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Internationalization of teaching and learning in public health

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ABSTRACT

Due to the increased interconnectedness in the world, healthcare workers and policy makers now widely recognize that health transcends national boundaries, with global political and economic impact. Unfortunately, existing evidence suggests that the current global public health workforce is unprepared to confront the challenges posed by globalization. There is growing recognition of the need for the internationalization of curriculum (IOC), and the development of educational programmes that adequately prepare the public health workforce to deal with global health issues. The present literature review aims to examine the current perspectives, pedagogical approaches, theoretical or policy issues and debates related to (and explores different ways of improving) IOC in public health. A systematic search of literature up to 22 January 2018 was undertaken in the following databases in addition to google scholar: MEDLINE; EMBASE and PsycINFO. Data analysis involved writing annotated summaries of each paper and classifying the papers according to which of the questions they address, displaying the data, comparing the themes across papers, and drawing inferences and conclusions. The results suggest that internationalization of the public health curriculum, overall, can enable universities and individuals to meet both local and global social accountabilities and responsibilities. However, the way that IOC is defined, along with the internationalization model and pedagogical approach taken, have an impact on the benefits that can be realised.

INTRODUCTION

Public health is the science and the art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations public and private, communities and individuals (Walley and Wright, 2010). Due to increased interconnectedness in the world, healthcare workers and policy makers now widely recognize that health transcends national boundaries, or has a global political and economic impact (Bozorgmehr, 2010). Many 'public health' challenges faced by health professionals or policy makers are in fact 'global health' challenges (eg tuberculosis, HIV, influenza, smoking, alcohol consumption, climate change and obesity) that require a global-level understanding of the determinants of health (Department of Health, 2008; Hunter *et al.*, 2013; Lee *et al.*, 2011). A very recent example would be the 2014-2016 Ebola outbreak which originated from a small village in Guinea and rapidly spread across Liberia and Sierra Leone with a few cases and fatalities also reported in Senegal, Mali and Nigeria (Dawson *et al.*, 2016). Containing this outbreak required global action including organizations, healthcare professionals and experts from Western countries providing services, advice, training and support. There have been a number of global influenza pandemics in recent years such as Severe Acute Respiratory Syndrome in 2003, the 2009 H1N1 influenza outbreak which swept across 214 countries, and the 2012 Middle-East Respiratory Syndrome. In fact, since 2007, health has become one of the pressing foreign policy issues of our time (Labonté and Gagnon, 2010). According to the former director general of the World Health Organization, Dr Brundtland, 'The separation between domestic and international health problems is no longer useful' (Brundtland, 2001).

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Unfortunately, existing evidence suggests that the current global public health workforce is unprepared to confront the challenges posed by globalization (Lee *et al.*, 2011). Research has highlighted that most public health curricula lack an international/global perspective, despite an upsurge of interest from health professionals and students (Haupt *et al.*, 2007; Lee *et al.*, 2011; Macfarlane *et al.*, 2008). There is growing recognition of the need for the internationalization of teaching and learning, and the development of educational programs that adequately prepare the public health workforce to deal with global health issues (Lee *et al.*, 2011).

For higher education, internationalization is often considered in two ways: global competition for talent and students among universities; and the educational process that prepares students for a globalized world (Knight, 1999; Lori, 2008). The latter is often operationalised through the internationalization of curriculum (IOC). IOC can be defined as providing students with a global perspective of, and broader knowledge base on, their discipline (Higher Education Academy, 2014). IOC can be a tool for fostering engaged global citizens who are resilient and can compete in a rapidly changing, diverse cultural and global context (Elspeth and David, 2013; Leask, 2015; Lori, 2008; Higher Education Academy, 2014). The ease with which, and extent to which, a curriculum can be internationalized is discipline specific. As highlighted by the Higher Education Academy (2014), or HEA (and now known as Advance HE), some disciplines are by nature already 'internationalised' (eg International Studies), and some lend themselves to internationalisation more easily than others.

