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## Mentoring health researchers globally: Diverse experiences, programmes, challenges and responses

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### ABSTRACT

Mentoring experiences and programmes are becoming increasingly recognised as important by those engaged in capacity strengthening in global health research. Using a primarily qualitative study design, we studied three experiences of mentorship and eight mentorship programmes for early career global health researchers based in high-income and low- and middle-income countries. For the latter, we drew upon programme materials, existing unpublished data and more formal mixed-method evaluations, supplemented by individual email questionnaire responses. Research team members wrote stories, and the team assembled and analysed them for key themes. Across the diverse experiences and programmes, key emergent themes included: *great mentors inspire others* in an inter-generational cascade, *mentorship is transformative* in personal and professional development and involves *reciprocity*, and *finding the right balance* in mentoring relationships and programmes includes *responding creatively to failure*. Among the challenges encountered were: struggling for more *level playing fields* for new health researchers globally, *changing mindsets* in institutions that do not have a culture of mentorship and building *collaboration not competition*. Mentoring networks spanning institutions and countries using multiple virtual and face-to-face methods are a potential avenue for fostering organisational cultures supporting quality mentorship in global health research.

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## Introduction

Mentoring has been recognised as an important component of programmes aiming to strengthen health research capacity globally (Bennett et al., 2010; Harle, 2011; Lansang & Dennis, 2004). The programmes include those with mentoring in specific

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areas of global health research such as injury prevention (Hyder, Meddings, & Bachani, 2009) and HIV clinical trials (Mbuagbaw & Thabane, 2013). Shah, Nodell, Montano, Behrens, and Zunt (2011) developed guidelines for transnational mentorship programmes in clinical global health research. Research mentorship is also recognised as important for public health trainees (Tweheyo et al., 2011; Zea & Belgrave, 2009) and has been incorporated into public health research training programmes (Gourevitch et al., 2012). Yet there are challenges in mounting mentorship programmes in low- and middle-income countries (LMICs) (Nundulall & Dorasamy, 2012). Adequate funding and connections internationally have responded to some of these challenges (Bennett, Paina, Ssenkooba, Waswa, & M'Imunya, 2013) though structural problems persist (Nakanjako et al., 2014), in keeping with persistent inequities across and within countries.

As a group of academics located in various parts of the globe and engaged in mentoring newer health researchers in both high-income countries (HIC) and LMIC contexts, we wished to share and learn from our diverse experiences of, and approaches to, mentoring in global health research. The questions we posed were: how have mentorship initiatives developed in different contexts? What methods have been used over what periods of time? What challenges and successes were encountered? We engaged in a process of description, story-telling, curation and reflection in light of relevant literatures to provide suggestions for those engaged in health research mentoring globally.

## Relevant notions of mentoring

Mentoring, and the associated terms mentor, mentee and mentorship are understood in myriad ways by different disciplines and organisations (Sambunjak & Marušić, 2009). Often, mentorship is equated in nursing and medical student education with supervision (Andrews & Wallis, 1999; Nakanjako et al., 2014; Roy & Linendoll, 2006). Mentoring in higher education has often been seen as part of faculty responsibilities. In surveys of graduates of doctoral programmes (Aanerud, Homer, Nerad, & Cerny, 2006), faculty mentoring was described as too all-encompassing to be effective. Therefore, 'most respondents were not getting the research and publication mentoring critical for their success within academic (research) careers' (Aanerud et al., 2006, p. 128). Among research funders, the NIH National Research Mentoring Network promotes support to biomedical researchers through grantsmanship training, and the Canadian Institutes of Health Research expect mentors, as part of their Strategic Training Initiatives in Health Research, to be directly involved in training. In contrast, the Wellcome Trust expects the applicant's mentor to provide guidance, rather than training. To clarify our meaning of mentoring, we drew on Bozeman and Feeney's definition (2007) (see Box 1).

