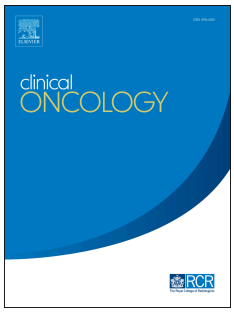
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UK Cancer Healthcare Professionals collaborating with Colleagues in low- and middle-Income Countries: Mapping the Extent and Nature of Partnerships; Future Implications

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PII: S0936-6555(24)00210-3

DOI: https://doi.org/10.1016/j.clon.2024.05.015

Reference: YCLON 3589

To appear in: *Clinical Oncology*

Received Date: 5 September 2023

Revised Date: 18 May 2024

Accepted Date: 29 May 2024

Please cite this article as: Diprose K, Wakeham K, Lewis P, Lodge M, Sullivan R, Siroh B, Young A, Ranasinghe N, Mutebi M, Gyawal B, Cowan R, Stanway S, UK Cancer Healthcare Professionals collaborating with Colleagues in low- and middle-Income Countries: Mapping the Extent and Nature of Partnerships; Future Implications, *Clinical Oncology*, https://doi.org/10.1016/j.clon.2024.05.015.

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UK Cancer Healthcare Professionals collaborating with Colleagues in low- and middle-Income Countries: Mapping the Extent and Nature of Partnerships; Future Implications

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Declarations:

Richard Sullivan. The Mapping Project was supported by funding from the Economic and Social Research Council Global Research Challenge Fund, National Centre for Research Methods, University of Southampton (ES/P010962).

No further declarations to disclose.

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UK Cancer Healthcare Professionals collaborating with Colleagues in low- and middle-Income Countries: Mapping the Extent and Nature of Partnerships; Future Implications

Abstract

Introduction

In 2020 the UK Global Cancer Network (UKGCN) was formed to unite those in the UK interested in Global Oncology and to strengthen collaborative partnerships with stakeholders working across low- and middle-income countries (LMICs) in cancer health systems, governance and care. The UKGCN undertook a mapping exercise to document collaborations to inform the UK's global oncology strategy.

Methods

A semi-structured survey was developed and disseminated using a snowball method over ten weeks from February 2021 across the UK's cancer community, to identify individuals and institutions engaged in clinical practice, research and/or education with partners in LMICs. The survey was sent to individuals in NHS hospitals, charities, universities, other organisations, UKGCN members and to contacts identified by a literature and web search.

Results

A total of 639 invitations were sent and 88 responses received. Results demonstrate a range of collaborative efforts spanning many areas of cancer control: health promotion, prevention, diagnosis and treatment, survivorship and palliative care. A wide range of countries were represented from Sub-Saharan Africa, South America, MENA region, China and South-East Asia. Projects included education and training (146), clinical practice/care (144) and research (226).

Conclusion

This mapping exercise demonstrated considerable UK collaboration with stakeholders in LMICs across all three domains of education, clinical care, and research. The survey results provide an initial framework from which to promote in-depth strategic intelligence on the broad range of activities undertaken by the UK global oncology community. This information has been used as a catalyst to create new partnerships and connect colleagues working in similar geographical settings, encouraging bidirectional learning. The UKGCN will galvanise endeavours to improve equitable access to cancer services globally.

Keywords

Global oncology

NHS

Cancer Control

UK and Ireland Global Cancer Network

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Introduction

Global collaborations in education, care, research and governance are essential for building sustainable and affordable national cancer control planning. Three-quarters of the 10 million global cancer deaths occur in low- and middle-income countries (LMICs) where resources are often the most constrained [1]. Whilst systems strengthening across the cancer care continuum is a necessity to improve cancer outcomes, other factors will be imperative such as the development of cancer intelligence and most importantly, political will. Furthermore, to advance global cancer control, education and training, research, clinical practice and advocacy initiatives are critical components of developing a health workforce. Collaborations between LMICs and high-income countries (HICs) may increase the efficiency of these initiatives through opportunities for shared learning and experience, technology transfer and creation of sustainable equal multidisciplinary partnerships [2]. A Canadian scoping review of oncology training and education initiatives in LMICs reported that almost all the projects it identified were done in partnership with an organisation from a high-income country [1].

The UK has a long history of global health outreach, predominantly focused on communicable diseases. Much has been written on the nature of impactful collaborations improving health with core values including shared vision with mutual respect, humility, clear leadership, trust and flexibility. These relationships include reciprocal learning amongst other positive experiences which have been shown to have affirmative ramifications for UK health workers, improving staff morale, leadership skills and resourcefulness, and de facto, the NHS [3]. The UK's health system is also enriched by the diaspora community who bring many strengths to the NHS, including diversity, skills and expertise, multilingualism, community engagement, and innovation. These strengths are invaluable in improving healthcare outcomes for patients and creating a more inclusive and effective healthcare system.

