

Research Article

Is neocolonialism existing in global surgery practice? An analysis of a web-based survey amongst global surgery practitioners

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Background

There is an ongoing discussion for decolonization of global health and a resetting of global health partnerships and practices. However, a lack of understanding and agreement on the issues involved remain a major limitation. The aim of this study was to understand and identify the manifestations of neocolonialism in global surgery practice.

Methods

This was a qualitative web-based survey of 445 low-and middle-income countries (LMICs) and high-income countries (HICs) global surgery practitioners. We also captured through focussed interviews their perceptions and reported manifestations of neocolonialism in global surgery.

Results

The majority (73.9%) came from LMICs, while 26.1% were from HICs. Surgeons formed the largest group (57.6%), with many having extensive experience (38.7% with over 10 years in global surgery). Neocolonialism was defined as an unequal power dynamic favoring HIC agendas. Uncompensated work by LMICs staff and funding disparities were identified as neocolonial practices by HICs participants. Limited research capacity and frustrated LMICs providers were seen as consequences. Factors enabling neocolonialism included limited local funding and training priorities set by funders, not local needs. More than 75% of participants agreed that fear of losing HIC support was a major barrier to open communication about neocolonialism in global surgery.

Conclusions

This study among global surgery players underscores existence and experiences of neocolonialism in global surgery. The impact of this practice and the enablers need to be urgently addressed by implementing mitigating solutions.

There is an ongoing call for decolonization of global health and a review of global health partnerships and practices.¹ This is not unrelated to increased awareness of the detrimental effects of knowledge generated in high income countries (HICs) on knowledge systems in low and middle income countries (LMICs) and the realization that current research partnerships often benefit the better resourced partner.² While the unmet burden of surgical disease is disproportionately shouldered by LMICs, there are no guidelines for tackling ethical challenges and other considerations facing global surgery collaborations.³ There is also a relative absence of LMIC generated global surgery research in literature, resulting in underrepresentation of the LMIC

perspective. International research collaborations frequently do not align with LMIC national priorities, and the contribution of the LMIC partners are often underacknowledged or unacknowledged.⁴

The term neocolonialism can be used to refer to the practice of using economics, globalization, cultural imperialism, and conditional aid to influence a country instead of the previous colonial methods of direct military control (imperialism) or indirect political control (hegemony).⁵ With the ambitious goals in global surgery to surmount profound disparities in access, quality, safety and affordability to critical surgical and anesthesia services, it is imperative to better understand the presence, penetrance, and

impact of these elements of neocolonialism in global surgery partnerships, as well as modes of manifestation, enabling factors and alternative approaches.

The Transformational Dialogues (TD) is a broad coalition of individuals and organizations from the global surgery community working to identify and address issues of neocolonialism and inequities in global surgery. To better understand and identify the prevalence and manifestations of neocolonialism in global surgery, the TD coalition launched a global survey. The specific objectives of the survey were to:

1. Ascertain the prevalence of neocolonialism in global surgery as perceived by LMIC and HIC global surgery stakeholders
2. Ascertain the different types of neocolonialism which currently occur / manifest – both explicit and implicit
3. Ascertain the current impact and potential impacts of neocolonialism on global surgery
4. Understand the underlying enabling factors for neocolonialism
5. Ascertain the barriers to openness in discussions about neocolonialism

METHODS

STUDY DESIGN

This was a qualitative study using a survey tool to capture participants' responses based on the stated objectives. Focused interviews were conducted with respondents from LMICs and HICs who volunteered to be interviewed.

ETHICS APPROVAL

Ethics approval was obtained for the study from the institutional review board of National Hospital, Abuja, Nigeria. In addition, participants were asked to consent to participation in the study before filling out the survey.

TOOL DEVELOPMENT AND PRETESTING

The survey tool was developed using a 5-point Likert scale to capture responses across different domains including existence of neocolonialism, practices depicting neocolonialism, impact of neocolonialism, enablers of neocolonialism, barriers to conversations on neocolonialism, solutions and barriers to implementation of solutions. Some open-ended questions were incorporated to allow respondents better convey their perceptions without restrictions. Participants' demographics were also captured. (Appendix I)

The survey tool was pretested in a pilot study, following which it was further refined to address any ambiguous questions and ensure completion within a reasonable time of 15 minutes. The tool was translated into French, Spanish, Arabic, Portuguese and Chinese to ensure that those not proficient in English could respond appropriately.

