countries, which play a leading role in KT and capacity building. These initiatives, such as the Cancer Control Leadership Forums, aim to promote evidence-based policies and programs, often derived from high-income country contexts. While these frameworks are adapted to the limited resources of low- and middle-income countries LMICs, they only partially account for local priorities and knowledge, thereby perpetuating a form of dependency on external approaches and a hierarchy of knowledge. This reliance on international frameworks and funding raises crucial questions about how global evidence can be adapted to the local needs and realities of LMICs.

This phenomenon highlights a broader issue in global health: healthcare systems, research, policies, and funding are still largely dominated by HICs, often at the expense of the perspectives, priorities, and specific needs of LMICs [50]. This imbalance is evident in the frequent misalignment between international aid and the specific disease burden of recipient countries where funding does not always align with local priorities, and NGOs and research institutions from HICs continue to receive most resources [51]. Since the Abuja Declaration in 2001, the decolonisation of global health movement has sought to address these epistemic injustices [52]. The Lusaka Agenda (2023) [53] follows this path, calling for the abandonment of vertical donor-driven programs and advocating for national ownership of interventions, shared leadership, and context-specific approaches. Integrating this agenda into cancer control initiatives is essential in order to give African and Asian countries a more proactive role, not only in implementing interventions but also in defining their own priorities and intervention models. Thus, for oncology interventions in Africa and Asia to be more sustainable and effective, they must be based on strengthened local leadership and more deeply integrate the specific knowledge and needs of these countries.

The lack of local research and data generation specific to African contexts limits the development of strategies truly adapted to the needs of these countries. Therefore, the production of local evidence would enable the design of more relevant approaches, better suited to the financial capacities and healthcare infrastructures of LMICs, and potentially more cost-effective, especially in countries with lower cancer incidence. This strengthening of the local knowledge base aligns with the principles of the Lusaka Agenda, emphasising national ownership and the contextual relevance of interventions.

In this context, initiatives led by researchers adopting a participatory, multi-stakeholder approach to the "local" production of knowledge represent a valuable step toward establishing effective dynamics of knowledge production and transfer in these countries. By involving various stakeholders — including local health professionals, community leaders, and policymakers — these initiatives foster collaboration and ensure that the knowledge generated is relevant, culturally appropriate, and directly addresses the specific challenges faced in the region. This collaborative framework enhances research quality and promotes a sense of ownership among local actors, strengthening their capacity to use the generated data effectively. Moreover, it opens new opportunities for applying this knowledge, such as fostering partnerships and ensuring that cancer control issues are prioritised on the agenda. To build on these participatory efforts, it will be crucial in the future to go beyond the collaborative production of knowledge and establish robust KT mechanisms. These mechanisms should ensure that the knowledge generated is effectively utilised by target audiences.

Comparison of KT interventions in HICs and LMICs in the field of cancer

Beyond the stark disparity in the number of documented KT interventions, our scoping review highlights key differences closely linked to the distinct challenges faced by LMICs and HICs in cancer control. In LMICs, KT interventions primarily target policymakers, focusing on raising awareness and informing the development of cancer control policies — often absent or underdeveloped in these settings. By contrast, in HICs—where cancer policies and healthcare infrastructures are more firmly established—our comparison with the scoping review by Brouwer et al. shows that KT interventions engage a broader spectrum of stakeholders, including healthcare providers, patients, caregivers, and community organisations, resulting in more diverse objectives and strategies [20]. The reference by Brouwer et al. dates from 2011, which may not fully capture more recent developments in KT interventions in HICs.

Another notable distinction is the scope of KT interventions. In LMICs, cancer control efforts including KT interventions often prioritise a limited set of high-burden cancers, driven not only by domestic resource constraints but also by the priorities and perceptions of international organisations and major funding agencies [54]. This is particularly evident in the focus on prevention and screening of cervical cancer, which is widely perceived as a cost-effective investment due to the availability of effective preventive interventions such as HPV vaccination [55] and affordable screening techniques such as visual inspection methods. Conversely, KT efforts cover a wide

spectrum of cancers and span multiple stages of the care continuum in HICs [20]. Despite these differences, our scoping review also identifies shared challenges across settings, notably the inadequate evaluation of KT intervention processes and outcomes [20], as well as the terminological ambiguities and conceptual overlaps in KT [56].

