

COLLABORATIVE APPROACHES TO CLINICAL PRACTICE EDUCATION IN SCHOOLS  
OF NURSING: A SCOPING REVIEW

By

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## Abstract

Clinical experiences are a vital component of nursing education where nursing students can apply the theory they learn in the classroom to the clinical environment. The traditional model of clinical practice education is under scrutiny from Schools of Nursing (SoN) and healthcare organizations due to the theory practice gap consistently identified from literature. Therefore, a collaborative approach to clinical practice education is being explored to merge the theory and practice gap. The purpose of this review is to explore, summarize, and provide a broad overview on the various collaborative approaches to clinical practice education in nursing. A scoping review of literature published between January 1986 to August 2020 was conducted using five databases & indexes to identify and explore collaborative approaches to clinical practice education in nursing. 25 articles (11 qualitative, 8 mixed-methods, and 6 quantitative) were obtained from Cumulative Index to Nursing and Allied Health Literature, Medline, PubMed, PsychInfo, and Joanna Briggs Institute Evidence Based Practice. Analysis of included articles indicated that collaborative approaches facilitate a stronger bond between the triad of academic institution, nursing students, and healthcare organization and more individualized learning for the student. However, limited input from all stakeholders, managing clinical instructor (CI) burnout, and the issue of feasibility of delivering a collaborative model into existing healthcare organizations remain key challenges. Collaborative approaches to clinical practice education in nursing are promising models to foster academic practice partnerships and student satisfaction. More viable solutions addressing usage of various types of CIs, financial support and investment into a new clinical model, and scheduling conflict between the CI and student nurses are needed to ensure utility and sustainability of this clinical approach.

*Keywords:* clinical practice education model, clinical experience, clinical placement, collaborative academic practice partnership, collaborative clinical model, dedicated education unit

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### **Dedication**

This paper is dedicated to my wife, Nicole. I am truly thankful for your never-ending love, support, and sacrifice throughout the course of the whole program. I am well aware of all those sleepless nights you endured with our beautiful, and often cranky, newborn son since the start of the program. Words cannot describe how incredibly grateful I am for all that you have done and continue to do.

## **Chapter 1: Introduction**

Clinical experiences are a vital component of nursing education where nursing students can apply the theory they learn in the classroom to the clinical environment. Without an optimal clinical setting, nursing students face various challenges that can negatively affect their professional development (Jamshidi et al., 2016). In extreme cases, inadequate clinical placements can lead nursing students to drop out of their program and the profession altogether (Jamshidi et al., 2016; Rudman et al., 2014). Jamshidi et al. (2016) found that all of the following components should be met in order to provide students with an ideal clinical practice education environment: effective and consistent communication between students and their clinical instructor, collegial relationship between student nurses, clinical instructor, and healthcare staff, and familiarization with the physical environment prior to starting clinical practice education on the unit. Losing prospective front-line staff may have a devastating effect on the projected nursing shortage (Canadian Nurses Association, 2009). Robust models for providing valuable clinical practice education experiences are required to build clinical competence for student nurses and to secure future front-line candidates. However, while various innovative models of clinical practice education exist in both national and international Schools of Nursing (SoN) the current traditional clinical practice education model, defined in the following section, continues to dominate over other clinical practice education models and undermines the potential benefits of underutilized collaborative clinical practice education models (Budgen & Gamroth, 2008; Ownby et al., 2012; Ramsbotham et al., 2019).

### **1.1. Background**

Courtney-Pratt et al. (2012) described the traditional model of clinical practice education as involving an adjunct clinical instructor (CI) who may or may not have clinical expertise or

clinical experience on the unit, supervising between 6-8 students, and pairing each student with a designated nurse each shift. Under the traditional model of clinical practice education, research shows that many CIs have voiced concerns regarding what their specific roles and responsibilities are, and their lack of inclusion into the creation of clinical practice education curriculum in nursing programs resulting in feeling disconnected with both academic institution and the healthcare organization (McPherson, 2019; Meyer, 2017; Owens, 2017; Roman, 2018). Additionally, studies on new graduate nurses indicate their clinical practice rotations faced various challenges including: disparities regarding what they learned theoretically and how it is applied clinically, a lack of direct immediate clinical support from either the CI or paired clinician, and lack of individualized learning (Henderson et al., 2012; Omer et al., 2013). Bedside nurses teaching nursing students have also voiced their lack of understanding about their own roles as educators, as well as not knowing what the scope of practice is for their students (Ramsbotham et al., 2019). These concerns and the identified gaps between academic institutions and healthcare organizations indicate a need for more collaborative approaches to clinical practice education.

The collaborative education model in nursing is a relatively new concept and has only been introduced globally in the last two decades. One of the first formalized collaborative education models originated in Australia in the late 1990s which utilized a dedicated education unit (DEU), a model developed by an academic-healthcare partnership with the focus on improving clinical practice and support for both students and instructors on a clinical unit (Wotton & Gonda, 1999). The results of the initial study showed promising outcomes which addressed existing gaps that are present in the traditional model of clinical practice education. Since then, a multitude of

collaborative approaches to clinical practice education began to surface not only in Australia, but in other SoN on a global scale.

Current evidence suggests that a collaborative approach to clinical practice education holds promising advantages in building a successful clinical placement for all stakeholders including the academic institutions, clinical instructors, students, and healthcare organizations (Forber et al., 2016; Glynn et al., 2017). However, the traditional clinical practice education model appears to be the standard practice in many SoN, and collaborative approaches are not well understood or utilized. Therefore, an extensive examination regarding what is known about a collaborative approach to education is needed.

## **1.2 Terminology**

The use of jargon and variable terminology makes synthesizing the literature on this topic confusing and complex. As an example, Budgen and Gamroth's (2008) overview of practice education models noted misinterpretations and inconsistent title use for types of CIs in the literature. This is particularly challenging when exploring collaborative academic practice partnership models on an international scale when every region utilizes terms that have been used historically, but whose current meaning often not synonymous with the original definition. Therefore, I have compiled some common terms used when discussing the topic of collaborative academic practice partnership models of clinical practice education to improve clarity of the definition.

The terms 'academic practice partnership', 'collaborative academic practice', 'collaborative academic practice partnership', or many variations with those words have been used to describe a collaborative approach to clinical practice education. There is currently no consensus or consistent usage in the literature on which term should be used. For the purpose of

this review, the term ‘collaborative academic practice partnership’ (CAPP) will be used to describe a working partnership between the ‘*triad*’.

A ‘*triad*’ has been used in literature to describe three separate entities within a collaborative team: a faculty member from an academic institution, a student nurse from an academic institution, and a staff member in a healthcare organization (Cooper Brathwaite & Lemonde, 2011; Koharchik et al., 2017). A healthcare organization provides medical services for the purpose of improving the health and wellbeing of individuals. However, not all areas within the healthcare organization can be described as a clinical practice unit. A clinical practice unit involves a systematic approach in organizing and implementing clinical practice education between the practicing unit and the academic institution. Furthermore, the site of clinical practice units is not limited to hospital-based settings and can include outpatient clinics and home health communities. The traditional approach to clinical practice education typically generates minimal communication between the triad during clinical rotations. The difference between a traditional approach to clinical practice education compared to a CAPP is that CAPP entails greater understanding, communication, and transparency between the academic institution and the practice partner with sufficient time allocated to co-create a meaningful outcome for nursing students during a clinical rotation.

The term clinical practice education can be defined as ‘hands on’ training in the actual practice setting to improve work readiness and to meet clinical competence to gain entry into practice (Mackay et al., 2014; Nishioka et al., 2014). This does not include final preceptorship; whereby nursing students are paired 1:1 with a single designated nurse for a duration of time during their last clinical rotation prior to completion of a nursing program.

Historically, the term CI has been used consistently in the literature to describe an adjunct nurse that is hired and paid by the academic institution to provide clinical instruction and supervision to a group of nursing students. However, current research indicates that this description, role, and title have changed considerably due to newer models of clinical practice education. In CAPP models, the CI can be an adjunct nurse hired and paid by the academic institution and/or healthcare organization. In some cases, the CI may have a post in both the academic institution and healthcare setting (Cremonini et al., 2015). In contrast to the traditional model of clinical practice education where the CI is primarily hired from an area not from the clinical practice unit they are assigned to and typically have limited knowledge of the clinical practice unit they are placed on, the CI in the CAPP model can either be internally or externally hired from the healthcare organization, and will most likely have previous or current working experience on the clinical unit. Having some familiarity with the clinical unit can be an important key factor in the overall satisfaction for student nurses during clinical practice education. Furthermore, additional titles such as clinical affiliate (CA), clinical coach (CC), clinical designated instructor (CDI), clinical facilitator (CF), clinical supervisor (CS), clinical teaching associate (CTA), clinical liaison nurse (CLN) all share similar traits as the traditional description of a CI. However, each title used in the literature have small variations between each of them which creates a challenge when deciphering their specific roles and responsibilities. Table 1 depicts characteristics of the types of CIs found in the literature.

**Table 1***Types of CIs*

Name of CI	Origins of the CI		CI's minimum level of education			# of students responsible for	
	External Nurse	Hospital Nurse	BSN	MSN	Not available	Range	Not available
Traditional Clinical Instructor	X	X	X	X		6-8	
Clinical affiliate		X			X		X
Clinical coach		X	X			1	
Clinical designated instructor		X	X			1-2	
Clinical facilitator/Clinical supervisor	X	X			X		X
Clinical teaching associate		X	X	X		2-3	
Clinical liaison nurse		X	X			2-3	
Clinical nurse supervisor	X				X	1-6	
Preceptor		X			X	1-2	

*Note.* BSN = Bachelors of Science in Nursing. MSN = Masters of Science in Nursing

### 1.3 Rationale/Reason for Interest

Providence Health Care is known for its' clinical teaching units where students from varying professions consolidate their skills and knowledge on the actual clinical units. The Acute Medicine Unit at St. Paul's Hospital is one such clinical teaching unit. Throughout the year, various SoN throughout the Vancouver lower mainland have their students take part in clinical rotations on the Acute Medicine Unit as part of their Medical/Surgical rotation. In my role as a bedside Registered Nurse at St. Paul's, I have noticed that the traditional clinical practice education model is consistently used for clinical practice education in every SoN that I have encountered so far. This model of clinical practice education initially intrigued me because many stakeholders surrounding each clinical rotation, including myself, voiced confusion and frustration with a combination of an apparent knowledge gap, miscommunication, and misunderstanding between the academic institution and the healthcare organization. I received

anecdotal concerns from CIs that they did not feel comfortable on the unit because of their unfamiliarity with the unit culture and practices. I have also witnessed nursing students noticeably frustrated with the ‘time wasted’ as they wait for their CIs to assess/evaluate a clinical skill or to ask a question. The amount of time delayed in attending to student nurses’ needs can accumulate depending on the number of nursing students the CI is in charge of, and if one or more student nurses require additional support. As a bedside nurse providing guidance to nursing students, I felt I lacked the knowledge of what students were learning in the classroom because I was never informed what topics were being taught in class. I also felt inexperienced in relaying theoretical components of education to teach the students in a way that would be meaningful to them as no additional education or experience is required to provide guidance and supervision to nursing students.