AIM

The proposed project aimed to examine the current perspectives, pedagogical approaches, theoretical or policy issues and debates related to, and explore different ways of improving, IOC in public health.

Specifically, the project aimed to address the following questions:

1. What are the current perspectives on the internationalization of the public health curriculum?
2. What are the pedagogical approaches in public health education?
3. What are the current theoretical or policy issues and debates relating to IOC in public health?
4. What are the practical implications of the literature review findings on public health education and curriculum?

METHODS

A systematic search of literature up to 22 January 2018 was undertaken following the principles recommended by the Centre for Reviews and Dissemination guidance for undertaking systematic reviews (Centre for Reviews and Dissemination, 2009). The following databases were searched on the OVID platform: MEDLINE; EMBASE and PsycINFO. The following terms were used: public health, or global health, or international health, or world health, or community health; AND internationalization or globalization; AND curriculum, or learning, or teaching or education (for full search strategies see Appendix 1). Scoping searches were also conducted on google scholar. The reference lists of included studies were also scanned. No date, language or geographic limits were applied.

Selection of literature to include in the review involved the screening of the titles and abstracts of the identified articles, ordering full papers for those articles identified as potentially relevant, and screening of the full text papers for inclusion by the author. Empirical or theoretical articles were included in the review if they addressed any of the study questions.

Data analysis involved writing annotated summaries from each paper and classifying the papers according to which of the questions they address, displaying the data, comparing the themes across papers, and drawing inferences and conclusions (Whittemore and Knafelz, 2005). The quality of the articles included in the review was not assessed. The results are organized according to the research questions above.

RESULTS

827 articles were identified from the searches in total (Figure 1). After removing duplicates, the remaining 577 titles and abstract were screened for eligibility, from which 78 were classified as potentially eligible. 37 of the 78 were excluded for not being specific to public health education (30); and being irrelevant (seven). 41 were included – many of them addressed multiple research questions.

IOC in the context of public health

IOC in public health has primarily been seen, defined and operationalised from the lens of developed country institutions in terms of health initiatives for low and middle income countries (LMICs) (Knipper *et al.*, 2015; Lori, 2008; Macfarlane *et al.*, 2008). Earlier initiatives in Europe were on 'tropical medicine' focused on diseases most prominent in tropical climates- ie diseases not seen in Europe and that challenged the scientific community to explain them. The mid-20th century saw the rise of 'international health' as a discipline which largely focused on establishing and implementing national and international health interventions and policies within health systems in LMICs. Recent years have seen the emergence of 'global health/ global public health'. Global health places a priority on improving health and achieving equity in health for all people worldwide, emphasizes transnational health issues, determinants and solutions; promotes interdisciplinary collaboration involving many disciplines within and beyond the health sciences; and integrates population-based prevention with individual-level clinical care (Koplan *et al.*, 2009; Macfarlane *et al.*, 2008; Winskell *et al.*, 2014). Despite this seemingly broad focus, global health education is still largely biomedically oriented, focused on technical skills and practice opportunities in LMICs (Lori, 2008; Macfarlane *et al.*, 2008). In fact, many university global health centres and institutes in developed countries define their target group as LMICs (Macfarlane *et al.*, 2008). For example, the University of Emory (<http://www.globalhealth.emory.edu/index.html>); University of Ottawa, Canada (<http://www.cgh.uottawa.ca/eng/index.html>); Case Western Reserve University, USA (<http://case.edu/orgs/cghd/>); and Vanderbilt University, USA (<https://www.vumc.org/global-health/>), all specifically identify this LMICs focus within their mission statements.

