

REVIEW

Clinical nursing and midwifery research in Latin American and Caribbean countries: A scoping review

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Abstract

Aim To identify and describe published, nursing-led and midwifery-led, clinical research that has been conducted in Latin America and the Caribbean.

Background Peer-reviewed published research may correspond to and elucidate country's realities, priorities, and needs.

Design A 6-stage scoping review methodology was used to search scientific databases using an applied search strategy.

Data Sources Five databases were searched for articles published in English, Spanish, or Portuguese conducted in a Latin American or Caribbean country between January 1, 2006 and June 14, 2016.

Review Methods Articles were independently considered for inclusion by 2 researchers, data extracted, and study characteristics described.

Results Of 6922 articles identified, 404 were included. The majority were conducted in Brazil (90.6%) followed by Chile (2.5%). Most were nurse-led (95.8%) and were implemented in hospitals (48.6%). Studies frequently explored patient knowledge or characterized patient populations (61.3%) and commonly assessed chronic disease (19.3%) or maternity/child health outcomes (15.9%).

Conclusion Findings revealed a large number of publications but an uneven geographical distribution of nurse-led clinical research and an evident gap of midwifery-related research in Latin America and the Caribbean. Results may be used to build research agendas to promote nursing and midwifery research capacity and further establish evidence-based practice.

KEYWORDS

Caribbean, clinical research, Latin America, midwifery, nursing, scoping review

SUMMARY STATEMENT

What is already known about this topic?

- Nursing and midwifery clinical research can address critical health issues globally.
- A review and synthesis of clinical nursing and midwifery research conducted in the World Health Organization regions of Latin America and the Caribbean is needed.

What this paper adds?

- An overview of the general and methodological characteristics of nursing and midwifery clinical research conducted in Latin America and the Caribbean.

The implications of this paper:

- The regions could benefit from capacity building to promote collaboration, conduct, and disseminate nurse-led and midwife-led clinical research.
- There is a continued need to develop nurse and midwife researchers to advance the science of clinical research and to understand country-specific and regional-specific research priorities.

1 | INTRODUCTION

Globally, nurses and midwives are essential to health across the lifespan (World Health Organization, 2016a). Of the estimated 43.5 million health workers worldwide, 20.7 million are nurses and midwives (World Health Organization, 2016a). Beyond providing direct clinical care, nurses and midwives can and should be part of the clinical research that guides their field (Grady & Edgerly, 2009). The goals of clinical research are to develop or contribute to generalizable knowledge about human health and illness, test methods that might improve our ability to prevent, diagnose, and treat illness, and develop an evidence base that can inform effective care (Grady & Edgerly, 2009). When a nurse or midwife is a principle investigator or lead researcher, they are responsible for designing, implementing, and analysing the research. This enables them to contribute unique patient care experiences and interdisciplinary training to the research that affects both their practice and patients. Nursing and midwifery clinical research can, and should, encompass a wide scope of scientific inquiry and approaches to address the problems and needs of their specific context so that they can improve the health and health care of the populations they serve (Barbosa, 2010). Examples of the types of clinical research led by nurses or midwives can include, but are not limited to, understanding experiences across the lifespan, health promotion and disease prevention, treatment and management of health conditions, and effective services for individuals and communities in diverse settings (American Association of Colleges of Nursing, 2006).

Developing nursing and midwifery research, evidence, and strategic priorities is one of the guiding principles in the World Health Organization's (WHO) Global Strategic Directions for Strengthening Nursing and Midwifery 2016–2020 (World Health Organization, 2016a). It is recognized that generating evidence for practice in one setting may not be applicable in others (Sun & Larson, 2015); thus, it

is recommended that research priorities be developed according to country and regional realities, urgencies, and needs (Ventura, Mendes, Fumincelli, & Trevizan, 2015). Therefore, a first step in developing strategic priorities in research is to assess the current state of the science produced by these professionals within a specific region or countries.

To understand the state of the science of nurse-led or midwife-led clinical research, systematic and scoping reviews have been conducted in numerous countries and regions. For example, researchers have assessed the status and scope of nursing research in the United Kingdom (Rafferty, 2000), Australia (Borbasi, Hawes, Wilkes, Stewart, & May, 2002), Turkey (Ozsoy, 2007), Germany and the European Context (Hackmann, 2000), Jordan (Khalaf, 2013), nursing research related to diabetes in Nordic countries (Iversen et al., 2016), and in all of the African countries (Sun & Larson, 2015). These studies highlighted various levels of progress, development, and influence of nursing and midwifery research on health in their respective locations. However, no study was identified appraising the nursing-led or midwifery-led research in the regions of Latin American or the Caribbean.