Furthermore, to bridge the theory to practice gap, I was privileged to be part of the University of British Columbia (UBC) Practice Academic Collaborative project where UBC collaborated with St. Paul’s Hospital to create a working partnership. In this position, I was appointed to become a temporary UBC CI on the unit I was working in instructing UBC nursing students in their last term prior to preceptorship. This project was able to effectively bridge the gap from the academic institution to the healthcare organization. I received the same orientation that UBC provides to all CIs and was given an outline depicting which theories/concepts students were learning week by week. I was able to facilitate a more streamlined clinical placement by combining the knowledge gained from orientation and ongoing connection with UBC and my existing clinical expertise and familiarity of the clinical unit and its culture. Understanding the unit culture, such as the practice norms, beliefs and values, and informal expectations, are

imperative for nursing students to learn prior to starting their clinical practice education so that they understand what the routine practices are on the practicing unit.

While this project did show some promise in utilizing a collaborative clinical practice education model, it is important to note that this approach was not without logistical challenges. Some questions that were raised includes: who would cover my position should I not be able to work for an extended period as no other CIs had any experience on my unit? How would I, as a CI and a bedside nurse on the unit, resolve a role/power struggle between colleagues and nursing students should a conflict arise? How should I fulfill my full-time equivalent hours if I am seconded into a part-time CI position? After I completed this innovative clinical practice education pilot project in 2016, the positive experience I encountered sparked my interest in wanting to explore more about CAPP models and is primarily the reason for choosing this topic for this paper.

#### **1.4 Project Purpose**

A few comprehensive integrative and systematic reviews have already been completed on existing clinical practice education models. Budgen and Gamroth (2008) provided an overview of various current clinical practice education models but were limited to articles up until year 2006 and included both student education and student employment education models. Forber et al. (2016) completed an integrative review that included and contrasted collaborative and non-collaborative approaches. However, their methodological approach was focused on contemporary clinical practice education models between January 2006 to December 2015 and was limited to the student perspective. Furthermore, Jayasekara et al. (2018) carried out a systematic review aimed at evaluating the effectiveness of clinical models with only quantitative research designs. Lastly, another systematic review by Williamson, Plowright, et al. (2020)

compiled what is currently known around a model described as collaborative learning in practice that is becoming more popular specifically in the United Kingdom (UK). Due to the explicit use of this type of terminology in the review by Williamson, Plowright, et al. (2020), other types of collaborative education models not recognized by key search terms were automatically excluded. In addition to their exclusion criteria, any articles before 2008 were excluded. Although collaborative approaches to clinical practice education in nursing have been increasingly utilized and researched, it is still an emerging concept globally.

The purpose of this Scholarly Practice Advancement Research (SPAR) project scoping review is to examine all available research literature on what is known about collaborative approaches to clinical practice education and identify strengths, limitations, promising trends, and recommendations for future practice and research.

### **1.5 Research Question**

The researchable (PIO) question to guide the literature search is: *In nursing programs, what is the impact of collaborative academic practice partnership approaches on clinical practice education?*

## Chapter 2: Theoretical Perspective

Lave and Wenger's (1991) original work on Community of Practice (CoP) in their theory of situated learning will be used to guide this SPAR project. This constructivist theory highlights that learning occurs gradually through *peripheral* participation in a social setting. Lave and Wenger (1991) further describe that a CoP cannot be formally created. Instead, it is through social interactions with one another that learners will organically take on the identity of the community.

The importance of a CoP is fundamental to a collaborative approach to clinical practice education because the acquisition of knowledge cannot be expected right from the start. Instead, learners start peripherally and move towards the centre of the community once they feel more competent. In the context of clinical practice education, it is quite common for the CI and their students to be placed on a unit with little to no understanding of the unit culture and norms (Stevens & Duffy, 2017). Familiarity with the clinical unit such as locating supplies/resources, understanding organizational policies, and identifying clinical staff members, has been cited as a major theme in giving rise to confidence and competence to new and returning CIs and nursing students (van der Riet et al., 2018). Repeated exposure to similar clinical environments builds confidence and results in increased competence in CIs and nursing students as they are able to recognize and resolve these concerns earlier and faster.

In cases where the CI is from the practice unit and therefore already part of the CoP, the students are able to transition into the CoP quicker and more seamlessly by decreasing the amount of time spent at the periphery. Since the CI is already familiar with the unit culture and routine, they can facilitate the orientation process to their students faster and more accurately than a CI externally hired (Davies et al., 1999). Building a collegial relationship and connection

between student nurses and clinical unit staff can be hastened and prove beneficial to student learning with the existing collegial relationships the CI has on the unit so that students do not feel like a guest on the unit or feel bothersome (Bridges et al., 2013; Cantrell & Murawski, 2010; Nishioka et al., 2014). As a result of having a CI with an established rapport built with the unit staff, and be familiar with the practice unit can decrease the time spent on orientation for student nurses and increase time spent on actual hands-on practice.

Lave and Wenger (1991) noted that the CoP is not meant to be static by any means. As new members join and leave the community, so does the evolution of the relationships built between all those involved. Those once called 'learners' will begin to blend into the CoP so that co-creation of relational practices can emerge and positive attributes such as trust and communal identity can be fostered. One of the advantages to a CoP is co-creation of further acquisition of knowledge from one another once the foundation of trust has been built. The fluidity and non-linear process brings about further flexibility to build upon the existing CoP.

Looking at collaborative approaches to clinical practice education through the lens of situated learning and Communities of Practice, it is apparent that giving CIs and students adequate time to become acquainted with the unit will allow them to become more confident and competent with their assigned unit and therefore engage in deeper learning.

## **Chapter 3: Methods**

This scoping review will utilize the original five-stage framework by Arksey and O'Malley (2005): (1) Identifying the research question, (2) Identifying relevant studies, (3) Study selection, (4) Charting the data, (5) Collating, summarizing, and reporting the results (Arksey & O'Malley, 2005). In addition to the framework, the following two updated enhancements to the framework will also be applied to two stages: Stage (2) describing the planned approach to evidence searching, selection, data extraction, and presentation of the evidence (Peters et al., 2020), and stage (5) Identifying the implications of the study findings for policy, practice, or research (Levac et al., 2010).

### **3.1 Information Sources**

For the purpose of this review, a variety of information sources were examined. Databases that were used to conduct the literature search include: Cumulative Index to Nursing and Allied Health Literature (CINAHL), MEDLINE, PubMed, PsychInfo, and Joanna Briggs Institute Evidence Based Practice (JBI EBP).

### **3.2 Search Strategy**

This scoping review was conducted on both current and older literature by eliminating the limitation on the initial publication year on each search engine and by applying an end publication date of August 2020. A comprehensive search strategy was created to identify the relevant literature. Table 2 includes specific search strategies used for each database and search engine.

#### **Table 2**

*Search Strategy and Returns, by Database/Search Engine*

Source	Strategy	Number
CINAHL	((nurse*) AND ((collaborative academic practice) OR (academic practice partnerships) OR (clinical model) OR (collaborative model)) AND ((dedicated education unit or deu) OR (clinical placement or practice placement or clinical experience) OR (education unit))	n=298
MEDLINE	((nurse*) AND ((collaborative academic practice) OR (academic practice partnerships) OR (clinical model) OR (collaborative model)) AND ((dedicated education unit or deu) OR (clinical placement or practice placement or clinical experience) OR (education unit))	n=248
PubMed	((Nurses) AND (“dedicated education unit OR clinical placement”) AND (“academic practice partnerships OR collaborative model”))	n=159
JBIEBP	((nurse*) AND ((collaborative) OR (partnership) OR (clinical) OR (model)) AND ((dedicated education unit) OR (clinical placement) OR (practice placement) OR (clinical experience) OR (education unit)).mp.	n=98
PsychInfo	((nurse*) AND ((collaborative academic practice) OR (academic practice partnership) OR (clinical model) OR (collaborative model)) AND ((dedicated education unit or deu) OR (clinical placement or practice placement or clinical experience) OR (education unit))	n=36
Total		n=839

### 3.3 Inclusion and Exclusion Criteria

Articles describing any nursing clinical practice education models explicitly stating that a collaborative approach was utilized were included for review. Any year of publication, language, and geographic region was also accepted to reach a broader scope to review. The use of the Google Translate website would be used to translate articles written from any language to English and then assessed to determine its' eligibility. Any titles of nurse including, but not limited to, vocational nurse, licensed practical nurse, registered psychiatric nurse, etc. were included from any SoN program.

Articles were excluded if there were implicit or inadequate details explaining the collaboration between the academic institution and healthcare organization. Preceptorship

clinical rotation (the final clinical rotation), prior to completion of the nursing program in the SoN was also excluded as this stage of clinical rotation is not within the scope of this review.

