Title of the article: **Recruitment and Retention of Healthcare Professionals in Rural Canada: a systematic review"**

Abstract:

Introduction: This review explores a pertinent issue for healthcare professionals and recruiters alike; which factors are most important in the recruitment and retention of these professionals in rural practice in Canada. Existing research concentrates on specific factors or focused populations. This review was created to explore multiple factors and a wider population.

Methods: A literature search was carried out on four databases. Data from included studies were extracted, and thematic analysis conducted on relevant findings. The quality of individual studies was assessed, and then themes were evaluated for overall confidence based on four components, using the Confidence in Findings from Qualitative Evidence Syntheses.

Results: Four qualitative and one quantitative articles were identified. 5 themes, 10 sub-themes, 40 major, and 80 minor codes were generated through axial coding of open codes. Six out of ten review findings received 'moderate confidence' as per the overall CERQual assessment of confidence. Three out of ten were 'high' confidence, one was 'low'. Codes included attraction to rural lifestyle, recreational activities, scope of practice, rural training, and incentives. Scope of practice was deemed very important as a factor of recruitment. Incentives were found to be of little importance in influencing the recruitment of healthcare professionals, and even less important for retention.

Conclusion: A lack of research was determined in the realm of factors influencing the recruitment and retention in healthcare professionals other than medical doctors in Canada. Therefore, it is recommended that further such studies investigate specific healthcare professionals.

Key-words: Retention, Recruitment, Rural Health Services, Canada, Primary Care

## Introduction

The World Health Organization encourages the establishment of sustainable health systems and promotes retention of health-workers in underserved areas. [1] Although Canada does not have the shortage of health-workers that some developing countries demonstrate, the rural health system may not be sustainable. To transform this shortage into a sustainable structure, recruitment and retention (Rc&Rt) strategies should be evaluated. Multiple factors influence the Rc&Rt of health-workers in rural Canada, including personal, economic, professional, education, family, and community. [2,3] Previous research focused on specific elements.[4-7] This review aimed to conduct a broader synthesis reviewing multiple factors of Rc&Rt.

## Methods

### Search strategy

Subject-specific electronic databases including PubMed, Medline Complete, Index of Chiropractic Literature (ICL), and Cochrane Library were searched. Hand-searching and 'snowballing' were performed. Key terms were combined with Subject Heading Terms, relating to recruitment, retention, and healthcare professionals. Study selection was predetermined by inclusion and exclusion criteria and screened for eligibility accordingly (see PRISMA diagram in Fig 1). Both qualitative and quantitative papers were eligible (Table 1). Only English language primary research conducted in Canada was included. Studies were chosen if they investigated multiple factors affecting Rc&Rt. Exclusively Francophone and indigenous culture specific studies were dismissed, as they may not be generalisable. Study participants were healthcare professionals with diagnostic capabilities such as medical doctors, chiropractors, dentists, osteopaths, and physiotherapists practicing in rural Canada. All

age groups, genders, and career stages were considered applicable. Specialization was not an exclusion criteria.

Data extraction, quality appraisal, and synthesis

Study and participant characteristics were extracted and tabulated (Table 2). An inclusive extraction of findings was conducted, and analyzed using thematic analysis. Concepts were combined, resulting in the axial coding of open codes. Themes, sub-themes, major, and minor codes were generated. Major codes represented the factors influencing Rc&Rt. Minor codes were the individual impact of these factors on Rc&Rt respectively. These were scored high or low, based on frequency, prevalence in text, and description of importance.

Overall study quality was judged using a combination of critical appraisal checklists, assessment of bias, and limitations of study and participant characteristics. [8,9] Themes were assessed for overall confidence using the Confidence in Findings from Qualitative Evidence Syntheses (CERQual) approach. [10] Each theme was assessed based on methodological limitations, relevance, coherence, and adequacy of data. A final table was developed summarizing the CERQual assessments.