RECRUITMENT OF PARTICIPANTS

The survey was advertised through global surgery organisations, institutions, associations, societies, platforms (social media and websites) as well as the website of Transformational dialogues. The advertisement included a description of the intention of the survey as well as a web link to the survey

TIME AND DATE

The survey was open from 5th of July 2021 to 14th November 2021. The interviews were conducted after the survey closed within a 2-month period

SURVEY ADMINISTRATION

The survey was web-based through the link included in the advertisement and responses were captured on redcap. The survey was entirely voluntary and there were no incentives. The survey took a maximum of 15 minutes to complete.

Following the web-based survey, volunteers were interviewed via zoom by 2 of the investigators using specific questions (the same questions were used in all the interviews). The volunteers were interviewed by single investigators in the volunteer's preferred language and convenient timing.

DATA ANALYSIS

The data from redcap was downloaded and analysed using the STATA® statistical software for the Likert scale questions. The 5-point Likert scale was collapsed into a 3-points scale (strongly agree and agree were collapsed into agree while strongly disagree and disagree were collapsed into disagree and not sure left as it is) for the purposes of analysis. The Chi square test was used to determine the level of statistical significance for these categorical variables, and the level of statistical significance was set at $p < 0.05$ at 95% confidence interval. Open ended responses were grouped into themes. One hundred and ninety-two (41.6%) answered every question while 270 (58.4%) did not answer at least 1 question. All responses have been analysed.

RESULTS

DEMOGRAPHICS

Of 445 participants who indicated gender, 271 (60.9%) were males, 164 (36.9%) were females and 10 (2.2%) were others. Of 444 respondents who indicated their work location, 328 (73.9%) were LMIC based and 116 (26.1) HIC based. Four hundred and forty-three provided their occupation consisting mostly of surgeons 255 (57.6%) ([Table 1](#)). A little over one third (172/445, 38.7%) had more than 10 years of global surgery experience.

As per IRB approval instructions, no personal or identifiable information to ascertain identities of respondents were collected. Hence, it was not possible to ascertain identities of the respondents. However, respondents that consented to be interviewed provided details about their iden-

Table 1. Demographics of the respondents

Country classification	Frequency	Percentage
LMIC	328	73.87
HIC	116	26.13
Total	444	100.00
Gender		
Female	164	36.85
Male	271	60.90
others	10	2.25
Total	445	100.00
Occupation		
Surgeon	255	57.56
Anaesthetist	74	16.70
Non-physician Anaesthtist	1	0.23
Nurse	12	2.71
Others	101	22.80
Total	443	100.00
Years worked in Global surgery		
Never	85	19.10
<5years	94	21.12
5-10	94	21.12
>10	172	38.65
Total	445	100.00

tities. Authors interacted physically by Zoom video meeting with only the respondents that were interviewed.

DEFINITION AND CHARACTERIZATION OF NEOCOLONIALISM

A synopsis of the respondents' definition of neocolonialism was that it is a system of imbalanced relationships between HIC and LMIC with resultant imposition of ideas that favour the advancement of HIC agenda, loss of LMIC decision making power and subordination of LMIC. The participants also responded that within the research context, it manifests as imposition of projects, mining of data and gift authorships without capacity building. In the clinical setting, it was described as being characterized by imposition of surgical views and solutions on the locals and investing in surgeries of interest to the visiting faculty with no consideration of local priorities. Respondents opined that it is rooted in old colonial ideas of supremacy and land ownership currently presented as aid but actually a policy of imperialism with a cycle of dependence on HIC and no true empowering of LMIC. Overall, it was depicted as exploitative, wearing a façade of help but in reality, utilizing local resources to promote selfish interests of the visitor.