### **3.4 Study Selection, Charting, and Analyzing the Data**

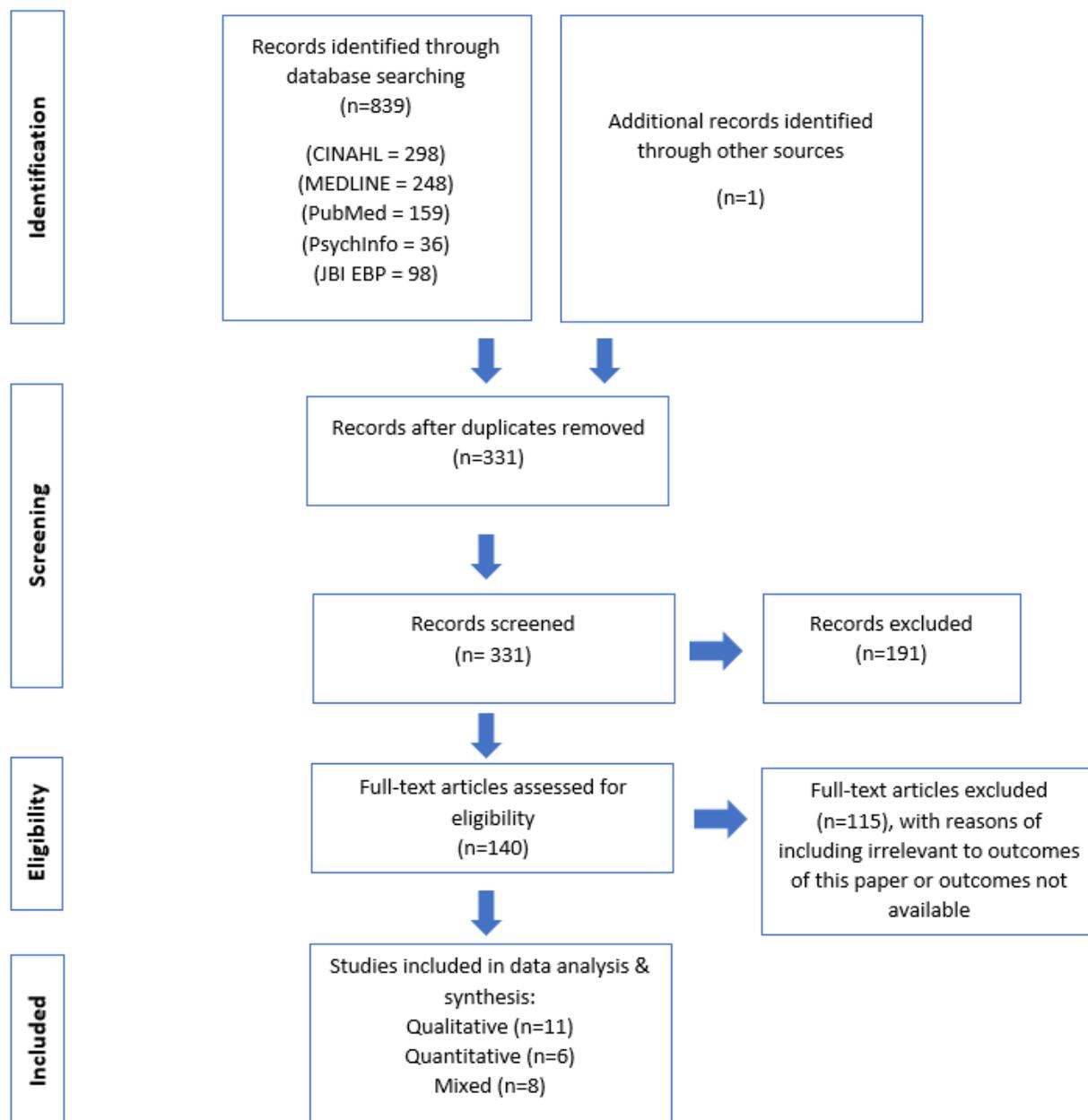
All articles were inputted into Mendeley reference management software and then exported into a Microsoft Word document to screen and categorize the literature. All titles and abstracts were initially screened using the inclusion and exclusion criteria. Then, I reviewed the remaining full text articles, removed duplicates, and removed those not meeting the inclusion and exclusion criteria upon full review. Specific information from the remaining articles was extracted into another Microsoft Word document utilizing a Matrix table with columns indicating the following elements: Name of author(s), year of publication, population type, location of study, methodology, collaboration type, aim of study, outcome of study, limitations of study, notes specifying collaboration. The Matrix table was reviewed for relevancy and accuracy by one supervisor (EB). The process from identification, screening, eligibility, and included articles is presented in a PRISMA Flow Chart. The Joanna Briggs Institute Critical Appraisal Checklists were used to assess the trustworthiness and relevance of each published paper. After close review of the data extraction matrix, relevant characteristics from the articles were further organized into categories (strengths, weaknesses, etc.) to identify key themes across the included articles. These themes were reviewed and critically analyzed while frequently reviewing the literature to ensure relevance and accuracy.

### **3.5 Search Results and Selection of Literature**

This scoping review searched through five databases/indexes and yielded 839 potential published full text articles from January 1986 to August 2020. Figure 1 outlines the systematic

process from identifying, screening, eligibility, and inclusion process in determining the final 25 articles for review.

Removal of duplicate articles using Mendeley reference management software and manual review of all publications resulted in 331 articles. An additional published article (Lovecchio et al., 2012), with unique perspectives on CAPP, was included into this review as this particular publication was not listed in any of the results from the identified databases/indexes with the specified search criteria. Of the 331, 191 articles were manually excluded after abstract review. The outstanding 140 articles received full-text review which resulted in 115 articles being excluded due to irrelevant outcome, including measuring a specific instrument and tool, or the outcomes were not available. This resulted in the final 25 articles to be included in this review.

**Figure 1***PRISMA Diagram of Literature Selection*

## **Chapter 4: Findings**

### **4.1 Summary of Selected Literature**

All 25 articles included in this scoping review are research-based and provide relevant information on CAPP. There were a greater number of qualitative research design compared to quantitative and mixed-method research design. Publication dates ranged from 1994 to 2020, with increasing number of publications after 2010. Papers originating from United States of America (USA) contributed the most publications for this scoping review. See Appendix A-G for an overview of the articles included in this scoping review.

### **4.2 Evolution of the Literature**

The initial research on this topic was conducted in 1994 with a qualitative study with the objective of developing a collaborative model of clinical practice education for student nurses using the CTA model (Baird et al., 1994). This article was the only published study that promoted a new model of collaborative education in that year. No new publications with regards to collaborative clinical practice education models were introduced until three years later. Even then, the article published in 1997 (Nehls et al., 1997) only introduced a concept similar to the preceptorship model with expanded collaboration. No new innovative CAPP models of clinical practice education were created until 2009 with the introduction of a Hub & Spoke Model (Croxon & Maginnis, 2009). Publications about CAPP increased after 2009 (with the exception of 2016), with at least one article published yearly until 2020. See Appendix D for a table representing the evolution of literature on CAPP.

### **4.3 Type of Studies**

The majority of articles used a qualitative design (n=11, 44%). The remaining articles used mixed-methods (n=8, 32%) and quantitative (n=6, 24%) design. Many of these articles used

a combination of questionnaires, interviews, and/or focus groups for data collection. The use of convenience, purposive, and cluster sampling was primarily used in the majority of the included articles due to the nature of this topic. Two articles used a participatory action research approach (Blum, 2009; Mackay et al., 2014) and one other article used the plan-do-study-act cycle for a pilot program (Underwood et al., 2019). The 25 articles included in this paper represent original research, with no systematic or integrative research articles included. See Appendix E for a table representing the type of research designs that were included in this scoping review.

#### **4.4 Geographical Origins of Included Papers**

Most of the literature originated in the USA (n=12, 48%). This was followed by Australia (n=6, 24%), UK (n=3, 12%), Canada (n=1, 4%), Israel (n=1, 4%), Italy (n=1, 4%), and New Zealand (n=1, 4%). Articles from Asia were included in the preliminary screening, but ultimately did not meet the inclusion criteria. No publication from South America was found. All selected articles indicated only one region where the study was undertaken, but some articles indicated multiple healthcare sites and/or units. See Appendix F for a table representing the geographic region where the included studies originated.

#### **4.5 Types of Clinical Instructor Models**

The preceptor CI model was cited the most (n=7, 28%) in the selected studies compared to all other types of CI. The preceptor CI model differs from the preceptorship model (excluded from this scoping review) in that the latter occurs during the last clinical rotation and is designed specifically for senior nursing students to work one-on-one with an experienced registered nurse for an extended period with the aim of immersing the student to gradually assume the roles and responsibilities of a fully-fledged registered nurse (Oosterbroek et al., 2019). On the other hand, the preceptor CI model can occur at any stage in a nursing curriculum and will typically pair a

registered nurse with up to two student nurses to work in a time-limited clinical rotation to facilitate students' learning (Cooper Brathwaite & Lemonde, 2011). The next most commonly used CI model is the clinical facilitator/clinical supervisor model (n=4, 16%), followed by CTA (n=3, 12%), and CLN (n=2, 8%). Rounding out the list, CA, CC, CDI, and CNS all contributed (n=1, 4%) each. Included in this list were articles (n=5, 20%) that did not specify what type of CI was used; instead, the general term CI was used throughout each article. The unspecified terminology of CI did not add to any confusion to the results of the study as this scoping review focused on the collaborative nature of the clinical practice education model used, and not specifically on just the type of CI used in each case. See Appendix G for a table representing a summary of the types of clinical practice education model used in each included study.

#### **4.6 Issues Addressed in the Literature**

The lack of stakeholder input, particularly from CIs, in creation of a CAPP model has been cited as a key concern in seven articles (Blum, 2009; Cantrell & Murawski, 2010; Cooper & Lemonde, 2011; Jeffries et al., 2013; Lovechio et al., 2012; Nishioka et al., 2014; van der Riet., 2018). In nine articles, CIs indicated feeling burnt-out due to workload issues regardless if the CIs themselves held a patient assignment (or not) in addition to supervising nursing students (Baird et al., 1994; Barnett et al., 2010; Cooper & Lemonde., 2011; Crawford et al., 2018; Cremonini et al., 2015; Croxon & Maginnis., 2009; Davies et al., 1999; Didion e al., 2013). The issue of feasibility was prominent in 23 articles (92%). Feasibility concerns included healthcare setting usability, additional cost to either the academic institution or healthcare organization for orientation of CIs and/or staff, and scheduling conflicts that occur when matching student nurses to an appropriate CI (Baird et al., 1994; Barnett et al., 2010; Bittner & Anderson, 1998; Blum, 2009; Bridges et al., 2013; Cantrell & Murawski, 2010; Cooper Brathwaite & Lemonde, 2011;

Crawford et al., 2018; Croxon & Maginnis, 2009; Davies et al., 1999; Didion et al., 2013; Jeffries et al., 2013; Koharchik et al., 2017; Lovecchio et al., 2012; Mackay et al., 2014; Nehls et al., 1997; Roxburgh et al., 2012; Sadeh, 2018; Smyer et al., 2015; Underwood et al., 2019; Van De Mortel et al., 2020; van der Riet et al., 2018; Williamson et al., 2020). See Appendix C for a table representing the most common issues raised from the selected literature regarding a CAPP approach to clinical practice education.

