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Barriers to Practice of Rural and Remote Nursing in Canada

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Abstract

The delivery of rural and remote healthcare has been identified in the literature as a unique and complex working environment for Nursing practice. This Canadian setting **integrative review** looks at barriers associated with rural and remote nursing. Nine articles were retained after filtering over 200 articles extracted from 4 databases. Critical Appraisal Skills Programme Checklist (CASP) for qualitative research and Quality Assessment Tool for Quantitative Studies (QATQ) were used for assessment of a total sample of N=3402 participants. Four (4) main themes (barriers) were extracted: 1) Professional Isolation, 2) Competing Demands, 3) Lack of Sustainable Continuing Educational Initiatives and 4) Lack of Organizational Support. Following analysis of the demographic data, an emerging theme of an aging workforce was also seen as a potential future barrier to rural nursing practice. Future research is required in order for sufficient and appropriate action to be taken in addressing aforementioned barriers. Recommendations for nursing practice and policy in rural and remote areas revolve around exposing nursing students to rural / remote settings, incentives for new graduate students to practice in these areas, as well as support and educational initiatives encouraging practitioners to work to their full scope of practice.

Keywords: Nursing policy, nursing practice, integrative review, rural, remote.

Introduction

Rural Canada accounts for 95% of the country's land mass and in 2002 there were 41,500 registered nurses (RNs) working in rural and small town Canada (CIHI, 2010). The delivery of safe and effective rural and remote healthcare has been identified in the literature as a unique and complex working environment, being considered more of a nursing specialty than a generalist area. Remote nursing requires advanced skills and knowledge borrowed from a wide array of different nursing specialties and some skills

specific to rural and remote nursing itself. Yet, many barriers still remain to the provision of safe and effective nursing services in rural and remote healthcare contexts.

Framing the Context

This Canadian setting integrative review looks at barriers associated with rural and remote nursing. However, it is important to note that not all literature explored in the study is Canadian centered.

Many definitions exist for both rural and remote, with some disagreement between policy makers and scholars (Hanvey, 2005; Kulig & Williams, 2012). Although initiatives have been taken to redefine rural and remote within Canada (Statistics Canada, 2001), agreement on a standardized definition has yet to be reached.

Regional variations in the definitions of rural also exists, which can complicate matters and challenge reviewers when trying to formulate a comprehensive and inclusive definition. For an initial broad view, all definitions of 'rural' found in the included studies were accepted for the present inquiry. As such and as far as it pertains to this review, the term rural outlines an area separated by geography, located outside of major metropolitan cities, with limited access to resources traditionally available in larger communities and population size not exceeding 4,000-5,000 people. These are the areas that tend to be the most overcome by scarce resources, little support services for both community members and healthcare providers and a general lack of political and organizational support (Hanvey, 2005).

In Canada, predominantly rural and remote communities tend to house Aboriginal Peoples communities with diverse and unique health challenges and needs, as well as richly dynamic and complex cultural customs and values. In predominantly remote regions (i.e. regions located 300 km or more from the nearest metropolitan area), transportation is generally accomplished by air and is frequently plagued by transient barriers, such as weather conditions, which often limit access to the regions and pose complex problems when external support is required (McBain, 2012).

Health needs of rural and remote populations tend to differ slightly from that of urban regions, with similar incidences of disease but higher prevalence of chronic health conditions such as hypertension, obesity, depression and poor reported functional health (Kulig & Williams, 2012). This can further increase in complexity for First Nations communities, as they are more likely to suffer with diabetes, cardiovascular disease and a higher prevalence of HIV/AIDS which can require further specialized support from healthcare providers (Hanvey, 2005; Kulig & Williams, 2012).

Methods

A literature search was undertaken between December 2015 to February 2016 with multiple key words and the use of Boolean operators. Multiple databases were used which included Medline, PubMed, ProQuest and CINHAL. All articles were filtered according to a pre-specified list of inclusion and exclusion criteria. The inclusion criteria comprised 1) articles stemming from primary research, 2) aiming to investigate the barriers and/or facilitators to rural health or rural nursing practice and 3) published between 1990-2016. Exclusion criteria included 1) literature reviews, 2) systematic reviews and 3) integrative reviews. Secondary analysis were excluded in order to prevent representation of redundant data. Publication dates of articles retained for review were limited to the period between 1990 and 2016 in light of the evolving nature of health care systems and technological advances.