Scoping reviews, designed to comprehensively identify extant literature in a particular domain, provide a broad overview of the nature of the research, and identify areas for future study, can be an informative process when little is currently known (Armstrong, Hall, Doyle, & Waters, 2011). Thus, as part of a collaborative effort to move nursing and midwifery research forward, the authors conducted a scoping review to identify all peer-reviewed published nursing and midwifery clinical research carried out in the Latin America and Caribbean regions in the preceding 10 years to summarize existent research. The overarching research question was as follows: what are the general and methodological characteristics of this body of clinical research and what do those characteristics tell us about the state of the nursing and midwifery science in these regions? Results from this review will be used for a next phase Delphi study to establish international expert consensus on priority research focus areas, which will then be incorporated into a planned participatory conference to convene nursing and midwifery scientists in these regions.

2 | REVIEW METHODS

2.1 | Aims

The aim of this review was to identify and describe published peer-reviewed, nursing-led and midwifery-led, clinical research conducted in Latin America and the Caribbean.

2.2 | Design

We carried out a scoping review of the scientific literature by using 6 established stages (Arksey & O'Mally, 2005; Armstrong et al., 2011; Levac, Colquhoun, & O'Brien, 2010) and following the guidelines set forth in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses standards (Moher, Liberati, Tetzlaff, Altman, & Group, 2009). The stages included the following: establish research question(s); identify relevant studies; select studies; chart the data; collate, summarize, and report the results; and a 6th consultation step, to include expert commentary and feedback on obtained results.

2.3 | Research team

The team consisted of interdisciplinary researchers from Columbia University School of Nursing, a US-based designated Pan American Health Organization/WHO Collaborating Center (PAHO/WHOCC), in collaboration with PAHO/WHOCCs in Latin America and the Caribbean. Members included nursing faculty, research fellows, national and international graduate students, and research scholars from Brazil. Team members were bilingual in English/Spanish (S.I., S.S., and B.L.) or English/Portuguese (I.S., R.F., and F.S.). Weekly team meetings were held to review screening, data extraction, and coding during data analysis. Nursing faculty from PAHO/WHOCCs in Jamaica and a site in Chile reviewed the protocol (described below) and provided expert feedback and commentary on findings as part of the consultation step.

2.4 | Search methods

Studies were identified principally by systematically searching electronic databases. A search strategy was developed with the assistance of a health science information specialist and included the following key terms: "nursing," "midwife," "South America," "Latin America," the "Caribbean," and each of the 33 country names. The search strategy was carried out in BVS, LILACS (Latin American and Caribbean Health Sciences Literature), CINAHL, PubMed, Embase, and OVID Medline. The complete search strategy is listed in Appendix A.

Articles written in English, Spanish, or Portuguese, published between January 1, 2006 and June 14, 2016 were considered. Dates were selected based on prior scoping reviews restricting searches to 5 to 10 years (Bassalobre Garcia & Reveiz, 2015; Borbasi et al., 2002; Sun & Larson, 2015) and to narrow the search to only include current research.

Inclusion criteria were as follows: (1) original research conducted in 1 or more of the 33 countries in Latin America and the Caribbean defined by the WHO region of the Americas (<http://www.who.int/about/regions/amro/en/>), (2) research conducted by a nurse(s) or midwife in any country (determined by authorship with RN/RM credentials in title page or an affiliation with school of nursing/midwifery, nurses or midwives did not have to be from, or residents of, a certain country), (3) clinical research that was defined as research conducted at the individual patient or client level that included at least 1 patient-related outcome, and (4) included a full abstract. The definition of midwife-led research was modified following preliminary review of articles because so few articles were initially identified. Thus, to form a comprehensive picture of the literature, any study where a midwife either was an author or involved in the intervention was included. Clinical research was defined broadly from Wilson and Cleary's taxonomy of biomedical and health-related quality of life outcomes (Wilson & Cleary, 1995) and Walton's attributes of outcome assessment (Walton et al., 2015). Accordingly, research examining quality of life or perceptions of health using subjective measures were included. Studies that measured biological or physiological factors (eg, genetic biomarkers) or assessed physical, behavioural, psychosocial, emotional, or psychological symptoms were also included.

Articles were excluded if they (1) were not conducted in a South American, Latin American, or Caribbean country; (2) did not assess a patient outcome (eg, pedagogical, organizational, workforce, or policy research); (3) were case studies, reviews, commentaries, discussion papers, or editorials; or (4) did not have an abstract. Studies focusing on nursing diagnoses were included if patient-related clinical outcomes or patient symptoms were measured. Reference management software (EndNote, Thomson Reuters, and Covidence©, www.covidence.org/) was used to organize citations, remove duplicates, and screen for inclusion criteria. Studies found in more than 1 database were considered only once. Figure 1 illustrates the search procedure that was followed.

2.5 | Search outcome

A total of 6922 references were obtained, of which 1505 were eliminated as duplicates. A process of discrimination was then carried out by means of review of titles, abstracts, and a search for credentials and school/health care organization affiliation within the full text of the articles as author affiliation and credentials are not typically found in the abstract. The full text of the remaining 561 articles were then further screened, which led to the exclusion of an additional 157 articles (did not include a patient outcome [83, 52.8%], were not led by nurse or midwife [62, 39.5%], or were not conducted in a Latin American or Caribbean country [12, 7.6%]) and a final 404 studies included in the review.

