

Em M. Pijl-Zieber\*, Sylvia Barton, Oluwagbohunmi A. Awosoga and Jill Konkin

# Nursing Students Achieving Community Health Competencies through Undergraduate Clinical Experiences: A Gap Analysis

DOI 10.1515/ijnes-2015-0022

**Abstract:** In Canada, it is widely believed that nursing practice and health care will move from acute care into the community. At the same time, increasing numbers of nursing students are engaged in non-traditional clinical experiences for their community health rotation. These clinical experiences occur at agencies not organizationally affiliated with the health care system and typically do not employ registered nurses (RNs). What has yet to be established is the degree to which nursing students are actually being prepared for community health nursing roles through their community health clinical rotations. In this paper we report the findings of a mixed method study that explored the gap between desired and observed levels of competence in community health of senior nursing students and new graduates. The gap was quantified and then the nature of the gap further explored through focus groups.

**Keywords:** clinical education, undergraduate nursing education, competence, community health nursing

## Background

In Canada, many baccalaureate schools of nursing are using non-traditional or innovative placements for undergraduate practice rotations in community health (Cohen & Gregory, 2009; Reimer Kirkham, Hoe Harwood, & Van Hofwegen, 2005). These experiences differ from traditional community health practicums in several ways. A traditional community health practicum involves nursing students spending one-on-one time (similar to a

“preceptorship”) with a registered nurse in a community nursing role – usually in public health or home care, although sometimes in community clinics as well. Non-traditional community experiences occur at a wide range of sites not organizationally affiliated with the health care system and that typically do not employ registered nurses: schools, homeless shelters, non-profit organizations, industry, anti-poverty or environmental groups, seniors’ centres, police stations or even places of worship (Cohen & Gregory, 2009). Students in these clinical experiences typically lack opportunities to develop areas of unique nursing knowledge and skills. Students are usually supervised at a distance by nursing program faculty; sometimes there is an on-site non-nursing contact as well with whom students can connect as they go about their clinical activities. Common themes in non-traditional experiences in Canada include: community assessment, healthy public policy, community partnerships, advocacy, health education, and social justice, within a population health and/or community development framework (Cohen & Gregory, 2009).

These non-traditional experiences are eclipsing traditional preceptored (one-on-one mentorship in the professional nursing role) placements in public health and home care (Cohen & Gregory, 2009; Hoe Harwood, Reimer-Kirkham, Sawatzky, Terblanche, & Van Hofwegen, 2009), sectors that make up the largest portions of community health nurses, employing 59% and 16% of community health nurses, respectively (Underwood, 2009). Strong, empirical evidence indicating the degree to which non-traditional community health nursing clinical rotations are preparing students for practice is lacking. What is unclear is the degree to which students are able to prepare for community health nursing practice roles without ever being exposed to them.

In Canada, a competence approach to professional practice is legislated as a way to ensure accountability (Black et al., 2008). Part of this legislation involves provincial and territorial colleges and associations of nursing delineating competencies for new nurses, in consultation with employers, educators, government, and other stakeholders (Black et al., 2008; Canadian Nurses Association,

**\*Corresponding author: Em M. Pijl-Zieber**, Faculty of Health Sciences, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta T1K 3M4, Canada, E-mail: em.pijlzieber@uleth.ca

**Sylvia Barton**, Faculty of Nursing, University of Alberta, Edmonton, Alberta, Canada

**Oluwagbohunmi A. Awosoga**, Faculty of Health Sciences, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta T1K 3M4, Canada

**Jill Konkin**, Department of Family Medicine, University of Alberta, Edmonton, Alberta, Canada

2007, 2008). Provincial regulatory bodies implement and enforce federal, provincial and territorial legislation that governs nursing practice, and set standards for nursing education programs within their jurisdictions (Black et al., 2008). Nursing education programs that prepare entry-level registered nurses use entry-to-practice competencies to measure student progress towards entry-level nursing practice. In Alberta, the competency profile for new registered nurses is captured by the document, *Entry-to-Practice Competencies for the Registered Nurses Profession* (College and Association of Registered Nurses of Alberta, 2013). Additionally, the Community Health Nurses of Canada have developed a set of competencies for home health nursing (Community Health Nurses of Canada, 2010) and public health nursing (Community Health Nurses of Canada, 2009).

Most of the literature assessing undergraduate nursing students' achievement of community health competencies is qualitative or merely descriptive (Bouchaud, 2011; Brosnan, 2005; Ciesielka, 2008; Francis-Baldesari, 2008; Hjälmhult, Haaland, & Litland, 2013; Laplante, 2007; Lasater, 2007; Ravella, 2001; Reimer Kirkham et al., 2005; Van Doren, 2012). No quantitative studies have been published that determine the degree to which nursing students are prepared for community health practice through their undergraduate community health clinical experiences. A study by Diem and Moyer (2010) set out to evaluate students' confidence in using public health nursing skills and satisfaction with team projects. While this study contributes to our understanding of what is learned in community health experiences, the tools are reflective of general competencies, not specific competencies for public health.

## Method

The purposes of this research study were to: (1) establish the level at which community health nurses, senior baccalaureate nursing students and community health faculty *desire* to see specific competencies achieved in nursing students; (2) establish the level at which nurses, students and faculty are *observing* these specific competencies in

nursing students; and (3) determine the nature of the gap between observed and desired nursing student competence in community practice settings. Gap analysis arises out of performance analysis, the purpose of which is to identify discrepancies between current and desired or expected performance levels (Rothwell, Hohne, & King, 2007). Please see Figure 1 for a visual depiction of the study.

This study utilized a mixed method explanatory sequential design, in which quantitative data collection and analysis is followed up with qualitative data collection and analysis to further explain the quantitative results (Creswell & Plano Clark, 2011). The quantitative phase entailed email distribution of an online survey using Qualtrics Research Suite®. The survey consisted of demographic questions, including questions about community health clinical experiences and work role, and the main section consisted of two matrices. The first matrix required respondents to indicate the level of competence they *desired* to see in senior nursing students and new graduates in community health. The second matrix required respondents to indicate the level of competence they actually *observed*. Following the format of a previous competence study (Canadian Association of Schools of Nursing, 2010), the 5-point Likert scale consisted of five points: unaware, aware, understands, demonstrates with assistance, and demonstrates independently.