### Box 1. Our definition of mentoring.

'Mentoring: a process for the informal transmission of knowledge, social capital, and psychosocial support perceived by the recipient as relevant to work, career, or professional development; mentoring entails informal communication, usually face-to-face and during a sustained period of time, between a person who is perceived to have greater relevant knowledge, wisdom, or experience (the mentor) and a person who is perceived to have less (the protégé).' (Bozeman & Feeney, 2007).

## Methods

We drew on primarily qualitative study design traditions informed by narrative inquiry approaches (Webster & Mertova, 2007). Narrative inquiry works with text and stories as the fundamental data for description, analysis and interpretation. In late 2012, we contacted global health research mentorship programmes known to team members, with the aim of collecting and analysing a set of case studies representing a range of geographies and types of programmes (see categories below). As the project progressed, team members suggested other colleagues whose experiences would complement the spectrum of programmes identified. In total, 11 cases studies were included; 3 mentorship experiences and 8 formal mentoring programmes.

### *Comparative description of programmes*

We drew on D'Abate, Eddy, and Tannenbaum's (2003) classification of 13 developmental interactions. As defined by D'Abate et al. (2003) these are 'interactions between two or more people with the goal of personal or professional development' (p. 363), such as coaching, mentoring, apprenticeship and action learning. We compared the eight programmes in terms of their goals, modalities, skills targeted, institutional sponsorship, participants and funding supports. Four of the eight mentorship programmes had unpublished needs assessment and monitoring data upon which we could draw (e.g. number of participants, feedback on formal sessions, annual self-evaluations by trainees). The other four programmes had conducted formal mixed-method evaluations with appropriate ethics review (Barnoya, Monzon, & Colditz, 2013; Godoy-Paiz et al., 2011; McCullough, 2012; Toranzos & Ruty, 2011) from which research team members extracted relevant information. Organisational website information was supplemented by email exchanges with programme leadership and Microsoft Excel tables facilitated comparisons.

Three programme-affiliated research team members emailed questionnaires to all former participants in their programme. The questionnaire drew upon research on mentorship programme characteristics (D'Abate et al., 2003), evaluation of mentorship programmes (Berk, Berg, Mortimer, Walton-Moss, & Yeo, 2005; Keyser et al., 2008), and themes related to successful and failed mentoring relationships (Straus, Johnson, Marquez, & Feldman, 2013). These were supplemented by competencies in global health (Cole et al., 2011) and essential competencies for faculty members (Bland, Taylor, Shollen, Weber-Main, & Mulcahy, 2009, Figure 4.4, pp. 53–54). Ethical approval for this new data collection was obtained from team members' respective research ethics boards (Hospital de Clinicas, University of Buenos Aires; London School of Hygiene and Tropical Medicine; University of Toronto Health Sciences). Selected data were incorporated into the programme stories.

### *Story development*

In order to explore the personal and deeper learning experiences of key actors in each of the programmes, we adopted research story and narrative approaches increasingly being used in social science health research (Frank, 2010), health education research (Greenhalgh & Wengraf, 2008) and knowledge translation (Bell, 2010). Each team member

developed a mentorship case story around a theme chosen both for its centrality to the programme experience and for the dialogue that the theme created amongst the stories such that, when read together, these stories would reveal a rich understanding about the particularities of mentorship in the context of global health research.

## Analysis

Drawing on narrative inquiry and making use of social media tools, early drafts of the stories were posted on the Canadian Coalition for Global Health Research's intranet. The research team posted comments about the connections between and differences among the various stories as well as emerging themes. Taking these into account along with story-by-story group discussion on periodic teleconferences, team members prepared final story drafts. During a day-long series of teleconferences and face-to-face meetings, the research team generated a set of emerging themes. The themes were subsequently situated within the current literatures on mentorship, global health research and their intersection.

## Mentorship experiences and programmes

The final set of 11 assembled stories encompassed diverse approaches to mentoring across time and place (see Box 2). Two focused on extended relationships, one of co-mentoring between HIC and LMIC colleagues (*Wisdom Shared*), and the other of senior mentoring of mid-career colleagues, who in turn mentor (*Mentorship Cascade*). One experience described initiatives at three Canadian universities, with elements of mentorship and leadership development for global health research (*Seize Opportunity*).