2.6 | Data abstraction

The variables studied included the general and methodological characteristics of the study based on scoping review recommendations (Armstrong et al., 2011), prior nursing research reviews (Bassalobre Garcia & Reveiz, 2015; Borbasi et al., 2002; Sun & Larson, 2015), research questions, and by evaluating a subset of included studies (233 full text) to iteratively develop and refine the coding scheme for each category. Consensus of categories and subcategories was met by discussion (Sandelowski, 2010).

General characteristics included the following:

- Number of articles published per year
- Nurse-led or midwife-led
- Country where research took place
- Language(s) in which study was published

The methodological characteristics included the following:

- Study design type, with 2 categories: descriptive nonexperimental and experimental or quasi-experimental
- Study setting, with 7 categories: hospital, community, clinic, long-term care facility, health department/dataset, multiple, or not specified
- Study sample type, with 14 categories: adult, elderly, women, and neonatal/infant among others (see Table 2 for full list)
- Sampling strategy, with 2 categories: nonprobabilistic (eg, convenience sampling) and probabilistic (eg, random sampling)



PRISMA 2009 Flow Diagram

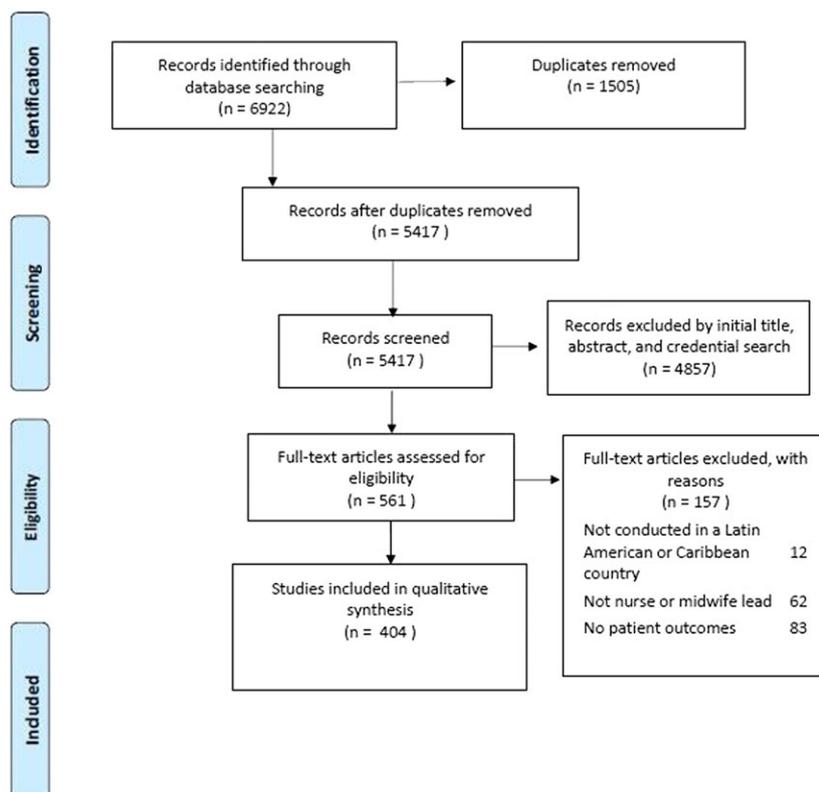


FIGURE 1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram

- Sample size
- Funding source reported and source (eg, internal governmental, external governmental, and nongovernmental organization)
- Author affiliation with university or organization outside of country of origin of the study
- Main topic of study, with 7 categories: (1) experience or knowledge, (2) characterizing patients or populations, (3) treatment and management, (4) nursing/midwife practice or assessment, (5) program evaluations, (6) hospital services, and (7) epidemiology or surveillance (see Table 2 for definitions and examples of each topic)
- Disease conditions: 30 disease or condition categories (eg, cardiovascular disease, substance abuse, and adverse medical events) (see Table 3 for full list)

We noted multiple articles where the manuscript was reported as extracted from a student's, masters, or doctorate thesis and added a category to report these findings during subset analysis. Additionally, the following variables were only extracted in the subset analysis because of inconsistencies in reporting sampling strategy, coauthor with international affiliation; studies derived from a student's, masters, or doctorate thesis; and funding source.

2.7 | Data analysis/synthesis

Analysis was carried out in 2 stages because of the large number of studies: first to develop and refine coding scheme (described above)

and second to recode with final coding scheme. Five authors (S.I., S. S., B.L., I.S., and R.F.) were involved in coding. To validate the data extraction process, each reviewer completed data extraction on a set of articles and findings were reviewed as a group to reach agreement during weekly meetings. Descriptive statistics (frequency and percentages) for all study variables were calculated.