PERCEPTIONS AND EXPERIENCES

The respondents offered their perception and experiences of neocolonialism in global surgery. Significantly more HIC respondents indicated that the following practices were neocolonialistic: LMIC staff being asked to work without compensation for time, travel funds for attending meetings and presenting research made available for HIC participants and not LMIC, differential treatment of some trainees in the same program to the advantage of HIC trainees, high article processing charges of global surgery journals keeping them out of reach of LMICs, non-prioritization of local capacity building during missions and surgery outreach visits, disruption of LMIC routine care during missions and visits and HIC trainees performing surgeries in LMICs without the required skills and supervision ([Table 2](#)). Overall, the main themes that emerged out of free comments from respondents regarding different aspects of neocolonialism are summarized in [box 1](#).

Table 2. Perceptions of neocolonialism

Responses to finance related neocolonialism				
	LMIC	HIC	Total	P-value
Different financial compensation for time commitment for LMIC staff				
Agree	100 (72.99)	42 (77.78)	142 (74.35)	0.495
Not agree	37 (27.01)	12 (22.22)	49 (25.65)	
Being asked to work without compensation for time for LMIC staff				
Agree	85 (62.04)	45 (83.33)	130 (68.06)	0.004*
Not agree	52 (37.96)	9 (16.67)	61 (31.94)	
Travel funds for attending meetings and presenting research made available for HIC participants but not LMIC participants				
Agree	84 (61.76)	46 (85.19)	130 (68.42)	0.002*
Not agree	52 (38.24)	8 (14.81)	60 (31.58)	
Training related neocolonialism				
	LMIC	HIC	Total	P-value
limited training opportunities in global surgery for LMIC				
Agree	114 (73.55)	41 (71.93)	155 (73.11)	0.814
Not agree	41 (26.45)	16 (28.07)	57 (26.89)	
Training content focused on developing HIC personnel				
Agree	104 (67.10)	45 (78.95)	149 (70.28)	0.094
Not agree	51(32.90)	12 (21.05)	63 (29.72)	
Preferential treatment of some trainees in same program to the disadvantage of LMIC person				
Agree	97 (62.58)	44 (77.19)	141 (66.51)	0.046*
Not agree	58 (37.42)	13 (22.81)	71 (33.49)	
Most global surgery training programs domiciled in HIC locations				
Agree	104	43	147	0.267
Not agree	50 (32.47)	14 (24.56)	64 (30.33)	
Lack of or imbalance in reciprocity of educational opportunities (i.e. LMIC students' limitations on immersive experiences in clinical settings in other countries)				
Agree	118 (76.62)	45(78.95)	163 (77.25)	0.721
Not agree	36 (23.38)	12 (21.05)	48 (22.75)	
Research-related Neocolonialism				
	LMIC	HIC	Total	P-value
Limited research grant opportunities for research ideas that have no HIC collaboration				
Agree	109 (79.56)	39(84.78)	148 (80.87)	0.436
Not agree	28(20.44)	7(15.22)	35 (19.13)	
Opportunities for career advancement through global surgery research collaborations in favour of HIC researchers				
Agree	107 (78.10)	36(80.00)	143 (78.57)	0.788
Not Agree	30 (21.90)	9 (20.00)	39 (21.43)	
Lack of actual LMIC research capacity development in collaborations				
Agree	104 (76.47)	36 (80.00)	140 (77.35)	0.624
Not Agree	32 (23.53)	9 (20.00)	41 (22.65)	
Limited opportunities for LMIC persons to act as lead investigator / oversee funding				
Agree	112 (82.96)	39 (86.67)	151 (83.89)	0.558
Not agree	23 (17.04)	6 (13.33)	29 (16.11)	
Publication-related Neocolonialism				
	LMIC	HIC	Total	P-value
High article processing charges of global surgery journals keeping them out of reach of LMIC				

Responses to finance related neocolonialism				
Agree	95 (72.52)	41 (89.13)	136 (76.84)	0.022*
Not Agree	36 (27.48)	5 (10.87)	41 (23.16)	
Lack of meaningful inclusiveness of LMIC authors in publication				
Agree	96 (73.28)	40 (86.96)	136 (76.84)	0.059
Not Agree	35 (26.72)	6 (13.04)	41 (23.16)	
Service delivery-related neocolonialism				
	LMIC	HIC	Total	P-value
Non-prioritization of local capacity building during missions and surgery outreach visits				
Agree	95 (68.84)	48 (90.57)	143(74.87)	0.002*
Not Agree	43 (31.16)	5 (9.43)	48 (25.13)	
Disruption of LMIC routine care during missions and visits				
Agree	91 (65.94)	44(83.02)	135 (70.68)	0.020*
Not Agree	47 (34.06)	9 (16.98)	56 (29.32)	
HIC trainees performing surgeries in LMIC without the required skill and without the required supervision				
Agree	95 (68.84)	46(86.79)	141 (73.82)	0.012*
Not Agree	43 (31.16)	7 (13.21)	50 (26.18)	