The items included in the tool were 43 Alberta entry-to-practice competencies (ETPCs) (College and Association of Registered Nurses of Alberta, 2013) that most closely aligned with the Home Health Competencies (Community Health Nurses of Canada, 2010) and Public Health Nursing Competencies (Community Health Nurses of Canada, 2009). The 43 competency items were grouped within the tool using the same grouping as in the provincial entry-to-practice document. Respondents were required to make a subjective judgment and rate performance as a proxy for competence. Because the three sets of competencies on which the tool was based are well-researched, established, and widely accepted, the authors believe that the tool had good face and construct validity. Reliability testing was done on the desired competency items, revealing a Cronbach's  $\alpha$  of 0.977 (43 items,  $n=174$ ), and on the observed competency items, revealing a Cronbach's  $\alpha$  of

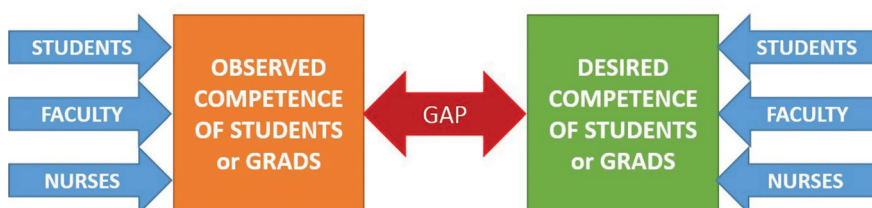


Figure 1: Gap analysis study – visual depiction.

0.988 (43 items,  $n = 175$ ). This high score may not necessarily indicate high internal consistency, and instead may indicate that the abstract nature of competency statements make poor items for rating or that the items being rated were too highly intercorrelated.

Prior to wide dissemination of the survey, a pilot test was conducted with 30 respondents at the lead author's institution. Minor adjustments were made to enhance readability and flow. The surveys were anonymous and submission of the survey implied consent. Data was managed and analyzed by the lead author using SPSS® v. 21.

Potential respondents were in Alberta and were: practicing community health nurses (over 2 years of experience and experience with new graduates and/or students); managers and educators in community health areas; faculty teaching community health nursing at baccalaureate schools of nursing; senior baccalaureate nursing students who have had a community health clinical rotation or are completing a final preceptorship (with a community health nurse) in community health; and new graduates (0–6 months practice) working in community health. Potential respondents were determined by emails to deans of university nursing schools in Alberta; access to practicing nurses and managers was facilitated by the provincial health authority research office. Participants self-selected into the study. Ethical approvals were obtained from all baccalaureate schools of nursing in the Canadian province of Alberta. Ethical and operational approvals were also obtained from all service areas within the publicly funded provincial health services provider (Alberta Health Services). Alberta Health Services is divided into geographic areas or regions to better serve residents.

For the qualitative phase, the lead author conducted focus groups with the same respondent groups: senior nursing students at two schools of nursing in two different provincial health authority regions; community health faculty at two schools of nursing in two different health authority regions; home care nurses in one health authority region; and, public health nurses in one health authority region. While the quantitative portion of the study sampled from all five health regions within the province, the qualitative portion sampled from only two, primarily due to ease of access. Participants signed a consent form and were free to terminate their involvement at any time. Focus groups were audio-recorded and then transcribed for analysis. Data was managed by the lead author using NVivo 10.

Textual data from the focus groups and survey's open-ended comments were subjected to a thematic analysis (Clarke & Braun, 2013, 2014; Vaismoradi, Turunen, & Bondas, 2013) and coded into categories during analysis, seeking the minimum number of groups to avoid an

overwhelming number of small categories. A log file was created to track changes between the original text and the version coded into themes, to ensure the original text and its intent was retained (Schmidt, 2010). Poignant textual data and explanatory accounts were also retained in support of findings.

While inferences were drawn after the quantitative and qualitative phases of data analysis, interpreting the connected results involved drawing meta-inferences relating to how the qualitative data helped elucidate the problem – i.e., the gap – identified in the quantitative phase (Creswell & Plano Clark, 2011). The samples had a high level of integration between the quantitative and qualitative samples, permitting the drawing of appropriate meta-inferences and enabling good transferability (Collins & Onwuegbuzie, 2013). A variable-oriented analysis consisted of identifying relationships and themes that cut across cases and among entities and yielded rich findings that supported both the qualitative and quantitative findings (Onwuegbuzie, Slate, Leech, & Collins, 2009). Such triangulation of data produced a rich dimensional understanding of the topic.

Strategies employed to legitimate the truth value of the qualitative findings included several steps as put forth by Onwuegbuzie and Leech (2007b). Persistent observation identified characteristics and attributes that were most relevant to readiness for practice. Data was triangulated using multiple and different methods (quantitative and qualitative, survey and focus group), theories (various education theories and views on competence) and sources (faculty, students, public health nurses and home care nurses) to gain corroborating evidence and reduce the possibility of chance associations and systematic biases. The lead author created an audit trail of documents, records, and data, including: the raw data, the raw transcripts, the data reduction process and products, ongoing memos, data reconstruction and synthesis products, process notes, and a running log of amendments to the study. Focus group findings were related back to the survey findings, using the former to elucidate the latter. When findings were unusual or not representative, these instances were noted in the analysis and description of results. In the analysis, data was converged through the use of thematic tables and diagrams that elucidated the nature of the gap that had arisen in the quantitative findings (Creswell & Plano Clark, 2011).

## Findings

The survey, which took about 45 minutes to complete, had a high attrition (non-completion) rate of 24.9%,

indicating that respondents may have been overwhelmed by the survey itself or its length. The survey consisted of two main parts: a demographic section, and two matrices. All of the attrition occurred during or at the end of the demographic section, or at the beginning or middle of the first matrix. Because both matrices were required to reveal a gap, respondents ( $n=2$ ) with only one matrix complete were not counted in analysis and were considered lost to attrition. Respondents lost to attrition and as such whose data was incomplete were deleted, resulting in 187 valid cases (students,  $n=81$ ; nurses,  $n=87$ ; and faculty,  $n=19$ ) across 5 regions of the provincial health authority. Nursing students were primarily in their senior year ( $n=60$ ) or in final program preceptorship ( $n=19$ ); four respondents indicated they were new graduates working in a community health area. Nurse respondents primarily worked in public health (66.7%, followed by home care (31.0%). Most nurse respondents were involved in direct patient care (60.7%), followed by management and education (23.8%) and case management (13.1%). The majority of nurse respondents possessed a baccalaureate degree in nursing (92.8%). Faculty respondents had experience in community health theory, clinical or preceptorship courses, and had practiced in community health prior to academe. Unfortunately, the response rate among faculty was particularly low, perhaps as a result of survey fatigue (Porter, 2004; Savage & Waldman, 2008; Umbach, 2004), workload, or other environmental factors.