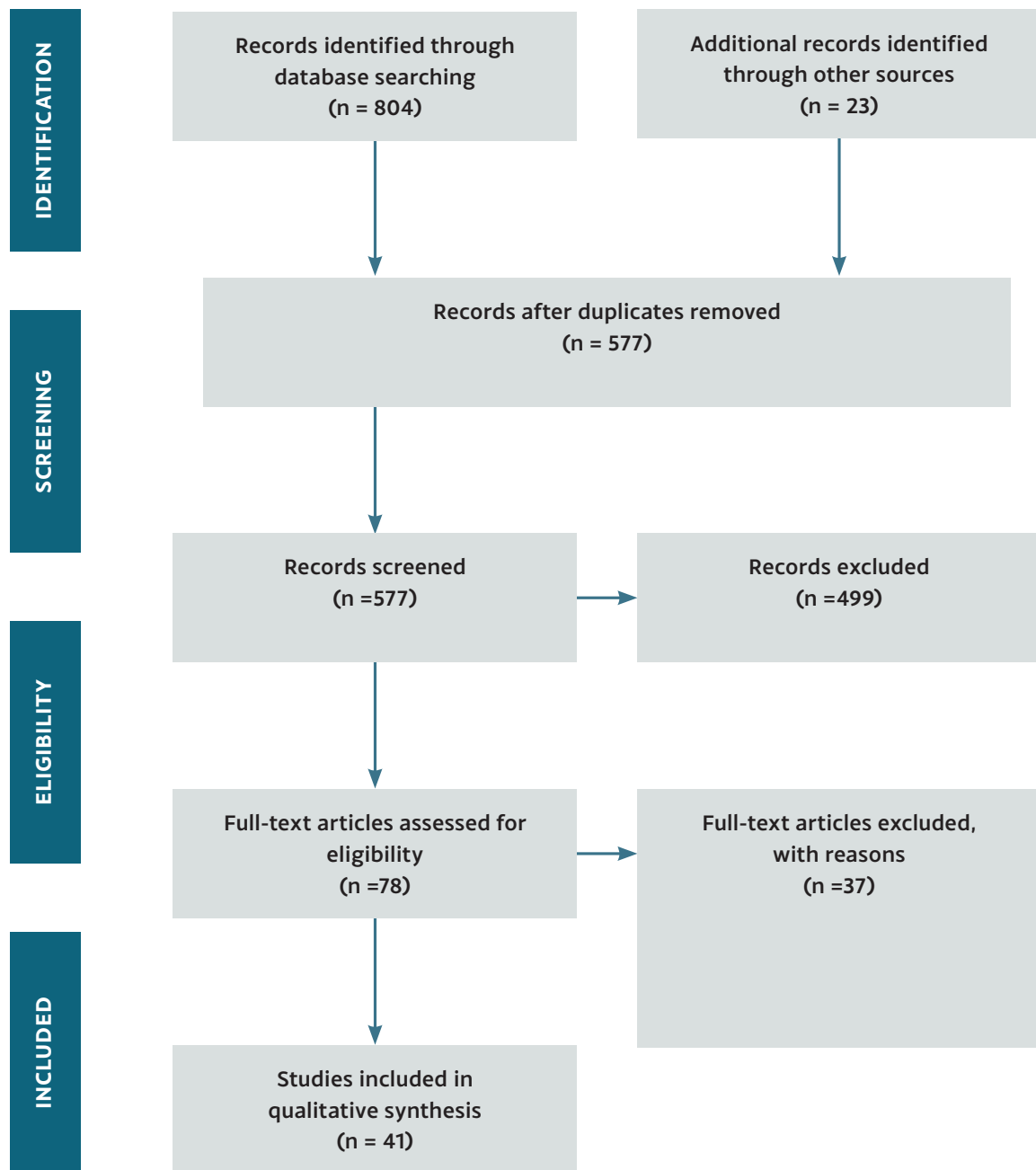


Figure 1: Flow of articles within the review

This orientation towards public health work in LMICs is also reflected in some broader definitions of internationalization. For example, according to the HEA (2014), 'Internationalisation could mean providing a broader knowledge base through including conceptual and theoretical work from non-Western sources; providing opportunities for practice in diverse cultural contexts; or examining practice in the discipline in different parts of the world'. For public health, this narrows the scope by excluding health problems of developed countries. What this means for LMIC institutions, or a student from a non-Western country studying in the UK for example, is that IOC in the context of public health is actually business as usual (Macfarlane *et al.*, 2008). Considering the gradual shift in the leading causes of morbidity and mortality in LMICs from infectious and parasitic diseases to non-communicable, chronic, degenerative diseases that have previously been mainly associated with developed countries (Adogu *et al.*, 2015), it is vital that LMIC public health workforce is also adequately equipped to deal with the types of conditions associated with developed country contexts. Some have argued that although higher education systems in Africa are the most globally marginalised, they are, overall, the most internationalised in their model, dimension and scope due to colonial systems and models replacing traditional and indigenous higher learning institutions (Damtew and Greijn, 2010). However, this does not seem to be the case for public health. It is therefore crucial to define and operationalize IOC in public health in a way that incorporates both a developed and developing country perspective.

Public Health Pedagogy