#### **4.7 Critical Appraisal of the Included Studies**

Although all languages were accepted in the inclusion criteria, the terminologies may not translate directly into other languages and may result in omission from languages other than English. With that said, only one article in a single database was found written in another language other than English; coincidentally, the same article was found translated into English from Italian in another database. This article was assessed for its eligibility and resulted in being included into this scoping review (Cremonini et al., 2015). Several articles included publications greater than 10 years ago, with the oldest article printed in 1994 (Baird et al., 1994; Barnett et al., 2010; Bittner & Anderson, 1998; Blum, 2009; Cantrell & Murawski, 2010; Croxon & Maginnis, 2009; Davies et al., 1999; Nehls et al., 1997). Two articles indicated only a small number of participants contributed to the results (Blum, 2009; Bridges et al., 2013). A threat to construct validity was cited in one article due to omission of demographics in their questionnaires (Sadeh, 2018). Due to the nature of this topic, participants from all included studies used either convenience, purposive, or cluster sampling. As a result of the possibility of a novelty effect (sampling bias), an internal threat to validity ensued (Lovecchio et al., 2012).

## Chapter 5: Discussion

In this scoping review, types of collaborative clinical practice education models were identified and the impact they have on clinical practice education in nursing was explored. The emphasis of the findings was categorized according to its' affect placed on the triad.

### 5.1 Key Findings

#### 5.1.1 Strengths

##### *Stronger partnership*

One of the goals of CAPP is to build a stronger connection and communication between the academic institution and healthcare organization. Seven articles explicitly indicated the partnership between both sectors were strengthened through their respective collaborative methods of clinical practice education (Baird et al., 1994; Blum, 2009; Cooper Brathwaite & Lemonde, 2011; Crawford et al., 2018; Didion et al., 2013; Jeffries et al., 2013; Roxburgh et al., 2012). Although the rest of the included articles did not overtly state a stronger bond was formed, it was implied that the relationships between academic institutions and healthcare partners improved through open lines and consistent communication. It is important to note that none of the articles indicated a negative impact on the relationship between sectors due to a collaborative approach.

##### *Familiarity*

The concept of familiarity continues to be an important factor raised by student nurses in relation to students' sense of integration into the healthcare organization/unit. Knowledge of existing and current organizational policies and procedures, unit culture and norms, staff personnel and physical environment is important for CIs to have in order to create a seamless entry onto the clinical unit for student nurses. Several studies indicated a strong correlation

working with CIs who are bedside nurses on the assigned clinical practice education unit between student satisfaction with their clinical rotation (Bittner & Anderson, 1998; Blum, 2009; Bridges et al., 2013; Cooper Brathwaite & Lemonde, 2011; Crawford et al., 2018; Cremonini. et al., 2015; Croxon & Maginnis, 2009; Davies et al., 1999; Roxburgh et al., 2012; van der Riet et al., 2018). For CIs that are hired from the clinical unit, their level of satisfaction also appears to increase as they can pass down their expertise to student nurses and improve their clinical skills through ongoing continuing education (Baird et al., 1994).

### ***More time***

The roles and responsibilities for each person in the triad can be time consuming since there are assignments and tasks that need completing on clinical days as well as those that are ongoing. Academic faculty typically have multiple students to supervise which includes gathering information for formal and informal student evaluations (Blum, 2009; Cooper Brathwaite & Lemonde, 2011; Smyer et al., 2015). In addition to their daily patient assignment, student nurses are often required to complete additional assignments such as journals and mini projects to further consolidate their learning to the clinical site (Nehls et al., 1997). In some instances, CIs who had a full patient assignment in addition to supervising and teaching their students stated insufficient time to complete reports for either the workplace or on their students (Baird et al., 1994; Barnett et al., 2010; Cooper Brathwaite & Lemonde, 2011; Jeffries et al., 2013). Only Jeffries et al. (2013) specified that a 5:1 or 6:1 patients to nurse ratio constitutes a full patient assignment, whereas the other included articles indicated the CI would maintain their patient assignment in addition to their responsibilities as a CI. Also, the number of students for the CI to supervise in each study ranged from one to three student nurses. In contrast, the traditional model of clinical practice education has a ratio of CI to student nurses of 1:6 or 1:8

(Courtney-Pratt et al., 2012). Due to the increased partnership developed through consistent communication between academic faculty and CI in the CAPP models of clinical practice education, collecting relevant and accurate feedback for student evaluation was obtained faster when compared to non-CAPP models. As a result, more time was created for both the academic faculty and CI to complete their individual tasks (Baird et al., 1994). In the CAPP models, student nurses were able to have their unit-specific questions answered quicker than non-CAPP models since the CI is from the clinical practicing unit and is familiar with the location of supplies and is knowledgeable of policies in place, thereby, enabling student nurses to complete their patient assignments faster and provide more time for them to complete clinical coursework during clinical practice hours (Nehls et al., 1997). When compared to the adjunct CI in the traditional model, additional time may be spent searching for resources and reviewing unfamiliar guidelines resulting in time lost for student nurses requiring assistance from their CIs. The findings from 10 articles from this scoping review suggests that a collaborative approach can actually increase time for each of those in the triad to complete such tasks (Baird et al., 1994; Bridges et al., 2013; Cantrell & Murawski, 2010; Cooper Brathwaite & Lemonde, 2011; Crawford et al., 2018; Croxon & Maginnis, 2009; Lovecchio et al., 2012; Nehls et al., 1997; Nishioka et al., 2014; Sadeh, 2018).

### ***5.1.2 Barriers and Concerns***

#### ***Stakeholder Input Issues***

The creation and sustainment of a CAPP model of clinical practice education is complex as there are multiple moving pieces to coordinate. Input from key stakeholders is essential to co-create such an undertaking that affects numerous areas from both academic institution and healthcare organization. The lack of input from necessary stakeholders can be detrimental to the

CAPP model if vital voices are not included in the discussion and creation of the clinical practice education model. For instance, the study by Underwood et al. (2019) planned to have a clinical educator from the practice partner organization present during the clinical days with the students to assist with facilitating education sessions. Unfortunately, no educators were included into the conversation during the planning phase of the study. As a result, this study faced inconsistent education sessions and lacked the appropriate resources to run the original planned study.

Another study gathered input from all those specifically involved in the CAPP model, such as the triad, but neglected to involve the other bedside nurses without student nurses on the unit. The lack of inclusion of those in the peripheral environment created confusion about what the expectations were for everyone else on the unit (Williamson et al., 2020). Only three articles explicitly described who was included in the development of the clinical model (Mackay et al., 2014; Underwood et al., 2019; Williamson et al., 2020). An additional three articles cited that stakeholders were involved, but no specific details were provided (Jeffries et al., 2013; Lovecchio et al., 2012; Nishioka et al., 2014). While many articles indicated various high-level stakeholders from the academic institution and healthcare organizations were included into the making of a CAPP model of clinical practice education, no articles from this scoping review requested or stated any contribution from student nurses.

### ***Burnout***

Burnout in healthcare is increasingly prevalent due to a plethora of internal and external reasons. Burnout, characterized by high levels of emotional exhaustion, depersonalization, low levels of personal accomplishment (Leiter & Spence Laschinger, 2006), and fatigue (Canadian Nurses Association, 2010). According to Canadian Nurses Association (2012), up to 55.5% of nurses responded *always* or *almost always* feeling fatigue during work, and 80% feel this way

after work. This scoping review found nine articles from CIs citing feeling overworked and burnt-out while utilizing a CAPP model of clinical practice education (Baird et al., 1994; Barnett et al., 2010; Cooper Brathwaite & Lemonde, 2011; Crawford et al., 2018; Cremonini. et al., 2015; Croxon & Maginnis, 2009; Davies et al., 1999; Didion et al., 2013; Jeffries et al., 2013). Of these, four articles utilized various types of CIs (CTA, CF, and Preceptor) and each CI held a full patient assignment while supervising student nurses (Baird et al., 1994; Barnett et al., 2010; Cooper Brathwaite & Lemonde, 2011; Jeffries et al., 2013). The other five articles also used various types of CIs (CLN, CNS, CF, and CA) and reported fatigue but the CI did not hold a patient assignment (Crawford et al., 2018; Cremonini. et al., 2015; Croxon & Maginnis, 2009; Davies et al., 1999; Didion et al., 2013). Unfortunately, there were no evidence stated in the selected literatures to suggests any CAPP models would decrease or resolve burnout in CIs regardless if they held a patient assignment or not. However, burnout is not exclusive to CAPP models and affects CIs in non-CAPP models as well, but for vastly different reasons. Some CIs in non-CAPP models cited that low pay and compensation, insufficient peer support/mentorship, and decreased job security contributed to feeling stressed and burnout (Mann & de Gagne, 2017; McPherson, 2019; Owens, 2017). Nevertheless, the lack of evidence about factors contributing to CI burnout in CAPP models may not be explicitly indicated as this concept may be out of the scope of the selected studies.