The founding constitution of NHS services, that access to health care is based on clinical need, not an individual's ability to pay [4] must remain the global aim for fair, equitable cancer care. In the decades since its inception in 1948, the NHS has pioneered 'universalising the best' ensuring universal health coverage (UHC) with no tiered access to services, which promotes the homogenous delivery of high-value cost effective practices across the Nation [5]. The NHS model remains a strong and trusted export and given the global impact of cancer, UK aid funding may better promote security and economic growth through NHS led initiatives and collaborations.

Specifically in the field of oncology, collaborations between the UK and LMIC partners are well established. While, in the 10 years before the COVID-19 pandemic, the UK lay in 4th position behind the USA, China and Germany in a list of cancer research publications, and had the highest proportion of publications with authors from LMICs (3·85%) [6]. However, there is great scope for substantial expansion in both research and other collaboration domains. In-house surveys conducted separately at the UK's two largest comprehensive cancer centres identified significant levels of collaboration between UK health professionals and partners in LMICs, and many respondents desired further

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opportunities to support global health care, and to join a collaborative group working on global oncology initiatives at their institutions [7].

Encouraged by the success of global oncology meetings hosted by the Royal Society of Medicine and the subsequent development of London Global Cancer Week [8] , this drive to engage with partners in LMICs has grown steadily at the grassroots of the NHS and UK academia [2]. In November 2020, a new initiative – the UK Global Cancer Network (UKGCN) [9]– was launched at the start of the second London Global Cancer Week. The origin and mission of the UKGCN have been described previously [2]. As its first action, the UKGCN Founding Members agreed that the Network should conduct a rapid survey to establish the extent and nature of the UK's contributions to strengthening cancer control practice and research in LMICs as this was unknown. A model for such an investigation had already been established in 2018 by the National Cancer Institute Center for Global Health (NCI-CGH), in collaboration with the American Society of Clinical Oncology, with its Global Oncology Survey of NCI–Designated Cancer Centers (NDCCs). This extensive survey confirmed that NDCCs were active in global oncology research and training and were leading collaborations supporting global cancer control [10].

In this UK survey we sought to assess the breadth and depth of current UK cancer collaboration with LMICs across three cross-cutting domains; research, clinical care and education to help inform future UKGCN and national strategies.

Methods

The survey questions were developed by the UKGCN Steering Group (Appendix 1). The survey questionnaire was distributed using a snowball method between 12th March and 19th April 2021. Six key groups of individuals and institutions were identified: Personal contacts of steering group; networks and other relevant organisations; cancer centres and teams, Royal Colleges and professional societies; UK cancer charities and an academic list (Table 1). Individual email messages were sent to the contacts identified in these groups inviting them to complete the survey (Appendix 2). To increase participation, invitees were asked to share the survey link with others with similar expertise and experience. The survey link was also promoted on the UKGCN LinkedIn page and via Twitter. A literature search was undertaken to identify additional individuals active in the field. PubMed and Embase were searched for papers published by authors affiliated to UK-based institutions from 31 December 2015 onwards using appropriate MeSH terms for Global Health/ Low- and Middle-Income Countries and 'Neoplasms' (Appendix 2). All authors with a UK-based institution were highlighted, and searches via institutions and relevant papers were used to identify email contact details, where available. The UKGCN website was launched on 15 April 2021 [9]. People who signed up to join the UKGCN on the website were also invited to complete the survey. These contacts were emailed between 12 March and 19 April 2021 and formed an extension of the survey rollout (Table 2). A reminder message was circulated on 19th April 2021, and an additional reminder was posted on the UKGCN LinkedIn page on Monday 26th April 2021.

The survey data collection was stopped on 30th April 2021. Data extracted from responses included: demographic details, professional discipline, affiliation with any other global organisation, country of partnership. Some respondents were working in broad geographical areas e.g. across Sub-Saharan and

because the work could not be associated with specific countries, so these areas have been included as separate entries. Responses were then analysed according to the type of work undertaken, within 3 categories: clinical practice, research, and education and training. We appreciate there will be some overlaps with these categories but felt this was the most logical, and useful way to categorise responses. Partner organisations were analysed according to World Bank Income Group, Human Development Index rank, and Gender Development Index. Finally, funding sources for the projects described by respondents were extracted on to an Excel spreadsheet and analysed.