A number of studies have focused on public health competencies to guide curriculum, including globally-focused discipline specific and technical competencies such as global burden of disease, determinants of health, travel and migration, as well as generic/transferable competencies such as in cultural, communication, collaboration and management (Clark *et al.*, 2016; Warren *et al.*, 2016; Wilson *et al.*, 2012). However, there has been much less attention on the pedagogical approaches appropriate for the acquisition and assessment of these competencies (Merzel *et al.*, 2017; Winskell *et al.*, 2014). Moreover, the voice of LMICs in the setting of these competencies is limited (Cherniak *et al.*, 2017).

The limited literature on public health pedagogy emphasises interdisciplinary, competency-based approaches and experiential learning (Chávez *et al.*, 2006; Doobay- Persaud *et al.*, 2017; Merzel *et al.*, 2017; Winskell *et al.*, 2014). The competency-based approach can adopt a developmental approach based on the concept of progression along a series of defined milestones. Miller's pyramid (Figure 2) gives an example of such an approach where skills development is depicted as a 4-step process leading from knowledge at the base to independent performance at the apex (Miller, 1990). Such an approach also helps focus assessment on outcomes appropriate for each stage.

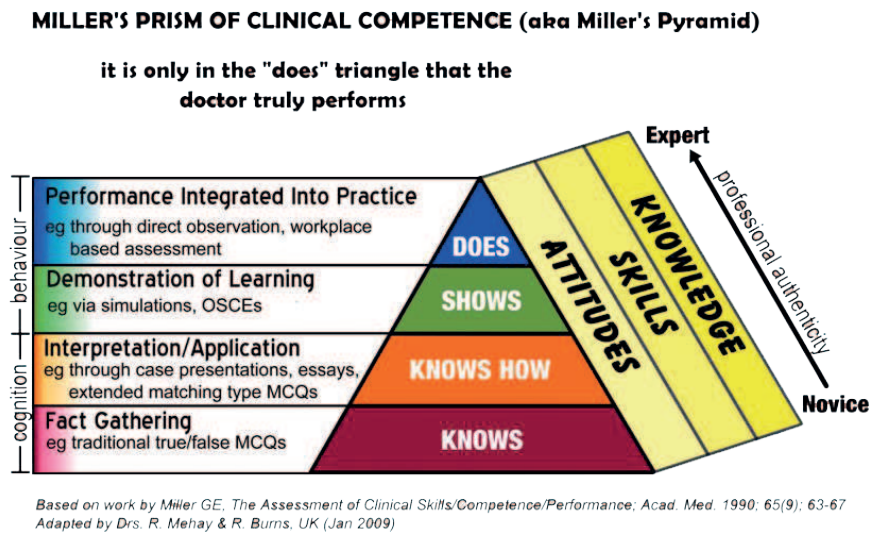


Figure 2: Miller's Pyramid of clinical competence

Merzel *et al.* (2017) describes an approach that places strong emphasis on the content and outcomes, and the incorporation of professional learning as a process within the competency development and assessment framework. Professional learning involves the stimulation of thinking and professional knowledge, and ensuring that practice is critically informed and up-to-date, based on three main components: learning that deepens knowledge and understanding; learning by inquiry (or inquiry based learning (IBL)); and collaborative learning (interactive, reflective and involve learning with and from others).

