Developing collaborative healthcare education programmes for staff in low and middle income countries: reaching consensus on the most effective approach

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Abstract

Large discrepancies exist between standards of healthcare provision in developed and developing countries. The root cause is often financial, resulting in poor infrastructure and under-resourced educational and healthcare systems (Kim et al, 2015; Willot et al, 2018). Continuing professional education (CPE) programmes improve staff knowledge, skills, retention and practice (Willis-Schattuck, 2008), but remain costly and rare in the developing world. One potential solution involves healthcare education collaborations between institutions in developed and developing countries to provide culturally-appropriate CPE in low/middle income countries (Buchan and Campbell, 2013). To be effective, educational partnerships must take account of the potential barriers arising from differences in cultural norms, language, available technology, organisational structures within collaborating countries. However, there is currently no consensus, on how best to collaborate.

Background to the topic

GHWA and WHO (2013) estimate that there is a global deficit of 7.2 million healthcare workers, a figure which is estimated to rise to 12.9 million by 2035. By implication this suggests that worldwide millions of people lack essential healthcare provision. Health and healthcare are increasingly acknowledged as global issues whose solutions need to be sought through international co-operation between different professions. Collaborative approaches are essential to meet WHO post-2015 targets for quality health care (Buchan and Campbell, 2013) and continuing professional education (CPE) for qualified staff is key to developing staff knowledge and skills in order to meet population healthcare needs (Tyrer-Viola et al, 2013). However, the most effective way to develop such collaborations remains undetermined.

Collaborations between high income countries (HICs) and low and middle income countries (LMICs) should involve a sharing of skills and expertise. HICs are well resourced and can contribute professional expertise and specialised resources whilst LMIC partners contribute local clinical and other contextual knowledge (Oman et al, 2002; Lucas, 2019). However, such partnership work does present many challenges. Limited physical and financial resources in LMICs can be a problem, including a lack of educational and clinical facilities and the educational and academic staff to run them effectively (Kim et al, 2015).The sheer number of staff requiring CPE to improve their skills and practice standards may also present problems, placing further strains on existing services (Macedo et al, 2013). Educational approaches developed by well-meaning HICs may also be problematical and not take account of local circumstances. For example, a number of international programmes are

only offered in English or by distance learning, which will exclude those who lack the necessary language skills or technology and reliable sources of electricity (Johnson et al, 2007; Kim et al, 2015). These factors combine to limit opportunities for staff to participate in CPE (Willot et al, 2018) which in turn narrows their scope of professional practice, rather than bringing it into line with international standards (Kildea et al, 2011). The situation is made worse by staff migrating overseas to work, moving from rural to urban facilities or shifting from the public to the private sector in search of better pay, conditions and career opportunities (Willis-Shattuck et al, 2008) resulting in inequitable workforce distribution (WHO, 2013).

Well-intentioned programmes devised by HICs may also fail for other western-centric reasons. For example, the authors have found it difficult to meet the requirements of budget holders when attempting to spend project funds. In a country where institutional email addresses and electronic invoices are the norm, it can be difficult to persuade budget signatories that personal email accounts and written invoices are legitimate. Power inequalities between HICs and LMICs and different agendas and goals (Oman et al, 2002) can also leave LMICs potentially open to exploitation by HICs (Lucas, 2019).

It is morally and ethically unacceptable that huge discrepancies in healthcare practices, provisions and outcomes to exist between developed and developing nations. As healthcare becomes increasingly globalised, and healthcare professionals move between countries to work, minimum accepted standards of knowledge and practice are also of increasing importance for patient safety.

For collaborations to be effective they need to result in programmes which are owned and led by the LMIC partner, context-specific and relevant to the socioeconomic characteristics and needs of the communities they are designed to benefit (WHO, 2013). For programmes to be considered effective, they should enable participants to acquire the necessary knowledge and skills to improve healthcare standards and bring about changes in healthcare practice. De Santis' (1995) Counterpart Concept proposes that there are four criteria which healthcare education partnerships between HICs and LMICs need to meet in order to be truly collaborative:

1. The HIC partner's should eventually be able to withdraw, leaving the LMIC partner to successfully run the programme and take ownership of it
2. Programmes should be designed to meet the specific needs of the LMIC
3. Sociocultural, political and economic factors must be taken into account when planning the programme
4. The collaboration should develop healthcare partners from the HIC and LMIC to their fullest potential

Existing systematic reviews

The initial scoping search, undertaken in January 2019, resulted in only 36 citations, including one relevant systematic review. George and Meadows-Oliver (2013) conducted a systematic review of the literature relating to collaborative nursing partnerships published between January 2001 and July 2012. They analysed nine articles in the context of DeSantis' (1995) Counterpart Concept and found that none met all of the criteria and only one first author came from a LMIC. Four studies met criterion number 1, nine met criterion number 2, eight met criterion number 3 and only one met criterion number 4. The HIC partners were Canada, England, Scotland, Norway and the USA, with the latter involved in five different collaborations. The LMIC partners were Cambodia, Tajikstan, Madagascar and various countries in Africa. The review authors concluded that all of the authors of the reviewed papers learned valuable lessons in building healthcare partnerships between LMICs and HICs but more needs to be done for these to be truly collaborative. The review also has some limitations as it focussed purely on collaborations between nurses.