### Box 2. Global health research experiences mentorship stories.\*

#### Experiences

*The Mentorship Cascade*

*Seize Opportunity*, Build Community: CCGHR Pilot Mentorship Programs

*Wisdom shared*: Co-Mentoring Relationships in Global Health Research

#### Programs

*Finding Success in Group Mentorship*

*Breaking New Ground*: The Introduction of Mentorship in a Culture

*The Loneliness of the Long Distance Scholar*

The Global Health Research Capacity Strengthening Program: *Building a Community of Practice*

*Mentorship & Supervision*

*The Thirst for Mentorship* in Global Health

*Evaluating a Mentoring Program*: Travelling the Road Less Travelled

*Fostering Safe Places*: A Mentorship Pilot

\*Full stories available at <http://www.ccgrr.ca/working-groups/mentorship-working-group/stories-of-mentorship/>

The other eight stories were based in health research capacity strengthening programmes in which mentorship either plays (played) an important role, or is (was) the primary focus of the programme (see Tables 1 and 2). The programmes varied in the extent of planning and structure provided to the mentorship process from a collegial network (*Thirst for Mentorship*) or set of peers (*Finding Success in Group Mentorship*), through flexible options (*Mentorship and Supervision*) to more formalised roles (*Evaluating a Mentoring Program*). Some employed formal contracts to prompt participation and

**Table 1.** Locations, goals/aims, mentees and mentors of global health research mentorship programmes.

Story name	Finding success in group mentorship	Breaking new ground	Loneliness of the long distance scholar	Building a community of practice	Mentorship and supervision	Thirst for mentorship in global health	Evaluating a mentoring program	Fostering safe places
<i>Location</i>	Full sponsorship programme located at <i>AMHF</i> in Nairobi, Kenya. Independent researchers based at home Kenyan institutions but conduct research at <i>AMHF</i> sites	<i>ATCRMP</i> hosted by <i>CEDES</i> but mentorship primarily at mentees' respective institutions, with regular in-person or virtual meetings with mentor	South–South collaboration. Run from <i>ESE:O</i> – Santiago, Chile using Argentine-designed interface. <i>CARTA</i> – One facilitator based at the University of the Witwatersrand, Johannesburg. Meetings held in Nairobi, Dar es Salaam and at Wits	<i>GHR-CAPS</i> sponsored by four Quebec universities: Université de Montréal, McGill University, Université du Québec à Montréal, Université Laval. Training activities in all four; internships outside Quebec with a host academic institution	<i>MCDC</i> – Virtual, distance mentoring with one face-to-face meeting encouraged per year; Mentees based in 8 countries in Sub-Saharan Africa with majority of mentors outside of Africa; one pair at same institution in Africa; two pairs at affiliated institutions in Africa	<i>SIs</i> have been held in, and <i>FITs</i> have come from Canada and LMIC countries from a mix of institutions including universities, research NGOs, public health institutions, and research and development institutions	Coordinated at <i>UNICAR-RFP</i> . Fellows housed at the Central American and Dominican Republic Institute of Nutrition/ Comprehensive Centre for the Prevention of Chronic Diseases.	<i>UoT Pilot</i> hosted by <i>DLSPH</i> , University of Toronto, with one mentor Skyped in from University of Sydney, Australia.
<i>Goal/ Aims</i>	Began as an initiative of a group of graduate students who identified a need for mentorship unmet by their supervisors. Programme developed to meet these needs and strengthen capacity on mental health research in Africa	To enhance research capabilities in the complex transdisciplinary field of tobacco control and to help mentees become institutional leaders	To level the playing field between writers and advocates in the South and their Northern counterparts, and to open the store of world knowledge to local voices through writing mentorship	To contribute to the national and international development of GHR through recruitment and training of researchers who will work in a high-calibre interdisciplinary environment and whose performance will significantly influence GH policies and programmes	To strengthen African research capacity in malaria prevention and control by providing structured career support, through mentoring, to postdoctoral researchers	To strengthen the capacities of individuals in Canada and LMICs in the areas of research leadership	To develop a cadre of young investigators to strengthen Guatemala's research capacity, fill the NCD research – knowledge gap, and make significant changes in NCD control.	To help young investigators excel in their careers and become future leaders.