The majority of students experienced a non-traditional community health clinical experience (85%). That non-traditional sites are commonly used for community clinical was also reported by Hoe Harwood et al. (2009) in their Canadian survey on innovative placements and by Cohen and Gregory (2009) in their pan-Canadian study. Focus group data revealed that a wide range of student experiences and exposures to community health roles is occurring not only between distinct nursing programs but also within them. In other words, individual community health clinical education experiences are widely diverse, even within a single nursing education program.

The degree to which student respondents felt prepared to work as a registered nurse in community health as a result of their community health clinical rotation was analyzed as a binary: preceptored (traditional placement), or non-traditional. Data was negatively skewed. A Mann-Whitney  $U$  test was conducted to test whether the average feeling of practice readiness differed between the students who had a traditional preceptored experience in community health ( $n=19$ ) and those who experienced a non-traditional placement ( $n=54$ ) groups. The

average feeling of readiness for the preceptored students was 3.21 (SD=0.918) whereas the average of the non-traditional students was 2.20 (SD=0.979). The mean rank of preceptored students was significantly higher than non-traditional site students,  $z=-3.595$ ,  $p < 0.001$ , indicating that students who spent time with a community health nurse for their clinical experience felt more prepared to work in the role of a community health nurse than students who only had a non-traditional experience (please see Figure 2). Cohen's effect size value ( $d=0.93$ ) suggested a high practical significance.

The competency matrix data was analyzed to see if desired competence scores and observed scores differed by respondent type. Descriptive statistics revealed that both the desired and observed scores were negatively skewed and could not be corrected by transformation. As a result, non-parametric tests were used. A Kruskal-Wallis test (with Bonferroni correction) found statistically significant differences in the mean rank between respondent groups in the majority of competency items,  $\alpha=0.05$ . Follow-up pairwise comparisons determined that both students and faculty respondents were more likely to rate both desired and observed performance higher than were practicing nurses on all 43 competency items. Overall, desired and observed scores were higher among faculty and students, and lower among practicing nurses. A Wilcoxon test was used to determine the degree and direction of difference between paired *observed* and *desired* scores. All mean observed scores were significantly lower than mean desired scores ( $p < 0.05$ ). The size of the perceived gap was also reported as wider (overall) by nurses than by students and faculty (please see Figure 3). For the largest gap, which was between nurses' and faculty's perspectives, the Cohen's effect size value ( $d=0.496$ ) suggested a moderate practical significance. Similarly, the gap between difference scores provided by students and nurses had a moderate effect size ( $d=0.338$ ) suggesting these differences also have a moderate practical significance.

Overall, these findings reveal that all respondent groups report a statistically significant gap between observed level of performance and desired level of performance of students in community health competencies. To confirm these findings, competencies were bundled by category on Entry-to-Practice competency framework (College and Association of Registered Nurses of Alberta, 2013) and then the means compared between respondent groups. A Wilcoxon test found statistically significant differences between bundles in all groups of competencies except *Planning*, confirming that there is a gap between the observed and desired competence level of senior nursing students.

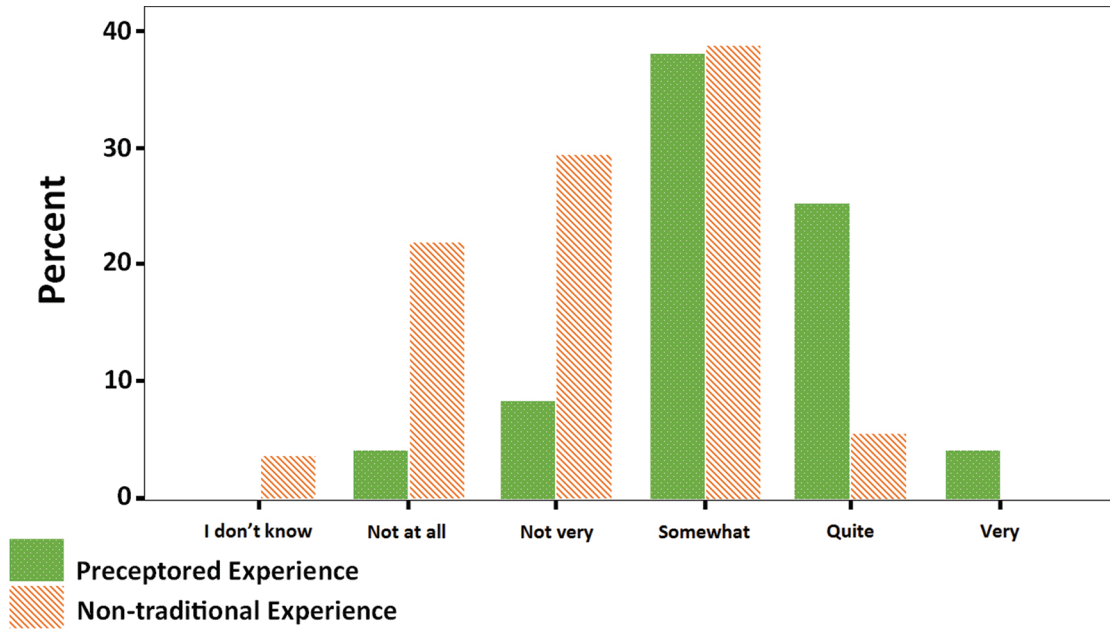


Figure 2: Degree to which student respondents feel prepared to work as a RN in community health by type of clinical experience: non-traditional experience ( $M = 2.20$ ,  $SD = 0.979$ ) and traditional preceptored experience ( $M = 3.21$ ,  $SD = 0.918$ ).