Aim and review questions

This review will explore the research on developing collaborative healthcare education programmes for staff in low and middle income countries in order to consider what works, how it works and the practical barriers which need to be addressed. The research questions will be framed using Cook's (2009) Taxonomy:

- What pedagogical approaches are appropriate when using international collaboration to establish sustainable, culturally-appropriate CPE programmes for healthcare professionals in low and middle income countries? (Descriptive)

- What barriers must be overcome to develop these educational programmes?

- How are these approaches effective (Clarification)?

The findings will then be used to address this final question:

- How should healthcare educators in LMICs and HICs collaborate in order to design and deliver CPE programmes?

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Population:

- Healthcare educators in HICs and LMICs working in academic or practice settings.

Activity:

- CPE activities for qualified healthcare staff.

Outcomes:

- Designing and delivering effective educational programmes to meet identified local needs.

- Efficient use of educational resources e.g. finances, time, educators.

- Generating new pedagogical theory and knowledge.

- Identifying the key components of successful educational collaboration between LMICs and HICs.

Keywords: Low and middle income countries; collaboration; healthcare education.

Methods

Definitions

Collaboration: this is defined in the context of DeSantis' (1995) Counterpart Concept. It is used to refer to healthcare staff and educators from a HIC and an LMIC working together to develop continuing professional education to meet the needs of the LMIC.

Continuing Professional Education (CPE): this refers to: 1. Education and training for qualified healthcare professionals leading to formal qualifications. 2. Education and training for qualified healthcare professionals which develops knowledge and skills but does not lead to formal qualification.

Low and middle income countries: these are defined as all countries on the Development and Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development's (OECD) (2018) list of countries and territories eligible to receive Official Development Assistance (ODA). These consist of all low and middle income countries based on gross national income (GNI) per capita as published by the World Bank, with the exception of G8 members, EU members, and

countries with a firm date for entry into the EU. The list also includes all of the Least Developed Countries (LDCs) as defined by the United Nations (UN). The current list is provided below:

DAC List of ODA Recipients
Effective for reporting on 2018, 2019 and 2020 flows

Least Developed Countries	Other Low Income Countries (per capita GNI <= $1 005 in 2016)	Lower Middle Income Countries and Territories (per capita GNI $1 006-$3 955 in 2016)	Upper Middle Income Countries and Territories (per capita GNI $3 956-$12 235 in 2016)
Afghanistan	Democratic People's Republic of Korea	Armenia	Albania
Angola[1]	Zimbabwe	Bolivia	Algeria
Bangladesh		Cabo Verde	Antigua and Barbuda[2]
Benin		Cameroon	Argentina[2]
Bhutan		Congo	Azerbaijan
Burkina Faso		Côte d'Ivoire	Belarus
Burundi		Egypt	Belize
Cambodia		El Salvador	Bosnia and Herzegovina
Central African Republic		Eswatini	Botswana
Chad		Georgia	Brazil
Comoros		Ghana	China (People's Republic of)
Democratic Republic of the Congo		Guatemala	Colombia
Djibouti		Honduras	Cook Islands[3]
Eritrea		India	Costa Rica
Ethiopia		Indonesia	Cuba
Gambia		Jordan	Dominica
Guinea		Kenya	Dominican Republic
Guinea-Bissau		Kosovo	Ecuador
Haiti		Kyrgyzstan	Equatorial Guinea
Kiribati		Micronesia	Fiji
Lao People's Democratic Republic		Moldova	Gabon
Lesotho		Mongolia	Grenada
Liberia		Morocco	Guyana
Madagascar		Nicaragua	Iran
Malawi		Nigeria	Iraq
Mali		Pakistan	Jamaica
Mauritania		Papua New Guinea	Kazakhstan
Mozambique		Philippines	Lebanon
Myanmar		Sri Lanka	Libya
Nepal		Syrian Arab Republic	Malaysia
Niger		Tajikistan	Maldives
Rwanda		Tokelau	Marshall Islands
Sao Tome and Principe		Tunisia	Mauritius
Senegal		Ukraine	Mexico
Sierra Leone		Uzbekistan	Montenegro
Solomon Islands		Viet Nam	Montserrat
Somalia		West Bank and Gaza Strip	Namibia
South Sudan			Nauru
Sudan			Niue
Tanzania			North Macedonia
Timor-Leste			Palau[2]
Togo			Panama[2]
Tuvalu			Paraguay
Uganda			Peru
Vanuatu[1]			Saint Helena
Yemen			Saint Lucia
Zambia			Saint Vincent and the Grenadines
			Samoa
			Serbia
			South Africa
			Suriname
			Thailand
			Tonga
			Turkey
			Turkmenistan
			Venezuela
			Wallis and Futuna