(Continued)

**Table 1.** Continued.

Story name	Finding success in group mentorship	Breaking new ground	Loneliness of the long distance scholar	Building a community of practice	Mentorship and supervision	Thirst for mentorship in global health	Evaluating a mentoring program	Fostering safe places
<i>Mentees</i>	Two types of programme support: full sponsorship fellowship open to Kenyan PhD and Master's students; and independent researcher fellowship available to local or international researchers	Individuals with a proposed project in tobacco control policy that is supported by their affiliate institution	First-year CARTA doctoral students from various disciplines in population and public health	Doctoral students and postdoctoral fellows, new researchers and mid-career researchers. PhD and postdoctoral trainees must be registered full time in a participating university. Competitive application	Individuals funded for doctoral research in malaria that are now part of the MCDC network	SI participants were Canadian – LMIC dyads or triads of new researchers (within past 5 years) working on a common project and selected via application. Mix of clinicians, natural and social scientists	Any health-related recent graduate (less than 2 years). Open application advertised across various outlets. Fellows selected taking academic and non-academic criteria into account.	Postdoctoral fellows and junior faculty working on global health research at UoT; by invitation. Variety of fields represented.
<i>Mentors</i>	Full sponsorship fellows' supervisors must be approved by AMHF. Independent research fellows must have a supervisor at their own institution and one approved by AMHF	Programme founder mentored first cohort, and Cohort 1 mentees mentored Cohort 2 mentees under founder's supervision	Approximately the same number of supervisors as participating doctoral students. Two key writing mentors accompany the writing process with both students and supervisors	Applicants required to find a GHR-CAPS mentor (out of list provided) before application	Mentees and MCDC collaboratively invite mentors. Mentors are selected mainly from the mentees' own networks or the MCDC network. Some mentors previously supervised their mentee's PhD. All mentees chose mentors from a similar discipline	Facilitators were senior members of the Canadian Coalition for Global Health Research. Two SI alumni, by application, became FITS for the next SI.	A programme founder is the lead mentor and other international experts have mentored specific projects.	Invited mentors/resource persons with UoT affiliation.

Note: AMHF, African Mental Health Foundation Group Mentorship Program; ATRCMP, Argentine Tobacco Control Research Mentorship Program; CEDES, Centro de Estudios de Estado y Sociedad; DLSPH, Dalla Lana School of Public Health; ESE:O CARTA: ESE:O-Consortium for Advanced Research Training in Africa (CARTA); GH, global health; GHR, global health research; GHR-CAPS, Global Health Research Capacity Strengthening Program; MCDC: Malaria Capacity Development Consortium Virtual Mentorship Program; SIs and FITs, CCGHR Summer Institutes and Facilitators in Training; UNICAR-RFP, Cardiovascular Unit of Guatemala-Chronic Disease Research Fellowship Program; UoT Pilot, University of Toronto Postdoctoral Fellow and Junior Faculty Mentorship Pilot.