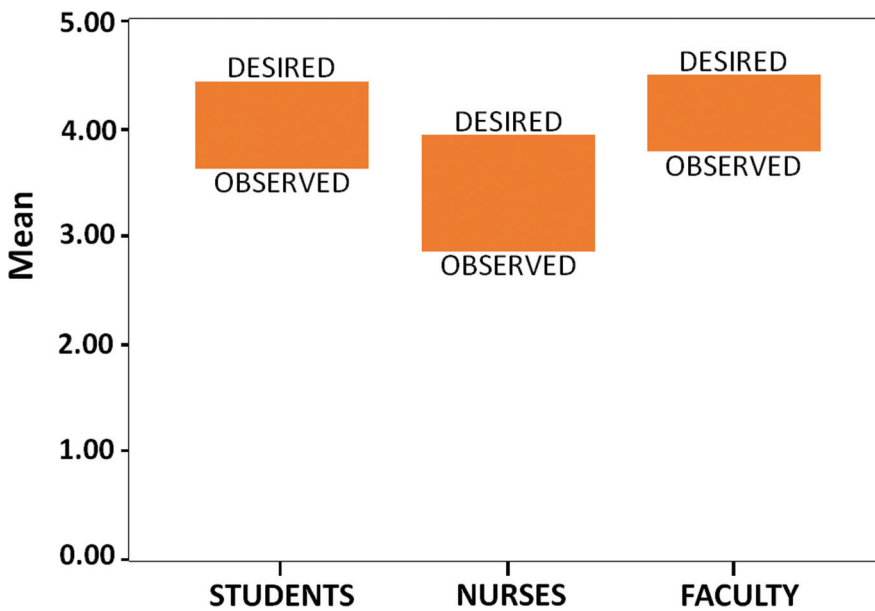


Figure 3: Mean scores for each respondent group revealed a statistically significant gap between observed and desired level of performance in community health.

A survey question about the face validity of the 43 selected competencies asked respondents to rate the competencies in terms of the degree to which they thought the competencies reflected the work of a community health nurse in Alberta. All groups had a mean of 4 on

a 5-point Likert agreement scale, and a Kruskal-Wallis test found no significant differences between groups. This finding suggests that the instrument has good face validity, as respondents believed that the identified competencies reflected community health practice.

Finally, observed and desired competency scores were subjected to a factor analysis to determine if there were a small number of core factors underlying the desired and observed competency scores. Some of the variables were skewed, but were not transformed due to the same response options being used for each variable. Principal components extraction was used prior to factor analysis to estimate the number of factors, presence of variable outliers, absence of multicollinearity and singularity, and factorability of the correlation matrix. The presence of several multivariate outliers compromised analysis and results should be interpreted in context and with caution. Four factors were extracted using the Maximum Likelihood procedure and rotated using a Varimax rotation procedure. The factor loadings above .45 were selected, yielding four interpretable factors which are identified in Table 1. The identified factors also aligned with the structure of the 43 competencies, supporting the validity of the tool.

**Table 1:** Factor analysis groupings.

Factor	Construct	% Item Variance
<b>Desired Competence</b>		
1	Specific knowledge-based practice Sample item: Collects information on client status using assessment skills of observation, interview, history taking, interpretation of laboratory data, mental health assessment, and physical health assessment, including inspection, palpation, auscultation, and percussion.	21.39
2	Ethical practice Sample item: Promotes a safe environment for clients, self, health care workers, and the public that addresses the unique needs of clients within the context of care.	18.36
3	General knowledge-based practice Sample item: Has a knowledge base in nursing sciences, social sciences, humanities, and health-related research	11.32
4	Service to the public Sample item: Uses resources in a fiscally responsible manner to provide safe, effective, and efficient care.	10.32
<b>Observed Competence</b>		
1	Specific knowledge-based practice	23.64
2	General knowledge-based practice	18.02
3	Service to the Public	17.88
4	Ethical practice	15.69

It is interesting to note that specific knowledge was responsible for most of the variance on both observed and desired scores. That specialized knowledge, and not just general knowledge, is required for new graduate

practice is somewhat contested among stakeholders. In their survey on public health education, the Canadian Association of Schools of Nursing [CASN] Task Force on Public Health Education (2007) found that the two areas most highly contested related to the teaching of specific community health knowledge and skills (such as immunizations, physical assessment and more).

The nature of the gap between observed and desired competence level of senior nursing students and new graduates in community health was explored through two focus group interviews with each of the following groups: nursing students (two schools,  $n = 12$ ), community health faculty (two schools,  $n = 11$ ), and community health nurses in public health and home care ( $n = 17$ ), resulting in a total of six focus group interviews across the province. To recruit for the focus groups a parallel sample was drawn, using the same selection criteria (Collins & Onwuegbuzie, 2013; Onwuegbuzie & Leech, 2007a). The focus group participants and survey respondents were similar in demographics and perspectives. The themes that emerged centred on a series of disconnects between theory and practice; these themes contribute to our understanding of the nature of the gap between desired and observed competence. Most prominent was the theme of disconnect between concrete and abstract. The other themes – pragmatism versus idealism, breadth versus depth, and logistics versus pedagogy are discussed elsewhere (Pijl-Zieber, Barton, Awosoga, & Konkin, 2015).

The theme, *concrete versus abstract*, emerged in the areas of *orientation to learning* and *understanding of readiness to practice*. As previously discussed, non-traditional placements exist in a wide variety of formats and typically occur at sites not formally affiliated with the health care system and at which registered nurses do not work. Thus, unlike their other clinical rotations, students do not carry out what they would describe as nurses' work, but instead conduct a variety of other activities through which they are to gain valuable insights regarding health in the community. Unfortunately, a disconnect occurred for students as a result. When students were asked what they did during their community health rotation, they were invariably concrete. For example, one student said, "We put papers in a binder." Others answered in equally concrete terms, such as "taught children", "served tea," or "TB testing." Overall, a climate of discontent centered on the disconnect between what they did and what they perceived they learned that was nursing-related. Students equated quality learning and developing competence with the ability to do the work of an RN. Students who had community health experiences in which they were allowed to participate in the work of an RN – such as conducting vascular risk

assessments – were much more satisfied with their clinical learning than students who had to make bigger conceptual links to the visible role of the RN. The more abstractly related to health and nursing, and the further students were removed from doing what they viewed as nurses' work, the greater their dissatisfaction. In clinical experiences that did not resemble the work of a community health nurse, students usually failed to see relevance. Nursing students placed high value on participating in nurses' work, particularly as it relates to nursing tasks.