2.8 | Consultation

The role of the consultants was to provide expert feedback on the study findings and add context and background for their country/region (Levac et al., 2010). Consultants were identified through recommendations from the WHOCC contacts in the Latin America and Caribbean regions based on their expertise. Consultants were asked to provide perspectives on findings related to study publication trends, geographic publication distribution, limited number of midwifery-related studies, and a large contribution of student publications.

3 | RESULTS

3.1 | Overview of included studies

Analysis of the annual distribution of publications of nurse-led and midwife-led clinical research in Latin America and the Caribbean revealed a large number of published studies and a peak of publications in 2010 with a subsequent trend downward (Figure 2). In terms

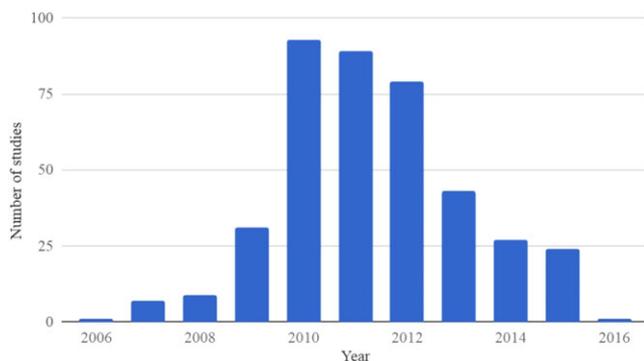


FIGURE 2 Number of publications by year

of country of origin, the vast majority were carried out in Brazil ($n = 365$, 90.6%), followed by Chile ($n = 11$, 2.5%), then multinational studies with 1 or more Latin American countries included ($n = 6$, 1.5%), Mexico ($n = 4$, 1.9%), while the rest of countries had published 3 or fewer studies ($n = 6$, 1.5%) (Table 1). The proportions of studies published in each of the 3 languages are as follows: Portuguese ($n = 163$, 40.3%), English ($n = 113$, 28%), Spanish ($n = 7$, 1.7%), or multiple languages, eg, Portuguese and English ($n = 121$, 30%).

Most studies were nurse-led ($n = 386$, 95.8%), while a few included a midwife as an author, or had a midwife-led intervention ($n = 17$, 4%). Of identified study designs, most were descriptive, nonexperimental designs ($n = 370$, 91.6%), while 34 (8.4%) were reported as

TABLE 1 Overview of included studies

Study Characteristic	N = 404	%
Country where research was conducted		
Brazil	365	90.6
Chile	11	2.5
Multicounty	6	1.5
Mexico	4	1.9
Uruguay, Columbia, Argentina (each)	3	0.7
Jamaica, Ecuador, Bolivia (each)	2	0.5
Peru, Panama, Haiti (each)	1	0.2
Nurse-led or midwife-led/involved		
Nurse	386	95.5
Midwife	18	4.4
Study design		
Descriptive nonexperimental	370	91.6
Experimental or quasi-experimental	34	8.4
Study setting		
Hospital	198	49.0
Community	89	22.0
Clinic	86	21.3
Not specified	12	3.0
Long-term care facility	9	2.2
Multiple	6	1.5
Health department/dataset	4	1.0
Sample type		
Adults	88	21.8
Specific patient population not otherwise specified (eg, heart surgery patients and diabetic pts)	73	18.1
Mothers	53	12.9
Paediatric/child/adolescent	50	12.4
Elderly	32	7.9
Women (not specified as mothers)	21	5.2
Not specified in abstract	20	5.0
Multiple (patients, caregivers, and health care workers)	19	4.7
Neonatal/infants	11	2.7
Caregivers	11	2.7
Families	10	2.5

(Continues)

TABLE 1 (Continued)

Study Characteristic	N = 404	%
Other	7	1.7
Health care professional	5	1.2
Men	4	1.0
Language(s) of publication		
Portuguese only	163	40.4
English only	113	27.8
Portuguese and English	92	22.8
English, Portuguese, and Spanish	27	6.7
Spanish only	7	1.7
Spanish and English	1	0.3
Portuguese and Spanish	1	0.3

experimental or quasi-experimental (Figure 3). Study settings in order of frequency were hospital, community/clinic, long-term care facility, and health department databases. Study populations were most frequently all adults ($n = 88$, 21.8%) followed by specific patient population not otherwise specified, such as women who have had breast cancer, or hospitalized men with cardiovascular disease ($n = 73$, 18.1%). Sample size ranged from 3 to 1 355 910 (mean: 6,272; median: 53 participants). There were 67 studies with over 300 participants (16.6%).