IBL is based on constructivist educational theory, prioritizes question-driven rather than topic driven activities, and emphasizes on students doing goal-oriented research/ investigative work that stimulate creativity, higher order thinking, and reflection (Aditomo *et al.*, 2013; Kienzler and Fontanesi, 2017; Oliver, 2007; Spronken-Smith *et al.*, 2011). Students learn through constructing new knowledge and understanding with the teacher as a facilitator (Spronken-Smith *et al.*, 2011). Within Healey's (2005) research-teaching nexus (Figure 3), IBL is in the research-based teaching quadrant rather than the University of York's research-led teaching pedagogy as outlined in the University of York, Learning and Teaching Strategy 2015-20 (University of York, 2015).

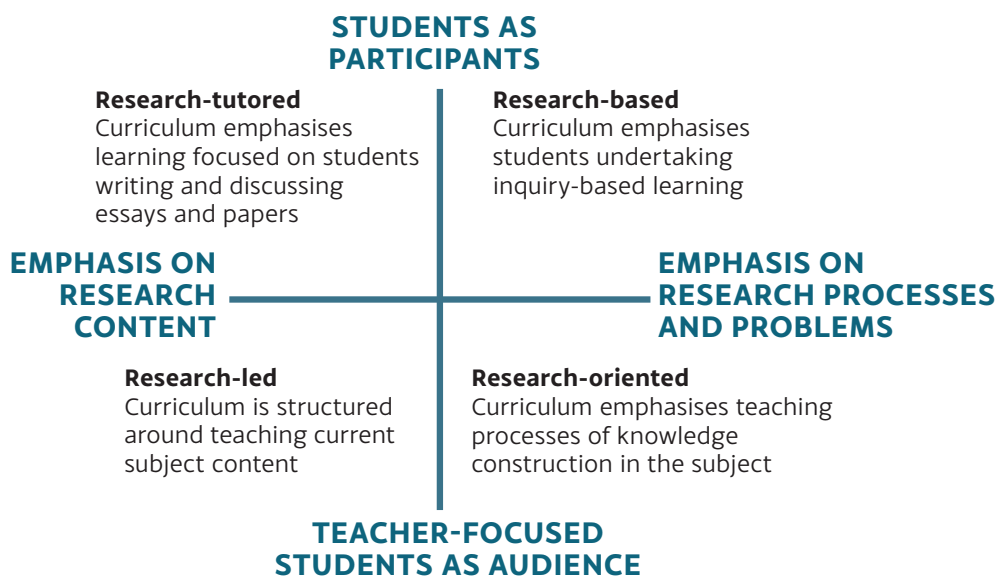


Figure 3: The research-teaching nexus (based on Healey, 2005)

Studies have largely established that learners acquire knowledge most effectively when engaged in their own research projects (Kienzler and Fontanesi, 2017). However, research has also shown that it is possible for students to obtain misconceptions or incomplete or disorganized knowledge with this approach (Kirschner *et al.*, 2006). For IBL to be successful students need to obtain prerequisite knowledge and undergo some prior structured experience in addition to ongoing instructional guidance (Kirschner *et al.*, 2006). This suggests a blend of all components of the Research-Teaching Nexus as a better approach- which would also be consistent with professional learning as described above. Moreover, Aditomo and colleagues (2013) suggest that IBL tasks can come in different forms including not only scholarly, simplified, applied or simulated applied research, but also literature-based inquiry, discussion-based inquiry, enactment of practice and role-playing.