Students' concreteness was in contrast to the views of faculty, who when asked the same question regarding what students did in the clinical rotation, expounded upon the foundations of community health, standards of practice and the nursing process. Faculty believed that being competent reflected the ability to *learn* and was a way of *being*. Most profoundly, one faculty participant stated, "We can teach them what to do or we can teach them how to be. And that's exactly what we're doing, is we're teaching them how to be." One faculty member, in response to students' dissatisfaction with the lack of concrete skills in clinical, helped students make connections to theory by writing the Standards of Practice for Community Health Nursing on the board and asking the students to call out what they were doing in clinical. Under each Standard, the instructor wrote where the clinical work fit into that framework. This activity resulted in a watershed moment for students, who realized "Oh, we are doing things, this is making a difference, this is what community health nursing is."

Community health nurses were concerned with students' or graduates' ability to be in possession of some basic knowledge and skills related to their specialty area, but also be able to learn. Nurses invariably focused on the integration of skills and knowledge in the patient encounter. Community health nurses did not mention standards of practice or competency frameworks, but rather, focused on the knowledge and skills needed for direct nursing care.

Concerning readiness for practice and what that entails, again, students were very concrete. Students described the need for basic knowledge and skills for practice, like giving medications and how to landmark. As well, students thought being ready for practice meant that they should be able to "go out into the field and just need minimal help, just like a guiding hand instead of a person teaching you every single thing." Students reported a feeling of vulnerability regarding their upcoming graduation. This vulnerability was fueled by their feeling unprepared primarily due to a lack of knowledge and skills, which they defined in concrete terms. Students

struggled to make the links to their preparation as generalists through the provision of a foundation for lifelong learning. There was a fear of bullying due to not performing at the required level so they felt that "to be ready for practice I need to know my stuff or else I'm gonna get killed out there."

Faculty, when asked about readiness for practice in community health, described being practice ready as having a set of general competencies such as: accountability; fiscal responsibility; good time management skills; using resources; being aware of social justice, access and equity; and applying the community health nursing standards of practice. Other faculty described their role in the preparation of generalists as laying the theoretical foundation for practice. In contrast, faculty who were clinical teachers during the days when students were preceptored in community health spoke less highly of what is learned in non-traditional settings. These faculty did not believe these experiences helped students get ready for practice, to the extent that they described the non-traditional community experience as a "waste of time." Faculty who had not experienced traditional preceptored community clinical experiences had a rich vision for what the non-traditional experience could deliver in terms of foundations for practice. Faculty overall felt that students in alternative placements were best prepared for population health promotion, and that additional course work specific to the speciality area (home care, public health, etc.) would help the new graduate at an entry-to-practice level.

Community health nurses viewed readiness for practice as the graduates or new hires being able to conduct themselves as community health nurses, particularly by the end of a preceptorship experience. One community health nurse was acutely aware of the theory-practice gap presented by alternative clinical placements, saying students need "real" community health experience or community projects that more closely mirror the work of actual community health nurses:

You couldn't put a nurse on to an acute care floor and expect them to know anything about the actual work of a nurse in that area if they have only spent 2 months working on wound care protocol in a hospital classroom. You really couldn't even call it acute care experience. Yet that's basically the kind of thing that happens with "community nursing experience" in schools.

Nurses' sense of graduates' readiness for practice was closely tied to real-world nursing practice. Nurses reported that preceptor students and new graduate hires in community health often lacked the foundations for community health practice, which were conceptualized

differently depending on their area of practice (home care or public health). Nurses were, overall, concerned that non-traditional community health experiences were not preparing students for actual practice roles and the situations they would encounter in practice. A public health nurse shed additional light on the role of foundational skills in nursing education, saying that students need to have the basics in place “so you can communicate with intent and not worry about the tasks and checklist.” This statement suggests that from a practice perspective, both concrete and abstract aspects are required in the development of competence.

## Discussion

No other studies, at the time of this manuscript, have compared readiness for practice from multiple stakeholder perspectives. However, in the United States, an environmental scan by Benner, Sutphen, Leonard, and Day (2010) indicates that the theory-practice gap is widening and that new graduates are not sufficiently prepared for the challenges in the workplace. The present study echoes these findings.

Similar to the present study, Wolsky (2014) also found that faculty have significantly higher expectations of graduate practice than did nurses. Similarly, educators had significantly higher perceptions of new graduates' communication and management ability, but the opposite was true of technical skill and assessment ability – of which educators had a significantly lower expectation than nurses. Wolsky's study also reported a performance-expectation gap in several areas between respondent groups; however, that study was not specific to community health but rather all nurses in the Canadian province of Alberta (sampling occurred through the RN professional association in Alberta).

It seems that the different perspectives on readiness for practice in community health areas, as evidenced in the gap between observed and desired competence levels, is multifaceted. Students seem to have little difficulty making links between medical/surgical theory and practice, and the leap from undergraduate preparation and registered nursing practice in a medical/surgical environment seemed smaller than in community health. This is probably because in medical/surgical education, theory is strongly tied to their clinical work – including pathophysiology, nursing care of the patient, pharmacology, prioritization of care, and other concrete items that directly relate to the clinical experience. During quiet times on the unit,

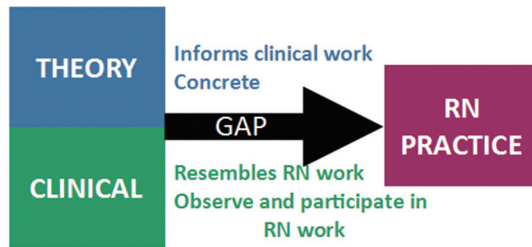
students are able to practice skills and participate in simulation; there was no alternative to downtime in community health clinical. Then, in medical/surgical clinical, the work in which students participate strongly resembles the work of registered nurses, who are also working alongside and act as mentors. Thus, the gap between education and practice requires less of a conceptual and practice leap, as they have already been participating in this work and sometimes for more than one semester or clinical rotation.

