

Nursing education partnerships between western high-income universities and non-governmental agencies and low-income local agencies: A scoping review of the literature



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ABSTRACT

Nursing education partnerships between high-income and low-income countries have increased over recent decades, aiming to advance health care across borders. In order to understand the current state of these partnership efforts, we completed a systematic scoping review of nurse education partnerships. From peer-reviewed literature, grey literature, program websites, and web announcements, references describing 28 international nursing education partnerships were identified. Partnerships ranged by geographic location of partners (mainly among the low-resource countries), types of organizations, clinical specialty focus, and types of degree or certification conferred. Additionally, references ranged in the amount of information provided, ranging from comprehensive program evaluations to brief descriptions. This overview of available information on nursing education partnerships provides evidence that efforts across the globe are underway and details the various programs. There is need for more systematic evaluation and refinement of guidelines regarding best practices for established and emerging nursing educational partnerships.

Introduction

Nursing education partnerships between high-income nations and low-income countries (LIC) exist across many regions, and among varied partners. Over the past decade, an increasing number of university-based nursing programs in high-income, western-based countries have committed to advancing health care across borders and creating a globally minded citizenry, resulting in an increased number of international nursing education partnerships (Bell et al., 2014; Bender, Aga, Demissie, & Cherie, 2016; Berland, Richards, & Lund, 2010; Binagwaho et al., 2013; “Botswana - American International Health Alliance”, 2016; Cerino, 2009; Evans, Razia, & Cook, 2013; “FNU Partners with Nursing School in Haiti”, 2016; “Global Healthcare Breakthrough”, 2012; Gray & Goodchild, 2012; “Haiti: Institutional Strengthening Through Advanced Nursing Training (2010-2014)”, 2018; Johnson, Ghebreyohanes, Cunningham, Kutenplon, & Bouey, 2007; Lev, Lindgren, Pearson, & Alcindor, 2013; “Liberia: Filling the Health Care Workforce Gaps (2012-Current)”, 2018; McConnell et al., 2017; O’Connor et al., 2016; Pallangyo et al., 2012; Palmer-Wickham, Beattie, Boudreau, & Fitch, 2010; Rumsey, Catling, Thiessen, & Neill, 2017; Street, Mandel, Bermudez, & Man, 2017; “UCSF School of

Nursing and Global Health in Malawi”, 2016; West, Dawson, & Homer, 2017). There is a trend for programs to establish long-term partnerships and degree-conferring programs, transcending the traditional short-term training in a clinical specialty for nurses (Baumann & Alexandre, 2016; Bell et al., 2014; Bender et al., 2016; Berland et al., 2010; Binagwaho et al., 2013; “Botswana - American International Health Alliance”, 2016; “FNU Partners with Nursing School in Haiti”, 2016; Johnson et al., 2007; “Liberia: Filling the Health Care Workforce Gaps (2012-Current)”, 2018; Mbalinda, Nabirye, Ombeva, Brown, & Leffers, 2017; Street et al., 2017; “UCSF School of Nursing and Global Health in Malawi”, 2016). Programs are led by university faculty, some in conjunction with non-governmental organizations and charitable organizations, yet often these programs exist in silos within a university or college and act independently, with limited or no connection to one another. Professional associations such as the Global Nursing Caucus and the Consortium of Universities for Global Health provide opportunities for collegial networks for nursing faculty at their annual meetings, where members learn of programs and partnerships underway across the globe. Beyond these limited face to face opportunities, there is limited opportunity to realize the many programs working across the globe. To fully understand and record the reach,

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Table 1
Overview of international nursing education partnerships