3.2 | Topical analysis

Of the main study topics, the highest percentage assessed experiences or knowledge of patients ($n = 137$, 33.9%), followed by studies that focused on characterizing patient populations ($n = 111$, 27.5%), and evaluation of treatment and management of interventions ($n = 66$, 16.3%). Table 2 presents the classification of the studies by the main topic under study along with examples of the items and associated study aims evaluated in those study categories. The most common disease or condition that the studies focused on were chronic diseases ($n = 76$, 18.8%) and maternity/child health issues ($n = 65$, 15.9%) (Table 3).

3.3 | Subset analysis

The majority of the 233 studies included in the subset analysis used nonprobabilistic sampling ($n = 204$, 87.6%), while 19 (8.2%) used probability sampling strategies, and 10 (4.3%) did not report or had unclear

sampling strategies (Table 4). Of the 10 randomized controlled trials, 5 reported using a probabilistic sampling strategy. The majority of authors were all from the same country where the study was conducted ($n = 227$, 97.4%), 2 studies were conducted in Brazil with coauthors from other countries: Canada (Evangelista Cabral & Groleau, 2009) and United States (Sartore Balsanelli, Alves Grossi, & Herth, 2011); 1 study was conducted in Mexico with coauthor from Brazil (Herrera Paredes & Arena Ventura, 2010), and 1 was conducted in Haiti that had all US authors (Sloand, Astone, & Gebrian, 2010). Funding was not reported in the majority of the studies ($n = 203$, 87.1%) while 26 reported having funding (11.2%), and 4 reported no funding (1.7%). Over a third of studies ($n = 90$, 38.6%) were a student's, masters', or doctoral thesis, 9 (3.9%) were unclear (first author was a student), but most ($n = 134$, 57.5%) did not report whether they were part of academic preparation.

4 | DISCUSSION

4.1 | Overview

A scoping review of the nursing and midwifery research conducted in the last 10 years in Latin America and the Caribbean was performed to identify and describe the state of this research and to identify areas for future research development. A large number of studies conducted in these regions (404) were identified as compared to a similar nursing/midwifery clinical research scoping review of all African countries with similar inclusion criteria in which 73 peer-reviewed publications (Sun &

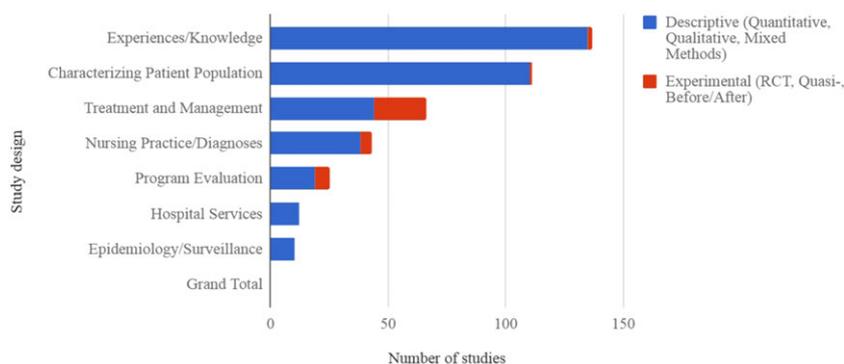


FIGURE 3 Descriptive and experimental studies according to study design

TABLE 2 Category of study topics, study purpose, and examples of aims from included studies (N = 404)

Study Topic (Categorized)	n (%)	Examples of Items Evaluated	Examples of Study Aims From Included Studies
Explore experiences or knowledge	137 (33.9)	Self-care strategies, quality of life, health knowledge, or beliefs, coping strategies, perceptions of a health topic, or strategies for health care delivery by caregivers	<ul style="list-style-type: none"> ● Evaluate the level of hope among the 3 different groups and correlate their levels with demographic and clinical variables ● Analyse the perceptions of a group of hypertensive people about their sickness process
Characterize patients or populations	111 (27.5)	Risk factors for diseases or socioeconomic factors	<ul style="list-style-type: none"> ● Compare possible differences regarding the presence of depressive symptoms according to the clinical diagnosis of acute coronary syndrome ● Characterize the profile, risk factors, and nursing diagnoses of adult patients who have fallen from bed during hospitalization
Treatment and management	66 (16.3)	Evaluation of clinical outcomes for specific treatments, use of protocols for a condition, or adherence to treatment	<ul style="list-style-type: none"> ● Evaluate skin and mucous membrane impairment in patients due to cancer and its treatment ● Verify the occurrence and characterize errors in the administration of antibiotics
Nursing/midwife practice or assessment	43 (10.6)	Nursing-mediated/midwifery-mediated practice/interventions and reporting on outcomes of practice/intervention (eg, fall or pressure ulcer prevention)	<ul style="list-style-type: none"> ● Compare clinical assessment of congestion performed by a nurse to that performed by cardiologist and correlate them with NT-ProBNP levels ● Identify the noninvasive technologies of midwifery care usually used by nurse-midwife in the care of mothers
Program evaluation	25 (6.2)	Program/intervention (not nursing mediated specified) such as a clinic-wide multidisciplinary diabetic program	<ul style="list-style-type: none"> ● Verify whether early (first postoperative day) or late initiation (after removal of the continuous suction drain) of a functional rehabilitation exercise programme influences the incidence of seroma formation and dehiscence for women after breast cancer surgery ● Test an educational programme with telephone follow-up to improve self-care in Brazilian patients who underwent percutaneous coronary intervention
Hospital services	12 (3.0)	Assessing processes occurring within a hospital setting (not nursing mediated specific) such as clinical outcomes of postoperative care and emergency care	<ul style="list-style-type: none"> ● Evaluate pain intensity in postoperative patients, identify associations between physiological alterations and the presence of pain, and describe the analgesia used ● Identify signs and symptoms of infection of surgical site in the posthospital discharge following cardiac reconstructive surgery
Epidemiology or surveillance	10 (2.5)	Reporting/summarizing incidence and prevalence of disease in patient care settings	<ul style="list-style-type: none"> ● Determine and analyse the prevalence of urinary incontinence and its demographic and clinical predictors ● Assess the prevalence of self-reported faecal incontinence in a sample of community-dwelling adults residing in an urban area