In contrast, non-traditional community theory may be fairly abstract in nature and may not be presented in ways that it relates to community health practice roles (Cohen & Gregory, 2009). In non-traditional community health clinical placements, what students do does not resemble community health nurses' work – at least not the bulk or visible part of it. Students neither observe nor participate in the work of a registered nurse (Cohen & Gregory, 2009; Pijl-Zieber & Grant Kalischuk, 2011). Thus, the gaps are wider. The fact that students are working in sites lacking an RN also means that there are few, if any, opportunities for professional identity formation and role modeling. This lack was noted by student participants. In essence, students did not have opportunities to discover the RN role but were instead engaged in a range of activities for which they failed to see direct relevance to nursing. Nurses and preceptors have been concerned that “students can pass their competencies and not be competent in fundamental nursing skills” (Butler et al., 2011, p. 301). Since there are often no specific skills associated with the competencies, it is theoretically possible for a student to “never be assessed on essential nursing skills” prior to employment as a registered nurse (Butler et al., 2011, p. 301). It is possible that the lack of an RN role model increased students' propensity for the concrete as they sought stability and nursing identity through recognizable, familiar or traditional nursing tasks. These gaps are depicted in Figure 4.

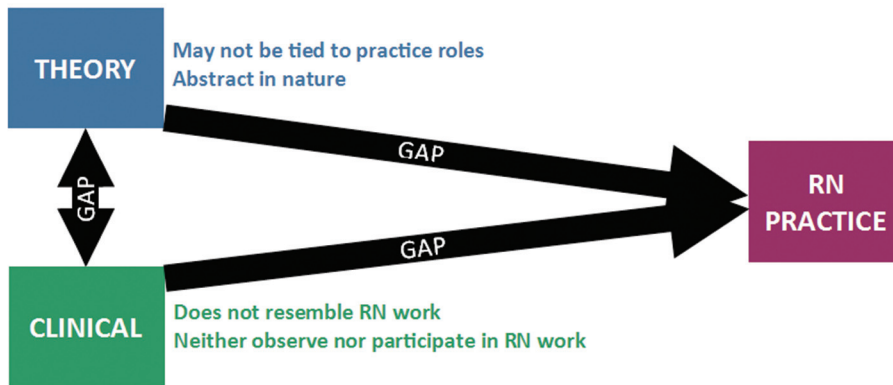
In essence, it seems that non-traditional clinical experiences require students to make much bigger leaps between theory and practice, and between education and work roles, than they are able to make. Nursing students are primarily concrete learners (D'Amore, James, & Mitchell, 2012; Hauer, Straub, & Wolf, 2005; Shinnick & Woo, 2015) and work their way from concrete tasks to bigger picture. Non-traditional community health experiences seem to require them to do the reverse. With the focus on the abstract foundations of community health practice, students may have an increased depth of foundation but also greater difficulty relating what they are doing to actual RN practice, which emphasizes specialized knowledge and skills. The focus on the abstract is



## (a) MEDICAL / SURGICAL LEARNING



## (b) COMMUNITY HEALTH LEARNING



**Figure 4:** Suggested hypothesis of why students have more trouble making links in community health (b) theory and practice than in medical/surgical (a) nursing.

not a result of poor pedagogy or poor experiences necessarily; rather, it is the result of a wide variation in community health experiences and practice, which is much more varied than in acute care. Faculty were able to, as more than one student remarked, “make or break” a clinical experience due to adding extra experiences or incorporating strong pedagogy to help students make links. The passion and resourcefulness of faculty in making a community health rotation valuable for students was profound.

Nursing programs need to ensure that students are exposed to the two biggest areas of community health nursing, home care and public health, so that students can observe and participate in the role of the community health nurse. Ensuring students have foundational nursing knowledge and skills is an important part of professional identity and professional growth. Nursing programs can utilize skills and simulation labs that relate to public health and home care. Students place a high value on hands-on skills, which can act as a springboard to deeper learning while enabling competent, safe patient care. Students with skill mastery are more likely to be competent, which will enhance their confidence, and increase their sense of belonging on the nursing unit due to their enhanced ability to participate meaningfully in the nursing work of the unit (Levett-Jones & Lathlean, 2009). Additionally, in some nursing programs students can

earn speciality certificates in addition to a baccalaureate degree, since many nursing jobs are in speciality areas (Eggertson, 2013). Overall, new models of clinical education are required to ensure new graduates are in possession of the skills, knowledge and abilities they require to be competent. A competency-based approach, as opposed to a rotation- or time-based approach to clinical, may allow more students into community health areas. At least one school of nursing is using preprogrammed avatars in multi-user virtual environments to foster learning outcomes (Niederhauser, Schoessler, Gubrud-Howe, Magnussen, & Codier, 2012). Such resources would foster in nursing students a greater understanding of community health nursing roles.

Without a doubt, teaching the principles of community health practice in a non-traditional setting is a challenge for faculty, although many rise to the challenge with passion and ingenuity. Considerations for narrowing the theory-practice gap may include the pursuit of joint appointments to enable faculty practice (Darbyshire, 2010; Rahnavard, Nodeh, & Hosseini, 2013) or a faculty practice model (Aquadro & Bailey, 2014; Barzansky & Kenagy, 2010; Dobalian et al., 2014) so that faculty remain in touch with practice and relationships are re-established with community health practice areas. Collaborations between academe and practice have been shown to ease graduates’ transition to practice

(Burns & Poster, 2008). Keeping communications open with practice areas is also imperative so academe and practice areas can find new ways to work collaboratively to enhance both practice and education. Community health educators need to foster strong and intentional pedagogy so that students are better able to make links between theory, clinical, and professional practice when these links are not apparent.

While the theory-practice gap continues to be a reality for nursing graduates, it seems to be even more apparent in community health areas due to the lack of exposure students have in their undergraduate experiences. Given that senior students, preceptor students, and new graduates are not achieving to the level they should be, perhaps a conversation with all stakeholders needs to be commenced to find ways to understand each other's values and expectations and what is possible to achieve, given the constraints. Clearly, some different viewpoints among stakeholders may be contributing to the gap.