#	Program	Citation	Partners	Methods description	Educational program	Program outcomes	Funding	Length of program
Caribbean and Central America								
1	Telehealth community health nurse education in Guatemala	McConnell et al., 2017	AgroAmerica (local agricultural company in Guatemala) and Center for Global Health at Colorado School of Public Health (USA)	Description and program evaluation (pretest-posttest) of pilot 10-lecture series via telehealth covering child health topics	Non-degree; community health nursing education telehealth series	7 learners completed the program; high satisfaction was reported in learners and instructors; there was evidence of knowledge gain by learners	Funded by AgroAmerica (Guatemalan agricultural company)	Described partnership from 2014-2016
2	Nursing education certificate program in Haiti	Lev et al., 2013	Faculte des Sciences Infimieres de l'Universite Episcopale d'Haiti in Leogane and Rutgers University College of Nursing (USA)	Description and evaluation (post-program surveys) of pilot blended onsite and online nursing certificate program	Certificate in nursing education	Participants reported the objectives of the program were that presentations were easier to understand than the textbook, students learned more when working collaboratively with classmates, there were cultural differences in expectations, regular communication and collaboration between faculty and students was important	No funding or cost information	Described single pilot program; unclear length of program or sustainability
3	Graduate nursing program in Haiti	Baumann & Alexandre, 2016	Haitian Nurses Association, Faculte des Sciences Infimieres de l'Universite Episcopale d'Haiti in Leogane, and Promoting Health in Haiti (USA)	Description and evaluation (qualitative focus groups and interviews) of ~2-year graduate nurse education program	Master's degree in nursing	10 graduates reported on issues such as pressing on amid uncertainty, learning amid competing responsibilities, enjoying support while learning new skills, and barriers of language and cultural differences between learners and educators	Funded by Promoting Health in Haiti (USA-based non-government nursing organization)	Partnership began in 2013 and reported on first cohort graduating in 2015
4	International Nurse Faculty Partnership Initiative in Haiti	Street et al., 2017	International Nurse Faculty Partnership Initiative Haitian Ministry of Health, University of Notre Dame d'Haiti, Regis College (USA), and Partners in Health (USA)	Description and evaluation (post-program, qualitative) of Master's nursing education program to promote professional development for nurses in Haiti	Master's degree in nursing	24 interviews with faculty, deans and community leaders were conducted; salient themes included increasing use of leadership skills; enhanced respect from allied professionals, community members, peers and managers; improved competency in developing syllabi and curriculum; and increasing classroom engagement	Funded by Partners in Health (USA-based non-profit organization)	Partnership began in 2007 and is ongoing
5	Nursing education program in Haiti	Website ("FNU Partners with Nursing School in Haiti", 2016)	Faculte des Sciences Infimieres de l'Universite Episcopale d'Haiti in Leogane and Frontier Nursing University (USA)	Description of Bachelor of science in nursing program, and nurse-midwifery program, and family nurse practitioner program; assistance with curriculum development and distance education	Bachelor's degree in nurse midwifery	Partnership began in 2015, nurse-midwifery program to launch in late 2016; no outcomes specified (online webpage description only)	No funding or cost information	Partnership began in 2015; unclear length of program or sustainability
6	Infectious disease nursing certification in Haiti	Website ("Haiti: Institutional Strengthening Through Advanced Nursing Training (2010-2014)", 2018)	Institutional Strengthening Project, Haiti University of Notre Dame d'Haiti nursing and medical schools, four Haitian hospital partners (Foyer St. Camille, St. Bonifant, Sacre Coeur-Milot, and St. Damien), Catholic Relief Services (USA),	Description of partnership to provide post-graduate training to nurses, developed infectious disease training curriculum for Haiti's principal nursing school, with basic certification training program; using train-the-trainer model	Certificate in infectious diseases nursing	Initial cohort of 6 nurse faculty instructors in 2011; 70 nurses enrolled in the certificate program; with each cohort, the pass rate, scores and pre-post test results improved; nurse graduates reported satisfaction with training and gained knowledge and skills	Funded by the Centers for Disease Control (CDC; USA governmental agency)	Partnership was funded from 2010 to 2014

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Table 1 (continued)

#	Program	Citation	Partners	Methods description	Educational program	Program outcomes	Funding	Length of program
Africa								
7	Nursing degree program development in Botswana	Website ("Botswana - American International Health Alliance", 2016)	Institute for Health Sciences in Gaborone, Ohio University College of Health Sciences (USA), and American International Health Alliance (USA)	Description of partnership to provide Master's in nursing education to local educators to upgrade current nursing diploma program to a full degree program	Master's degree in nursing	Team of 4 to 6 Botswana faculty pursuing Masters' degrees with Ohio University aimed at improving quality of teaching to implement degree program; no outcomes specified (online webpage description only)	No funding or cost information	Partnership between 2013 and 2015
8	Graduate education for nursing in Eritrea	Johnson et al., 2007	University of Asmara and Stony Brook University (USA)	Description and evaluation (post-program, qualitative evaluation) of a distance education and onsite clinical support for advanced practice nursing graduate program	Master's degree in nursing	10 graduates and faculty reported limitations with technology, suboptimal oversight of clinical setting, and discordance between curriculum and realities of Eritrea health care system; graduates were highly successful academically and clinically; high satisfaction was reported by graduates and all 10 graduates were recruited to serve as nurse educators	Funded by United States Agency for International Development (USAID; USA governmental agency)	Partnership began in 2004 for four semester-programs; unclear length of program or sustainability
9	Master's in nursing education research component in Ethiopia	Bender et al., 2016	Toronto Addis Ababa Academic Collaboration Addis Ababa University and University of Toronto (Canada)	Description of cooperative development of the research component (research course and thesis project) in the Master of Science in Nursing program	Master's degree in Nursing	Onsite teaching and distance thesis support and communication was provided; course schedule, content and teaching had ongoing change based on programmatic demands and infrastructure challenges; experience reflected two-way collegial exchange and a successful counterpart relationship	Financial support for teaching trips from Academics Without Borders (USA non-governmental organization)	Partnership began in 2007, development and teaching conducted between 2010 and 2013
10	Diploma in emergency nursing education program in Ghana	Bell et al., 2014	Kwame Nkrumah University of Science and Technology, Ghana College of Physicians and Surgeons, Komfo Anokye Teaching Hospital, and University of Michigan (USA)	Description of initial needs assessment and development of emergency nursing program curriculum including a 30-module systems-based program and "sandwich" delivery model allowing students 2 weeks of curriculum instruction during employment leave	Diploma in emergency nursing	Needs assessment identified lack of emergency nursing knowledge; 24 nurses completed the program the first year and 3 served as trainers for the second cohort	Funded by Fogarty International Center of the National Institutes of Health (USA governmental agency)	Partnership began in 2009 and reported about 2013 cohort
11	Oncology nursing education workshop in Kenya	Palmer-Wickham et al., 2010	Aga Khan University Hospital and Odette Cancer Centre Nursing Division at Sunnybrook Health Sciences Centre (Canada)	Description and evaluation (pre-test, ongoing, and post-test assessments) of 5-day oncology nursing workshop focused on chemotherapy administration using the "twinning" model	Non-degree; oncology nursing workshop	67 participants completed the workshop; assessments identified full engagement of participants, positive feedback and improvement in learning objectives	No funding or cost information	Described single twinning experience and workshop; unclear length of program or sustainability
12	Primary Health Care Specialist Nursing	Website ("Liberia: Filling the Health Care	Mother Patem College of Health Sciences, Catholic	Description of development and implementation of post-graduate training module for	Master's degree in primary health care specialist	Developed Master's program framework for Liberian healthcare context; no outcomes	No funding or cost information	Partnership began in 2012 and is ongoing