**Results**

Study selection

A total of 139 papers underwent a screening process. After 28 duplicates were removed, 111 papers remained. Further 102 studies were excluded based on title/abstract screening and IC/EC. A full text assessment led to the rejection of four papers. One of these papers focused on a culturally specific cohort, and the further three addressed specific factors. Five papers fit the review's predetermined inclusion and exclusion criteria. [2,3,5-7]

Study characteristics

Four qualitative studies and one quantitative study was identified. [2,3,5,6,7] All studies examined physicians that were in rural practice. The physicians either practiced family medicine or had specialized. The qualitative studies used varied methodologies, three studies used predetermined questions to interview their subjects [2,5,6] and one based their method on the grounded theory. [3] Two qualitative studies assessed both Rc&Rt [2,3], one explored factors of recruitment [6],with one focused on retention [5]. Cameron et al. also interviewed, observed, and retrieved information from staff members, spouses, and community members. [5] The quantitative study by Chauban et al. included both Rc&Rt in their survey. [7] The quantitative study contained the largest sample size, surveying 642 participants. [7] The analysis varied amongst papers. Descriptive text, numerical ranking and percentages, and the number of communities out of four were used.

Synthesis of results

A total of 40 factors influencing Rc&Rt were allocated into five common themes, across two domains. There were 13 professional practice factors, 12 personal and family factors, 10 community factors, three professional education factors, and two economic factors. The factors either impacted recruitment, retention, or both. Tables 3-7 illustrate examples of the overlap of common factors amongst papers, and list the weighting of importance of each paper in their respective outcome measurements.

Personal/Family Factors

Attraction to the rural lifestyle was one of the main factors deemed important for recruitment. It was the second most influential recruitment factor for both the study by Chauban et al. and Wasko et al. [3,7] 83% of the younger physicians compared to 81% of older physicians considered liking the rural lifestyle as an important factor for recruitment. [7] This factor was also

important for retention, with Wasko et al. ranking it as fifth of twenty factors investigated. [3] However, in comparison to recruitment, it was less influential, which was a common pattern amongst papers.

Community Factors

Recreational and leisure activities were nearly equal in importance for recruitment and retention. According to Asghari et al. "those who enjoyed nature and being outdoors found rural practice to be attractive." [2] Wasko et al. ranked its importance as #5. [3] By frequency, 71% of younger physicians and 60% of older physicians in the study by Chauban et al. mentioned this. [7] Four out of four communities in Cameron et al.'s study found this important as a factor of retention. [5]

Professional Practice Factors

The most frequently mentioned factor was scope of practice, appearing in each paper either under recruitment, retention, or both. In terms of recruitment, this factor overlapped in four studies. Two papers listed this as their most influential factor. In the study by Chauban et al., 86% of young physicians and 83% of older physicians found this important. [7] Of twenty total factors that Wasko et al. looked at for retention, the ability to practice full-scope medicine was the second most important.[3]

Professional Education Factors

In one study, rural experience in training ranked seventh most important for recruitment in both younger and older generation practitioners. [7] 71% of younger physicians rated this factor positively with regards to recruitment, compared to 40% of older physicians. The higher percentage of rural rotations and experience in training in the younger generation also correlated with a higher satisfaction with their preparedness for rural practice. Physicians having completed rural rotations were more likely to have received incentives. They also listed pref-

erence for rural practice as their most influential factor for choosing rural practice. On the contrary, those physicians who had not completed rural rotations noted scope of practice as their primary reason. [2] Continuing professional development was mentioned multiple times as a factor for retention.