**Table 2.** Competencies, programme format, and duration/maturity of global health research mentorship programmes.

Story name	Finding Success in Group Mentorship	Breaking New Ground	Loneliness of the Long Distance Scholar	Building a Community of Practice	Mentorship and Supervision	Thirst for Mentorship in Global Health	Evaluating a Mentoring Program	Fostering Safe Places
<i>Competencies</i>	Global mental health research and partnerships, transcultural research programmes (low-, middle- and high-income countries), grant writing, knowledge translation, mentoring	GHR methodology and advocacy, knowledge translation (specifically, writing scientific articles, policy briefs and press releases both in Spanish and English)	Academic writing	GH perspective; critical approach and interdisciplinary thinking; gender, diversity and cultural dimensions; ethics and professionalism; partnership development; planning, financing and management of research; scientific communication; leadership; knowledge-to-action	Career development issues, research-related issues (including identification of funding and job opportunities), and decision-making, troubleshooting problems, and discussing personal issues	Mentoring skills and leadership		Networking, 'grants-personship', research implementation and management, writing, career planning.
<i>Programme format</i>	Research fellowships (Full Sponsorship or Independent Researcher) offer group mentorship for postdoctoral, PhD, and Master's students and independent researchers in the field of mental health and substance-use-related research. Mentorship via face-to-face and virtual meetings	Under mentors' guidance, mentees select coursework according to their background and interests. Mentees also prepare, implement and distribute the results of a research project	Writing workshops begin and end with a face-to-face session with supervisors, with 10 supervised assignments for fellows in between; a draft literature review is considered a programme deliverable	Mentorship is offered through the interdisciplinary community of mentors, one-on-one mentor-trainee relations, and interactions with peers. GHR-CAPS offers four bursary types: (1) Postdoctoral fellowships, (2) Doctoral fellowships, (3) Support for development of North-South research partnerships and (4) Professional Development Grants. Postdoctoral and Doctoral fellowships: Trainees participate in the GHR-CAPS training platform to develop cross-cutting core competencies essential for leaders in GHR. Trainees regularly meet their GHR-CAPS mentors with whom they complete individualised training plans and self-evaluations	Mentoring pairs given autonomy to manage relationship according to need. Mentees define their needs. Communication between mentoring pairs is primarily virtual (telephone, Skype, email)	SIs are face-to-face, structured workshops. Two levels of mentorship provided: SI participants, grouped as dyads or triads working on a common research project, receive project feedback from a senior facilitator and from an FIT. FITs receive feedback from a senior facilitator on their mentorship of SI participants	Fellows receive constant, direct feedback from the mentor, meeting at least once a week; programme content involves preparing, implementing and disseminating a protocol on an NCD-related and policy-relevant topic under mentor supervision; programme supplemented with monthly Journal Club organised by fellows	Event-based, topic-oriented group mentorship through monthly 1.5 hour face-to-face sessions (with virtual participation by one mentor). Mentees prepare session materials and agendas in advance. Resource packages are sent to participants before sessions. Session resources and notes shared with participants using Dropbox

(Continued)



**Table 2.** Continued.

Story name	Finding Success in Group Mentorship	Breaking New Ground	Loneliness of the Long Distance Scholar	Building a Community of Practice	Mentorship and Supervision	Thirst for Mentorship in Global Health	Evaluating a Mentoring Program	Fostering Safe Places
<i>Programme duration and maturity</i>	Full sponsorship programme must be completed in 2.5 years. Independent researcher fellowship new in 2013	Duration: 18 months. Cohort 1: March 2009 to July 2010; Cohort 2: August 2010 to December 2012	Duration: 8 months. Launched in 2011.	North–South partnership: Pairs of postdoctoral fellows or early-career researchers initiate new research partnerships under the guidance of GHR-CAPS mentors. With the support of their mentors, pairs of researchers submit operating grant proposals to CIHR or equivalent organisations Professional development grants: Trainees are integrated into global health research teams. Supervisors from the host institution and mentors supervise the trainees and follow their progress 1 year with possibility of renewal 1 year with possibility of renewal 1 year up to 3 months Funding received in April 2009; first trainees recruited in January 2010	Duration: 4 years. Launched in January 2011	Duration: 10-day workshop. Held mid-year, 2004–2010. Eight FITs together supported the 2007–2010 SIs	Duration: 1 year. Programme initiated in 2009	Monthly sessions held from January to June 2012

commitment of all parties, while in other instances contracts would not work (*Breaking New Ground*). Topics of structured sessions varied, as did intensity and frequency of interaction – occasional contact after an intense workshop (*Thirst for Mentorship*) to ongoing help in academic writing (*Loneliness of the Long Distance Scholar*). The last shows remarkable flexibility in using multiple mediums of communication to conduct mentorship virtually. Below we cite illustrative examples of the lessons learned and their implications.