Implications for KT practice in cancer control in LMICs

The findings of this scoping review, alongside previous research, provide valuable insights into how KT initiatives in LMICs can be better adapted to enhance their relevance and impact in cancer control.

In LMICs, effectively translating cancer research into policy and funding decisions requires strategic KT interventions tailored to policymakers. For health policymakers, interventions must prioritise the dissemination of context-specific evidence on cancer epidemiology, treatment costs, barriers to care, and patient experiences in order to position cancer as a major public health and economic priority. Since cancer control in LMICs is primarily financed through domestic resources and often leads to severe financial hardship for patients and their families [57], KT interventions must include a dedicated component targeting ministries of finance, public financial institutions, and social protection organisations — while also engaging international donors and funding agencies as secondary audiences. Strategies, tools, and content should be tailored to their specific needs, leveraging targeted investment cases and policy briefs including assessment of the current financial burden on patients, the healthcare system, and the state, addressing financing needs, cost-effectiveness analyses, and impact modeling for scaled-up cancer control efforts [58]. This is all the more important given that specifically for cancer, the benefits of improved coverage take time to materialise into increased service use and better health outcomes, as expanding cancer services often requires investments in new facilities, specialised infrastructure, trained personnel, and the establishment of trust among patients and providers [57].

To bridge the research-to-policy gap, engagement strategies such as stakeholder dialogues and tools such as policy briefs should be leveraged in order to facilitate informed decision-making. Previous research indicates that policymakers generally find policy briefs useful, primarily employing them for conceptual purposes, while also using them for instrumental and, to a lesser extent, persuasive aims. Moreover, several factors, already identified in previous research, must be taken into account, notably the specificity of the target audience, the legitimacy of the authors, the demonstrated quality of the data, the timing of the dissemination, the

dissemination strategy, the involvement of the target audience in the development process, the format, the context-related nature of the provided data, and the applicability of the recommendations [59].

Additionally, improving access to synthesised knowledge generated in LMICs — often fragmented or inaccessible — can help align funding priorities with local realities and ensure that resource allocation is both effective and equitable.

Given the limited availability of locally generated cancer research, KT strategies in LMICs should leverage multiple sources of knowledge, including experiential knowledge from patients, healthcare providers, and other local actors, as well as hospital-based research conducted by specialists. Deliberative dialogues can represent a particularly relevant strategy in this context, as they bring together diverse stakeholders to collectively interpret research findings and adapt them to local realities [60].

In settings where external partners have a strong influence on national health agendas and where institutionalised KT entities and dedicated funding mechanisms are scarce, integrating civil society actors throughout the knowledge transfer process is particularly relevant. Civil society actors have historically played pivotal roles in advancing major global health milestones, such as the Framework Convention on Tobacco Control and the Doha Declaration on Intellectual Property Rights, which facilitated access to life-saving treatments for HIV/AIDS [61]. Beyond the quality of the data itself, its impact on policy decisions depends on its dissemination by credible and influential actors, whose legitimacy strengthens the uptake and integration of evidence into policymaking [62]. Patient associations provide this crucial legitimacy, helping to anchor cancer control efforts within a local dynamic. This not only enhances the effectiveness of interventions but also promotes epistemic justice by giving countries a proactive role in defining their priorities and implementing solutions, ensuring a more sustainable and contextually adapted approach to managing cancer.