Ethical Considerations

The survey was managed in line with the General Data Protection Regulations (GDPR) and UK GDPR (post Brexit; Appendix 3); a link to the UKGCN privacy policy was also provided. Participants were asked to confirm whether they were happy to be contacted by the UKGCN for further details. This work features no identifiable patient or participant data. In line with UK NHS Health Research Authority parameters, ethics committee approval was not required.

Results

A total of 639 survey invitations via email were sent within Phase 1 and Phase 2 of the activity mapping process (Tables 1 and 2). Eighty-eight responses (13.7%) were received between February and April 2021 (Table 3).

The largest group of respondents gave their primary affiliation to a UK university, (47.7%), with 31.8% based in an NHS hospital and 12.5% from a charity or non-governmental organisation (NGO). Most responses were from people based in the UK (88.6%). We also received submissions from people based in a variety of countries across the world involved in relevant projects, some of whom had been working in the UK and had moved to a LMIC. Two respondents in LMICs wish to develop links with the UK.

Respondents were from varied disciplines with larger numbers being oncology health care professionals including doctors, nurses, radiographers, pharmacists, data and in research. The majority of respondents were working in a clinical role, (26), with academics also represented: professors (20), lecturers (12) or researchers (11; data not shown).

A wide range of organisations (n=50) were represented across the respondents. There were six members of the African Organisation for Research and Training in Cancer (AORTIC), three members of the International Association for Hospice and Palliative Care (IAHPC), four members of the International Society of Paediatric Oncology (SIOP) and four members of the Union for International Cancer Control (UICC). Two thirds of the organisations represented had a global remit. Eight organisations focussed on palliative care, six on paediatric cancers, and five were cancer site specific.

The collaborative projects described by respondents were predominantly focused on research, spanning the disciplines of basic and translational science, prevention, screening, diagnosis, treatment and palliative care, as well as social science (Figure 1). Partnerships working on clinical practice and education and training initiatives showed a similar distribution across the spectrum of cancer care.

A wide range of countries were represented through the partnerships described in the survey responses (Figure 1). Some respondents worked in broad geographical areas (Table 4), such as across Sub-Saharan Africa (SSA), or the Middle East and North Africa (MENA). Other projects with a global reach, such as the Global Health Network which supports the research community, spanned more than one country. In these instances, projects have been included in the graph as separate entries. These data are cartographically presented in Figures 1, 2 and 3.

A variety of funding sources were described by respondents, from private funding (self-funded or corporate) to charitable and governmental funding. The most common source was charitable or NGO funding, primarily for research projects (Figure 4).

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Discussion:

This mapping study identified a myriad of UK individuals and institutions engaged in global oncology from clinical practice, research through to education and training collaborations. Given the heterogeneity of the organisational structures across the UK and the multiplicity of individuals and institutions with potential involvement in this field, a multi-factorial approach to identify participants was adopted. It is likely that the geographical pattern of collaborations is a reflection of Britain's historical influence and the spread of anglophone practices. The survey elicited a complex range of multi-country and single country partnerships funded by a disparate set of sources. Overall no specific patterns of collaboration with LMIC were apparent from these data suggesting most collaborations have grown organically from long standing *ad hoc* partnerships.

To date, the UKGCN has used the data as a catalyst to create new partnerships based on people working in the same LMIC settings. As a proof of concept, we approached those UK respondents working in Nepal and invited them to form a collaborative group with a view to identifying areas of common interest. This newly formed group has now identified priority areas and in collaboration with colleagues in Nepal, have formulated a delivery plan. Importantly the group is gathering relevant current data before introduction of the new programme which will serve as a baseline and permit accurate measurement of the impact of the new programme. The UKGCN recognises that the diaspora community has been an integral part of the NHS in the United Kingdom for many years. Diaspora communities can play a crucial role in improving healthcare in their home countries by providing financial support, sharing knowledge and expertise, advocating for better policies, partnering with local organizations, and introducing innovative solutions. This is evident in a Nigerian partnership project involving diaspora in the UK and colleagues working in Nigeria.

The UKGCN plans to use this mapping data to make similar approaches to other UK colleagues who share similar spheres of work either in terms of the country where they are active or their particular area of expertise, be it clinical, education or research.

As demonstrated by the responses to the recent survey of staff at 2 large UK cancer centres [7], there is a strong appetite among UK clinicians and researchers from all professional backgrounds for involvement in LMIC cancer treatment education and research. We anticipate that by raising national awareness of UK activity this study may help pave the way for the development of new partnerships among active collaborators. A new consciousness is emerging within the global oncology community - particularly in those members at the early stage of their careers - which includes climate change and health related issues of social equity. Many of these individuals have the enthusiasm and increasing expertise but lack the vehicle through which they can contribute in this global setting. This mapping exercise offers the potential for senior UK institutions to provide a path for these individuals to gain the specialist skills to develop a career in which global health is a significant part.