## What we learned

### **Great mentors inspire others to become mentors**

A key theme in a number of the stories was the mentoring of mentors. It is described with particular poignancy in *Breaking New Ground* and *Finding Success in Group Mentorship*, in which two young research trainees received mentoring in countries with a tradition of mentoring (the USA and the UK, respectively). Partly in response to the demand for mentorship, they later started mentoring programmes in their home countries (Argentina and Kenya), as did two mentees of a senior mentor (*Mentorship Cascade*). Indeed, modelling of mentorship can be seen as a form of inter-generational learning in which knowledge, values and practice pass from one generation of health researchers to another, often accompanied by explicit training in mentoring (*Mentorship and Supervision, Thirst for Mentorship*) (Bland et al., 2009). Several stories noted ‘paying it forward’ as an explicit expectation of the programme, encouraging or requiring participants to mentor the next cohort of mentees (*Breaking New Ground, Building a Community of Practice, and Mentorship and Supervision*). This inter-generational cascade of mentoring is essential for creating a critical mass of trained researchers, as described by an LMIC researcher in *Mentorship Cascade*:

These meetings ... are the occasions when I have floated my wild dreams, heard him [a senior mentor] cutting them to size and sharing his words of wisdom, and helped me sharpen my vision. I am using the same mentorship methods to mentor my junior colleagues.

### **Mentorship is transformative**

All of the stories highlight benefits that accrue to mentees – acquisition of new knowledge and skills, making new contacts, becoming part of a community of practice, publishing and opening up career opportunities. Mentorship is described as facilitating ‘deep learning’, in which seemingly disparate pieces of knowledge suddenly connected in a new and exciting way or in which knowledge of one’s personal self is enhanced to motivate change (i.e. traditional gender roles). Both types of learning happen in ‘safe spaces’ (*Fostering Safe Places*) – environments or personal relationships where mutual respect has been established. In these safe spaces, individuals are exposed to a diversity of ideas, opinions and experiences and are willing to open themselves up and ‘admit we know nothing about certain things and even less about others’ as do the two protagonists in *Wisdom Shared*. Online academic writing mentoring also resulted in transformative experiences for both research students and their supervisors (*Loneliness of the Long Distance Scholar*), consistent with the crucial role of academic writing competence for growth as a researcher

(Bazerman, 1988). The longitudinal stories (*Mentorship Cascade, Wisdom Shared*) show how mentorship can flourish in long-term relationships, encompassing the ‘whole person’.

### **Reciprocity**

Mentoring is ‘a two-way street’ in which mentors themselves have learned and grown professionally from the experience of mentoring. In *Breaking New Ground*, Raúl Mejía points out how mentoring activities have boosted his career. In *Wisdom Shared*, readers are offered an intimate portrait of the reciprocity of learning and personal growth that can be found in some relationships:

Our co-mentoring took place around crisis points, unexpected opportunities and unpredictable needs. When we were assisting each other to navigate complex waters we had to change roles and operate on faith, trust and respect. The more than twenty-year difference in age and the difference in academic positions became secondary. Co-mentorship focused on moment-by-moment coaching on cultural nuances that had to be understood for progress to be made.

This experience resonates with Lansang and Dennis’ (2004) view that ‘co-learning (in which the mentor and the person being mentored learn from each other) ... that takes place through community-based organisations and civil society groups is an important way of strengthening ... skills ...’ (p. 765). Centeno (2002) noted ‘both mentor and mentee must profit and learn from the process of mentoring in order to fulfil an essential purpose of the university. Their relationship represents the bond between the past and the future’. Cascades of mentorship, similar to those longstanding in research laboratories and in clinical medicine, can be built into a global health research programme (Shah et al., 2011).