Given the scarcity of KT intermediaries and resources, those generating knowledge —researchers, patients, and healthcare professionals — must be equipped to assume this role, making capacity-building a crucial element of KT interventions from the outset. Several initiatives have been proposed or implemented to establish structured KT mechanisms in LMICs, such as the Knowledge Transfer Unit planned at the National Institute of Public Health in Burkina Faso [63] (though not yet implemented, a detailed plan was developed), the African Center for Equitable Development (ACED) in Benin, which operates across seven Francophone countries, and eBASE in Cameroon. These are just a few examples among many emerging efforts. However, most remain in their early stages,

fragmented, and insufficiently documented, highlighting the need for more sustained, institutionalised approaches to strengthen KT ecosystems and ensure that research effectively informs cancer control policies and practices.

It is also essential to evaluate KT interventions to generate knowledge about the most effective strategies for enabling the use of evidence-based knowledge by health system actors in specific contexts. This evaluation allows for the identification of best practices and challenges, providing insights that can improve future KT interventions in cancer control in LMICs.

Limitations of the study

This study is limited by the inclusion criteria and the definition of KT interventions used, which may have unintentionally excluded relevant works that do not fit these parameters. Additionally, the potential exclusion of literature published in languages other than English and French, particularly research from Asia, could further constrain the scope of this review.

Conclusion

This scoping review highlights the limited body of evidence produced on KT interventions in the field of cancer in Africa, especially in Francophone regions, and Asia. This situation can be attributed, in part, to the low level of funding for cancer control and the limited investment by donors in NCDs in LMICs.

Nevertheless, the urgency for the formulation and implementation of evidence-based policies and cancer control systems that leverage local data cannot be overstated. Although the number of countries in Africa and Asia with an NCD plan that includes cancer or a NCCP has significantly increased, their quality and operational effectiveness remain inadequate and stakeholders face numerous challenges in their implementation [64]. Furthermore, achieving universal health coverage (UHC) requires not only prioritising the development of NCCPs that are actionable and tailored to local contexts but also adapting entire health systems to address local challenges at every stage of the cancer care continuum. This includes context-specific guidelines for prevention, screening, diagnosis, treatment, and palliative care. Additionally, it involves the evolution of social protection systems that integrate context-specific data on cancer and the establishment of tailored medical-social support mechanisms to provide holistic care and address the broader needs of patients and their families. The growing commitment from donors and institutions to support KT interventions, along with increased availability of funding, provides a favourable environment for their development. However, the persistent lack of robust cancer data in many countries remains a major obstacle.

To address this situation, it is critical to mobilise additional funding for cancer research in Africa and Asia and to ensure that every new cancer research project includes a dedicated KT component. In the absence of robust scientific data, experiential knowledge from patients and communities can provide invaluable insights, guiding decisions to ensure that interventions are contextually relevant and aligned with lived experiences. Moreover, all cancer-related initiatives should embed well-documented KT approaches supported by rigorous evaluation strategies to assess their outcomes and impact. Such measures are essential to bridge the gap between research findings and practical applications, transforming scientific advancements into effective and localised interventions that enhance cancer care across Africa and Asia.

Abbreviations

LMICs	Low- and Middle-Income Countries
WHO	World Health Organization
NCCP	National Cancer Control Program
NCD	Non-Communicable Diseases
KT	Knowledge Transfer
IKTR	Integrated Knowledge Translation Research
AIMD	Appraisal Instrument for Mixed Methods Studies
MMAT	Mixed Methods Appraisal Tool

Supplementary Information

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Supplementary Material 1.

Supplementary Material 2.

Supplementary Material 3.

Supplementary Material 4.

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Authors' contributions

The scoping review was conceived by J.R, V.R, C.S, and A.D, who also developed the search strategy for the bibliographic databases. J.R and A.D led methodology development. A.D conducted the literature search and data collection, while J.R and C.S performed the reference screening. J.R also drafted the manuscript, conducted data analysis and interpretation. V.R, C.S, K.F, and M.L provided critical revisions of the manuscript. C.S and V.R supervised this scoping review at every stage. All authors read and approved the final manuscript.

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Data availability

The datasets generated and/or analysed during the current study are included in this published article and its supplementary files.

Declarations

Ethics approval and consent to participate

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Competing interests

The authors declare no competing interests.

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