Economic Factors

Four of the papers rated incentives (financial and/or non-financial) as not effective in recruiting healthcare professionals. Eight percent of participants in the study by Wasko et al. noted the benefit of bonuses or incentives for recruitment. [3] While Asghari et al. found disagreement on the effectiveness of incentives for recruitment, they stated that incentives were even less influential on retention. [2] Wasko et al.'s findings correlated, with incentives being their least important factor for retention. [3] Incentives were of greater importance to younger physicians compared to older. [7]

**Discussion**

This review aimed to explore the most important factors in the recruitment and retention of healthcare professionals in rural practice in Canada. Five eligible studies were included, and 40 factors were identified across the two domains of recruitment and retention. This systematic review of the literature determined attraction to the rural lifestyle, recreational activities, scope of practice, rural training, and incentives discussion worthy.

Personal and Family

A prominent influencer with regard to personal and family factors is attraction to the rural lifestyle. This can be very difficult to manage from a recruitment point of view, since it is personal preference. Advertisement campaigns such as Travel Alberta's "Remember to Breathe" can be crucial in promoting the attractiveness of a certain location. [11] Government

endorsed brochure campaigns are another strategy to promote the advantages of rural lifestyle. [12]

Community

The availability and quality of recreational activities in rural areas is an important community based factor for both Rc&Rt of physicians. Canadians are known to have an affinity for the outdoors. [13] Three out of four households disclosed a family member participating in outdoor activities close to home. [14] Health professionals, who are aware of the benefits of exercise, will be even more likely to engage in outdoor activities, making Rc&Rt practice an ideal match for this population.

Professional Practice

Factors of professional practice were considered very important in this review, especially scope of practice in terms of recruitment. As a general physician in rural areas, additional skills must be enhanced. These areas of medicine include general anaesthesia and surgery. [15] Wasko et al. states: "it is in a rural setting that full-scope family medicine is most often practised." [3] Specialists on the other hand, found rural practice patient populations simply too small to be highly specialised. This is reflected by the CMA, which states that in 2015, 14% of Canada's family physicians practiced in rural locations, compared to only 2% of the specialists. [16] Specialisation and sub-specialisation is a growing trend amongst medical students. [17] This poses the risk of new graduates congregating in urban centres, which could create a surplus in these areas and increase the shortage in rural locations.

Professional Education

The review also explored the impact of professional education, such as rural training on recruitment for example. Based on the pattern identified by Chauban et al., one can devise that many of the participants of papers in this review did not have rural training. [7] Scope of prac-

tice being the number one factor for recruitment in this review may not be entirely accurate, as it depends on the participant characteristics that were not mentioned by some of the examined studies.

Though this review found incentives to have a minimal effect on retention, strategies encouraging this are still in place. For example, Alberta has a Retention Benefit Program which offers payments for each year in practice. [18] Incentives had varying degrees of influence on differing participant ages.

Economic

Economic factors were a largely debated finding. A cause for the trend whereby younger physicians were far more likely to find incentives very or somewhat important, may be due to the higher costs of medical school tuition in more recent years, leading to a greater need of financial support during their career start up to alleviate their student debt. [7] According to the Graduation Questionnaire National Report, the median amount of debt accumulated directly from medical studies was $94,000. [19] In addition, rural origin students are more likely to have a higher debt load upon entry to medical school due to the added costs of living away from home. [20]

"The increasing cost of medical education and student debt may decrease physicians' interest in rural practice, leading them to choose a more lucrative urban specialty" [21]

Indeed, Canadian family physicians received an average gross of $253,683. Medical specialists however, averaged at $349,039. [22]

The factors discussed within this review were but a small sample of the reasons why practitioners choose rural practice. The raw numerical data extracted can be used for further interpretation of correlations.