### **Finding the right balance**

Several stories describe how a relationship started out with a particular set of goals, and then stretched, bent and blossomed into something different over time. Stories like *Wisdom Shared, Mentorship and Supervision*, and *Finding Success in Group Mentorship* reveal the challenges in navigating disciplinary norms and expectations, as well as institutional (Warner, 2002), national (Isichei, 2007) and international cultures (Tams & Arthur, 2007). Other stories, like *The Loneliness of the Long Distance Scholar*, offer insight into the challenges of aligning individual and programme goals. Several (particularly *Building a Community of Practice*) showed the importance of getting right the mix of mentoring modalities – that is, one-to-one and one-to-group, peer-to-peer and inter-generational, ‘chance’ and ‘planned’, or face-to-face and virtual. Collectively, the stories demonstrate the importance of dialogue and listening to one another, and of flexibility and adaptability in working through problems and ‘finding the right balance’.

### **Responding creatively to failure**

Neither does every mentee who starts a programme finish, nor is each mentor as committed as desirable or all mentors–mentee pairings a good fit. The judgement of failure varies by culture and discipline, yet it is a key to learning. The stories speak to how

failure can be important to innovation. As an LMIC research trainee described in *Group Mentorship*:

When I attended the sessions of the group in my office it occurred to me that this was the opportunity I had been waiting for all along. The discussions were lively and enlightening to the students and to me as well. There was a free flow of ideas and suggestions from the students themselves that enriched their work and helped those who were stuck move on. It was then that I realized that in the current situation, where few mentors are willing to give their time and support to students, more students would benefit if mentorship was done in a group setting rather than the traditional one-on-one setup between the mentor and the mentee. In a group, one mentor is available to multiple students at the same time, thus saving on time and the mentor does not feel overwhelmed.

Another example was the emphasis on flexibility in using multiple mediums of communication, fundamental to the dialogic communication strategy of the E:SEO (*Loneliness of the Long Distance Scholar*) for transforming failures of both understanding and expression into new opportunities for learning. Responding based on a team's learning becomes one of the responsibilities of those leading the mentorship programme (e.g. *Thirst for Mentorship*) (Bland et al., 2009), as evidenced by Makerere colleagues' 'skills training [and] induction courses for doctoral students-mentor teams' (Nakanjako et al., 2014).

## Global contextualisation of mentoring

### *Level playing fields*

In *The Loneliness of the Long Distance Scholar*, two mentors observe that 'the unequal production and accumulation of knowledge [is] an aspect of globalisation as worrying as the inequitable distribution of wealth [and disease]'. Disparate access to the validation of knowledge persists for authors of the Global South (Falabella et al., 2007). Recognition of disparities in training, career opportunities and recognition of health researchers globally was a starting point for most programmes. Several stories also speak to struggles faced by global health researchers in Canadian universities 'achieving not only permission for, but recognition of, their global work'. Mentoring involves not only developing skills or bolstering self-esteem, but jointly fostering improvements in the conditions of colleagues in LMIC institutions and facilitating policy change to improve the health of the vulnerable (*Breaking New Ground*) (Vasquez, Hirsch, Giang, & Parker, 2013). Such mentoring resonates with partnerships taking critical, constructivist stances (Philpott & Batty, 2009).

### *Changing mindsets*

Hand-in-hand with empowering a next generation of global health research leaders goes the need to develop leadership in mentoring. Several stories describe their protagonists' journeys from mentee to mentor to leader. Certainly research mentorship, from the health professional student to the visiting mid-career fellow level, has been woven increasingly into HIC-LMIC collaborations (Bennett et al., 2013). Yet, as one LMIC researcher noted, 'Until recently, mentoring was not formally recognised as a capacity building tool for research in Latin American countries. The unusual cases that happen are mostly a matter of chance rather than part of an organized, planned process' (*Breaking*