(1) General Assembly resolution A/RES/70/253 adopted on 12 February 2016, decided that Angola will graduate five years after the adoption of the resolution, i.e. on 12 February 2021. General Assembly resolution A/RES/68/18 adopted on 4 December 2013, decided that Vanuatu will graduate four years after the adoption of the resolution on 4 December 2017. General Assembly resolution A/RES/70/78 adopted on 9 December 2015, decided to extend the preparatory period before graduation for Vanuatu by three years, until 4 December 2020, due to the unique disruption caused to the economic and social progress of Vanuatu by Cyclone Pam.

(2) Antigua and Barbuda, Panama and Palau exceeded the high-income threshold in 2016 and 2017, and Argentina exceeded the high-income threshold in 2017. In accordance with the DAC rules for revision of this List, if they remain high income countries until 2019, they will be proposed for graduation from the List in the 2020 review.

(3) The DAC agreed to defer decision on graduation of Cook Islands until more accurate GNI estimations are available. A review of Cook Islands will take place in 2019.

OECD (2018)

Healthcare professionals/qualified healthcare staff: this refers to staff who are qualified in both internationally recognised professions e.g. nurses, midwives, doctors and locally/nationally recognised healthcare roles in LMICs which require specific training and meet identified needs e.g. trained birth assistants.

Healthcare educators: this refers to qualified healthcare professionals working in educational roles in both practice and educational settings. This includes those who undertake education as part of a senior clinical role e.g. consultant surgeon educating/training junior staff.

Inclusion criteria	Exclusion criteria
All study designs and approaches, audits, reports, surveys, conference paper and proceedings, conference posters, descriptive studies	Reviews, guidelines, commentary on published articles
Collaboration between a HIC and a LMIC	Research or educational endeavours between LMICs and HICs where there is no evidence of collaboration
Any healthcare profession, including locally and nationally recognised roles which exist in LMICs e.g. trained birth assistants.	Professions unrelated to healthcare
Healthcare educators or trainers	Articles which discuss theoretical collaborations.
Practice or educational settings	
CPE activities	Undergraduate programmes
Any date	
Any language	

Search terms

TBC

(low and middle income countries OR developing countries) AND (developing OR devising OR designing health* OR educat* OR clinical educat* OR practice educat* OR nurs* educat* OR midwif* educat* OR medical educat* OR social work educat* OR physiotherapy educate OR allied health educat*) AND (faculty development OR continuing professional education OR continuing professional development OR capacity building global collaboration OR global partnership OR

international collaboration OR international partnership OR collaboration in education OR overseas development)

Databases:

- EBSCO (CINAHL complete, Medline with full text, AMED, Dentistry and oral Sciences Source, ERIC).

- Cochrane Library

- EMBASE

- PUBMED

Other sources:

- Hand searches (e.g. articles in reviews, specific journals, Abstracts from the last 5 years of AMEE annual meeting proceedings will be hand searched)

- Grey literature (approaches e.g. Opengrey.org, direct approaches to researchers re. anything unpublished)

- Conference proceedings, abstracts, posters and papers.

- Relevant organisations e.g. WHO;UN/UNHCR; Non-Governmental Organisations e.g. Oxfam, MSF; SPHERE; British Council; Liverpool School of Tropical Medicine; Department for International Development

- Specific individuals e.g. experts known to the team; relevant government ministers

Limiters: none applied so all languages, dates and geographical locations considered. All study designs – quantitative and qualitative – considered.

Scoping search: this was undertaken on 29th April 2019 using the search strategy listed above and the following databases - Dentistry and Oral Sciences Source, CINAHL Complete, ERIC, Medline full-text, AMED. This yielded 1444 articles, with no limiters applied.

Data extraction

- One person to undertake the literature searches and removal of duplicates

- Two people will separately screen the titles

- Two people will separately screen the abstracts.

- Full text articles will be screened against the inclusion criteria by two people, working independently. The authors will work in pairs to do this. Wherever possible, a pairing will include an HIC and an LMIC author.

- Data extraction from full-text articles included in the review will be undertaken by two people working independently. Wherever possible, a pairing will include an HIC and an LMIC author. A data extraction form will be used.

- Any disagreements which arise when screening abstracts and full-text articles will be solved by involving a third author and reaching consensus.