## Bias, Limitations, and Strengths

Each study used their own unique pool of questions. Asghari et al. minimized question bias by using the Delphi method to reach consensus regarding interview questions. [2] They piloted the interview on two rural physicians. The other studies did not mention whether they had accounted for question bias. Misunderstood or unanswerable question bias could have occurred in any of the studies. Especially in studies researching older generation physicians, recall bias could appear. Biased reporting was mentioned as a limitation in Wasko et al. [3] The halo effect may have been present in studies that examined financial factors such as incentives or remuneration. [23] Physicians may have been reluctant to report on the importance of or role of financial factors. Moderation bias may have been present in the study by Wasko et al. since students and residents with a lower educational rank and inexperience in questioning were the interviewers. [3] External validity may have been affected simply by participant involvement in the survey, when they realised their role in the study, known as the Hawthorne effect. [24]

Due to the heterogeneous outcome measures amongst the studies, a comparison of the importance of individual factors was difficult. Choosing one representative example of each theme based on their importance or frequency of appearing in the studies, may have created outcome and reporter bias, influencing the validity of the review. By using only four databases, important studies may have been missed. However, the exploratory and explanatory data design, which combined both qualitative and quantitative data improved study reliability. The mixed methods approach provided a holistic view of the research topic.

The overall level of evidence gathered in this review, taking both the articles' and review's strengths and limitations into account, is moderately high. Though the studies had minor

flaws individually, the results still demonstrated a commonality. Therefore, recommendations could be derived from the data.

## Recommendations

Based on the literature, the following recommendations can be established. The effectiveness of retention benefit programs should be questioned. The connection between rural experience in training and the likelihood of choosing rural practice should be thoroughly explored. Further exploration of the link between the amount of student debt and the preference of financial incentives for recruitment should be conducted.

Though this systematic review looked to explore factors influencing healthcare professions, no published study looking at additional healthcare professions was found. Thus, the papers in this review, as well as the results, were based solely on physicians with medical training. There is need for further research looking at specific healthcare professionals to gain a deeper understanding of this subject area.