*P value less than 0.05

Box 1. Main themes of perceptions of neocolonialism

Lack of equity in compensation for time commitment
Excessive consumption of funds by HIC partners
Lack of HIC accountability to local authorities
Inequitable ownership of projects and research
Inequitable access to publication opportunities
Inequitable access to academic networks
Inequitable access to education
Inequitable access to funding
Supremacy of HIC priorities

IMPACT OF NEOCOLONIALISM

Across different aspects of global surgery practice (finance, training, research, publication and service delivery) most respondents, agreed that the situations depicted in the survey represented impacts of neocolonialism (Table 3). However, significantly more HIC respondents agreed that the following situations were results of neocolonialism; low research capacity in LMIC, low publication output from LMIC, limited high quality locally contextualized data and research from LMIC, poor surgical outcomes in LMICs, surgical backlog in LMICs due to distraction of resources and focus, frustration and demoralization of local LMIC providers and, diminished trust in local LMIC clinicians by patients and the public.

Overall, the following themes emerged from respondents' comments about impacts of neocolonialism on different aspects of global surgery.

Finance: HIC having absolute power and control with demotivation and underappreciation of LMIC and brain drain

Training: Disregard of indigenous experts and lack of access to advanced training

Research: Lack of actual mentoring by HIC with inadequate research capacity locally

Service delivery: Disregard of indigenous experts by government and policy makers, patients and HIC providers; disruption of routine service; inappropriate procedures; increased need for re-interventions; lack of monitoring and evaluation with no improvements in quality of care or outcome; lack of comprehensive care and proper follow up; challenges with informed consent.

ENABLERS OF NEOCOLONIALISM

Majority of respondents across different country income levels indicated that the following factors were enablers of neocolonialism; limited local funding for training and research and services in LMICs, lack of indigenous LMIC global surgery program, limited global surgery capacity, limited local research capacity, lack of high impact indigenous global surgery journals, training priorities often determined by funder priorities rather than local needs and limited superspecialty training and support in LMICs. Significantly more HIC respondents than LMIC agreed that shortage of workforce in LMICs (HIC 86% versus LMIC 65.2%, $p = 0.007$) and non-culturally relevant training curriculums and materials (often framed as HIC trainer coming in to teach providers in LMICs or do global surgery work in LMIC) (HIC 90% versus LMIC 76.7% $p = 0.047$) were enablers of neocolonialism.