Key words used were "Barriers AND rural nurs*", "Barrier AND remote nurs*", "Barrier AND outpost nurs*" and "Barriers AND rural AND remote nurs*". In total, 214 articles were found meeting the key terms. The abstracts for the articles were reviewed and compared to the inclusion and exclusion criteria. If the abstracts met the inclusion criteria, full text was retrieved. Article languages were limited to English, French or Spanish; however, only English articles were found to meet the inclusion criteria.

The key terms "barriers AND rural nurs*" found 169 articles with 9 articles selected. The terms "barriers AND remote nurs*" found 22 articles with none selected. The key terms "barriers AND outpost nurs*" found 0 articles and the key terms "barriers AND rural OR remote nurs*" found 15 articles with none selected.

From the 214 articles reviewed, nine (4%) met the inclusion criteria and were chosen for review. Some databases showed overlapping articles. In addition, several studies pulled data from national surveys in which reanalysis were published in multiple studies. In this case, only one study was used, as the data presented became redundant in subsequent studies.

The data collected from the full text articles were summarized into chart form for review. When available, demographic data from the retained studies was introduced into SPSS version 22 to run basic descriptive analysis including frequency distributions. These refer to average age, gender, years of nursing experience, type of research (qualitative or quantitative) and how many of the participants were nurses. In addition to these demographics, the Critical Appraisal Skills Programme Checklist (CASP) for qualitative research design studies was used to assign a score between 1-10 (1 being poor and 10 being excellent) to all qualitative studies to aid in the appraisal and assessment of methodological quality (Oxford Critical Appraisal Skills Programme, 2014). As for quantitative research, the Quality Assessment Tool for Quantitative Studies (QATQ) with a global rating between 1 and 3, with 3

being the weakest and 1 being the strongest, was employed (National Collaborating Centre for Methods and Tools, 2016). The integrative review was further guided by the method proposed by Whitmore and Knafl (2005).

Analysis

A review of the available literature revealed a relative scarcity of high quality research on the barriers of rural and remote nursing practice. However, there is substantial amount of literature pertaining to the barriers in terms of continuing education needs for rural nurses and the use of nurse practitioners as a possible solution to the lack of primary care providers in rural and remote regions.

There is limited literature investigating in general, perceived and actual barriers of rural and remote nursing. While there is some research available investigating perceived barriers, no research was identified highlighting actual, measureable barriers present for rural and remote nurses. In alignment with Whitemore and Knafl's (2005) integrative review process, a thematic analysis was performed to aid in content analysis as a means to categorize barriers into themes for easier interpretation.

Four (4) main themes were extracted from the reviewed literature, as follows: 1) Professional Isolation, 2) Competing Demands, 3) Lack of Sustainable Continuing Educational Initiatives and 4) Lack of Organizational Support. A number of sub-themes and categories were outlined within these main themes, which will be discussed later.

Settings and Demographics

All reviewed studies were conducted within a rural context. Three were conducted in Australia (Haines & Critchley, 2009; Kenny & Allenby, 2013; Kenny & Duckett, 2003), two were conducted in Canada (Hanvey, 2005; Penz et al., 2007), and the remaining four studies from the USA include the rural islands of Hawaii (Kataoka-Yahiro, Richardson & Mobley, 2011), Minnesota (Lindeke, Jukkala & Tanner, 2005), Oregon (Turner et al., 2008) and one includes data from six states: Arkansas, Colorado, Georgia, Montana, Nebraska and Vermont (Stratton et al., 1998).

Most of the studies were conducted within the context of rural hospitals (Haines & Critchley, 2009; Kenny & Allenby, 2013; Kenny & Duckett, 2003; Kataoka-Yahiro, Richardson & Mobley, 2011; Lindeke, Jukkala & Tanner, 2005; Stratton et al., 1998). Two studies used data from multi-state/province surveys about nurses working in hospitals, community and/or outpost settings (Hanvey, 2005; Penz et al., 2007).