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Figure 1 - PRISMA Diagram

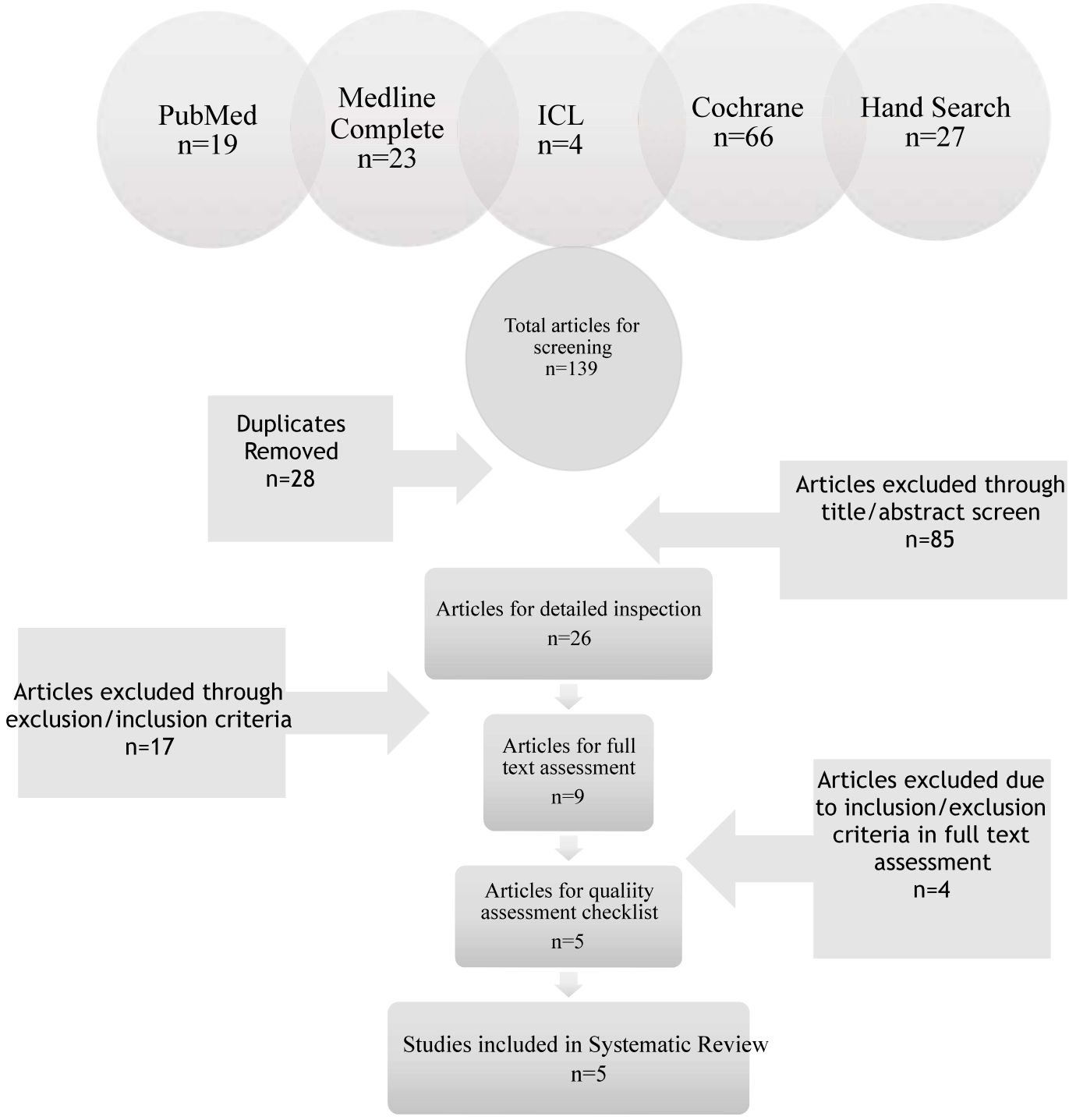

Table 1 - Inclusion/Exclusion Criteria

| **Inclusion Criteria** | **Exclusion Criteria** |
|---|---|
| Primary Research | Exclusively Francophone Studies |
| Qualitative Papers | Exclusively Indigenous Culture Studies |
| Quantitative Papers | Studies exploring a single factor affecting recruitment and/or retention |
| English Language | |
| Research conducted in Canada | |
| Healthcare professionals with diagnostic capabilities practicing in rural Canada | |
| All age groups, genders, career stages, specialisations | |

Table 2 - Study characteristics

| Study | Aim | Design | Location | Sample Size | Analysis | Findings | Participant Characteristics |
|---|---|---|---|---|---|---|---|
| [2] | Explore reasons, through qualitative analysis, why Canadian family physicians decide to work in rural and remote communities. | • Qualitative<br>• Participatory Research Approach<br>• Semi-structured interview | Canada | 17 | Thematic Analysis | Attractive and deterring factors, strategies for improving recruitment and retention | • Rural family physicians in Canada (West, East, North, Quebec)<br>• Experience as a family physician in a rural (population <10,000) or remote area (no road access, hospital >6 hours away)<br>Early- (<5 yr), mid- (5-15 yr), and late- (>15 yr) career physicians |
| [3] | Determine factors which motivate physicians to select rural practice and result in long term retention. | • Qualitative<br>Standardized, direct interviews | Saskatchewan | 62 | Inductive Analysis | Community, personal, practice, compensation factors | • Physicians practicing in rural Saskatchewan |
| [5] | Examine the implications of personal, professional, and community factors on physician retention in four rural Albertan communities. | • Qualitative<br>• Collective Case Study<br>Interviews, Documents, Observation | Alberta | 43 | Not stated | Professional, personal, community factors | • 4 communities, 1-4 hours from nearest urban centre<br>• Physicians, Staff Members, Spouses, Community Members<br>• Mean age of physicians: 46.0<br>• Mean age of other participants: 47.5<br>• Duration of practice ranged from 4-30+ yrs<br>7/15 physicians Canadian born |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| [6] | Find recruitment strategies and improve physician retention, especially in younger physicians. | • Qualitative<br>Semi-structured interviews | Saskatchewan, Newfoundland & Labrador | 48 | Thematic Analysis | Personal/ family, professional practice, education, economic, community factors | • Physicians graduating from Memorial University of Newfoundland or University of Saskatchewan<br>Early- (1995-1999) ,mid- (1985-1989), late- (1975-1979), end- (1965-1969) career physicians |
| [7] | Assess national trends of migration from rural to urban areas and how to reduce this flow. | • Quantitative<br>Cross Sectional Survey | Canada | 642 | Descriptive Statistics | Incentive, recruitment factors, current personal & professional satisfaction, rural training | • Physicians in rural practice in Canada<br>Physicians grouped into aged ≤ 45 years, and > 45 years |