Table 3. Respondents' perception on impact of neocolonialism

Respondents' response on the impact of neo-colonialism on Finance				
	LMIC	HIC	Total	P-value
Demotivation of LMIC researcher for involvement in international collaboration				
Agree	76 (68.47)	40 (81.63)	116 (72.50)	0.086
Not Agree	35 (31.53)	9 (18.37)	44 (27.50)	
Individuals from LMICs moving to higher income countries ("Brain Drain")				
Agree	93 (83.78)	43(87.76)	136 (85.00)	0.517
Not Agree	18 (16.22)	6(12.24)	24 (15.00)	
Training priorities often determined by funder priorities, not local needs				
Agree	102 (91.89)	45(91.84)	147 (91.88)	1.000
Not Agree	9(8.11)	4 (8.16)	13 (8.13)	
Respondents' response on the impact of neo-colonialism on Training				
	LMIC	HIC	Total	P-value
Low numbers of indigenous global surgery experts				
Agree	76 (68.47)	40 (81.63)	116 (72.50)	0.086
Not Agree	35 (31.53)	9 (18.37)	44 (27.50)	
"Vicious cycle" - lack of trainers and opportunities perpetuates lack of trainees in LMICs				
Agree	93 (83.78)	43(87.76)	136 (85.00)	0.517
Not Agree	18 (16.22)	6(12.24)	24 (15.00)	
Non-culturally relevant training curriculums and materials (often framed as HIC trainer coming in to teach providers in LMICs or do global surgery work in LMIC)				
Agree	89 (74.17)	43 (87.76)	132 (78.11)	0.053
Not Agree	31 (25.83)	6 (12.24)	37 (21.89)	
Respondents' response of the impact of neo-colonialism on Research				
	LMIC	HIC	Total	P-value
Low research capacity (expertise) in LMICs				
Agree	81 (71.68)	40 (93.02)	121 (77.56)	0.002*
Not agree	32 (28.32)	3 (6.98)	35 (22.44)	
Poor research infrastructure in LMICs				
Agree	89 (78.07)	39(90.70)	128 (81.53)	0.069
Not Agree	25 (21.93)	4 (9.30)	29 (18.47)	
Low publication output from LMICs				
Agree	87 (76.32)	40(93.02)	127 (80.89)	0.012*
Not Agree	27 (23.68)	3 (6.98)	30 (19.11)	
Limited high quality locally contextualized data and research from LMICs				
Agree	81 (71.05)	38 (88.37)	119 (75.80)	0.024*
Not agree	33 (28.95)	5(11.63)	38 (24.20)	
Low rate of successful grant applications in LMICs				
Agree	95 (83.33)	40(93.02)	135 (85.99)	0.119
Not agree	19 (16.67)	3(6.98)	22 (14.01)	
Limited funding for research for LMICs				
Agree	97 (85.09)	40 (93.02)	137 (87.26)	0.283
Not agree	17 (14.91)	3 (6.98)	20 (12.74)	
Research oriented individuals from LMICs moving to higher income countries ("Brain Drain")				
Agree	95 (83.33)	38 (88.37)	133 (84.71)	0.434
Not agree	19 (16.67)	5 (11.63)	24 (15.29)	

Respondents' response on the impact of neo-colonialism on Finance				
Adverse impact on career progression for LMIC researchers				
Agree	80 (70.80)	33 (76.74)	113 (72.44)	0.458
Not agree	33 (29.20)	10 (23.26)	43 (27.56)	
Research effort and/or funding directed towards projects that represent HIC priorities rather than those of LMICs				
Agree	90 (78.95)	38 (88.37)	128 (81.53)	0.175
Not agree	24 (21.05)	5 (11.63)	29 (18.47)	
Respondents' response of the impact of neo-colonialism on service delivery				
	LMIC	HIC	Total	P-value
Poor surgical outcomes in LMICs				
Agree	45(40.18)	32(68.09)	77(48.43)	0.001*
Not agree	67(59.82)	15(31.91)	82(51.57)	
Large pool of untreated complex cases in LMICs as the targets of missions are often simple cases				
Agree	74(66.07)	33(70.21)	107(67.30)	0.612
Not Agree	38(33.93)	14(29.79)	52(32.70)	
Surgical backlog in LMICs due to distraction of resources and focus				
Agree	68(60.71)	36(76.60)	104(65.41)	0.055*
Not Agree	44(39.29)	11(23.40)	55(34.59)	
Frustration and demoralization of local LMIC providers				
Agree	67(59.82)	38(80.85)	105(66.04)	0.011*
Not agree	45(40.18)	9(19.15)	54(33.96)	
Lack of patient follow-up by visiting teams if operating team doesn't include local LMIC providers				
Agree	95(84.82)	43(91.49)	138(86.79)	0.257
Not agree	17(15.18)	4(8.51)	21(13.21)	
Lack of co-ordination (or even competition) between visiting teams from HICs leading to patients being started on treatment protocols that may be incompatible with local care or the care offered by other visiting teams.				
Agree	89(79.46)	42(89.36)	131(82.39)	0.135
Not agree	23(20.54)	5(10.64)	28(17.61)	
Diminished trust in, or respect for, local LMIC clinicians by patients and the public				
Agree	64(57.14)	41(87.23)	105(66.04)	< 0.0001*
Not agree	48(42.86)	6(12.77)	54(33.96)	

BARRIERS TO OPEN COMMUNICATION ABOUT NEOCOLONIALISM

More than 75% of respondents across different country income levels, agreed that the following situations, were barriers to open communication about neocolonialism in global surgery; fear of withdrawal of support by HIC, fear that it would stall future career progression, strain in international collaboration and not wanting to appear ungrateful if one is a previous beneficiary of HIC funding.