The engagement of UK funding agencies in global health has been declining [11] and still remains infectious disease focussed and Afro-centric [12]. The mapping exercise was conducted against the background of a draconian reduction of UK Overseas Development Assistance (ODA) from 0.7% to 0.5% gross national income and continuous attempts at redefining 'ODA' by successive Conservative governments. Their policy, which included sudden and substantial cuts to UK Research and Innovation's ODA funding and at the UK Global Challenges Research Fund prompting widespread

protest at home, has damaged the UK's reputation abroad, especially in the fragile states [13,14]. This unilateral lowering of ODA for key global health initiatives, most recently the UK's reduced contribution to the Global Fund to Fight AIDS, Tuberculosis and Malaria, has made the identification of individuals and institutions that have not abandoned their commitment to improving the healthcare of LMIC populations all the more important.

Within the UK remains organisational support for global work. Although it's functions have recently been transferred to NHS England, Health Education England *(*HEE*), a government body within the NHS that coordinates leadership and training* have long advocated of the benefit to NHS staff and consequently their UK patients of involvement in global health [15]. Affiliated to the NHS are the Medical Royal Colleges in the UK who are professional bodies charged with setting standards in their field and supervising the training of doctors. The Royal Colleges have international activities to improve health through training activities and support UK trainees to work in LMICs as part of speciality training for example, the Royal College of Radiologists [16]. The Royal College of Anaesthetists has an exemplar model including reciprocal training fellowships for LMICs, e-learning and support for LMIC institutional development [17]. Working within Royal Colleges and the NHS are overseas trained staff. In 2022, in a self-reported survey, the proportion of staff working in the NHS reporting a nationality other than British was 33% for doctors and 24% for nursing staff [18] . These staff give a wealth of experience and support to the NHS and diaspora often contribute to economic and social development in their countries of origin. The UKGCN strives to work alongside the NHS, Royal Colleges and staff to encourage 'Out of Programme' reciprocal training opportunities, sabbaticals, knowledge and governance transfer.

To our knowledge this is the first attempt by any UK group to map and collate the global oncology activities that occur with a UK-based individual or institution as a partner. This is an iterative process, the publication of this paper in the RCR journal, and future survey and mapping rounds will increase the numbers mapped. This is an important start to grow networks, avoid silos and duplication of effort and resources, and ensure benefit for UK and overseas partnerships. We hope this type of mapping exercise will also act as an exemplar for replication and development for other HICs. Further surveys will aim to gather more granular detail from a wider pool of stakeholders involved in the cancer care continuum.

Concurrently, the UKGCN plans to repeat this survey on a regular basis and to create a live database of activity that can be used to encourage UK institutions and professional bodies (e.g. NHS, Royal Colleges, universities, medical schools) to regard these global partnerships as beneficial and to contribute to the success of future collaborations. The database will provide real world evidence to support calls for increased NGO/charitable funding specifically for cancer care, and for institutional recognition of, and investment in, Global Oncology as a discipline. We aim to reduce siloed working and improve communication between those working on similar projects or the same country. The UKGCN aims to engage with a broad range of organisations, including the NHS, private sector and charities, that are involved in cancer care and include their activity on this database. As a direct benefit of the mapping exercise the UKGCN has recently formed focused action groups to bring together individuals and organisations captured during the survey. These groups include activities in climate change and professional collaborations with specific countries. We believe the projects formed

through the mapping experience are more inclusive, collaborative, are multidisciplinary and will bring a coherent strategy for bilateral partnerships.

We acknowledge the limitation in understanding the global oncology activity in the UK due to the low response rate to the survey. The UKGCN has developed and expanded since the survey. Work has gone into advocacy activities with professional bodies and through London Global Cancer Week (LGCW). In November LGCW is a platform to educate, share experience, advocate, provide opportunities for networking and influence policy makers nationally in the UK and internationally with the aim of getting cancer control higher up on political agendas. In 2023, LGCW attracted about 2500 attendees and speakers from over 150 countries. These activities have broadened our reach, and we understand more the target audience of the survey. Combining the next survey round with the lead up to LGCW 2024 is planned to be a key trigger moment to ensure maximum response. Members of LGCW are also part of new networks with the Republic of Ireland and NHS Global Health Partnerships. To prevent personal connection bias the literature and internet search will be repeated for all future survey rounds.