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Table 1 (continued)

#	Program	Citation	Partners	Methods description	Educational program	Program outcomes	Funding	Length of program
	Master's program in Liberia	Workforce Gaps (2012-Current)", 2018)	Relief Services, and University of Maryland (USA)	neonatal nurses, Primary Health Care Specialist Master's program		specified (online webpage description only)		
13	Intensive nursing leadership training in Liberia	Website (Gray & Goodchild, 2012)	University of Liberia, Dogliotti School of Medicine, Tubman National Institute of Medical Arts, University of Massachusetts (USA), and Indiana University (USA)	Description of partnership including intensive nursing leadership training sessions to improve the quality of science training for nurses and midwives	Non-degree; training in nursing and midwifery education leadership	Description of multidisciplinary team focused on collaborating to lead nursing leadership trainings; no outcomes specified (online webpage description only)	Funded by Higher Education for Development (USA non-profit organization) and USAID (USA governmental agency)	Partnership began in 2007, ongoing as of 2012
14	Global AIDS Interfaith Alliance (GAIA) nursing scholarship program in Malawi	Schmiedeknecht et al., 2015	Malawi Ministry of Health, Christian Health Association of Malawi, and Global AIDS Interfaith Alliance (USA)	Description and evaluation (mixed-methods) of nursing scholarship program that includes preservice scholarships requiring service agreements of 4–5 years of work post-grad in public sector; provides follow-up services and support through service agreement	Non-degree; nursing scholarship provision	Program has awarded over 400 scholarships to nursing students; current analysis includes 30 interviews and 52 surveys from nursing graduates and focused on workforce retention; themes from responses included challenges of lack of resources and high nurse-to-patient ratios, low salaries, poor housing options, and lack of appreciation as reasons to leave public sector	Global Aids Interfaith Alliance (GAIA) is funded by USAID (USA governmental agency)	Partnership began in 2005 and reported on program participants in 2014
15	eHealth and nursing informatics education in Malawi	O'Connor et al., 2016	Mzuzu University, University of Manchester (UK), Imperial College London (UK), University College Dublin (Ireland), and Queen's College City University of New York (USA)	Description of partnership including capacity building, eHealth research center, online repository of materials, and educational workshops	Non-degree; training and support in nursing informatics	Capacity building through faculty gaining expertise in nursing informatics and development of initiative for eHealth research and education; mobile device research opportunities have increased	Funding from Irish Health Service Executive (HSE), Musgrave Charitable Trust (Ireland non-profit organization), the Strategic Research Fund at University College Cork, and Irish Fulbright Commission (USA governmental organization)	Described single educational workshop partnership; unclear length of program or sustainability
16	Nursing education Doctoral program in Malawi	Website ("UCSF School of Nursing and Global Health in Malawi", 2016)	University of Malawi Kamuzu College of Nursing, University of Alabama-Birmingham (USA), and University of San Francisco School of Nursing (USA)	Description of Fulbright scholar collaboration partnership with projects including developing the first PhD program in nursing in east Africa	Doctor of philosophy degree in nursing	Collaboration between scholars included developing PhD in nursing program, but no further details were reported; no outcomes specified (online webpage description only)	No funding or cost information	Partnership began in 2011 and report cohort planned for 2012
17	Human Resources for Health Program in Rwanda	Binagwaho et al., 2013	Human Resources for Health Program Rwanda Ministry of Health, Clinton Health Access Initiative (USA), and multiple Rwandan and US affiliates (including 16 academic medical centers and 6 schools of nursing)	Description of program utilizing a twinning model to facilitate curriculum development, clinical pedagogy, service delivery, and research capacity nursing degrees and diplomas	Diploma and bachelor's degree in nursing	Anticipated outcomes from the program will include nursing qualification improvements from secondary school to 3-year diplomas or from 3-year diplomas to Bachelor's degrees via online training platform; goal of increasing nurses and midwives in Rwanda	Funding from U.S. President's Emergency Plan for AIDS Relief (PEPFAR), USAID (USA governmental agency) and Global Fund to Fight AIDS, Tuberculosis and Malaria (Switzerland non-profit organization)	Partnership began in 2012 and is ongoing
18	Nursing and medical education partnership in Tanzania	Pallangyo et al., 2012	Muhimbili University of Health and Allied Sciences and University of California San Francisco (USA)	Description of partnership for multiple medical education activities, including curriculum revision and faculty development in a 3-year Academic Learning Project	Non-degree; health professionals' education support	Partnership targeting specific institutional needs; focus is on education and curricula across medical professions and programs, preparing students to deliver treatment as teams, and working with wide range of individuals at the institutions	Funding from Bill & Melinda Gates Foundation (USA non-profit organization)	Partnership began in 2005, funded from 2008 to 2011
19		Mbalinda et al., 2017						(continued on next page)