However, there were no significant differences between LMICs and HICs responses.

Overall, the themes that emerged from free comments by respondents regarding barriers to open communication included, fear of victimization, marginalization and exclusion, lack of financial resources, inaction of LMIC regulatory bodies and HIC incognizance of neocolonialism.

PARTICIPANTS' INTERVIEWS

Seventy-five (38.3%) of 196 respondents, consisting of, 43 LMIC and 32 HIC respondents indicated their willingness to participate in further interview on neocolonialism. However, 11 respondents (6 LMIC and 5 HIC) eventually participated in the interview. Three of the LMIC interviewees had no experience of neocolonialism in Global surgery.

The themes from interviews with LMIC participants were: prohibitive publication fees for open access journals, lack of access to publications in relevant journals due to paywall, limited access to hands on training opportunities in HIC, perceived unethical practices by visiting surgeons including trainees participating in surgeries without adequate supervision, HIC surgeons going to learn on patients in LMIC, poor monitoring and enforcement by medical regulating bodies in LMIC, support of neocolonialistic practices by powerful and influential LMIC persons, surgeons and politicians.

The themes from interviews with HIC participants were: easier access to grants and publications by HIC, short term visits and mission surgery with local surgeons pushed aside, perception that HIC surgeons are better than LMIC surgeons, mission trips shutting down other services and straining already limited staff especially nurses, HIC trainees doing surgeries they are not skilled enough to undertake, LMIC providers not being acknowledged, compensated or their opinions respected in decision-making, LMIC authors just being used as data collectors, defining local problems using HIC framework, lack of consideration of what happens when visiting HIC team leaves.

DISCUSSION

Until recently, much of the focus of global health had been on infectious diseases, maternal and child health without emphasis on surgery. This is despite the fact that about 5 billion people worldwide lack access to safe, affordable and quality surgical care.⁶ The work of the Lancet Commission on Global Surgery helped bring to the fore, the impact of a continued neglect of surgery within the global health space and has been influential in advocating for inclusion of surgery in global health agendas with increased investment in improving access to safe surgery and anaesthesia care. With increasing interest in global surgery, the underlying problems in global health delivery have become more apparent in this field. There have been concerns of neocolonialism in global health, characterized by imposition of solutions without local input, emphasizing public health solutions that do not pay attention to social determinants of health, improving the health of the population in order to more efficiently exploit them and seeking to gain political and economic influence.^{7,8}

PERCEPTIONS

There was a general agreement from both LMICs and HICs practitioners that neocolonialism exists in global surgery at different levels and to different degrees. This finding may not be surprising given that there had been much discussion about neocolonialism in recent times.⁹ However, this perception was more pronounced amongst HIC respondents. It may well be that the LMIC respondents were being cautious and some may not fully understand the concept of neocolonialism and the need to decolonize global surgery.¹⁰ The general agreement about existence of neocolonialism in global surgery is an important step in the initial understanding and frank discussions about possible solutions and mitigations.

IMPACT

The impact of neocolonialism as indicated by the respondents cuts across most global surgery practice platforms including training, service delivery and research. This finding has important implications for scaling up surgical care in LMICs. The current location of most global surgery programs in HICs means that only a limited number of LMIC

providers can be trained.^{11,12} This would mean that the required policy and advocacy skills needed to advance surgical care in LMICs at political and funding levels would be deficient. Any mitigation plans would have to address this inequity in access to global surgery training.