### ***Feasibility Issues***

A CAPP model of clinical practice education requires a great deal of planning, organization, and financial support to execute and maintain. One major concern that was cited in 23 articles indicated a problem with the feasibility of a CAPP model of clinical practice education (Baird et al., 1994; Barnett et al., 2010; Bittner & Anderson, 1998; Blum, 2009;

Bridges et al., 2013; Cantrell & Murawski, 2010; Cooper Brathwaite & Lemonde, 2011; Crawford et al., 2018; Croxon & Maginnis, 2009; Davies et al., 1999; Didion et al., 2013; Jeffries et al., 2013; Koharchik et al., 2017; Lovecchio et al., 2012; Mackay et al., 2014; Roxburgh et al., 2012; Sadeh, 2018; Smyer et al., 2015; Underwood et al., 2019; Van De Mortel et al., 2020; van der Riet et al., 2018; Williamson et al., 2020). The three feasibility themes that emerged from the literature were limited use of location of the CAPP model, additional cost to facilitate the new model, and scheduling conflicts between the CI and student nurses

**Limited use of location.** In some CAPP models, such as the study by Koharchik et al. (2017), utilized a DEU format that required the exclusive use of a healthcare unit by a single SoN. This can be difficult to achieve in many healthcare organizations as there are competing interests from all other SoN. However, one study was able to achieve a successful clinical rotation applying the CAPP model within a DEU with collaborative efforts from two other SoN concurrently completing their clinical rotations on the same unit (Crawford et al., 2018). While some CI models, such as CTA in Baird et al. (1994) and CA in Davies et al. (1999), were piloted in only one setting, both studies recommended the CI model used by each study to be utilized in multiple clinical settings. Both studies were able to utilize a bachelor prepared bedside nurse from the clinical unit to become the CI on their respected unit. Due to these generalizable criteria, created by the researchers, these types of model are able to be implemented onto other clinical units within the healthcare organization. However, not all models have the flexibility to be incorporated in every setting. Cooper & Lemonde (2011) purposely chose a public health setting to pilot a team preceptor approach due to the small and consistent healthcare team members working at the agency. The team preceptor model in this study utilized a group of experienced public health nurses to become the CI for a student nurse. This would prove more

difficult in a healthcare setting where the numbers of healthcare staff are rotating or inexperienced. Blum (2009) utilized an expanded preceptor model whereby a primary preceptor was matched with one student nurse for the duration of a yearlong curriculum on a single unit. This model would be challenging to preemptively assume no other SoN would compete for these selected nurses since these nurses would be ineligible to train or precept other staff or students. The selected nurses can also encounter issues that affect their ability to stay for the duration of the whole curriculum such as sickness, vacation, relocation, retirement, or other means of being unavailable to precept.

**Additional cost.** Creating a CAPP model requires financial investment into the project since there is additional cost for the collaborative portion of the model. The cost of orientation session(s) for each person in the triad is not only essential, but mandatory in all cases. In some CAPP models, especially those utilizing a DEU approach, requires orientation to all staff members on the clinical unit in addition to the triad. This ensures everyone on the unit is aware of their own roles and responsibilities for the study (Baird et al., 1994; Barnett et al., 2010; Bittner & Anderson, 1998; Cantrell & Murawski, 2010; Cooper Brathwaite & Lemonde, 2011; Croxon & Maginnis, 2009; Davies et al., 1999; Didion et al., 2013; Jeffries et al., 2013; Koharchik et al., 2017; Lovecchio et al., 2012; Mackay et al., 2014; Smyer et al., 2015; Underwood et al., 2019; Van De Mortel et al., 2020). In the traditional clinical practice education model, it is the academic institution that pays the wage to compensate for the hiring and orientation of an adjunct CI. However, in the CAPP models where the cost may be split between the academic institution and healthcare organization, additional personnel may be hired either internally or externally from either sectors to fulfill the role of the CI (Barnett et al., 2010; Cantrell & Murawski, 2010; Croxon & Maginnis, 2009; Didion et al., 2013; Jeffries et al., 2013;

Mackay et al., 2014; Underwood et al., 2019; Van De Mortel et al., 2020; Williamson, Kane, et al., 2020). The job requirement, level of experience or mastery the CI has, and duration of the clinical rotation all have an effect on the amount of financial support needed to supply the CAPP model with the appropriate resources to function. In contrast to the traditional clinical practice education model, there is an expectation that both sectors will contribute to all necessary expenses in a CAPP model. The possible benefits for the healthcare organization to fund some of the cost may include: future recruitment opportunities, improved retention of new hires from familiar positive clinical experiences, and fostering continuing partnership with the academic institution (Crawford et al., 2018; Jeffries et al., 2013; Cremonini et al., 2015; van der Riet et al., 2018).

**Scheduling conflicts.** In the traditional clinical practice education model, clinical practice education is typically predetermined on selective days and times of the week because one or more SoN is commonly scheduled on the same clinical unit. A prearranged schedule is necessary to avoid overcrowding from multiple SoN practicing concurrently at the same time on a single clinical practice unit. The predetermined schedule also allows academic institutions to teach classroom sessions during the days not scheduled for clinical practice education to allow student nurses to learn nursing theories while actively applying them in practice. With the various types of CIs used within a CAPP model of clinical practice education, 10 articles either paired a student nurse to work the same schedule as their CIs or vice versa. In addition, all the CIs in the selected 10 articles were hired from the clinical practice unit. Of the 10 articles, 4 studies used either CF (Barnett et al., 2010), CC (Bridges et al., 2013), preceptor (Blum, 2009), or an unspecified CI model (Williamson, Kane, et al., 2020) to pair a student nurse to work the same schedule as their CIs and 6 articles matched the schedule of the CI to the student nurse

using CTA (Baird et al., 1994), CF (Mackay et al., 2014), CDI (Smyer et al., 2015), preceptor (Jeffries et al., 2013), or an unspecified CI model (Roxburgh et al., 2012; Underwood et al., 2019). The benefits to the CAPP model are to ensure consistency on building upon a working relationship between the student nurse and CI, and student nurses appreciate working a ‘real shift’ that prepares them for once they graduate (Bridges et al., 2013). However, managers and academic faculty in these studies indicated many challenges to match the schedule of the CI with their respective student. Changing the master rotation of a clinical nurse to match their students were not always possible, some students had some concerns working evening, overnight, or weekend shifts, and for students opting to follow the same schedule of their CI may cause a conflict with the student’s school classes (Barnett et al., 2010; Blum, 2009). This complex and iterative process requires flexibility of the triad to weigh the pros and cons to determine if a CAPP model is actually feasible on the chosen clinical unit.

## **5.2 Gaps & Potential for Future Research**

The evolution and growth in the research surrounding CAPP are emerging on a global scale due to many promising results affecting not only the triad, but also patient safety and satisfaction (Baird et al., 1994; Cantrell & Murawski, 2010; Roxburgh et al., 2012). Despite the growing interest and uptake of CAPP models of clinical practice education, there are areas that have yet to be explored or currently hold limited knowledge. All 25 articles included in this scoping review focused on the population of baccalaureate nursing students despite the inclusion criteria intended to capture various titles of nursing including, but not limited to, vocational nurse, licensed practical nurse, and registered psychiatric nurse.

A total of 18 articles (72%) were contributed by researchers in the USA and Australia, whereas all other regions collectively added only 28%. As there is no literature included from

Asia and South America, we have no information if they incorporate any variations of a CAPP model in their SoN clinical practice education. The lack of information and expertise from diverse geographical areas may prevent new strategies to be shared amongst those attempting to resolve the known barriers and concerns. Furthermore, as this scoping review found only six articles using a quantitative research method, future additional quantitative studies would benefit healthcare policy makers in providing them with more statistics to support the use of a CAPP model. Based on the findings from existing research about CAPP models of clinical practice education, there is a need for additional research to be conducted as new models and/or variations of existing CAPP models are being piloted. Lastly, as there was no input from student nurses in the creation of CAPP models from any of the selected articles, their unique perspectives would be an asset to be included in future studies.

### **5.3 Implications**

The findings from this scoping review may advance nursing practice and healthcare policies on a larger scale by better preparing SoN and healthcare organizations to incorporate CAPP models. Based on the findings, it is evident that the benefits from this model answers some, but not all, of the known challenges in the traditional model of clinical practice education. A disadvantage to the traditional model is the lack of availability from specialized clinical units to accept student nurses due to various reasons, with one being that adjunct CI may not have the competence or knowledge of the specialized area. However, selective CAPP models such as CTA and CA, where the CI is an expert from the clinical unit, may bridge that gap. Therefore, having the ability to implement these types of CAPP models in specialized units can be beneficial for academic institutions especially when there are limited numbers of specialized units accepting clinical practice education rotations (Crawford et al., 2018). Increasing the

capacity in underutilized units to accept clinical rotations would further decrease the strain and competition on existing clinical units that are constantly in use. Bedside nurses hired as CIs can benefit from a CAPP model as this provides them with continuing education hours required as part of their yearly license renewal (BCCNP, 2020) and has reported that it expands their professional skill and increase satisfaction (Baird et al., 1994).

An increase in student nurse satisfaction during clinical practice education is known to have some correlation with a decrease in attrition of newly graduated nurses on the unit (Crawford et al., 2018; Jeffries et al., 2013; Cremonini et al., 2015; van der Riet et al., 2018). Building long-lasting relationships, having familiarity with the physical environment, and knowing some familiar faces on the unit are instrumental not only to keep newly graduated nurses on the unit, but helps build capacity of existing nurses on the unit by passing on their knowledge to more inexperienced nurses.

In regards to financial issues that can include additional training and/or orientation for academic faculty, student nurses, and healthcare staff, Greene & Turner (2014) conducted a study that suggests both the academic institution and healthcare organization would actually result in a financial net gain compared to a net loss by incorporating a CAPP model. The potential for financial gain, less attrition of newly graduate nurses to replace/add to existing workforce, and flexibility to have clinical practice education on a myriad of healthcare settings can be enticing, or at the very least, informing policy makers, leaders, and managers in organizations on the benefits of integrating a CAPP model. Greater effort must be made to navigate through the multiple issues concerning feasibility as this is key to establishing and maintaining a collaborative approach to clinical practice education.

## 5.4 Conclusion

This scoping review provides an overview of the literature on CAPP models of clinical practice education in nursing. CAPP is increasingly researched and piloted in many SoN on an international scale. The benefits of a CAPP model are three-fold. First, it can build a stronger alliance between the academic institution and healthcare organization. Second, this model increases student satisfaction with their clinical practice education as a result of utilizing a CI who is from the clinical practice unit and is familiar with the existing and current organizational policies and procedures, unit culture and norms, staff personnel and physical environment. Lastly, more time is allocated to each member of the triad resulting in individualized learning for the student nurse and time for academic faculty and healthcare clinicians to gather information in order to complete necessary reports. The three main issues raised are the lack of key stakeholder input into creation of the CAPP model, feeling burnout for those in the role of CIs, and the issue of feasibility, which includes limited use of location for this model, additional cost, and scheduling conflicts between the CI and student nurses. Thus, the next steps are to incorporate these themes into a broader range of clinical areas in international SoN in order to garner feedback to researchers and policy makers on how to better implement a practical and feasible CAPP model of clinical practice education involving all essential stakeholders.