- Prior to screening the full-text articles, inter-rater reliability will be checked by all authors coding the same three articles and comparing results. If practicable, this will include a selection of different study types.

A data extraction form will be devised and piloted, based on BEME guidance (Hammick 2010).

Key items included will be:

- Countries and healthcare professionals involved in the collaboration
- Duration of the project
- Which professionals the healthcare education is designed for
- Healthcare or education setting for delivery
- Focus of the programme and local context
- Pedagogical approaches/delivery methods used
- Barriers and how these were overcome to develop the programme
- Programme duration
- Type and level of collaboration (rated using DeSantis' (1995) Counterpart Concept)
- Potential sources of bias
- Design of the collaboration

- Countries and types of healthcare staff involved in the collaboration and benefitting from the educational programme
- Impact of the collaboration, characterised by Kirkpatrick's (1967) hierarchy

Quality assessment

This will be judged using two tools:

1. A five-point scale (where 1 = weak; 5 = strong) to rate the strength of conclusions drawn from each study (Hammick et al, 2010).
2. A quality assessment tool (based on Reed et al, 2005) to rate the sources of potential bias in each study. Items will be judged to be of high quality (Green), Unclear quality (Yellow), low quality (Red).

Quality ratings will be made independently by two reviewers, with a third being consulted to resolve any disagreements. The quality assessment will not be used to exclude studies.

Bias source	High quality	Unclear quality	Low quality
Educational Underpinning	Clear and relevant description of theoretical models or conceptual frameworks that underpin the study	Some limited discussion of underpinning, with minimal interpretation in the context of the study	No mention of underpinning
Curriculum	Clear description of the process and outcomes of the curriculum / syllabus / assessment design	Some limited description that will not facilitate replication	No mention of curriculum
Setting	Clear details of the educational context and learner characteristics of the study	Some description, but not significant as to support dissemination	No details of learner characteristics or setting
Pedagogical	Clear description of relevant pedagogy	Some pedagogical alignment mentioned	No details of pedagogy

	employed to support delivery	but limited detail as to how applied	
Content	Provision of detailed materials (or details of access)	Some elements of materials presented or summary information	No educational content presented
Conclusion	Conclusions of the study reflect the findings	Some mismatch between the conclusions and findings	No correlation between the findings and conclusions

Synthesis of evidence

Narrative synthesis

Data gathered using the extraction form will be summarised into a summary table, using the format and headings shown below. This will provide information on the study design, the countries and staff delivering and benefitting from the programme and the type and quality of the collaboration (using DeSantis' Counterpart Concept and the quality assessment tool) along with an evaluation of its impact, using Kirkpatrick's (1967) hierarchy. The data collated under each heading will be synthesised to enable readers to understand the range of methods used across the papers included in the review. This information will be used to determine which types of collaboration resulted in effective outcomes and the barriers to undertaking these collaborations.

Summary table:

Author	Year	Author origins	Countries involved	Study type	Healthcare professions involved	Educational intervention	Pedagogical approaches and delivery methods	Outcome measures

Results	Conclusions	Perceived barriers	Quality indices*						Level of collaboration (DeSantis)	Level of outcome (Kirkpatrick)	Strength of conclusions
			E	CU	S	P	C	S			

*Quality Indices

E– Educational underpinning   Cu – Curriculum   S– Setting   P - Pedagogy   C – Content   S – Strength of conclusion

Green = low risk of bias   Yellow = unclear risk of bias   Red = high risk of bias

<u>Determining why it worked (Clarification)</u>

Thematic analysis with a grounded theory approach will be used to determine what enabled particular collaborations to work effectively, or alternatively factors which prevented them from working.

Translation into practice

● Designing effective, collaborative healthcare education programmes for LMICs to meet identified local needs.

● More efficient use of educational resources e.g. finances, time, educators.

● Generating new pedagogical theory and knowledge.

● Benefits of collaborative working may extend more widely as approaches used to deliver healthcare education may be transferrable to other topics and professions.

10. Project timetable

Date	Activities
June 2019	Submit protocol Allocate tasks to reviewers Final literature searches completed and definitive list available Screen citations
June 2019	Screen any outstanding articles Further searches of alternative sources Analyse results and extract data and themes
July 2019	Screen abstracts Acquire full text articles for screening and allocate Check inter-rater reliability between reviewers Commence screening/data extraction from full text articles Search other sources of information
August 2019	Data extraction and grey literature searches Search other sources of information

September 2019	Data extraction and grey literature searches Search other sources of information
November 2019	Data extraction and grey literature searches Search other sources of information
December 2019	Commence synthesis
January 2020	Synthesis
February 2020	Write draft
March 2020	Revise draft and finalise
April 2020	Submit review

11. Conflicts of interest

None

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