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Conclusion:

This national survey conducted by the UKGCN has demonstrated the breadth of current activity and has the potential to empower UKGCN as a national group to contribute to the work of international colleagues. In-country solutions and funding remain the bedrock of cancer control in most LMICs. Nonetheless, there is a role for collaborative working and sharing of resources. As inequalities within countries and between countries widen, an understanding of the drivers of this will be increasingly important to all countries. Given the shared risk factors for many non-communicable diseases and overlapping social determinants contributing to these and communicable diseases and the range of actors involved in the cancer continuum, the global cancer community will rightly need to embrace broad epistemic domains making multidisciplinary working an imperative. The UK's strategy for its contribution to Global Cancer Care will be informed by the UKGCN's maintenance of a comprehensive database of UK LMIC activity.

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Tables

Table 1 Groups initially invited to respond to the UKGCN mapping survey

Group number	Group details and search strategy	Number of invitations
1.	Personal contacts of steering group	74
2.	Networks and other relevant organisations ● Google search for cancer related organisations ● Intelligence from steering group ● Identification of partner organisations linked to research	37
3.	Cancer centres and teams ● Teams identified from the clinical oncology UK workforce census 2019 report (2018 data returns) ● Email contacts identified through: ○ publications ○ hospital websites ○ LinkedIn contacts ○ Google search ○ Personal contacts	40
4.	Colleges and Societies ● List of relevant members of the Association of Medical Royal Colleges ● Recommendations for specialist colleges/societies from steering group ● Google search for leadership team and contact details	38
5.	UK Cancer Charities ● Contact details identified through networking and Google searches	46
6.	Academic list ● Universities with global health courses/teams ● Specialist global health units ● Teams running clinical trials identified from ○ ICRP database ○ WHO database ○ Kidney Cancer UK trials list	113
	Total invitations	**348**

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Table 2 Groups subsequently invited to respond to the UKGCN mapping survey

Group number	**Group details and search strategy**	**Number of invitations**
7.1	Literature search ➢ New contact, email address identified	286
7.2	Literature search ➢ New contact, no email address found	74
8.0	New active members who signed up when the website was launched, not within any of the first 7 groups	5
	Total invitations	**291**

Table 3. Response summary:

Group	**Number of invitations**	**Number of responses**	**Non-respondents**
1. Personal contacts	74	35	39
2. Network and organisations	37	3	32 individuals (29 networks and organisations)
3. Cancer centres and teams	40	5 (note responses were from individuals within the teams who had not been contacted direct, so these also fall within the 'additional responses' group)	33 individuals (26 cancer centres and teams)
4. Colleges and Societies	38	1	36 individuals (25 colleges and societies)
5. UK Charities	46	2	40 individuals (39 charities)

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Group	Number of invitations	Number of responses	Non-respondents
6. Academic	113	13 (note – responses in some cases were from people who had not been sent individual invitations, so 9 of these fall into the 'additional responses' group)	67 individuals (40 teams)
7. Literature searches		17	238 individuals
8. New members		0	5 individuals
9. Steering group		2	
10. Additional responses - individuals who had not been individually invited (note overlap with cancer centres and teams plus academic group)		24 (14 of which fall into group 3 and 6 above)	
Emails returned as undeliverable			31
Retired/no longer involved in relevant work			8
Total		**88**	**530 individuals**

Note: as invitations were sent to multiple individuals, in some academic and cancer centre teams the total numbers above are slightly lower than the number of invitations sent.

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Table 4. Number of respondents working in broad geographic areas