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#	Program	Citation	Partners	Methods description	Educational program	Program outcomes	Funding	Length of program
	Nursing education program in Uganda		Mulago National Referral Hospital, Makerere University and Health Volunteers Overseas (USA)	Description of partnership to improve pediatric nursing curriculum, fundamentals of nursing course, introduce a critical care curriculum, and establish a Master's degree program	Master's degree in nursing-midwifery and women's health	Collaborative curriculum development and Master's program implementation with first cohort in 2012; producing nurse educators and researchers, and the World Health Organization candidates for doctoral studies in nursing, and clinical practice skills	Funded by the Improving Nursing Education and Practice in East Africa program (European Union) and describes first cohort in 2012	Partnership began in 2000; project to develop Master's program began in 2008 and describes first cohort in 2012
20	Asia and Oceania Bachelor of nursing education in Bangladesh	Berland et al., 2010	International University of Business Agriculture and Technology and Mid-Main Community Health Centre (Canada)	Description of partnership with first Bachelor of Science in Nursing program at a private university in Bangladesh; ~10–15 international faculty volunteers teach courses annually and develop course material	Bachelors' degree in nursing	Partnership benefitted Canadian instructors and students by providing more international experience, cultural competence, and enriched clinical exposure; increasing supply of well-trained nurses; success factors included wider networking, courses designed for learners in developing countries, and building capacity within local universities	Describe fund-raising and volunteering to support the project, but no further details on cost or funding	Description of degree program beginning in 2003, and partnership is ongoing
21	Nursing Faculty Development Programme in India	Evans et al., 2013	Nursing Faculty Development Programme Government College of Nursing in Hyderabad and School of Nursing, Midwifery and Physiotherapy, University of Nottingham (UK)	Description and evaluation (post module and post-program discussion) of train-the trainer model with modules over 2-year period for nursing faculty development; including needs assessment, curriculum development, planning, strategic leadership involvement; modules were delivered for 7–10 days over a 2-year period using experiential approaches	Certificate of nursing education	25 faculty members and 6 clinical staff attended modules; positive evaluations of program delivery were reported by participants and facilitators, participants reported improved confidence and motivation with teaching; assessments also noted lack of instructors' familiarity with Indian education and nursing context; challenges include heavy workloads, lack of resources, capacity and infrastructure to focus on learning, and no mechanism for ongoing mentorship or support	Support from Nursing Faculty Development Programme (collaboration between State Government and an international non-governmental organization)	Partnership between 2008 and 2011
22	Maternal and Child Health Initiative in Papua New Guinea	West et al., 2017	Maternal and Child Health Initiative Five educational institutions in Papua New Guinea and University of Technology Sydney (Australia)	Description and evaluation (qualitative interviews) of 4-year partnership including international educators, 3-yearly national midwifery education workshops with simulated teaching, supporting systems and process changes, and tele-conferences and ongoing mentoring	Non-degree; workshops for midwifery education	13 local and 13 international educators were interviewed; themes included enabling factors such as knowing your own capabilities, importance of building relationships, and motivation to improve maternal and newborn survival; constraining factors included lack of consensus regarding capacity building strategies, interpersonal working relationships, cultural adaptation, and few local educators	No funding or cost information	Partnership began in 2012 and describe evaluation through 2015

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Table 1 (continued)