## Limitations

This study was hindered by unequal numbers of respondents in each group, particularly an underrepresentation of faculty, resulting in statistical bias. There was uneven representation across the province; thus, the final sample was not representative. Paper surveys were administered at two sites to enhance response rates; however, paper and online modes each have a different fatigue rate, non-response rate, and response error (Porter, 2004; Savage & Waldman, 2008; Umbach, 2004). Participants self-selected into the study. The development of the tool would have been strengthened by using a Delphi process with community health nurses, by which items are chosen from the entry-to-practice competencies as they related to community health nursing practice; however, neither time nor financial resources were available to enable such a process. A wide range of clinical experiences and clinical models were reported by students and thus the grouping of students into "traditional" or "preceptored" and "non-traditional" for analysis may have oversimplified their actual experiences and learning.

## Conclusion

Preparation for community health roles is an important part of nursing preparation and nurses' service to the public. Nursing education is fractured in its beliefs and

values from within and between it and community partners. A variety of perspectives and logistics fuel the fires of discontent; and local, provincial and national dialogue is critical to ensure that students are actually being prepared for community health nursing. The theory-practice gap is not unique to community health nursing; however, it is accentuated due to the unique features of undergraduate preparation for community health. That there is a significant gap between observed and desired competency level of senior nursing students and new graduates is no surprise; however, the nature of that gap sheds important light on the differences between nursing students, nursing faculty and practicing nurses. By engaging in dialogue with practice partners we can better understand each other so that graduates' level of preparation for practice can be enhanced.

**Funding:** Western Northwestern Region of Canadian Association of Schools of Nursing (Graduate Student Research Award).

## References

- Aquadro, L. C., & Bailey, B. I. (2014). Removal of nursing faculty practice barriers in academia: An evidence-based model. *Journal of Nursing Education, 53*(11), 654–658. doi:10.3928/01484834-20141027-04.
- Barzansky, B., & Kenagy, G. (2010). The full-time clinical faculty: What goes around, comes around. *Academic Medicine, 85*(2), 260–265.
- Benner, P., Sutphen, M., Leonard, V., & Day, L. (2010). *Educating Nurses: A Call for Radical Transformation*. San Francisco, CA: Jossey Bass.
- Black, J., Allen, D., Redfern, L., Muzio, L., Rushowick, B., Balaski, B., & Round, B. (2008). Competencies in the context of entry-level registered nurse practice: A collaborative project in Canada. *International Nursing Review, 55*(2), 171–178.
- Brosnan, C. A., Upchurch, S. L., Meininger, J. C., Hester, L. E., Johnson, G., & Eissa, M. A. (2005). Student nurses participate in public health research and practice through a school-based screening program. *Public Health Nursing, 22*(3), 260–266.
- Bouchaud, M. T. (2011). *Preparing Baccalaureate Nursing Students for Community/Public Health Nursing: Belief Systems and Values of Nurse Educators and Administrators*. (Doctor of Philosophy Proposal), Capella University.
- Burns, P., & Poster, E. C. (2008). Competency development in new registered nurse graduates: Closing the gap between education and practice. *Journal of Continuing Education in Nursing, 39*(2), 67–73.
- Butler, M. P., Cassidy, I., Quillinan, B., Fahy, A., Bradshaw, C., Tuohy, D., et al. (2011). Competency assessment methods – Tool and processes: A survey of nurse preceptors in Ireland. *Nurse Education in Practice, 11*(5), 298–303. doi:10.1016/j.nepr.2011.01.006
- Canadian Association of Schools of Nursing [CASN] Task Force on Public Health Education. (2007). Final Report: Public Health Nursing Education at the Baccalaureate Level in Canada Today.