Table 3 - Professional Practice Factors in Recruitment

| Factors | Study | Additional Information |
|---|---|---|
| Scope of practice | [3] | #1 most prevalent theme for recruitment. The frequency of this response as an important factor of recruitment was notable; 21 of 62 respondents answered 'scope of practice'. |
| | [7] | Young: #1, 86%<br>Older: #1, 83% |
| | [6] | Not specified |
| | [2] | Not specified |
| Work schedule/<br>Hours of work | [3] | #15 most prevalent theme for recruitment. Seven of 62 respondents answered, 'work schedule/hours of work'. |
| Positive work environment/<br>physician dynamics | [3] | Tenth most prevalent theme for recruitment; 16% of respondents answered 'positive work environment//physician dynamics'. |
| Group practice | [3] | Ninth most prevalent factor (16% respondent choice). |
| Independence | [3] | #16 most prevalent factor. 11% frequency of answer. |
| Practice opportunity<br>was available | [7] | Young: #4, 73%<br>Older: #4, 77% |
| Preference for rural practice | [7] | Young: #3, 79%<br>Older: #3, 79% |
| Feeling appreciated<br>by patients | [3] | #11 most prevalent answer. 16% frequency of answer. |

Table 4 - Personal/Family Factors Recruitment

| Factors | Study | Additional Information |
|---|---|---|
| Rural Background (Physician) | [3] | Third most important factor for recruitment. 21% of respondents answered this. |
| | [2] | Not specified |
| Rural Background (Spouse) | [3] | Thirteenth most important factor, 13% of respondents selected this factor. |
| Attracted to rural lifestyle | [7] | Young: #2, 83%<br>Older: #2, 81% |
| | [3] | Second most important factor of recruitment in the personal/family realm. 27% freqeuency of answer. |
| | [2] | Not specified |
| Friends & family living in the area | [3] | Sixth most prelevant factor. 18% frequency of answer. |
| | [7] | Young: #8, 49%<br>Older: #8, 40% |
| | [6] | Most important factor of recruitment for this study. |
| Spouse/family enjoy the community | [3] | Fourteenth most important factor for this study. 13% of respondents found this factor to be key in recruitment. |
| Grew up/previously lived in specific community (physician or spouse) | [3] | Fourth most important. Near one-fifth of the study‘s respondents voiced the importance of this factor. |
| Work/life balance | [6] | Important for younger generation primarily. |
| Spouse found employment | [3] | Fourteenth most important factor for this study. 13% frequency of answer. |
| | [2] | Not specified |
| | [6] | Important for younger generation primarily. |
| Adventure/seeing new places | [6] | Important for older generation primarily. |

Table 5 - Community Factors Recruitment

| Factors | Study | Additional Information |
|---|---|---|
| Feeling appreciated by the community | [3] | Twelfth most important factor. 13% of respondents marked this factor as important. |
| Recreational/leisure activities | [3] | Fifth most important community factors affecting recruitment. Near 1/5 of the respondents marked this factor as important. |
| | [7] | Young: #6, 71%<br>Older: #6, 60% |
| | [6] | Not specified |
| Integration and enjoyment of the community | [3] | Eighth most important factor. 16% of respondents selected this answer. |
| Medical need of the community | [6] | Important for older generation primarily. |
| Regional support | [3] | 5% of study participants found regional support to be an important community factor for recruitment. It placed 20th in the ranking of importance. |
| Education system | [3] | Nineteenth most important factor. 6% of respondents marked this factor as important. |
| Community needs a good match with my career interests | [7] | Young: #5, 73%<br>Older: #5, 70% |
| Proximity to larger centre | [3] | Seventh most important. 16% frequency of answer. |
| | [2] | Distance from large centres seen as a negative factor. |
| Recruitment Strategies | [6] | Not specified |