#	Program	Citation	Partners	Methods description	Educational program	Program outcomes	Funding	Length of program
23	Nursing and midwifery leadership program in the South Pacific	Rumsey et al., 2017	Australian Award Fellowship Program South Pacific Chief Nurses and Midwifery Officers Alliance and University of Technology Sydney (Australia)	Description and evaluation (qualitative interviews) of a health system strengthening 2-week leadership program to improve education by mentorship of nursing and midwife leaders	Non-degree; nursing and midwifery leadership program	34 participating nurses and midwives were interviewed; themes identified included requiring country-wide objectives to improve quality of care, learning how to be a leader as an important aspect of the program, negotiating barriers to participating in the program, and having effective mentorship as highly beneficial	Funded by the Department of Foreign Affairs and Trade (Australia, governmental department)	Partnership began in 2009; describes program between 2013 and 2015
24	Distance learning for nursing in Vietnam	Lewis et al., 2016	Vietnamese Nurses Association and Queensland University of Technology School of Nursing (Australia)	Description and evaluation (post-program survey) of partnership to deliver a distance learning program to improve nursing capacity and to develop a new national nursing curriculum (four-year undergraduate curriculum); including 6 distance learning and teaching modules and online discussion groups	Non-degree; nursing education program	175 nurse academics were enrolled and 102 completed the program fully; 112 nurse academics responded at the end of the program and identified modules as well-designed, easy to learn from, and useful for professional practice; most respondents indicated they changed their academic practice as a result of the program, focusing on student centered learning and building a staff community of practice	Funded by Atlantic Philanthropies group (private foundation)	Partnership began in 2007; describes program between 2009 and 2012
Middle East	25 Nursing and medical education support in Afghanistan	Website (Cerinno, 2009)	Afghan Armed Forces Academy of Medical Sciences, Afghanistan National Army Hospital, Kabul Medical University, and University of Nebraska Medical Center (USA)	Description of partnership to help evaluate and improve medical and graduate medical education programs in nursing with train-the-trainer models; establishing visiting professor program	Non-degree; nursing education	Description of collaboration for evaluating and improving medical and medical education programs, including one to two-week rotational visits from US faculty; no outcomes specified (online news announcement from Aug. 2009)	Describe funding coming from the US government, military and civilian sources	Partnership began in 2009; unclear length of partnership or sustainability
Multiple countries	26 Nursing Education Partnership Initiative (NEPI)	Middleton et al., 2014	Governments and key stakeholders in Ethiopia, Democratic Republic of Congo, Lesotho, Malawi, and Zambia; 19 nursing and midwifery education institutions; 1 nursing council; and President's Emergency Plan for AIDS Relief (USA)	Description of program to build capacity in nursing and midwifery education in Sub-Saharan Africa; focused on ensuring country ownership and partnership, consultative and collaborative planning and capacity building	Non-degree/multiple; nursing and midwifery education	Examples of the variety of efforts at systems, institution, and workforce levels include a master's degree program in nursing and midwifery education in Malawi, a post-graduate certificate in preceptorship, provisions of scholarships for candidates in nursing and midwifery, and specific needs-based training for educational knowledge and skills	Funding from U.S. President's Emergency Plan for AIDS Relief (PEPFAR)	Partnership began in 2011 and is ongoing
27	Global Health Service Partnership (GHSP)	Stuart-Shor et al., 2017	Multiple host country institutions, Peace Corps (USA), President's Emergency Plan for AIDS Relief (USA), and Seed (USA)	Description and evaluation (mixed-methods) of partnership to strengthen medical and nursing education, placing educators in host countries for ~1 year to share educational	Non-degree/multiple; medical and nursing education	Between 2013-2016, 97 nurse and physician educators were placed in 15 academic institutions in Malawi, Tanzania and Uganda, teaching 454 courses and workshops; exemplar	Funded by the Global Health Services Partnership (including Peace Corps, President's Emergency Plan for AIDS Relief and Seed)	Partnership began in 2013 and is ongoing

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Table 1 (continued)

#	Program	Citation	Partners	Methods description	Educational program	Program outcomes	Funding	Length of program
28	Ohio State Greif Neonatal Survival Program in Haiti, Kenya and Ethiopia	Website ("Global Healthcare Breakthrough", 2012)	OSU Greif Neonatal Survival Program Haitian Ministry of Health, WE (formerly named Free the Children), Ethiopian Ministry of Health, Ohio State University (USA), and Partners in Health (USA)	and clinical best practices; goals include deploying medical educators, working with partner institutions to improve learning environments by integrating academic and clinical teaching, and aligning efforts and resources with priorities of local governments and institutions	Educational program	programs include family medicine training (overall improvements were identified with a post-program evaluation), burn and wound care program (conference held in Uganda with positive post-conference evaluations), neonatal resuscitation program (train-the-trainer workshops have trained over 600 healthcare workers), and cervical cancer prevention training (187 healthcare workers completed 1-day training)	Funded by the Greif Packaging Charitable Trust (UK, non-profit organization)	Partnership began in 2012 and is ongoing
				Description of 6-month certification program Helping Babies Breathe and the Neonatal Resuscitation Program for neonatal nursing in Haiti, Kenya, and Ethiopia	Certificate in neonatal nursing	27 participants completed the certificate program by 2016 in Haiti; 65 participants completed the training program by 2016 in Kenya; and 80 participants completed the program in Ethiopia; no outcomes specified (online webpage description only)		

focus, and status of these multiple programs, we conducted a systematic scoping review of nurse education partnerships between western, high-income based universities and non-governmental organizations and LICs across the globe. This scoping review aims to provide a comprehensive presentation of educational partnerships between universities and non-governmental agencies from high-income countries and LIC-based programs that will serve as a resource for those currently working in this field and for future developers of nurse education programs. The detailed summary of the programs (Table 1), will afford readers key knowledge of former and current programs, including location/region, partners, methods, educational program and program outcomes.

Methodology

Systematic scoping review

We conducted a systematic scoping review to identify nursing education programs offered by Western or high-income country universities and non-governmental organizations in partnership with schools of nursing, colleges or universities in LICs. A systematic scoping review (Peters et al., 2015) methodology allows for a comprehensive review of available knowledge that is not limited by rigid research criteria constrained to a narrow scope of peer-reviewed scholarship. This broader search method is suited to this area of inquiry, as many nurse education partnerships and programs are not elucidated in peer-review literature.

We identified peer-reviewed literature, gray literature, program websites, programmatic announcements and news articles in both academic research databases and lay search engines. For academic research databases (i.e., PubMed, CINAHL, Global Health, and Web of Science), we used combinations of the following search terms: nursing education or faculty training, collaboration or partnership, and low-income countries. Specific indexing terms were used in databases when available, such as “education, nursing” [MeSH Terms], “faculty, nursing” [MeSH Terms], “developing countries” [MeSH Terms], otherwise the search terms were included in search queries directly, e.g., “low income countr*”. Only articles in English were included. We also searched Google to identify lay articles or program websites using combinations of the following search terms: nursing education or faculty training, certification or accreditation; international collaboration or partnership; and low-income countries. The search included countries defined as low-income as per the classification of the World Bank (The World Bank, 2018), which specifies 31 low-income countries. Additionally, we searched for identification of programmatic announcements or news articles in Google using specific program names that are well established in the field. Reference lists of all materials were reviewed with a “snowballing” technique to identify further relevant resources (Greenhalgh & Peacock, 2005). No date delineations were used in the searches.