Larson, 2015) were located. We found that the majority of the studies were conducted in 1 country predominantly by nurse researchers. Main study topics assessed experiences or knowledge of patients or characterized patient populations. Most commonly, studies focused on factors related to chronic diseases such as diabetes, cardiovascular disease, and kidney disease.

4.2 | Country where research took place

That most studies were conducted in Brazil is a similar phenomenon to what was reported in the scoping review of African countries, where a majority of nursing research was conducted in a single country, South Africa (Sun & Larson, 2015). The political atmosphere and

economics of a country have been reported as influencing the development of nursing research globally (Ozsoy, 2007). In terms of research and development spending, overall Latin America and Caribbean countries are reported as spending less than other regions and rely mainly on government financing (United Nations, 2004). Other reviews have also concluded that the state of nursing research in their country or region is behind that in Europe or the United States and that nursing research should be an established priority and further developed across regions to address critical health issues (Bassalobre Garcia & Reveiz, 2015; Hackmann, 2000; Ozsoy, 2007). To improve nurse or midwife researcher capacity, a commitment of funding, training, and mentorship to nurse scientists is recommended (Perala & Pelkonen, 2004).

TABLE 3 Disease, condition, or topic focus of included studies

Disease/Condition/Event	N = 404	%
Chronic diseases (eg, cardiovascular disease, diabetes, and chronic kidney disease)	76	18.8
Maternity/childbirth/breastfeeding/neonatal outcomes	65	15.9
Hospitalization/prehospitalization	39	9.7
Oncology	32	7.9
Infectious diseases (eg, HIV/AIDS, tuberculosis, and other)	24	5.9
Other	20	5.0
Health promotion	19	4.7
Caregiving/dependency	18	4.5
Mental health	17	4.2
Adverse medical event (eg, medication error)	17	4.2
Wound or ulcer care	16	4.0
Injury/accident	11	2.7
Clinical outcomes of IV line	9	2.2
Institutionalization	8	2.0
Gastrointestinal/gastrourinary (eg, incontinence and ostomy management)	8	2.0
Development, child/adolescent	7	1.7
Violence/abuse	4	1.0
Substance abuse (eg, alcohol and drugs)	4	1.0
Skills for activities for daily living	4	1.0
Occupational health	3	0.7
Dementia	3	0.7

TABLE 4 Study characteristics evaluated in subset analysis

Characteristic	n (N = 233)	%
Sampling strategy		
Non-probabilistic sampling	204	87.6
Probabilistic sampling	19	8.1
Not reported or unclear	10	4.3
Affiliation with author outside of study country ^a		
No	229	98.2
Yes (eg, Canada, Brazil, United States, and Sweden)	4	1.7
Reported as part of dissertation/thesis/masters research		
No	134	57.5
Yes	90	38.6
Unsure	9	3.9
Funding		
Not reported/unknown	203	87.1
Yes	26	6.5
No funding reported	4	1.7

Note: numbers do not equal total where full article not available.

^aBased on author affiliation.

4.3 | Methodological characteristics

The majority of identified studies explored individual's experience and knowledge or characterized patient populations and used descriptive, nonexperimental methods. This finding is similar to reviews conducted in other countries and regions, where most nursing research was either qualitative or consisted of cross-sectional and descriptive designs

(Iversen et al., 2016; Khalaf, 2013; Sun & Larson, 2015). In addition, the focus on chronic diseases is reflective of a focus on the growing issue of "lifestyle" diseases. This tracks closely with a current health concern in Latin America as chronic, noncommunicable diseases such as ischemic heart disease and diabetes represent some of the largest causes of mortality in the region (Pan American Health Organization, 2017). In contrast, the review of nursing research in Africa reported

that published research topics were more likely to reflect sources of funding available rather than health issues identified as priorities by nurse experts (Sun & Larson, 2015). A review of Australian nursing research found that the most frequently studied topic was nursing education or practice issues related to patient care, with less attention on health issues (Borbasi et al., 2002). In Jordan, nursing research focused on management issues and addressed health topics outside of the country (Khalaf, 2013). To enhance the efficacy and generalizability of nursing clinical research in Latin America and the Caribbean, an expansion on these methods is needed as clinical trials are considered the most reliable method to determine whether interventions are safe, effective, and more generalizable (Grady & Edgerly, 2009), while qualitative descriptive methods are typically not generalizable (Sandelowski, 2000).