Included studies did not list the demographic makeup of their participants, omitting gender differences (Haines & Critchley, 2009; Kataoka-Yahiro, Richardson & Mobley, 2011; Kenny & Duckett, 2003; Place et al.,

2012; Stratton et al., 1998; Turner et al., 2008), age variations (Kataoka-Yahiro, Richardson & Mobley, 2011; Kenny & Duckett, 2003; Place et al., 2012; Stratton et al., 1998; Turner et al., 2008), years of experience (Haines & Critchley, 2009; Kataoka-Yahiro, Richardson & Mobley, 2011; Kenny & Duckett, 2003; Place et al., 2012; Stratton et al., 1998; Turner et al., 2008) and highest level of education achieved. All of the studies did not specify the nursing category being surveyed (i.e. RNs vs. RPNs/LPNs vs. NPs); however, some of the studies were NP specific and only included NPs. One study employed the use of nurses, physicians and other healthcare providers (Haines & Critchley, 2009). As a result of this limitation, for analysis, all types of nurses were categorized under the general umbrella term "nurse" (including NPs, RNs and RPNs) and all other healthcare providers were listed under 'other'. Finally, from the nine reviewed studies, there were a total of N=3380 nurses (mean = 375.6, SD=925.5) of a total sample size of N=3402 (mean=378, SD=924.5 why mean and sd here) representing 99% of the sample as nurses.

Only three articles listed gender and from these articles there were a total of N=151 men (mean=50, SD=72.7) and N=2900 women (mean=966.7, SD=1506.6).

Characteristics, Design and Focus of Studies

Most of the studies (67%) are of qualitative design (N=6), while the remaining 33% (N=3) are quantitative.

Three of the studies focused on the barriers to rural nursing in terms of continuing education (Kataoka-Yahiro, Richardson & Mobley, 2011; Penz et al., 2007; Place et al., 2012). While one study reports the actual perceived barriers to rural practice among NPs (Lindeke, Jukkala & Tanner, 2005), another study looks at the barriers to using NPs in the rural context (Haines & Critchley, 2009), and another yet focuses on barriers to the provision of psychosocial care in rural environments (Kenny & Allenby, 2013). Stratton & al. (1998), studied recruitment barriers for rural nurses, Turner & al. (2008) examined the needs and resources of rural nurses working in public health and the final study looks at barriers to the provision of effective healthcare in rural hospitals (Kenny & Duckett, 2003).

Although the qualitative studies employed different methodological approaches, most were guided by semi-structured interviews (Haines & Critchley, 2009; Kataoka-Yahiro, Richardson & Mobley, 2011; Kenny & Allenby, 2013; Turner et al., 2008) and two (2) used narrative content analysis (Hanvey, 2005; Kenny & Duckett, 2003). The three quantitative studies employed surveys to gather data. Two were secondary analysis of pre-existing, national survey data (Penz et al., 2007; Stratton et al., 1998) and the final used the barriers to practice checklist survey (Lindeke, Jukkala & Tanner, 2005).

Quality of reviewed studies

The mean CASP score for the qualitative studies was calculated at 7.6 (SD=1.03), indicating moderate to high relative quality for the qualitative studies with low variance in study quality between the studies. The average QATQ score for the quantitative studies was 3 (SD=0), which indicates the lowest level of quality, with no variance in study quality between the studies (Table 1).

Table 1. Summary of studies and their respective quality score

Author	Design	Setting	CASP score	QATQ score
Kenny and Allenby (2013)	Interpretive descriptive	Rural Australia	9	NA
Kataoka-Yahiro et al., 2011	Descriptive qualitative	Rural Islands of Hawaii	7	NA
Haines and Critchley, 2009	Three round Delphi study	Rural Australia	8	NA
Penz et al., 2007	Survey, exploratory	Rural Canada	NA	3
Lindeke et al., 2005	Checklist (barriers to practice)	Rural Minnesota	NA	3
Stratton et al., 1998	Longitudinal Study	Rural regions of 6 States in USA	NA	3
Place et al., 2012	Content Analysis	Rural Canada	8	NA
Turner et al., 2008	Semi-structured in-depth interviews	Rural Oregon	6	NA
Kenny and Duckett, 2003	Qualitative descriptive methods	Rural Australia	8	NA

As several studies did not indicate demographic distribution of their participants, such as age, gender, years of experience, and most studies did not indicate the nursing category (i.e. RN vs. RPN) being studied, heterogeneity could not be fully established.