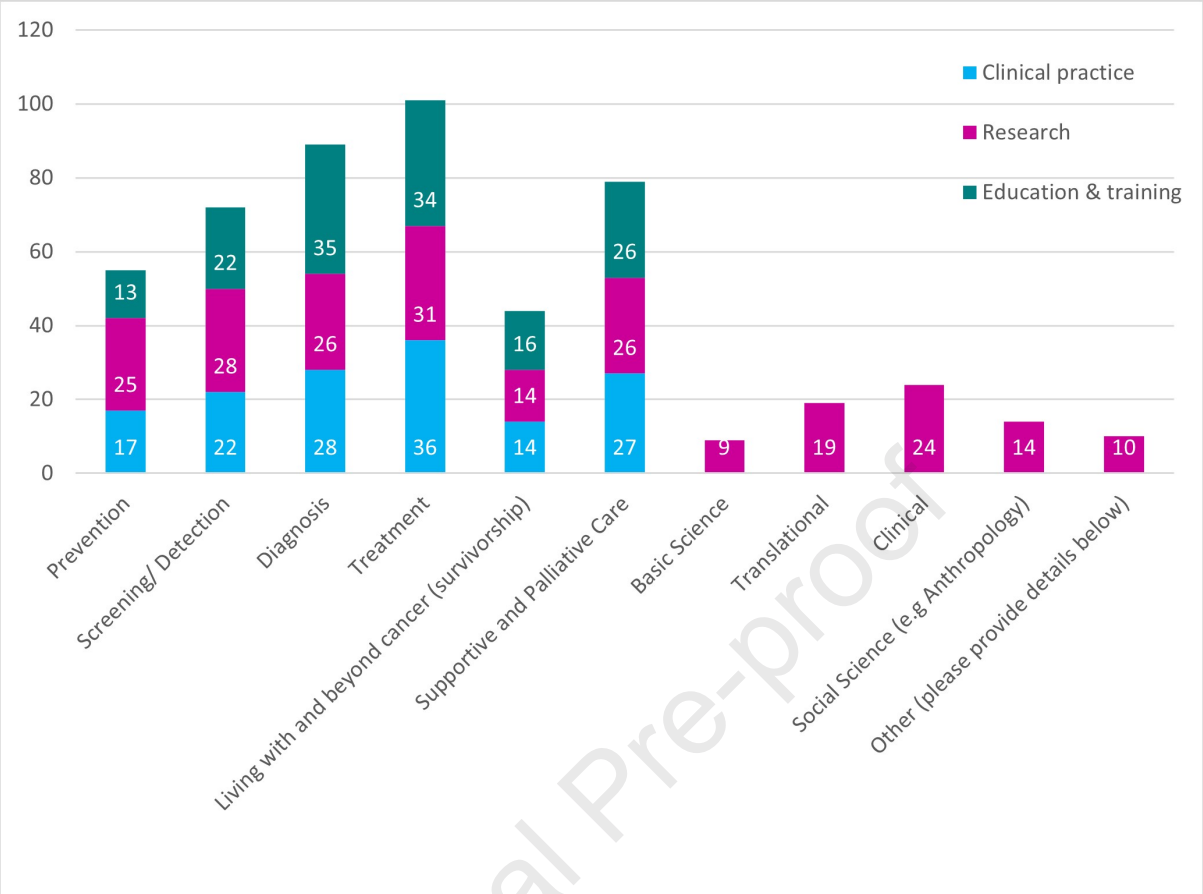
	Clinical practice	Research	Education and training
Global	**7**	**6**	**9**
Latin America	**0**	**1**	**1**
Middle East and North Africa	**1**	**1**	**1**
South East Asia	**0**	**0**	**1**
Sub-Saharan Africa	**3**	**5**	**3**