Chavez *et al.* (2006) highlights the potential usefulness of the pedagogy of collegiality which not only emphasises the importance of collaborative learning, but also the importance of fostering relationships characterized by unity of purpose, and respecting each other's abilities to work toward that purpose. It values all kinds of diversity and creativity (and is therefore responsive to diversity), thereby creating an effective educational environment in which an open and free exchange of ideas is encouraged within participatory framework that includes the students' voice. This ensures that both teacher and students become members of a community of learners. Within this pedagogy, public health is taught from the lens of community organizing with a focus on linkages among multiple determinants affecting health within the explicit language of social justice, cultural competence, and human rights rather than a strict biomedical focus on illness and disease. In combination with practice-based learning, the pedagogy of collegiality has been framed as 'a framework capable of representing the complexity of public health beyond the Western paradigm' (Chávez *et al.*, 2006). However, institutionally imposed roles of authority in a hierarchical University structure (eg differences in power between lecturers and students) could hinder application of the pedagogy of collegiality (Chávez *et al.*, 2006). The physical and technological infrastructure must be able to support this as well, for example, the ability to have small group discussions and to engage the learner through the use of participatory exercises and technology.

Experiential learning (learning through experience) can be interpreted in a number of ways. One interpretation focuses on students gaining field experience through electives (Doobay- Persaud *et al.*, 2017; Knipper *et al.*, 2015; Lori, 2008). Within the context of IOC, this tends to be students from developed countries going for placements in LMICs. This approach has been criticized for being unidirectional (Doobay-Persaud *et al.*, 2017); paying no attention to critical self-reflection and the discourse of development (Lori, 2008); and having the potential to impart a false sense of expertise on learners who have only demonstrated competencies in one specific context (Doobay-Persaud *et al.*, 2017), perpetuate attitudes of cultural and professional superiority, and accentuate and essentialise cultural differences (Knipper *et al.*, 2015; Lori, 2008). In addition, increase in students taking electives in LMICs can be burdensome for, and undermine, the host institutions and precarious health systems in LMICs (Knipper *et al.*, 2015; Macfarlane *et al.*, 2008). Examples of bidirectional field experience partnerships are beginning to emerge in other health fields. For example, the Medical Education Partnership Initiative (MEPI) on health research capacity building in Sub-Saharan Africa involves bidirectional trainee and faculty exchange between Sub-Saharan Africa and Global North partners (<https://www.fic.nih.gov/Grants/Search/Pages/Awards-Program-MEPI.aspx>). To facilitate learning, teaching materials can be organized prior to, during and after field experience (focusing on setting personal learning objectives and successful navigation of field experience with cultural humility and appropriate communication practice; on-going reflection in the field; and critical reflection, assimilation of knowledge and experience, and leveraging this for future experiences and careers respectively) (Doobay-Persaud *et al.*, 2017). Field experience electives may however be difficult to incorporate within a one-year full-time MPH program due to time constraints. In addition, not all students have the means or the inclination to study abroad (Elsbeth and David, 2013).

Another view on experiential learning is from the lens of the pedagogy of collegiality and professional learning where students not only examine and value their past and present experiences as sources of knowledge, but also share those experiences with each other (Chávez *et al.*, 2006; Merzel *et al.*, 2017). This view embraces the international as well as the intercultural dimension by aligning internationalization within the wider multicultural environment of equity and diversity which considers international students as a source of cultural capital and intentional diversity, enriching the learning experience both for home students and for one another, and expanding staff horizons (Brown and Jones, 2007). Within this, responding to the diversity of international students and to that of home students can be considered as one agenda and not two (Elspeth and David, 2013). This would be the most realistic option for a one-year full-time MPH program. However, for this to be an effective strategy the university, departmental and program outlook and recruitment strategy should be able to attract students from a diverse range of geographical, social, cultural and professional backgrounds. On the other hand, the presentation of diversity of learners with multiple professional skills, varying learner objectives, in addition to variable faculty perspectives and constraints of time and resources, can add complexity to designing curricula.