Additionally, some qualitative studies did not determine auditability and transferability. Two of the quantitative studies (Penz et al., 2007; Stratton et al., 1998) used pre-existing data to produce new results, different then the surveys were intended to search for, a method often useful and cost effective. The study by Turner et al. (2008), although remarkable for its results, had uncertain transferability, as it accounted for only 17 participants and the context was limited to one health unit.

Results

In accordance with Whitmore and Knafl's guide to integrative review process (Whittemore & Knafl, 2005), a thematic analysis was done to combine and present the data results of the retained studies. Four main themes were extracted, namely: 1) Professional Isolation, 2) Competing Demands, 3) Lack of Sustainable Continuing Educational Initiatives and 4) Lack of Organizational Support. They are presented in this section followed by a discussion in the following section.

Professional Isolation

Professional Isolation was present in five of the nine (56%) research articles (Haines & Critchley, 2009; Kenny & Allenby, 2013; Penz et al., 2007; Place et al., 2012; Lindeke, Jukkala & Tanner, 2005). In many of the studies, the concept of professional isolation referred to the lack of frequent and effective communication between providers and the inability to gain support from one another. In some studies, nurses expressed frustration with the inability to reliably call on physicians and other specialists for advice and support. Some research also identified a lack of pier support among their colleagues, subject to geographical barriers and scarcity of healthcare providers in certain areas.

Competing Demands

The concept of competing demands was mentioned in five of the nine (56%) research articles (Haines & Critchley, 2009; Kataoka-Yahiro, Richardson & Mobley, 2011; Kenny & Allenby, 2013; Penz et al., 2007; Place et al., 2012). Competing demands led to several sub-categories and themes, making it an umbrella concept for multiple barriers. Some of the nurse participants in the studies expressed distress over the heavy workloads that came with rural nursing practice. Additionally, other researchers found that competing financial, political and organizational demands limited the availability of resources for rural nursing (Kataoka-Yahiro, Richardson & Mobley, 2011; Penz et al., 2007).

Lack of Continuing Sustainable Education Initiatives

Four of the studies identified lack of continuing education initiatives as a prevalent barrier experienced by rural and remote nurses (Haines & Critchley, 2009; Kataoka-Yahiro, Richardson & Mobley, 2011; Penz et al., 2007; Place et al., 2012). In addition, Kenny and Duckett (2003) and Kenny and Allenby (2013) identified the need for continued skill acquisition and the further development of specialist skills applicable to the rural setting in order to deliver high quality, competent nursing care. The studies identified both a lack of available initiatives (Haines & Critchley, 2009; Kataoka-Yahiro,

Richardson & Mobley, 2011; Place et al., 2012), the cost associated with the available initiatives (Kataoka-Yahiro, Richardson & Mobley, 2011; Place et al., 2012), extreme geographical remoteness limiting access to workshops, lack of sustainable and effective format delivery (i.e. poor internet connections) and inability to take time off from work (Penz et al., 2007; Hanvey, 2005). Lack of access to reliable Internet and communication services was also identified by Turner et al. (2008).

Lack of Organizational Support

Lack of organizational support is a complex theme, interwoven in most of the research studies retained for this review (Haines & Critchley, 2009; Kataoka-Yahiro, Richardson & Mobley, 2011; Kenny & Allenby, 2013; Lindeke, Jukkala & Tanner, 2005; Place et al., 2012; Stratton et al., 1998; Turner et al., 2008). The concept of lack of organizational support presents as a lack of adequate facilities and resources (i.e. office spaces and reliable internet services) for rural nurses to practice with (Lindeke, Jukkala & Tanner, 2005; Place et al., 2012; Turner et al., 2008), a lack of acceptance and utilization of nurses (i.e. NPs) to their full potential (Haines & Critchley, 2009; Lindeke, Jukkala & Tanner, 2005), a lack of clinical supervision and multiskilling expectations (Kenny & Allenby, 2013), organizations failing to support nurses participation in continuing education initiatives (Kataoka-Yahiro, Richardson & Mobley, 2011), lack of support from political policies and physicians (Haines & Critchley, 2009) and poor professional interaction (Stratton et al., 1998).