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## Appendix A

### *Characteristics of Included Papers (Alphabeticalized)*

#	Author	Year	Journal	Title of Paper	Study Objectives
1	Baird et al.	1994	Journal of Nurse Educator	An innovative model for clinical teaching	To develop a collaborative model of clinical education for students, using the Clinical Teaching Associate (CTA) model
2	Barnett et al.	2010	Journal of Nurse Education in Practice journal	The evaluation of a successful collaborative education model to expand student clinical placements	To develop, implement and evaluate a collaborative model of clinical education that would increase the capacity of a hospital to accommodate student placements and improve students' readiness
3	Bittner & Anderson	1998	Journal of Nursing Education	The preceptoring map for RN-to-BSN students	To match the level of expertise of the RN to the student
4	Blum	2009	Journal of Nurse Educator	Development of a clinical preceptor model	To create a preceptor-guided nursing practice education model
5	Bridges et al.	2013	Journal of Continuing Education in Nursing	Transition to nursing practice of accelerated second-degree baccalaureate students using clinical coaches	To focus on the perspectives of four graduates who successfully transitioned to the role of professional nurse with the use of a Clinical Coach
6	Cantrell & Murawski	2010	Journal for Nurses in Staff Development	Enhancing the clinical experience for undergraduate nursing students	To provide an enhanced and enriched clinical experience for senior-level undergraduate nursing students in an acute care pediatric clinical practicum
7	Cooper & Lemonde	2011	International Scholarly Research Network	Team preceptorship model: a solution for students' clinical experience	To describe the strengths, limitations, and applicability of the team preceptorship model, which contributed to students' clinical experience and learning in public health nursing
8	Crawford et al.	2018	Journal of Nurse Education Today	"Feeling part of a team" a mixed method evaluation of a	To evaluate the impact of the dedicated education unit pilot on district health board nursing staff and nursing students from three

#	Author	Year	Journal	Title of Paper	Study Objectives
				dedicated education unit pilot programme	undergraduate programmes across two education providers, Whitireia New Zealand and Massey University
9	Cremonini et al.	2015	Journal of Acta Biomed for Health Professions	Nursing students' experiences of and satisfaction with the clinical learning environment: the role of educational models in the simulation laboratory and in clinical practice	To explore the students' experiences and satisfaction of the clinical learning environment and supervision of the educational model adopted
10	Croxon & Maginnis	2009	Journal of Nurse Education in Practice	Evaluation of clinical teaching models for nursing practice	To evaluate a practice initiative, namely trialling a group model of facilitation as compared to the current preceptor model, to facilitate students' learning in the clinical setting
11	Davies et al.	1999	Collegian (Royal College of Nursing, Australia)	Evaluating a clinical partnership model for undergraduate nursing students	To enhance the quality of learning experiences for students and to foster collaboration between the university and selected agencies
12	Didion et al.	2013	Journal of Professional Nursing	Academic/clinical partnership and collaboration in quality and safety education for nurse's education	To describe the development and implementation of the academic/clinical partnership essential to the implementation of a baccalaureate quality and safety education for nurses based integrated clinical education model
13	Jeffries et al.	2013	Journal of Professional Nursing	A clinical academic practice partnership: a clinical education redesign	To create and test a new clinical redesign model that would better prepare nursing students for clinical education to address concerns identified in this report related to new graduate preparedness and respond to a call by national nursing leaders for more creative teaching-learning strategies
14	Koharchik et al.	2017	Journal of Teaching and	Staff nurses' perception of their role in a dedicated	To evaluate the perceptions of staff nurses acting as clinical teaching associates (CTAs) to senior nursing students in the setting of an intensive

#	Author	Year	Journal	Title of Paper	Study Objectives
			Learning in Nursing	education unit within the intensive care unit	care unit where the dedicated education unit model was used
15	Lovecchio et al.	2012	Journal of Nursing Education	Clinical liaison nurse model in a community hospital: a unique academic-practice partnership that strengthens clinical nursing education	To describe an academic-practice partnership that paired nurse faculty from a baccalaureate nursing program at one university with experienced staff nurses from a community-based, acute care hospital
16	Mackay et al.	2014	Journal of Nurse Education in Practice	The development of a model of education for casual academic staff who support nursing students in practice	To develop a suite of strategies to assist casual academic staff working in the role of clinical supervisors to better support nursing students in the clinical environment
17	Nehls et al.	1997	Journal of Nursing Education	The preceptor model of clinical instruction: the lived experiences of students, preceptors, and faculty-of-record	To address the needs of precepting by describing the lived experiences of students, clinicians, and educators who participated in a preceptor model of clinical instruction in nursing
18	Nishioka et al.	2014	Journal of Nursing Education Perspectives	Dedicated education unit: student perspectives	To examine the factors that influence clinical learning outcomes, including student satisfaction with the clinical experience, opportunities to practice clinical skills as part of an interdisciplinary team, and the quality of the nurse-student relationship
19	Roxburgh et al.	2012	Journal of Nurse Education Today	Evaluating hub and spoke models of practice learning in Scotland, UK: a multiple case study approach	To evaluate the impact of hub and spoke model(s) of clinical practice placement across geographically diverse locations, with a particular focus on enhancing the student practice learning experience.
20	Sadeh	2018	International Journal of Nursing Education	Semi traditional clinical instruction vs. preceptored clinical instruction: satisfaction among nursing students	To compare satisfaction among nursing students with respect to the two models of clinical instruction

#	Author	Year	Journal	Title of Paper	Study Objectives
21	Smyer et al.	2015	Journal of Nursing Education	Systematic and deliberate orientation and instruction for dedicated education unit staff	To describe the development of a deliberate, systematic approach regarding the orientation and continued education of clinical dedicated unit instructors (CDIs) in the dedicated education unit over a 2-year period (2012 to 2014)
22	Underwood et al.	2019	British Journal of Nursing	Evaluating the impact of a coaching pilot on students and staff	To comply with the nursing and midwifery Council Standards for student supervision and assessment and to ensure that the students experience is maximized in the face of anticipated challenges, a derivative of the collaborative learning in practice model that was originally developed by the University of East Anglia was used for the coaching pilot
23	Van de Mortel et al.	2020	BMC Nursing	Supporting Australian clinical learners in a collaborative clusters' education model: a mixed methods study	To evaluate the acceptability of the collaborative clusters education model to stakeholders by examining their perceptions of the facilitators and barriers to the model in its implementation
24	van der Riet et al.	2018	Journal of Nurse Education in Practice	Nursing students' perceptions of a collaborative clinical placement model: a qualitative descriptive study	To explore 14 third year nursing students' perceptions of a collaborative clinical placement model undertaken in an Australian university
25	Williamson, Kane, et al.	2020	Journal of Nurse Education in Practice	'Thinking like a nurse'. Changing the culture of nursing students' clinical learning: implementing a collaborative learning in practice	To evaluate the implementation of a collaborative learning in practice models at a university school of nursing and midwifery with practice partners across the south west of England.

## Appendix B

### *Summary of Paper's Characteristics*

#	Author, Year	Location	Research Method	Clinical Instructor (CI) Type	Study Outcomes with Respects to the Triad		
					Academic/Healthcare	Student nurse	CI
1	Baird et al., 1994	USA	Quantitative	Clinical Teaching Associate	<ul style="list-style-type: none"> <li>• Faculty had more time to review student care plan</li> <li>• Increased collaboration with expert nurses</li> </ul>	<ul style="list-style-type: none"> <li>• Better individualized learning</li> </ul>	<ul style="list-style-type: none"> <li>• CTA was a resource since they were experts from the unit</li> </ul>
2	Barnett et al., 2010	Australia	Qualitative	Clinical Facilitator	<ul style="list-style-type: none"> <li>• Increased collaboration and partnership between both sectors</li> </ul>	<ul style="list-style-type: none"> <li>• Not everyone loved having only one preceptor, as some liked having multiple nurses to follow</li> </ul>	<ul style="list-style-type: none"> <li>• CF reported limited time with students as there is only one dedicated CF role</li> </ul>
3	Bittner & Anderson, 1998	USA	Qualitative	Preceptor	<ul style="list-style-type: none"> <li>• Faculty worked closely with healthcare settings to ensure appropriate student matched the bedside nurse</li> </ul>	<ul style="list-style-type: none"> <li>• Students appreciated their level of mastery was fitted with their specified track</li> </ul>	<ul style="list-style-type: none"> <li>• CI is familiar with unit culture</li> </ul>
4	Blum, 2009	USA	Qualitative	Preceptor	<ul style="list-style-type: none"> <li>• Only the Academic and bedside nurse was collaborating. Requires all stakeholders to work together with a common purpose</li> </ul>	<ul style="list-style-type: none"> <li>• Students established ongoing and consistent relationship with preceptor</li> </ul>	<ul style="list-style-type: none"> <li>• Preceptors should be chosen carefully to match with the student since they will cover the same units over the course of a year</li> </ul>