4.4 | Midwifery-related research

Midwifery-involved, or -led, research was underrepresented in the included studies. Even though there is limited midwifery research in Latin America and the Caribbean, there is little evidence of midwifery research elsewhere (International Confederation of Midwives, 2014). This could be due, in part, to numerous titles used in Latin American or Caribbean countries to identify midwives. Additionally, access to midwifery education varies in Latin America and the Caribbean and there is heterogeneity regarding midwifery programs and regulation across the region, resulting in inequity and underdevelopment of midwifery as a profession (Camacho, Land, & Thompson, 2014). Midwives may also simply lack the training needed for active research involvement or dissemination in peer-reviewed journals. This variability in titles and training also makes it difficult to distinguish between nursing and midwifery personnel in reported outcome data (World Health Organization, 2016b). For example, in Brazil, the number of midwives is unknown, but estimated to be small, as 89% of births are attended by physicians and many of the remaining births are estimated to be attended by obstetrical nurses (Gualda, Narchi, & de Campos, 2013). Obstetrical nursing is common in Brazil, with more than 94 active obstetric nurse programs; however, the focus of education remains distinct from midwifery, which has a more holistic focus on women's health (Ministry of Education [Brazil] - Sistema e-MEC, 2016). In contrast, in Chile, the professions of nursing and midwifery are well established and separate (Facultad de Medicina, 2016). Additionally, internal political conflict between obstetrical nurses, physicians, and midwives may impede the development of midwifery as a profession, in Brazil and elsewhere (WHO, 2016). Despite the long-lasting training of both nursing and midwifery and a wide recognition of the impact of these professions in improved maternal and infant health's indicators, there is a paucity in the academic and scientific development of both (Hodnett, Gates, Hofmeyr, Sakala, & Weston, 2011; Overgaard, Moller, Fenger-Gron, Knudsen, & Sandall, 2011; Walsh & Downe, 2004; World Health Organization, 2013).

4.5 | Subset analysis

The majority of studies in the subset analysis did not report their funding source and most either did not report or used nonprobabilistic

sampling strategies. According to a Caribbean collaborator on this study, most of the studies conducted by nurses in the Caribbean region are not funded, and for that reason, most of them are smaller studies. Findings suggest that reporting standards could be improved by universal use (author and journal endorsement) of study design-appropriate reporting standards such as Consolidated Standards of Reporting Trials (Schulz KF, 2010) and Consolidated Criteria for Reporting Qualitative Research (Tong, Sainsbury, & Craig, 2007). Additionally, more than one third of the studies reported coming from Master's or PhD theses or dissertations and additional studies listed a student as the primary author. Such a high percentage may indicate that a significant amount of research is conducted by students, who may not continue into research careers, representing a potential loss of talent in the field. This is the case in the Caribbean mainly because nurses in academic institutions are required to do research and publish. Hence, most of the research and publications may be conducted by faculty members in academic institutions in collaboration with graduate students. Collaboration between countries was also rare, with nearly all studies having authors from a single country. Of the few articles that did have authors from outside countries, none were between researchers within Latin America itself.

4.6 | Strengths and limitations

There are limitations to this study. First, not all journals include the author's degree, credentials, or affiliations. This challenge to identify whether a study was led by a nurse/midwife mandated extra steps at the first screening stage including full text review and author name searches to identify and verify authorship credentials or affiliation. Additionally, individuals may have an affiliation at a nursing school but may not have a nursing or midwifery degree. Hence, relevant studies may have been missed, while others may have been misrepresented as nursing-led or midwifery-led. Second, because of the large number of studies reviewed and included, a coding strategy was developed to collapse the study topics to enable overall characterization of included articles. Although we identified 9 main study aims and 30 disease/condition categories, granularity may be missing. Although there were challenges in identifying and classifying relevant articles, a strength of this study is that it is the most comprehensive picture of nursing- and midwifery-related research across the 33 countries in Latin America and the Caribbean. These findings are of particular relevance across these regions. However, results are relevant to nurse/midwife leaders globally as the scoping review process may be a useful template for other regions or countries to further elucidate evidence-based research priorities and identify gaps in the science, thereby establishing the foundation from which the disciplines may move forward.