Discussion

This integrative review revealed the shortage of rigorous Canadian research focused on the barriers to rural nursing. While many studies are dedicated to nursing practice in rural and remote climates, few concentrated on the barriers and enablers to rural and remote nursing practice. Several studies failed to include demographic characteristics and distribution of their research participants. This is pertinent, as perceived barriers may be influenced by age, gender, years of experience or education.

From the three studies providing demographic distributions, there was a marked over-representation of female nurses (N=2900) than male nurses (N=151). These three articles revealed an average age of 45.2 (SD=0.64), which is important to note as this shows an aging demographic within the rural context which may significantly impact the availability of nurses in these settings, approaching retirement age. Stratton et al. (1998) argued that, while recruitment in rural communities is problematic, organizations should focus more on staff retention initiatives. However, this tactic would undoubtedly become insufficient as rural nurses begin retirement.

For a more complete picture, it is beneficial to also consider the demographic distributions of nurses in Canada when looking at the results of the reviewed studies. According to CIHI (2010), in 2009 there were 4.4% of RNs working in a rural community and 6.1% of RNs working in a remote community. Only 0.2% of RNs were working in Canada's territories. The average age of RNs in Canada in 2009 was 45.2 (27.7% of all RNs in Canada were between 40-49), which is exactly the average age found in participants of the studies considered in the present review. In 2009, there were 16,475 male RNs and 249,866 female RNs, which accounts for the over-representation of female nurses in the Canadian studies.

The demographic characteristics of RPNs are quite similar, with the average age of RPNs in Canada being 43.4 years, (27.2% being between the ages of 40-49). In 2009, there were 5,618 male RPNs and 71,326 female RPNs, comparable to the variations between male and female RNs. One major difference was that, in 2009, RPNs were more likely to be working in rural and remote regions, with 8.1% of RPNs working in rural areas and 9.7% working in remote regions (CIHI, 2010).

The demographic characteristics of NPs are slightly different than both RNs and RPNs, with only 1,981 NPs in Canada in 2009. However, many of the NPs (41.8%) are between the ages of 40-49, which is slightly higher than RNs and RPNs. As well, NPs are more prevalent in rural and remote regions than both RNs and RPNs, with 9.5% of NPs practicing in rural communities, 10.6% practicing in remote communities, and 1.1% practicing in the Territories (CIHI, 2010). Table 2 summarizes the demographic distribution of nurses in Canada from a 2009 survey.

Table 2. Distribution of Nursing categories in Canada and rural, remote areas

Nurse	Average Age	# of Males	# of Females	% working in Rural, Remote and Territories	% of All Nurses (RNs and RPNs and NPs)
RPNs	43.4	5,618	71,326	17.8%	22%
RNs	45.2	16,475	249,866	10.7%	77%
NPs	45.5	119	1,871	21.2%	Less than 1%

Data from CIHI (2010)

The results presented in this integrative review may not be applicable and generalizable to all nurses in all rural contexts, as there were many regional variations within the selected studies (i.e. Australian context vs. Canadian context vs. American context), age variations and educational variations. Owning to lack of clear identification of the types of nurses being studied, assumptions cannot be made as to whether or not perceived barriers differ within the nursing profession itself. Variations in decision-making

processes, situational appraisal and experiences have already been identified in the literature between RNs and RPNs (Royle et al., 2000), so it is unlikely that these two nursing categories will experience barriers in the same way.