Knowledge-based content, competencies and IBL can be relatively easy to measure through exams, quizzes, essays, simulations, presentations and direct observation of practice for example (Doobay-Persaud *et al.*, 2017; Winskell *et al.*, 2014). Experiential learning on the other hand can be difficult to measure. Doobay-Persaud and colleagues (2017) suggest that, if in the form of field experience then assessment could focus on how the student can realistically contribute to the partner's mission, as well as formal and informal feedback on both the positive and negative impact of the student's field experience to the host institution. However, getting candid feedback from partners where culturally hospitality, agreeability and indirect communication dominate can be challenging (Doobay-Persaud *et al.*, 2017). Tools have been developed however to measure student learning through field work experience, such as the Global Perspective Inventory, the Intercultural Development Inventory and the Global Engagement Survey (Daneshyar, 2011; Mahoney and Schamber, 2004; Morais and Ogden, 2011).

Theoretical or policy issues and debates

Internationalization models: Internationalization models include the market model, the liberal model and the social transformation model. The *market model* is about increasing the global competitiveness of an academic institution (Warner, 1992). On the other hand, the *liberal model* is about global cooperation and international and intercultural understanding- ie collaboration, cooperation and sharing of ideas among members of the 'global village' (Lori, 2008). The *social transformation model* expands on the liberal model by adding critical social analysis and rejecting the market model idea of market supremacy (Allen and Ogilvie, 2004; Warner, 1992). The social transformation model acknowledges that globalization can result in increased marginalization of groups of people around the world; and promotes teaching and learning that increases knowledge and awareness of inequalities both within and between nations (Warner, 1992). This resonates with the overarching public health theme on 'health inequalities and inequities'. The social transformation model also emphasise on the need for mutuality and reciprocity, as well as networks and partnerships (Warner, 1992), all of which are recognised as important in advancing global public health as well (Walley and Wright, 2010).

Local versus global social accountability and responsibility: Arguments against the inclusion of an international focus include the need to produce public health professionals that are capable of supporting local services, particularly where training is funded through public funds (Lee *et al.*, 2011). However, this view has been criticised for being very short sighted as public health is by its very nature a global discipline. Moreover, many countries are increasingly multi-cultural societies that require public health professionals that are able to function in

diverse circumstances; and are able to appreciate the global factors that are relevant to their own settings and are thus better equipped to serve their multicultural and/or marginalized populations in addition to being able to address inequalities between nations (Lee *et al.*, 2011; Lori, 2008). Despite the global nature of public health however, the object of global public health knowledge may shift depending on the position and interests of the actors involved for a number of reasons (Rowson *et al.*, 2012). For example, specificity of location (ie context) and positionality of the actors may have implications on the significance placed on a specific public health issue as well as solutions to it. Hence Rowson and colleagues (2012) proposed a balanced and flexible teaching approach that covers both similarities and diversities.

Brain drain versus brain bridging: IOC can offer University a competitive advantage on the global market, which can in turn facilitate permanent emigration, particular when students graduating from overseas universities decide to stay in the foreign countries to pursue their careers and residence (Meyer and Brown, 1999). Unfortunately disproportionate mobility flows that have resulted in a brain drain from developing to developed countries with the young, well educated, healthy individuals being the most likely to migrate (Dodani and LaPorte, 2005; Krstic, 2012). This has been observed among healthcare professionals including those in public health and has resulted in the weakening of health systems in developing countries. Public health training that is focused on local needs have been proposed as one way to curb the brain drain. However, a counter argument has been that health problems are continually evolving even at local level and public health professionals need to have broad public health knowledge to be able to deal with these changing public health priorities. Moreover, the 'brain drain' scenario can be analysed as 'brain circulation' or 'brain bridging' with the graduating cohorts who choose to stay in foreign countries forming a very important part of human capital pragmatically relevant to their home countries (Shin and Choi, 2015). Countries have to have mechanisms to harness this human capital.

DISCUSSION

Internationalization of the public health curriculum, overall, can enable Universities and individuals to meet both their local and global social accountabilities and responsibilities. However, the way that IOC is defined, the internationalization model and pedagogical approach taken have an impact on the benefits that can be realised from it.

It is clear that study of public health should not limit itself to the study of the developing world- an approach that has characterised much of the international health/ global health discourse. Bozorgmehr (2010) tries to address this issue by offering an alternative definition, that is, supra-territorial determinants which impact on and thereby link social determinants of health *anywhere* in the world; but not necessarily everywhere or to the same extent.