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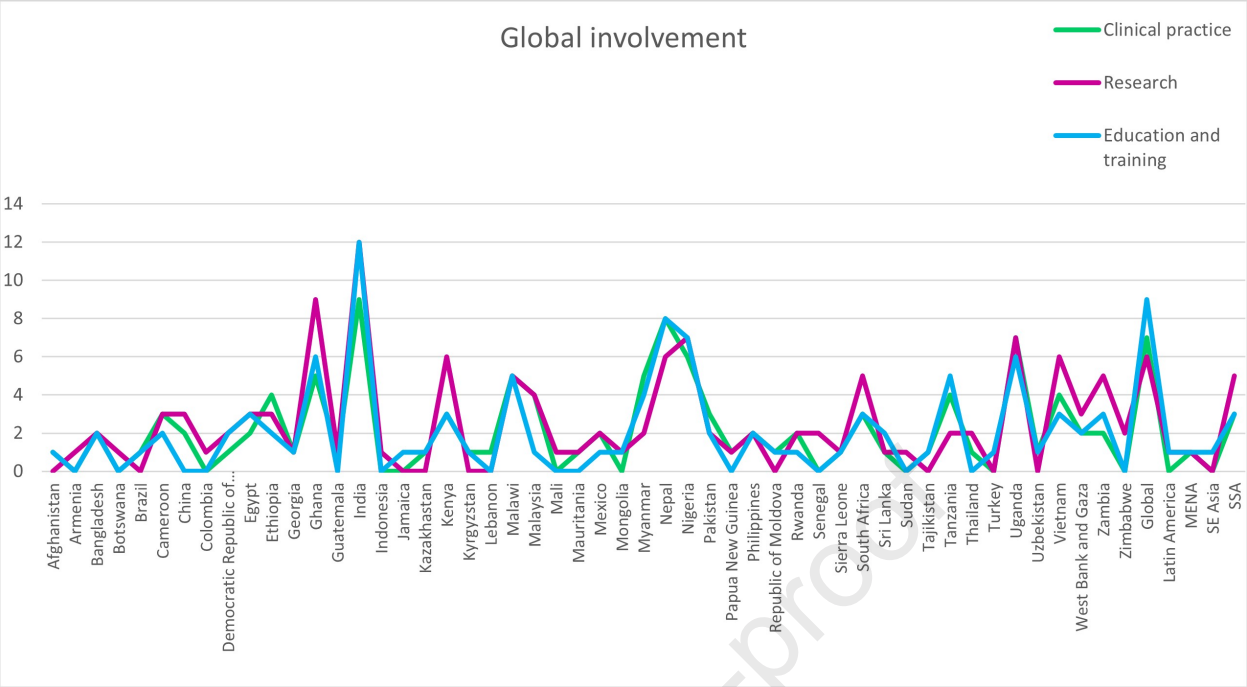
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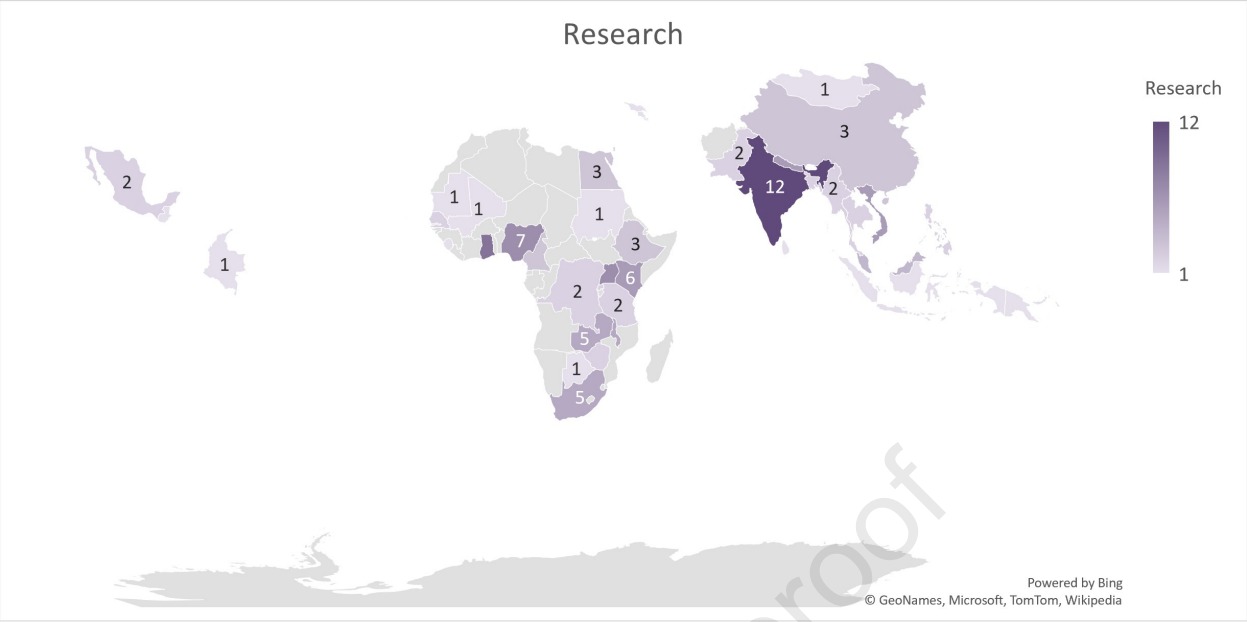
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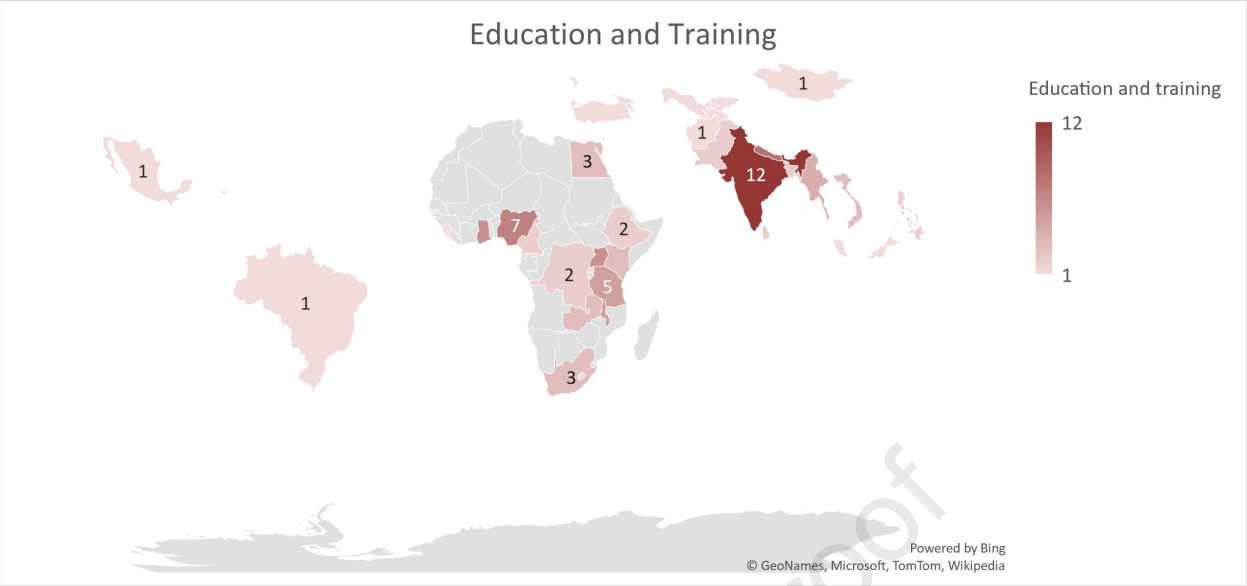
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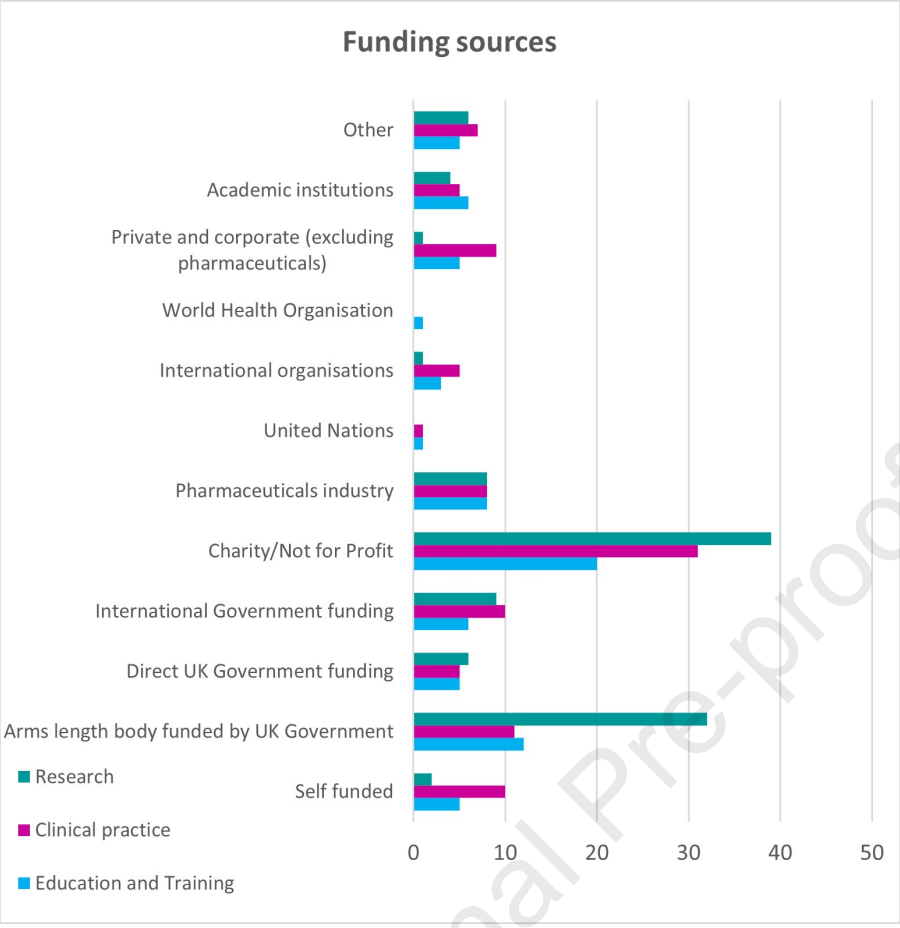
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Highlights

- There is considerable UK collaboration with stakeholders in LMICs working in global oncology.
- The survey acts as a baseline to build on and monitor output in UK global oncology community.
- This paper advocates for global oncology partnerships and bidirectional learning.
- The UKGCN aims to advocate for and co-ordinate endeavours to improve equitable access to cancer services globally.

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Authors contributions

Conceptualization: KM, PL, ML, RA, BH, AY, MM, BG, RC, SS

Data curation: KM, RC, SS

Formal analysis, KM, KW, PL, AY, RC, SS

Funding acquisition, RS, RC, SS

Writing -original draft, KM, KW, SS, AY, PL

Writing -review and editing, KW, SS, AY, NR

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Declaration of interests

☒ The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

☐ The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

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