Our initial search procedures resulted in 2707 peer-reviewed references; after duplicates were removed, 2652 references were screened for relevance at the title and abstract level (Fig. 1.). The screening resulted in 41 peer-reviewed articles, published between 1996 and 2017, to be included in the full manuscript review. Additionally, 19 websites or program announcements were identified as relevant through the lay search engine search (i.e., Google). All sources were included if they pertained to nursing and midwifery education/training partnerships located in low-income or low-resourced settings (i.e., India) and were funded or overseen by Western/high income country-based universities (Ambrosio-Mawhirter & Criscitelli, 2018), or non-governmental organizations. Only sources published in English were included. Study abroad or high income country-based nursing education programs with global nursing opportunities, non-nursing programs (e.g., other medical professional training besides nursing or midwifery), programs that admit international nurses into educational programs located in high income countries, or programs not involving partnership between a

high-income country-based organization and low-income setting partners were excluded. We selected only the most recent publication to alleviate the risk of duplication. Based on our inclusion and exclusion criteria, 20 peer-reviewed articles and eight websites or program announcements were retained for inclusion in the review, representing a total of 28 partnerships (Table 1).

Findings of results of systematic scoping literature review

Characteristics of programs

As noted in Table 1, half of the partnerships were in African countries ($n = 14$), five were in Haiti and the remaining included partnerships in Central America, Asia and the Middle East. Two sources included descriptions of large-scale partnerships that serve multiple countries (i.e., Nursing Education Partnership Initiative [NEPI] (Middleton et al., 2014), Global Health Service Partnership [GHSP] (Stuart-Shor et al., 2017)), and a final source described a partnership certificate program implemented in Haiti, Kenya, and Ethiopia (“Global Healthcare Breakthrough”, 2012). The high-income country partners included the United States ($n = 21$), Canada ($n = 3$), Australia ($n = 3$), and the United Kingdom ($n = 2$). It should be noted that one program involved multiple high-income country partners: a nursing informatics education partnership in Malawi included partners from the United States, the United Kingdom, and Ireland (O'Connor et al., 2016).

Ten of the included nursing education partnerships represented collaborations between a single organization in a resource-constrained region and a single academic institution from a high-income nation; however, most programs included multiple organizations from both the high-income countries or from the resource-constrained regions. Low-income country, ‘host’ partners generally included the following: national or local universities or colleges; specific medical or nursing schools associated with universities; hospitals; non-profit organizations; or local ministries of health. Of note, initiatives involving multiple countries such as NEPI and GHSP included multiple governmental and academic institution partners across several low-income countries and multiple non-profit organizations from high-income countries including the Peace Corps, President’s Emergency Plan for AIDS Relief, and Seed Global Health (Middleton et al., 2014; Stuart-Shor et al., 2017).

Eleven of the identified programs offered nursing or related degrees; three offered Bachelor’s degrees (BSN) (“FNU Partners with Nursing School in Haiti”, 2016; Berland et al., 2010; Binagwaho et al., 2013), seven were Master’s degrees (Baumann & Alexandre, 2016; Bender et al., 2016; “Botswana - American International Health Alliance”, 2016; Johnson et al., 2007; “Liberia: Filling the Health Care Workforce Gaps (2012-Current)”, 2018; Mbalinda et al., 2017; Street et al., 2017), and one offered a Doctoral level degree (“UCSF School of Nursing and Global Health in Malawi”, 2016). Four programs provided certificates in nursing or in a subspecialty of nursing, such as infectious disease, education, or neonatology (Evans et al., 2013; “Global Healthcare Breakthrough”, 2012; “Haiti: Institutional Strengthening Through Advanced Nursing Training (2010-2014)”, 2018; Lev et al., 2013). Two additional programs provided diplomas (Bell et al., 2014; Binagwaho et al., 2013), one of which offered both a diploma and a BSN. The remaining 12 references included educational workshops or programs and nursing education scholarships (Cerino, 2009; Gray & Goodchild, 2012; Lewis et al., 2016; McConnell et al., 2017; Middleton et al., 2014; O'Connor et al., 2016; Pallangyo et al., 2012; Palmer-Wickham et al., 2010; Rumsey et al., 2017; Schmiedeknecht et al., 2015; Stuart-Shor et al., 2017; West et al., 2017). Five programs included some form of distance education or teleconferencing (“FNU Partners with Nursing School in Haiti”, 2016; Bender et al., 2016; Johnson et al., 2007; Lewis et al., 2016; McConnell et al., 2017), four explicitly used “train the trainer” models (Baumann & Alexandre, 2016; Cerino, 2009; Evans et al., 2013; “Haiti: Institutional Strengthening Through Advanced Nursing Training (2010-2014)”, 2018) and two explicitly used