5 | CONCLUSION

This scoping review revealed a large number of publications but an uneven geographical distribution of nurse-led clinical research and an evident gap of midwifery related clinical research in Latin America and the Caribbean. Nurse or midwife researchers can expand on

previously established foundations of exploratory and descriptive findings to increase research methodologies that produce more generalizable results that can be synthesized and contribute to evidence-based practice. As health care needs may differ between countries, a deeper understanding of country-specific and region-specific health and health care needs is warranted to inform future research priorities. Collaboration (including mentorship) across the Latin American and Caribbean countries might facilitate the advancement of nursing and midwifery research to address common health care needs. Furthermore, intraprofessional and interprofessional partnerships could enhance the nursing and midwifery professions' academic contributions and further impact health systems. Additional challenges for the future of nursing and midwifery research include solidifying regional strategies for research and development, improving access to funding, and rigorously disseminating the findings applicable to practice.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHORSHIP STATEMENT

All listed authors meet the authorship criteria and are in agreement with the content of the manuscript.

AUTHOR CONTRIBUTIONS

SI, SS, BR, EL contributed to conception and design; SI, SS, BR, IS, and RF to acquisition of data and analysis (screened and evaluated the articles); and SI, SS, BR, IS, RF, LB, and FS to interpretation of data. All authors contributed to analysis of results and manuscript drafting.

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APPENDIX

SEARCH STRATEGIES

LILACS 6/14/16

BVS:

(tw:(enfermagem)) OR (tw:(enfermeira)) OR (tw:(enfermeiro)) OR (tw:(enfermeria)) OR (tw:(enfermera)) OR (tw:(nurse)) OR (tw:(nursing)) OR (tw:(midwife)) OR (tw:(midwife)) AND (tw:(Antigua e Barbuda)) OR (tw:(Aruba)) OR (tw:(Bahamas)) OR (tw:(Barbados)) OR (tw:(Cuba)) OR (tw:(Dominica)) OR (tw:(Granada)) OR (tw:(Guadalupe)) OR (tw:(Haiti)) OR (tw:(IlhasCaimão)) OR (tw:(IlhasTurcas e Caicos)) OR (tw:(IlhasVirgens)) OR (tw:(Jamaica)) OR (tw:(Martinica)) OR (tw:(Porto Rico)) OR (tw:(República Dominicana)) OR (tw:(Saint Barthélemy)) OR (tw:(Santa Lúcia)) OR (tw:(São Cristovão e Neves)) OR (tw:(São Vicente e Granadinas)) OR (tw:(Trinidade e Tobago)) OR (tw:(Belize)) OR (tw:(Costa Rica)) OR (tw:(El Salvador)) OR (tw:(Guatemala)) OR (tw:(Honduras)) OR (tw:(Nicarágua)) OR (tw:(Panamá)) OR (tw:(Argentina)) OR (tw:(Brasil)) OR (tw:(Bolívia)) OR (tw:(Chile)) OR (tw:(Colombia)) OR (tw:(Ecuador)) OR (tw:(Guiana)) OR (tw:(Guiana Francesa)) OR (tw:(Paraguai)) OR (tw:(Peru)) OR (tw:(Suriname)) OR (tw:(Uruguai)) OR (tw:(Venezuela))

1358 results, after using the filters:

Data Bases: **Medline, LILACS, MedCaribe and Paho**

Languages: English, Portuguese and Spanish

Period: 2005-2016

LILACS Search

Key words:

Nurs* midwif* midwif* enf*

AND

Anguilla OR "Antigua and Barbuda" OR Aruba OR Bahamas OR Barbados OR Bonaire, AND "Sint Eustatius and Saba" OR "British

Virgin Islands" OR "Virgin Islands" OR "Cayman Islands" OR Cuba
OR Curacao OR Dominica OR "Dominican Republic" OR Grenada
OR Guadeloupe OR Haiti OR Jamaica OR Martinique OR Montser-
rat OR "Puerto Rico" OR "Saint-Barthelemy" OR "Saint Kitts and
Nevis" OR "Saint Lucia" OR "Saint Martin" OR "Saint Martin
(French part)" OR "Saint Vincent and the Grenadines" OR "Sint
Maarten" OR "Sint Maarten (Dutch part)" OR "Trinidad and Tobago"
OR Trinidad OR Tobago OR "Turks and Caicos Islands" OR "United

States Virgin Islands" OR "Virgin Islands" OR Belize OR "Costa Rica"
OR "El Salvador" OR Guatemala OR Honduras OR Mexico OR Nic-
aragua OR Panama OR Argentina OR Bolivia OR "Plurinational
State of Bolivia" OR Brazil OR Chile OR Colombia OR Ecuador
OR Falkland Islands OR Malvinas OR "French Guiana" OR Guyana
OR Paraguay OR Peru OR Suriname OR Uruguay OR Venezuela
OR "Bolivarian Republic of Venezuela" OR Bermuda OR "Saint
Pierre and Miquelon