Further analysis of the demographic characteristics of nurses working in rural and remote regions (extracted from the research studies and supplemented with demographic data from CIHI) has led to a new potential issue or theme for consideration in terms of barriers to rural and remote nursing practice. This theme would be the aging workforce, which may further hinder adequate human resources in the rural and remote nursing context. To tackle this barrier, recruitment strategies should begin to focus on how to recruit new nurses to rural communities. Attention should be paid to advanced understanding and practice of rural and remote nursing, with a focus of bringing more awareness to new nurses and students enrolled in nursing programs.

Limitations

The integrative review was limited by the following: (a) the majority of the research used for this study comes from non-Canadian sources, including Australian and American research, (b) data gaps within research reports, meaning that the type of nurse (RN vs. RPN vs. NP) is not clear clear in all studies and demographic data is missing in the majority of studies and (c) the lack of a consistent definition of 'rural'. While a general definition of rural was used to inform this review, it may not be specific for all rural contexts and thus, poses an additional limitation. As a result, the findings derived from this integrative review should be interpreted in light of these limitations and, may not be generalizable to all Canadian contexts.

Implications for Nursing Practice and Policy

In light of the considerable sample size of several retained studies, the data obtained from this integrative review may be beneficial to guide and inform nursing policy makers in creating supportive working environments for rural nurses and address the underlined issues. It may also serve to advise research needs and future curricula for nursing professionals. As the analysis identified that multiskilling, continuing knowledge acquisition and continuing education were learning needs recognized by many rural nurses (Kataoka-Yahiro, Richardson & Mobley, 2011; Kenny & Duckett, 2003; Penz et al., 2007), an underlying knowledge gap can be acknowledged and attention should be paid to this matter.

Furthermore, recruitment initiatives should begin targeting nurses just entering the profession, since an evident age gap exists. This creates opportunities for the implementation of mentorship programs for new graduate nurses and further studies are encouraged to inform such a program.

Some policy already exists in Canada, promoting physicians and nurses to work in rural communities, such as the physician and nurse loan forgiveness initiative, which absolves some of the loan amount of these professionals when they work in rural communities (Government of Canada, 2016). More attention should also be paid to raising awareness of rural and remote health and creating sustainable educational initiatives that focus on the rural health context, both for nursing students and nurses.

Lastly, nurses wishing to pursue working in a rural and remote environment should ensure that they have access to educational resources that will give them the skills they need to practice safely and effectively in these environments.

Implications for Future Research

This integrative review revealed the paucity of research available investigating the perceived and actual barriers to rural nursing practice in Canada. Future research aiming to shed light over these issues is required in order for sufficient and appropriate action to be taken to address mentioned barriers.

Furthermore, researchers investigating barriers to rural and remote nursing practice should be sure to include demographic characteristics and years of nursing experience in their studies, as this data can be useful in understanding age, experience and educational variations among perceived barriers. A diversity of methods should be employed in order to explore and further understand nursing challenges in rural settings and adequately answer practice barriers.

Conclusion

This integrative review outlines nine articles, which were located and analyzed. The barriers to rural nursing practice were discussed in depth. The quality scores of the studies were moderate to high, with an average CASP score of 7.6 (SD=1.03) for the qualitative studies and QATQ score of 3 (SD=0) for the quantitative studies. The four major themes identified in this integrative review were 1) Professional Isolation, 2) Competing Demands, 3) Lack of Sustainable Continuing Educational Initiatives and 4) Lack of Organizational Support, which highlight the perceived barriers to rural and remote nursing practice. After analysis of the demographic data, an emerging theme of an aging workforce was also seen as a potential future barrier to rural nursing practice.

Demographic differences in nurses practicing in rural and remote Canadian environments were also evident, with NPs populating the vast majority of rural Canada, followed by RPNs and then RNs. The need for more

research on identifying barriers to rural nursing practice in Canada still exists, as well as efforts to attempt to mitigate and find answers to these barriers.

Potential solutions for the amelioration of the disparities in rural and remote nursing practice could include the introduction of mentorship programs within rural and remote settings for new graduate nurses, the introduction of government and organizational policies that support nurses working in these settings, support for these nurses to work to their full scope and potential, and the implementation of continuing education initiatives and rural nursing specific educational initiatives.

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