In addition, it is striking how the literature on internationalisation of public health curriculum is dominated by discussions around developed versus developing country context- yet these are not homogeneous groups. For example, the burden of disease and priorities in South Asia would be different from those in Africa. Even within Africa the burden of disease varies by regions and countries within regions. These differences also exist amongst developed countries. Public health curricula need to recognize these differences and context specificity in addition to looking at similarities (Rowson *et al.*, 2012).

Although this review has focused on IOC it is clear that this is really intertwined with recruitment processes, ie global competition for talent and students among universities. For example, the program's outlook can enhance competitive advantage for recruitment, and in turn if the recruitment strategy is able to attract students from a diverse range of geographical, social, cultural and professional backgrounds that can have a positive impact on IOC.

The review incorporated a number of recommended practices including conducting

systematic searches of literature and transparency in reporting the flow of articles within the review (Centre for Reviews and Dissemination, 2009; Moher *et al.*, 2009). However, selection of articles for inclusion, data extraction from the articles and analysis was conducted by one person (instead of the recommended two or more people performing these tasks independently) due to limited resources. There is therefore a potential of selection bias where relevant studies were excluded or accidentally missed and the subset of studies included does not reflect the entire evidence base (Clarke and Stewart, 1994). Assessment of the quality of studies included in the review would assist in the interpretation of the results. Whitemore and Knafl (2005) propose a strategy which includes considering the authenticity, informational value, representativeness of sources, and methodological quality of each document included in the review. However, the articles considered for this review were very diverse which required the use of many different quality assessment strategies and the resources were not available to enable this. Therefore the quality of included studies was not assessed.

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APPENDIX 1: SEARCH STRATEGIES**Medline 1946 to 22 January 2017**

1	global health.mp. or *Global Health/	46063
2	public health.mp. or *Public Health/	234530
3	international health.mp.	2347
4	community health.mp.	71730
5	world health.mp.	63737
6	or/1-5	389592
7	internationaliz*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	440
8	internationalis*.mp.	240
9	globaliz*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	3013
10	globalis*.mp.	744
11	or/7-10	4318
12	curriculum.mp. or *CURRICULUM/	77806
13	*Learning/ or learn*.mp.	337345
14	teach*.mp. or *Teaching/	180678
15	educat*.mp.	734501
16	or/12-15	1093967
17	6 and 11 and 16	284

Embase 1974 to 19 January 2018

1	global health.mp. or *global health/ or *public health/	75633
2	public health.mp.	360671
3	international health.mp.	3317
4	community health.mp.	47588
5	world health.mp.	127814
6	or/1-5	526863
7	internationalis*.mp.	340
8	internationaliz*.mp.	627
9	globaliz*.mp.	4617
10	globalis*.mp.	1244
11	or/7-10	6613
12	curriculum.mp. or *curriculum development/ or *curriculum/ or *teaching/	124190
13	teaching.mp.	208913
14	learning.mp. or *learning/	379631
15	*education program/ or *education/ or educat*.mp.	1165476
16	or/12-15	1549878
17	6 and 11 and 16	376

PsycINFO 1967 to January week 3 2018

1	*Global Health/ or global health.mp.	3367
2	public health.mp. or *Public Health/	44925
3	community health.mp. or *Community Health/	6507
4	international health.mp.	539
5	world health.mp.	10715
6	or/1-5	62775
7	*Globalization/ or internationalis*.mp.	7169
8	internationaliz*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	1622
9	globalis*.mp.	1287
10	globaliz*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]	12638
11	or/7-10	14740
12	curriculum.mp. or *CURRICULUM/ or *CURRICULUM DEVELOPMENT/	54935
13	*Learning/ or *Teaching/ or learn*.mp.	480821
14	*Educational Programs/ or teach*.mp.	285534
15	educat*.mp.	529731
16	or/12-15	947718
17	6 and 11 and 16	144