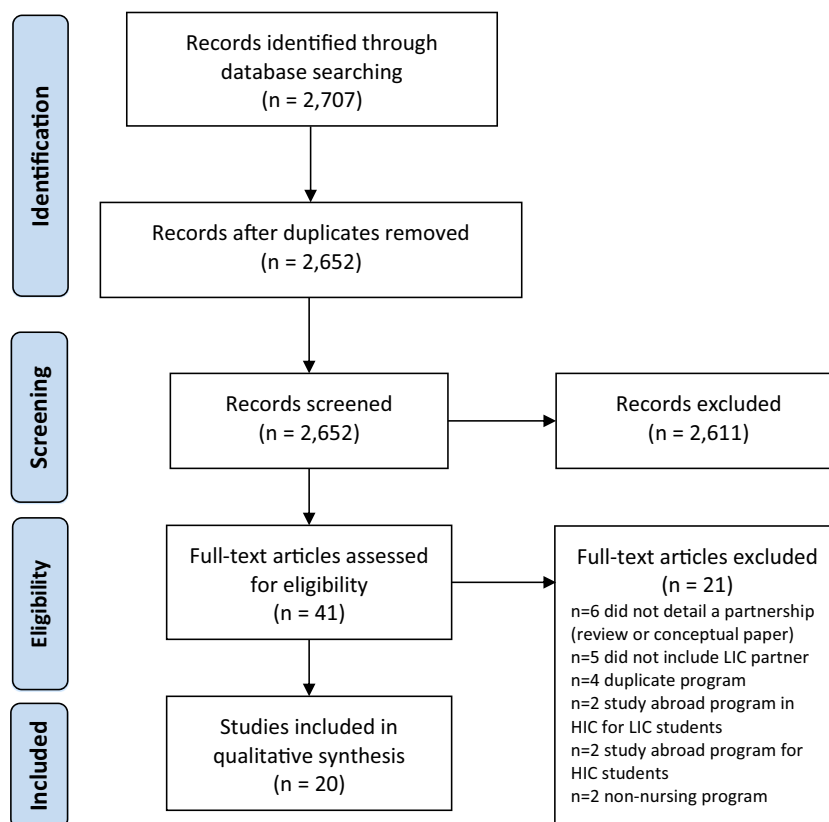


Fig. 1. Flow diagram of search procedures for selection of evidence in peer-reviewed sources.

“twinning” methods (Binagwaho et al., 2013; Palmer-Wickham et al., 2010). Degree conferring and certificate programs varied in their stage of implementation, with some in development, while others report the completion of multiple cohorts.

Funding for the majority of the partnerships and programs came from high income country governmental agencies (Bell et al., 2014; “Haiti: Institutional Strengthening Through Advanced Nursing Training (2010-2014)”, 2018; Johnson et al., 2007; Mbalinda et al., 2017; Middleton et al., 2014; Rumsey et al., 2017); high income country-based non-governmental organizations, non-profits or foundations (“Global Healthcare Breakthrough”, 2012; Baumann & Alexandre, 2016; Bender et al., 2016; Lewis et al., 2016; Pallangyo et al., 2012; Street, Mandel, Man, & Bermudez, 2019); private companies (McConnell et al., 2017); or specify a combination of sources, including non-profit organizations and high income governmental agencies (Binagwaho et al., 2013; Cerino, 2009; Evans et al., 2013; Gray & Goodchild, 2012; O’Connor et al., 2016; Stuart-Shor et al., 2017). Eight references did not indicate funding sources, and there was little description of costs of these programs and partnerships.

Publications, dissemination and program evaluations

Twenty of the programs produced peer-reviewed articles, twelve of which included some form of evaluation (e.g., quantitative surveys, pre-post knowledge tests, individual in-depth interviews). The remaining eight articles were descriptive reviews of or commentaries on the programs, without any systematic evaluation component.

In the twelve peer-reviewed articles with evaluation, evaluation methods included pre- and post-program surveys, qualitative interviews, focus groups, or combinations of the three (Baumann & Alexandre, 2016; Evans et al., 2013; Johnson et al., 2007; Lev et al., 2013; Lewis et al., 2016; McConnell et al., 2017; Palmer-Wickham et al., 2010; Rumsey et al., 2017; Schmiedeknecht et al., 2015; Street

et al., 2017; Stuart-Shor et al., 2017; West et al., 2017). Topics included satisfaction with the program content and instruction, knowledge or skills retained, and process measures such as whether distance-learning platforms were effective and acceptable. Long-term follow-up across any of the evaluations was limited. Healthcare delivery, including quality and safety of patient outcomes, was not evaluated by the programs.

Discussion

Description of programs

We identified 28 nurse faculty partnerships between high income nations and low-income countries across many regions and among varied partners. Efforts for collaborative nurse education partnerships are underway throughout low-income regions, with a noted presence in sub-Saharan Africa and Central America. Long-term accompaniment models, where collaborating partners reside alongside one another over time, exist in nursing programs in Kenya, Malawi, Tanzania, Uganda and Haiti. For example, a partnership in Haiti committed to a ten year period (Street et al., 2019), and the SEED Global Health partnership has engaged with partners for over several years (Stuart-Shor et al., 2017). In general, most of the references indicated engagement with the partnership over several years, though three programs described single workshops or educational sessions suggesting shorter term engagement, (Lev et al., 2013; O’Connor et al., 2016; Palmer-Wickham et al., 2010). Degree-conferring programs dominate the field today, with twelve programs offering diploma through doctoral level credentials for nurses in low-income nations. Clinical specialty certificate programs continue in a wide range of specialties and settings and across regions.

The emergence of degree generating programs, notably in Africa and Latin America is in keeping with World Health Organization’s call to advance nursing education (World Health Organization, 2011).