It has long been a concern that HIC service delivery efforts to LMICs may be disadvantaging local providers and practitioners.¹²⁻¹⁴ This has been the finding of this survey. Although efforts are gradually being made by many HIC organisations and groups to address this important impact, a more coordinated and sustainable solution will need to be created and implemented in a way that ensures mutual benefit to both LMIC and HIC providers.^{8,9,15-17}

Research is crucial to the improvement and advancement of surgical care particularly in the LMIC setting where context specific research and programs need to be implemented to address peculiar local situations and problems. The respondents agreed that LMIC providers have limited access to research funding as well as research publications, and there's inequitable research collaborations and non-locally contextualized focus. This implies that high-quality problem-solving research cannot be done in LMICs. Even where research has been done, the lack of access to relevant publications to support dissemination of research findings is problematic. This scenario contributes to the low output of high-quality publications from LMICs and varying aspects of such occurrences have been subjects of a some reports.^{18,19}

The findings regarding research need to be put in some context. First, in one review of 1240 published articles and 9301 authors, 51% of authors were affiliated with only HICs, 45% affiliated with only LMICs, and two-thirds of first and last authors were affiliated with at least one HIC institutions.²⁰ However, another report reviewing 786,779 publications, showed that 86% included at least one LMIC-affiliated author. The later report indicated a recent modest yearly increase in first and last authors affiliated with LMICs.²¹ In a recent survey of LMIC surgical trainees and consultant surgeons, 78.8% agreed that having a HIC co-author improves the likelihood of publication in a reputable journal.²²

Secondly, Africa makes up 15% of the world's population but accounted for just 1.1% of global investments in research and development.²³ It has been noted that the African Union in 2007 committed to investing at least 1% of gross domestic product (GDP) in research and development but 15 years later, no country had achieved that goal.²⁴ Available data shows that sub-Saharan Africa invests 0.44% of GDP in research and development compared to 3.32% in north America, 2.28% in the European Union and global average of 2.71% ([Table 4](#)).²⁵

ENABLERS

The diverse enablers of neocolonialism enumerated by the respondents is an indication that several factors contribute to this scenario. It may well be that many of these enablers are unintended fallouts of a desire of HIC organizations and providers to help. Discussions around addressing this issue should be dispassionate and frank in order to find solutions.

Table 4. %GDP Spent on Research and Development around the World

Region	%GDP Invested	Year
High Income Countries	2.94	2021
Upper Middle-Income Countries	2.24	2021
Middle Income Countries	1.64	2020
Lower Middle-Income Countries	0.58	2017
North America	3.32	2021
Global	2.71	2021
European Union	2.28	2021
South Asia	0.63	2020
Latin America & Caribbean	0.62	2020
Sub Saharan Africa	0.44	2007

BARRIERS

In this survey, it was found that key barriers to open communication about neocolonialism were fear of loss of career progression, loss of funding and disruption of relationships. Without an open communication and discussion about this issue, it's unlikely that sustainable solutions can be created and implemented. It is reassuring that in recent times such discussions are gradually happening albeit at very small fora. Coordinated advocacy is urgently needed to drive awareness, communication and identification of mitigating initiatives.

Despite the foregoing perceptions and barriers, the findings in this survey should serve as wake-up call. LMIC researchers and practitioners need to continuously upscale their skills and expertise to compete favourably in the global space. They need to work together based on their local context, rather than continue to look up to HICs for solutions. Challenges and barriers should inspire adaptations and innovations, rather than self-pity. In addition, LMIC practitioners need to be proactive and begin to challenge and encourage their governments, policy makers and local philanthropists to invest in research as a viable and sustainable pathway to strengthening their healthcare systems and improve outcomes.

CONCLUSIONS

This report involving both LMIC and HIC global surgery players has revealed the existence and experience of neo-

colonialism in global surgery. The impacts of this practice are clearly disadvantageous and undesirable to LMICs and the enablers need to be urgently addressed by collaborative creation and implementation of mitigating solutions involving both LMIC and HIC stakeholders taking into consideration mutual benefits. As a follow up to this study, the report of the survey will be shared with study participants and the general transformational dialogue group to continue engagements towards further understanding and mitigation.

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ETHICS STATEMENT

Ethics approval was obtained for the study from the Institutional Review Board of the National Hospital, Abuja, Nigeria. NHA/EC/023/2021

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AUTHORSHIP CONTRIBUTIONS

All authors contributed to the conception, study design data collection and analysis, drafting of the manuscript and approval of the final manuscript for submission.

DISCLOSURE OF INTEREST

The authors completed the ICMJE Disclosure of Interest Form (available upon request from the corresponding author) and disclose no relevant interests.

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