*New Ground*). LMIC academics have written about the challenges of hierarchy, gender and ethnicity within their universities (Isichei, 2007; Palomar Vereá, 2005; Warner, 2002) and the implications of these, coupled with workload demands, for establishing research mentorship programmes (Geber, 2009). Women were generally the minority both of mentors and mentees: about 40% of mentors (both HIC and LMIC) in *Building a Community of Practice*; about 25% of mentors (all HIC) in *Mentorship & Supervision*; and 30% of mentees in *Breaking New Ground*, consistent with ongoing concerns about women in science. Changing mindsets (Ghaffar, IJsselmuiden, & Zicker, 2008) – individual and institutional – is key to creating a ‘culture of mentorship’ (Bland et al., 2009), with senior mentors facilitating access of junior researchers of both genders to a network of mentors to support them (DeCastro, Sambuco, Ubel, Stewart, & Jagsi, 2013). As has been seen in other resource-constrained contexts (Oni et al., 2011), the stories celebrate collaborations which can ensue through mentorship, embracing interdisciplinary approaches, team work and creativity in global health research.

## Implications

Although our mentorship examples are promising, research gaps persist on mentoring in global health research, similar to those identified by human resource colleagues in their review (Hezlett & Gibson, 2005) in which they argued for clearer conceptual frameworks and judicious application of qualitative and quantitative methods guided by theory rooted in practice. Similarly, vocational researchers noted concerns with ‘over reliance on cross-sectional designs and self-reported data, a failure to differentiate between different forms of mentoring (e.g. formal versus informal)’ (Allen, Eby, O’Brien, & Lentz, 2008). In the midst of the current flurry of mentoring activity, some energy should be devoted to research development including: tracking trans-national mentoring relationships longitudinally, analysing how online capacity building in academic writing functions as a mentoring process, developing adequate cross-cultural measures to tap into deep learning through mentoring, exploring personal as well as mentoring programme outcomes, and assessing fuller programme and policy impacts of mentoring in gendered and inequitable global contexts, all embedded within more rigorous designs (Sambunjak, Straus, & Marušić, 2006).

Advice for mentors abounds (Lee, Dennis, & Campbell, 2007), some more evidence-based (Straus & Sackett, 2014) than others. Although we approach the making of additional suggestions with trepidation, we set out promising directions in Box 3. In relation to explicit recognition (#1), we concur with Vasquez et al. (2013) that global public health research mentorship programmes would do well to address HIC–LMIC power differentials and promote simultaneous integration of more local and more global contexts. We argue for intentionality but flexibility in mentorship programmes (#2) with greater leadership in tackling institutional barriers to mentorship (#3), both resource lacks and rigid, gendered hierarchies, similar to Vasquez et al. (2013). In terms of mentorship programmes in global health research, the creation of ‘safe spaces’ (#4) is essential. The use of mixed modalities (#5) shows promise, particularly for connecting globally. Finally, we endorse Young, Alvermann, Kaste, Henderson, and Many’s (2004) view that mentoring relationships should be more about co-learning (#6) and interdependency which ‘encourage[s] individual growth while simultaneously facilitating a sense of

friendship, collegiality, connectedness and caring between the mentors and mentees'. Fostering supportive interdependency across divides, both historical and globalisation-related, remains a key goal for mentorship in health research globally, perhaps through mentoring networks which span academic centres and countries using multiple virtual and face-to-face approaches.

**Box 3. Directions for mentoring in global health research.**

- (1) Explicit recognition of the global differences in conditions, resources, and access is required for multi-national mentorship programmes
- (2) Strongly planned and structured mentorship programmes are not always appropriate. Some flexibility is preferable to respond to different contexts and emerging needs of the mentees
- (3) Leadership in mentorship is required for institutional change and greater prioritisation of mentorship in global health research
- (4) By creating 'safe spaces', individuals can be exposed to a diversity of ideas and encouraged to open themselves up for holistic development as health researchers
- (5) Mixing mentoring and communication modalities (e.g. one-to-one and one-to-group, peer-to-peer and inter-generational, 'chance' and 'planned') may be preferable for responding to different mentor capacities and mentee needs
- (6) A co-learning approach between mentors and mentees may be a useful way to promote the co-development of mentorship programmes and mentees, across hierarchies

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