Table 6 - Professional Education Factors Recruitment

| Factors | Study | Additional Information |
|---|---|---|
| Rural training site | [6] | Not specified |
| | [2] | Not specified |
| Rural experience in training /rotations | [7] | Young: #7, 71%<br>Older: #7, 40% |
| | [2] | Mentioned multiple times. |

Table 7 - Economic Factors Recruitment

| Factors | Study | Additional Information | |
|---|---|---|---|
| Incentive/ Bonuses | [3] | Eighteenth most important factor. 8% frequency of answer. | |
| | [7] | Financial incentives | Young: #9, 49%<br>Older: #9, 32% |
| | | Other non-financial incentives | Young: #10, 36%<br>Older: #10, 22% |
| | [2] | Some disagreement regarding effectiveness of incentives. | |
| | [3] | 20th most important economic factor for recruitment. 5% of respondents indicated this factor to be important in recruitment. | |
| | [2] | States that incentive is not important for retention. | |
| Adequate amount/mode of remuneration | [7] | Young: #4, 73%<br>Older: #4, 77% | |
| | [6] | Not specified. | |

Table 8 – CERQual Qualitative Evidence Profile - Recruitment

**Objective:** To identify, appraise, and synthesise qualitative research evidence on the factors which influence the recruitment of healthcare professionals in rural Canada.

| **Review Finding (RF)** | **Studies Contributing to the RF** | **Assessment of Methodological Limitations** | **Assessment of Relevance** | **Assessment of Coherence** | **Assessment of Adequacy** | **Overall CERQual Assessment of Confidence** | **Explanation of Judgment** |
|---|---|---|---|---|---|---|---|
| Personal and family factors | Studies 2,3,6 | Minor methodological limitations (two studies with minor and one study with moderate methodological limitations) | Minor concerns about relevance (one study was from two provinces, one study was from one province, one study was Canada wide) | Moderate concerns about coherence (one factor had 3/3 studies, three factors had 2/3 studies, five factors had 1/3 studies) | Minor concerns about adequacy (three studies that together offered moderately rich data overall) | **Moderate Confidence** | This finding was graded as moderate confidence because of minor concerns regarding methodological limitations and adequacy, and moderate concerns regarding relevance and coherence. |
| Community factors | Studies 2,3,6 | Minor methodological limitations (two studies with minor and one study with moderate methodological limitations) | Minor concerns about relevance (one study was from two provinces, one study was from one province, one study was Canada wide) | Moderate concerns about coherence (two factors had 2/3 studies, six factors had 1/3 studies) | Minor concerns about adequacy (three studies that together offered moderately rich data overall) | **Moderate Confidence** | This finding was graded as moderate confidence because of minor concerns regarding methodological limitations and adequacy, and moderate concerns regarding relevance and coherence. |
| Professional practice factors | Studies 2,3,6 | Minor methodological limitations (two studies with minor and one study with moderate methodological limitations) | Minor concerns about relevance (one study was from two provinces, one study was from one province, one study was Canada wide) | Moderate concerns about coherence (one factor had 3/3 studies, five factors had 1/3 studies) | Minor concerns about adequacy (three studies that together offered moderately rich data overall) | **Moderate Confidence** | This finding was graded as moderate confidence because of minor concerns regarding methodological limitations and adequacy, and moderate concerns regarding relevance and coherence. |
| Professional education factors | Studies 2,6 | Minor-Moderate methodological limitations (One study with moderate and one study with minor methodological limitations) | Minor concerns about relevance (one study was from two provinces, one study was Canada wide) | Minor concerns about coherence (one factor had 2/2 studies, one factor had 1/2 studies) | Minor concerns about adequacy (two studies that together offered rich data overall) | **High Confidence** | This finding was graded as high confidence because of minor concerns regarding relevance, coherence and adequacy of data, and minor-moderate methodological limitations. |
| Economic factors | Studies 2,3,6 | Minor methodological limitations (two studies with minor and one study with moderate methodological limitations) | Minor concerns about relevance (one study was from two provinces, one study was from one province, one study was Canada wide) | Minor concerns about coherence (one factor had 3/3 studies, one factor had 1/3 studies) | Minor concerns about adequacy (three studies that together offered moderately rich data overall) | **High Confidence** | This finding was graded as high confidence because of minor concerns regarding methodological limitations, coherence and adequacy, and minor concerns regarding relevance. |