- Ottawa, ON: Author. Retrieved from: <http://www.casn.ca/2014/12/final-report-public-health-nursing-education-baccalaureate-level-canada-today/>
- Canadian Association of Schools of Nursing. (2010). *Achieving Public Health Competencies in Nursing School Graduates*. Ottawa, ON: Author.
- Canadian Nurses Association. (2007). *Understanding Self-regulation*. Ottawa, ON: Author.
- Canadian Nurses Association. (2008). *Canadian Regulatory Framework for Registered Nurses*. Ottawa, ON: Author.
- Ciesielka, D. (2008). Using a wiki to meet graduate nursing education competencies in collaboration and community health. *Journal of Nursing Education*, 47(10), 473–476.
- Clarke, V., & Braun, V. (2013). Teaching thematic analysis. *Psychologist*, 26(2), 120–123.
- Clarke, V., & Braun, V. (2014). Thematic analysis. In A. C. Michalos (Ed.), *Encyclopedia of Quality of Life and Well-being Research*. New York: Springer.
- Cohen, B. E., & Gregory, D. (2009). Community health clinical education in Canada: Part 1 – “State of the art. *International Journal of Nursing Education Scholarship*, 6(1), 1–17. doi:10.2202/1548-923X.1637.
- College and Association of Registered Nurses of Alberta. (2013). *Entry-to-Practice Competencies for the Registered Nurses Profession*. Edmonton, AB: Author.
- Collins, K. M. T., & Onwuegbuzie, A. J. (2013). Establishing interpretive consistency when mixing approaches: Role of sampling designs in evaluations. *New Directions for Evaluation*, 2013(138), 85–95. doi:10.1002/ev.20060.
- Community Health Nurses of Canada. (2009). *Public Health Nursing Discipline Specific Competencies: Version 1.0*. Hamilton, Ontario: Author.
- Community Health Nurses of Canada. (2010). *Home Health Nursing Competencies: Version 1.0*. Hamilton, Ontario: Author.
- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and Conducting Mixed Methods Research* (2nd Edn.). Los Angeles: Sage.
- Darbyshire, P. (2010). Joint or clinical chairs in nursing: From cup of plenty to poisoned chalice? *Journal of Advanced Nursing*, 66(11), 2592–2599. doi:10.1111/j.1365-2648.2010.05452.x.
- Diem, E., & Moyer, A. (2010). Development and testing of tools to evaluate public health nursing clinical education at the baccalaureate level. *Public Health Nursing*, 27(3), 285–293. doi:10.1111/j.1525-1446.2010.00855.x.
- Dobalian, A., Bowman, C. C., Wyte-Lake, T., Pearson, M. L., Dougherty, M. B., & Needleman, J. (2014). The critical elements of effective academic-practice partnerships: A framework derived from the Department of Veterans Affairs Nursing Academy. *BMC Nursing*, 13(1), 1–31. doi:10.1186/s12912-014-0036-8.
- D’Amore, A., James, S., & Mitchell, E. K. L. (2012). Learning styles of first-year undergraduate nursing and midwifery students: A cross-sectional survey utilising the Kolb Learning Style Inventory. *Nurse Education Today*, 32(5), 506–515. doi:10.1016/j.nedt.2011.08.001.
- Eggertson, L. (2013). The gap between clinical practice and education. *Canadian Nurse*, 109(7), 22–26.
- Francis-Baldesari, C., & Williamson, D. C. (2008). Integration of nursing education, practice, and research through community partnerships: a case study. *Advances in Nursing Science*, 31(4), E1-E10. doi: 10.1097/01.ANS.0000341416.11586.3a
- Hauer, P., Straub, C., & Wolf, S. (2005). Learning styles of allied health students using Kolb’s LSI-IIa. *Journal of Allied Health*, 34(3), 177–182.
- Hjälmhult, E., Haaland, G. U., & Litland, A. S. (2013). Importance of public health nurses precepting students in clinical practice: A qualitative study. *Nurse Education Today*, 33(4), 431–435.
- Hoe Harwood, C., Reimer-Kirkham, S., Sawatzky, R., Terblanche, L., & Van Hofwegen, L. (2009). Innovation in community clinical placements: A Canadian survey. *International Journal of Nursing Education Scholarship*, 6(1), Article 28. doi:10.2202/1548-923X.1860
- Laplante, N. (2007). *A Description of the Meaning of Reciprocity for Undergraduate Baccalaureate Nursing Students Engaged in Service-learning*. (D.N.Sc.), Widener University School of Nursing.
- Lasater, K., Luce, L., Volpin, M., Terwilliger, A., & Wild, J. (2007). When it works: learning community health nursing concepts from clinical experience. *Nursing Education Perspectives*, 28(2), 88–92.
- Levett-Jones, T., & Lathlean, J. (2009). The Ascent to Competence conceptual framework: An outcome of a study of belongingness. *Journal of Clinical Nursing*, 18(20), 2870–2879. doi:10.1111/j.1365-2702.2008.02742.x.
- Niederhauser, V., Schoessler, M., Gubrud-Howe, P. M., Magnussen, L., & Codier, E. (2012). Creating innovative models of clinical nursing education. *Journal of Nursing Education*, 51(11), 603–608. doi:10.3928/01484834-20121011-02.
- Onwuegbuzie, A. J., & Leech, N. L. (2007a). Sampling designs in qualitative research: Making the sampling process more public. *Qualitative Report*, 12(2), 238–254.
- Onwuegbuzie, A. J., & Leech, N. L. (2007b). Validity and qualitative research: An oxymoron? *Quality & Quantity*, 41(2), 233–249.
- Onwuegbuzie, A. J., Slate, J. R., Leech, N. L., & Collins, K. M. T. (2009). Mixed data analysis: Advanced integration techniques. *International Journal of Multiple Research Approaches*, 3(1), 13–33.
- Pijl-Zieber, E. M., Barton, S., Awosoga, O., & Konkin, J. (2015). Disconnects in pedagogy and practice in community health nursing clinical experiences: Qualitative findings of a mixed method study. *Nurse Education Today*, 35(10), e43–48. doi:10.1016/j.nedt.2015.08.012.
- Pijl-Zieber, E. M., & Grant Kalischuk, R. (2011). Community health nursing practice education: Preparing the next generation. *International Journal of Nursing Education Scholarship*, 8, 1. doi:10.2202/1548-923X.2250.
- Porter, S. R. (2004). Raising response rates: What works? *New Directions for Institutional Research*, 2004(121), 5–21. doi:10.1002/ir.97.
- Rahnavard, Z., Nodeh, Z. H., & Hosseini, L. (2013). Effectiveness of clinical teaching associate model in nursing education: Results from a developing country. *Contemporary Nurse*, 45(2), 174–181. doi:10.5172/conu.2013.45.2.174.
- Ravella, P. C., & Thompson, L. S. (2001). Educational model of community partnerships for health promotion. *Policy, Politics, & Nursing Practice*, 2(2), 161–166. doi: 10.1177/152715440100200213
- Reimer Kirkham, S., Hoe Harwood, C., & Van Hofwegen, L. (2005). *Innovative Clinical Placements: A Descriptive Study: Final Report*. Vancouver: Trinity Western University.
- Rothwell, W. J., Hohne, C. K., & King, S. B. (2007). *Human Performance Improvement: Building Practitioner Performance*. New York, NY: Routledge.

- Savage, S. J., & Waldman, D. M. (2008). Learning and fatigue during choice experiments: A comparison of online and mail survey modes. *Journal of Applied Econometrics*, 23(3), 351–371. doi:10.1002/jae.984.
- Schmidt, M. (2010). Quantification of transcripts from depth interviews, open-ended responses and focus groups. *International Journal of Market Research*, 52(4), 483–508. doi:10.2501/s1470785309201417.
- Shinnick, M. A., & Woo, M. A. (2015). Learning style impact on knowledge gains in human patient simulation. *Nurse Education Today*, 35(1), 63–67. doi:http://dx.doi.org/10.1016/j.nedt.2014.05.013.
- Umbach, P. D. (2004). Web surveys: Best practices. *New Directions for Institutional Research*, 2004(121), 23–38. doi:10.1002/ir.98.
- Underwood, J., Deber, R. B., Baumann, A. O., Dragan, A., Laporte, A., Alameddine, M., & Wall, R. (2009). *Demographic Profile of Community Health Nurses in Canada 1996–2007*. Hamilton, Ontario: Ontario Ministry of Health and Long-Term Care.
- Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing & Health Sciences*, 15(3), 398–405. doi:10.1111/nhs.12048.
- Van Doren, E. S., & Vander Werf, M. (2012). Developing nontraditional community health placements. *Journal of Nursing Education*, 51(1), 46–49. doi: 10.3928/01484834-20111116-04
- Wolsky, K. L. (2014). *Establishment of a Standard Definition of Practice Readiness: Academia's vs. Practice's Registered Nurses' Perceptions related to New Graduate Nurse Competencies within Alberta, Canada* (Doctor of Philosophy Dissertation). Ann Arbor, MI: Capella University.