#	Author, Year	Location	Research Method	Clinical Instructor (CI) Type	Study Outcomes with Regards to the Triad		
					Academic/Healthcare	Student nurse	CI
5	Bridges et al., 2013	USA	Qualitative	Clinical Coach (CC)	<ul style="list-style-type: none"> <li>Faculty works closely with CC and is kept in consistent contact to ensure students are supported</li> </ul>	<ul style="list-style-type: none"> <li>Students like the CC knowing the culture of the unit so students do not feel like a guest on the unit</li> </ul>	<ul style="list-style-type: none"> <li>Strength of this model is dependent on the experience of the CC</li> </ul>
6	Cantrell & Murawski, 2010	USA	Qualitative	Clinical Teaching Associate (CTA)	<ul style="list-style-type: none"> <li>Increased collaboration between academic faculty and Registered Nurses only. Few ancillary staff were included for input</li> </ul>	<ul style="list-style-type: none"> <li>Felt less bothersome to staff as CTA is well known to staff</li> <li>Staff seemed more willing to work with students and answer their questions</li> </ul>	<ul style="list-style-type: none"> <li>CTA was a resource when faculty was busy with another student</li> </ul>
7	Cooper & Lemonde, 2011	Canada	Qualitative	Preceptor	<ul style="list-style-type: none"> <li>Onus of collaboration was put more on the 'team' of preceptors</li> <li>Faculty was not always on site but was available via telecommunication</li> </ul>	<ul style="list-style-type: none"> <li>Students felt it was easier to get a hold of preceptor</li> <li>Student benefitted from having multiple expertise</li> </ul>	<ul style="list-style-type: none"> <li>Responsibilities were shared as they had a team of preceptor</li> </ul>
8	Crawford et al., 2018	New Zealand	Mixed Method	Clinical Liaison Nurse (CLN)	<ul style="list-style-type: none"> <li>Academic Liaison Nurse (ALN) and Clinical Liaison Nurse reported having 91.67% excellent rating in response to collaboration</li> </ul>	<ul style="list-style-type: none"> <li>Students reported having a positive relationship with the nurse</li> </ul>	<ul style="list-style-type: none"> <li>CI was seen as a resource and expert</li> <li>CI provided more individualized learning</li> </ul>

#	Author, Year	Location	Research Method	Clinical Instructor (CI) Type	Study Outcomes with Regards to the Triad		
					Academic/Healthcare	Student nurse	CI
					<ul style="list-style-type: none"> <li>ALN and CLN worked together to facilitate clinical learning and summative assessments of student learning</li> </ul>		
9	Cremonini et al., 2015	Italy	Quantitative	Clinical Nurse Supervisor (CNS)	<ul style="list-style-type: none"> <li>CNS worked in simulation lab of school as to form partnership between academic institution and healthcare organization</li> </ul>	<ul style="list-style-type: none"> <li>Students reported positive relationship with CNS as they can lead to feeling of security and good personal support</li> </ul>	<ul style="list-style-type: none"> <li>CNS best suited to receive 'hands on' education than faculty</li> </ul>
10	Croxon & Maginnis, 2009	Australia	Mixed Methods	Clinical Facilitator (CF)	<ul style="list-style-type: none"> <li>Academic works closely with Healthcare setting as unit requires adequate levels of staff 'skill mix' that would otherwise remove all senior/experienced nurses to become CFs</li> </ul>	<ul style="list-style-type: none"> <li>Students felt 100% supported from CF</li> <li>Students felt they received the one-on-one instruction than a preceptored model of clinical education</li> <li>A preceptor model may benefit quieter students</li> </ul>	<ul style="list-style-type: none"> <li>CF familiar with staff, unit, environment, policies and procedures</li> <li>Role overload when demands of assignment of clinical workload and students</li> </ul>
11	Davies et al., 1999	Australia	Qualitative	Clinical Associate (CA)	<ul style="list-style-type: none"> <li>Academic institution established a secondment partnership with healthcare setting</li> </ul>	<ul style="list-style-type: none"> <li>Students were perceived less intrusive in clinical area, more open communication with clinicians, and</li> </ul>	<ul style="list-style-type: none"> <li>CA familiar with organizational resources, policies, and procedures</li> </ul>

#	Author, Year	Location	Research Method	Clinical Instructor (CI) Type	Study Outcomes with Respects to the Triad		
					Academic/Healthcare	Student nurse	CI
						easier to handle conflict	
12	Didion et al., 2013	USA	Quantitative	Unspecified	<ul style="list-style-type: none"> <li>• Longer time was spent on the same unit to build stronger partnership between academic institution and healthcare organization</li> <li>• Success revolves around the consistent communication with clinical site about curriculum model</li> </ul>	<ul style="list-style-type: none"> <li>• Students did not 'lose time' from moving to multiple clinical sites</li> </ul>	<ul style="list-style-type: none"> <li>• A number of adjunct clinical instructors were needed for success of this clinical model</li> </ul>
13	Jeffries et al., 2013	USA	Mixed Methods	Preceptor	<ul style="list-style-type: none"> <li>• Only high-level stakeholders were invited to participate in creation of this a CAPP</li> <li>• Better partnership between leaders, educators in academic and clinical setting</li> </ul>	<ul style="list-style-type: none"> <li>• Students felt more satisfied and had a sense of belonging with the CI from the unit</li> </ul>	<ul style="list-style-type: none"> <li>• Preceptors were stronger nurses on unit, leaving weaker nurses on shifts</li> <li>• Preceptor burnout noted with consecutive students</li> </ul>
14	Koharchik et al., 2017	USA	Qualitative	Clinical Teaching Associate (CTA)	<ul style="list-style-type: none"> <li>• Consistent collaboration between academic faculty and CTA for suitable assignment and serve as a resource</li> </ul>	<ul style="list-style-type: none"> <li>• Students were not consistently paired with the same nurse</li> </ul>	<ul style="list-style-type: none"> <li>• Nurse manager chose CTA based on aptitude for teaching and previous</li> </ul>

#	Author, Year	Location	Research Method	Clinical Instructor (CI) Type	Study Outcomes with Respects to the Triad		
					Academic/Healthcare	Student nurse	CI
							success or interest in preceptor role <ul style="list-style-type: none"> <li>• This model “challenging” in a unit with a high turnover</li> </ul>
15	Lovecchio et al., 2012	USA	Quantitative	Clinical Liaison Nurse (CLN)	<ul style="list-style-type: none"> <li>• Higher collaboration between academic faculty and CLN</li> <li>• Faculty on site to aid CLN for clarity on curriculum</li> </ul>	<ul style="list-style-type: none"> <li>• Students were able to try new ideas from classroom theory into clinical practice</li> </ul>	<ul style="list-style-type: none"> <li>• CLN selected based on welcoming and helpful to nursing students by nurse manager</li> <li>• CLN more available for more one-to-one clinical problems</li> </ul>
16	Mackay et al., 2014	Australia	Quantitative	Clinical Facilitator (CF)	<ul style="list-style-type: none"> <li>• Only high level of stakeholders was invited for creation of this clinical model</li> </ul>	<ul style="list-style-type: none"> <li>• No information</li> </ul>	<ul style="list-style-type: none"> <li>• No differentiation if CI is employed by university or by healthcare facility</li> <li>• Comprehensive orientation is needed for the CF by</li> </ul>

#	Author, Year	Location	Research Method	Clinical Instructor (CI) Type	Study Outcomes with Regards to the Triad		
					Academic/Healthcare	Student nurse	CI
							academic institution
17	Nehls et al., 1997	USA	Qualitative	Preceptor	<ul style="list-style-type: none"> <li>Academic faculty worked with preceptor to form a team when approaching students' progress</li> </ul>	<ul style="list-style-type: none"> <li>Students reported having lots of one-on-one time and didn't feel rushed</li> </ul>	<ul style="list-style-type: none"> <li>Preceptors reported wanting to be invited in curricular development</li> </ul>
18	Nishioka et al., 2014	USA	Mixed Method	Unspecified	<ul style="list-style-type: none"> <li>Academic faculty worked as a coach for CIs</li> </ul>	<ul style="list-style-type: none"> <li>Students felt welcomed and part of the team due to CI part of unit</li> <li>Students were easier to integrate into unit workflow</li> </ul>	<ul style="list-style-type: none"> <li>CIs familiarity with unit culture was seen as an important attribute</li> </ul>
19	Roxburgh et al., 2012	UK	Mixed Method	Unspecified	<ul style="list-style-type: none"> <li>Difficult to build connection with multiple areas due to limited time in each area</li> <li>Major reorganization of placement and accessibility is a key concern</li> </ul>	<ul style="list-style-type: none"> <li>Students got to know patient throughout journey</li> <li>Students felt belongingness to the team</li> </ul>	<ul style="list-style-type: none"> <li>Not all areas with CIs understood their roles</li> <li>Short duration made it difficult to understand student progress</li> </ul>
20	Sadeh, 2018	Israel	Mixed Methods	Preceptor	<ul style="list-style-type: none"> <li>No significant difference in collaboration effort in either the semi-traditional model or preceptor model noted</li> </ul>	<ul style="list-style-type: none"> <li>Students reported faster socialization into nursing profession and felt appreciated working with staff</li> </ul>	<ul style="list-style-type: none"> <li>No significant difference between the two models in relation to the availability of</li> </ul>

#	Author, Year	Location	Research Method	Clinical Instructor (CI) Type	Study Outcomes with Regards to the Triad		
					Academic/Healthcare	Student nurse	CI
						<ul style="list-style-type: none"> <li>Students reported more time and less 'dead time' when compared with semi-traditional model</li> </ul>	<p>CIs in either models</p>
21	Smyer et al., 2015	USA	Mixed Method	Clinical Designated Instructor (CDI)	<ul style="list-style-type: none"> <li>CDI and academic faculty established a collaborative and trusting relationship in this model through student progress</li> </ul>	<ul style="list-style-type: none"> <li>No information</li> </ul>	<ul style="list-style-type: none"> <li>CDI received intense orientation by academic faculty</li> </ul>
22	Underwood et al., 2019	UK	Quantitative	Unspecified	<ul style="list-style-type: none"> <li>Only high level of stakeholders was invited for creation of this clinical model</li> </ul>	<ul style="list-style-type: none"> <li>Students developed greater problem solving and leadership skills as they were more independent compared to other models</li> </ul>	<ul style="list-style-type: none"> <li>This model not always feasible as it requires a dedicated coach for various numbers of students</li> </ul>
23	Van de Mortel et al., 2020	Australia	Mixed Methods	Clinical Facilitator (CF)	<ul style="list-style-type: none"> <li>Collaboration required keeping communication line open</li> <li>CF worked closely with ward-based RN and liaise with academic faculty for a collaborative model</li> </ul>	<ul style="list-style-type: none"> <li>Students became part of the team and developed more independence</li> </ul>	<ul style="list-style-type: none"> <li>External hire to the unit may lack clinical expertise in specific unit a concern</li> </ul>