Table 9 - CERQual Qualitative Evidence Profile - Retention

| **Objective:** To identify, appraise, and synthesise qualitative research evidence on the factors which influence the retention of healthcare professionals in rural Canada. | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Review Finding (RF)** | **Studies Contributing to the RF** | **Assessment of Methodological Limitations** | **Assessment of Relevance** | **Assessment of Coherence** | **Assessment of Adequacy** | **Overall CERQual Assessment of Confidence** | **Explanation of Judgment** |
| Personal and family factors | Studies 2,3,5 | Minor methodological limitations (two studies with minor and one study with no methodological limitations) | Minor concerns about relevance (two studies were from individual provinces in Canada, one study was Canada wide) | Moderate concerns about coherence (one factor had 2/3 studies, eight factors had 1/3 studies) | Minor concerns about adequacy (three studies that together offered moderately rich data overall) | **Moderate Confidence** | This finding was graded as moderate confidence because of minor concerns regarding methodological limitations, relevance, and adequacy of data, and moderate concerns regarding coherence. |
| Community factors | Studies 3,5 | Minor methodological limitations (one study with minor and one study with no methodological limitations) | Moderate concerns about relevance (two studies were from individual provinces in Canada) | Minor concerns about coherence (four factors had 2/2 studies, two factors had 1/2 studies) | Moderate concerns about adequacy (two studies that together offered relatively thin data overall) | **Moderate Confidence** | This finding was graded as moderate confidence because of minor concerns regarding methodological limitations and coherence, and moderate concerns regarding relevance and adequacy of data. |
| Professional practice factors | Studies 2,3,5 | Minor methodological limitations (two studies with minor and one study with no methodological limitations) | Minor concerns about relevance (two studies were from individual provinces in Canada, one study was Canada wide) | Moderate concerns about coherence (three factors had 2/3 studies, seven factors had 1/3 studies) | Moderate concerns about adequacy (three studies that together offered thin data overall) | **Moderate confidence** | This finding was graded as moderate confidence because of minor concerns regarding methodological limitations and relevance, and moderate concerns regarding coherence and adequacy of data. |
| Professional education factors | Study 2 | Minor methodological limitations (one study with minor methodological limitations) | No concerns about relevance (study performed was the first Canada wide qualitative study) | Substantial concern about coherence (RF only present in one study) | Substantial concerns about adequacy (only one study offering thin data) | **Low confidence** | This finding was graded as low confidence because of minor concerns regarding methodological limitations, no concerns about relevance, and substantial concerns about coherence and adequacy of data. |
| Economic factors | Studies 2,3 | Minor methodological limitations (two studies with minor methodological limitations) | Minor concerns about relevance (one study was from an individual province in Canada, one study was Canada wide) | No concerns about coherence (one factor had 2/2 studies) | Moderate concerns about adequacy (two studies that together offered moderately rich data overall) | **High confidence** | This finding was graded as high confidence because of minor concerns regarding methodological limitations, relevance, and no concerns regarding coherence, and moderate concerns regarding adequacy of data. |