Earning and holding an academic credential in nursing is thought to be instrumental in advancing the stature of nursing in the health care system (Street et al., 2019), and to improving patient care outcomes (Aiken et al., 2011).

Summary of the program evaluations

Overall, we found great variation in the evaluation data and the level of detail in the descriptions of nursing education partnerships. The peer-reviewed evaluation articles provided the most comprehensive information regarding programs whereas the online resources provided the least. Identification of lessons learned and factors for successful collaboration, such as consistent communication, setting clear-shared goals for stakeholders, and flexibility were included in several of these evaluations. Barriers and challenges faced included cultural differences and resource constraints, such as language barriers, limited resources particularly for research and training, competing responsibilities and limited time. Many low-income partners identified improved nursing education and strengthening healthcare capacity as a result of these partnerships through the development of specific curriculums, ongoing educational programs, or other educational collaboration work in the low-income settings. High-income partners specifically identify the benefit of international experiences for faculty and students, which enriches clinical practice and improves cultural competence (Berland et al., 2010; Lev et al., 2013).

Evaluation gaps

Implementation and process evaluations were conducted for some programs, and are underway among most of the programs, however evaluation of the impact of programs is lacking. This may be because many programs are in the initial stages of implementation and delivery, rendering a thoughtful impact analysis of clinical practice improvement implausible at this time. However, formal evaluation and dissemination of results warrants the attention of educators, program directors, and scholars in the field.

Today nursing education advancement in the classroom is outpacing improvements in nursing clinical care in low-income settings, and there is an urgent call for on-going impact evaluation of new nursing curriculums on the delivery of nursing care and patient care outcomes (Abusalah, Mohamad, & Akram, 2019; Bennett, Grimsley, Grimsley, & Rodd, 2017; Birch, Tuck, Malata, & Gagnon, 2013; Eggertson, 2013; Greenway, Butt, & Walthall, 2019; Gunay & Kilinc, 2018). We acknowledge that additional international partnerships as well as ongoing or completed program evaluations may be underway, however they were not identified in our search of the peer-reviewed or lay literature. We recognize that more partnerships may exist, yet fall outside of this review as participants have not published their work in either peer-reviewed or lay literature.

Central to all partnered relationships is an agreement on the goals of and for program development and implementation, and importantly on the evaluation of the program. Additionally, long-term consideration for health system preparedness and the integration of BSN and MSN educated nurses into the health care system is required. Generating evidence on the impact of BSN and MSN nurses on health care and outcomes, with associated fiscal gains to health systems, is key to ensuring ongoing commitment by country finance ministries.

Limitations

Although we attempted to be comprehensive in our search for partnerships, we acknowledge that additional international partnerships, as well as ongoing or completed evaluation efforts may be underway. Additionally, our search was the inclusion of only English-language references, though a large majority of scientific articles are published in English suggesting most relevant peer-reviewed references

would have been included (Drubin & Kellogg, 2012).

Implications for academic partners

The 28 nursing education programs located in this systematic scoping review provide growing evidence of the progress to advance the nursing profession in low-income countries through the creation of long-term faculty partnerships. Accompanying nursing faculty and students in low-income settings over time affords for the mutually-driven development of nursing curriculum and clinical education, and creates a meaningful and sustained impact on the nursing education and the profession as a whole (Street et al., 2017).

Academic institutions need to attend to student nurse clinical training in low-income and low-resource settings. Clinical bedside training for student nurses and new graduates is deficient in many low-income settings (World Health Organization, 2011), due to a lack of nursing staff and focus on this aspect of education. Promoting preceptorship and on-going mentoring for all levels of nursing professionals, from novice to expert, needs to be a priority of ongoing and future partnerships (Davis, 2013). The concept of mentorship is not fully understood within some cultures and therefore not readily embraced by nurse administrators and leaders and requires careful attention and modification for each setting.

There is broad consensus in the field of global health on key principles for responsible, effective, and ethical programs in creating human resources for health. Highlights include the need for host partner sponsorship, long-term sustained funding, leadership and mentorship, strong relationships based on respect and guided by proper preparation and supervision of visiting professors and educators (Roush, Kurth, & Gerchow, 2013). Conducting a thorough needs assessment and evaluation of the program, with a focus on sustainability and adherence to pertinent legal and ethical standards is required at the outset of partnered programs. Programs need to commit to ongoing development of memorandums of understanding and guidelines for partnerships as this formalization of the agreement ensures accountability for both parties (Roush et al., 2013).

Guidelines for the emerging educational partnerships between HIC and LIC countries and settings must be informed by evidence-based research and policy directives from host countries. Also, a comprehensive strategy to ensure compliance with best practice guidelines is required, given limited regulation and enforcement capacity in the host country (Lasker et al., 2018).

There are ongoing efforts to advance nursing education in low resource settings. We found the published literature and web resources on these efforts to vary in their level of description and evaluations of these partnerships. There is mutual benefit to both partners with faculty and students from the low-income settings gaining advanced education and training and high-income institutions fulfilling priorities of advancing nursing education and research across the globe and creating a global citizenry among faculty and students. Further, high-income partners gain key insights from these partnerships on health care delivery models in LICs, with the potential for clinical and program translation to local and national programs. International nursing education partnerships have great promise for the promotion of nursing education and clinical excellence globally.

Declaration of competing interest

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