#	Author, Year	Location	Research Method	Clinical Instructor (CI) Type	Study Outcomes with Regards to the Triad		
					Academic/Healthcare	Student nurse	CI
24	Van der Riet et al., 2018	Australia	Qualitative	Unspecified	<ul style="list-style-type: none"> <li>• Higher collaboration between academic institution and healthcare organization as all clinicals are placed at one healthcare organization but in different units</li> <li>• Designated academic faculty works with CI as a mentor</li> </ul>	<ul style="list-style-type: none"> <li>• Students reported greater familiarity and confidence with the unit due to being in the same hospital instead of different placements</li> <li>• Students felt welcomed and wanted as staff embraced having students</li> </ul>	<ul style="list-style-type: none"> <li>• CI familiar with host unit a benefit</li> </ul>
25	Williamson, Kane, et al., 2020	UK	Qualitative	Unspecified	<ul style="list-style-type: none"> <li>• Only high level of stakeholders was invited for creation of this clinical model</li> </ul>	<ul style="list-style-type: none"> <li>• Some students were counted 'in the numbers' as opposed to supernumerary which required further role clarity with unit</li> <li>• Students reported greater problem-solving skills, lasting friendship, and was able to take on more active role and build on leadership skills</li> </ul>	<ul style="list-style-type: none"> <li>• An increase in student capacity would result in a reduction in the amount of time students spend with their CI</li> </ul>

## Appendix C

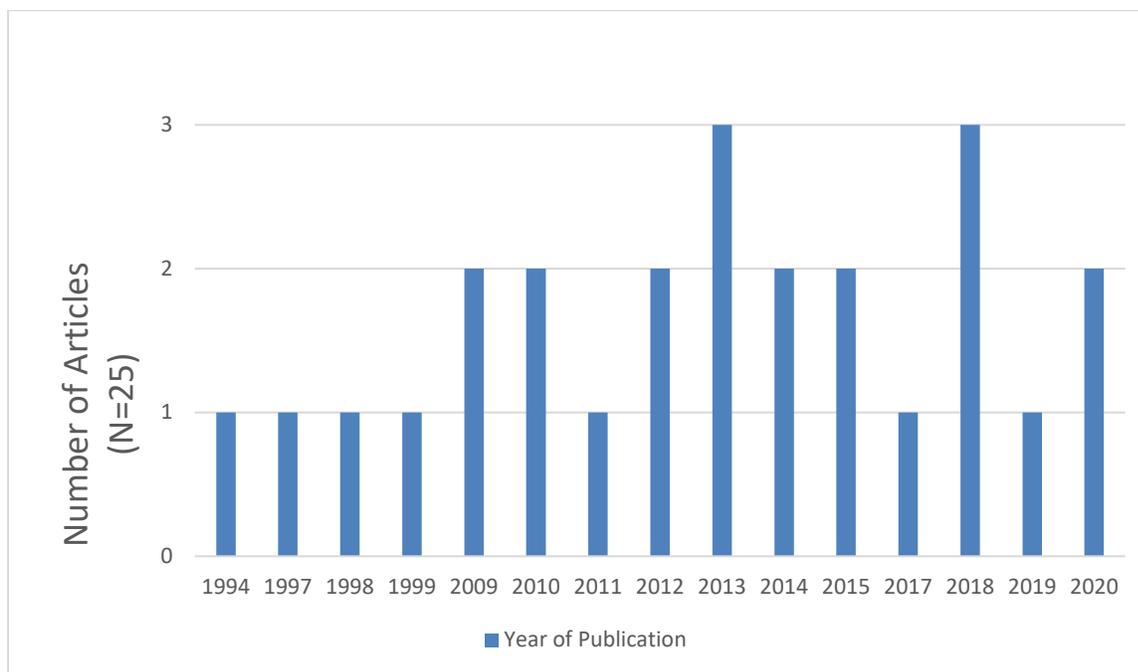
*Summary of Issues Addressed in the Literature*

#	Author, Year	Issue #1: Stakeholder Input Issues	Issue #2: Overworked and Burnout	Issue #3: Feasibility		
				Limited Location	Additional Cost (Orientation and/or Additional Personnel)	Scheduling Conflicts
1	Baird et al., 1994		X	X	X	X
2	Barnett et al., 2010		X	X	X	X
3	Bittner & Anderson, 1998				X	
4	Blum, 2009	X				X
5	Bridges et al., 2013					X
6	Cantrell & Murawski, 2010	X			X	
7	Cooper & Lemonde, 2011	X	X	X	X	
8	Crawford et al., 2018		X		X	
9	Cremonini et al., 2015		X			
10	Croxon & Maginnis, 2009		X		X	
11	Davies et al., 1999		X		X	
12	Didion et al., 2013		X	X	X	
13	Jeffries et al., 2013	X	X		X	X
14	Koharchik et al., 2017				X	
15	Lovecchio et al., 2012	X			X	
16	Mackay et al., 2014				X	X
17	Nehls et al., 1997				X	
18	Nishioka et al., 2014	X				
19	Roxburgh et al., 2012			X		X
20	Sadeh, 2018			X		
21	Smyer et al., 2015				X	X
22	Underwood et al., 2019				X	X
23	Van de Mortel et al., 2020				X	
24	Van der Riet et al., 2018	X		X		

#	Author, Year	Issue #1: Stakeholder Input Issues	Issue #2: Overworked and Burnout	Issue #3: Feasibility		
				Limited Location	Additional Cost (Orientation and/or Additional Personnel)	Scheduling Conflicts
25	Williamson, Kane, et al., 2020				X	X

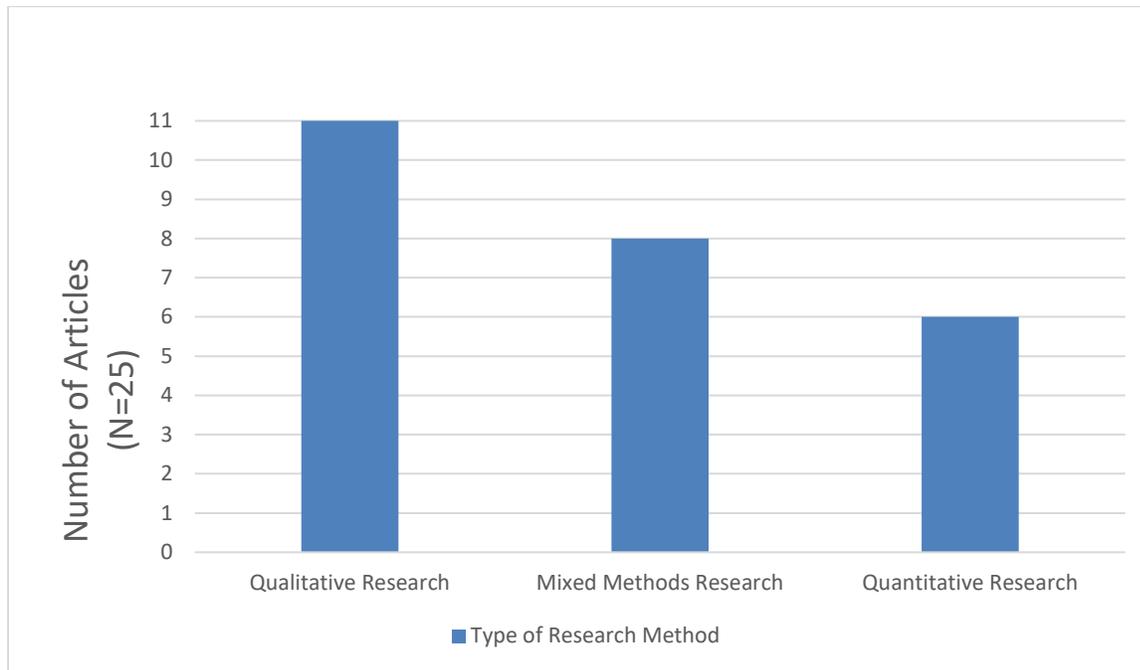
## Appendix D

### *Included Papers, by Year of Publication*



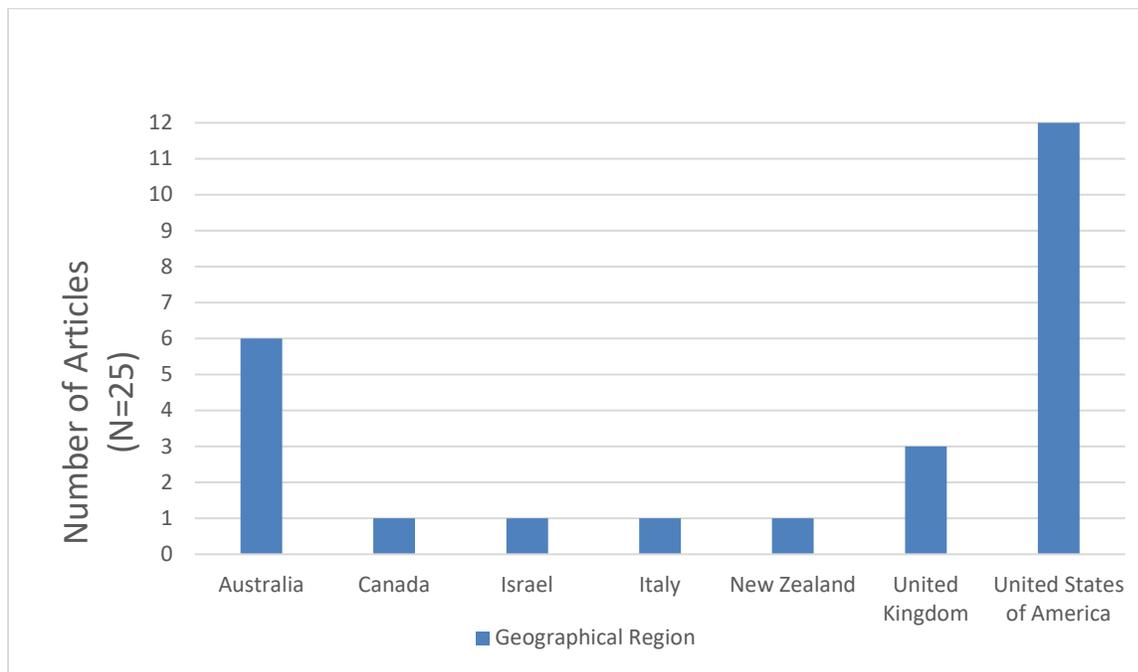
## Appendix E

### *Included Papers, by Type of Research Method*



## Appendix F

### *Included Papers, by Geographic Region*



## Appendix G

### *Included Papers, by Type of Clinical Practice Education Model*

