

## ORIGINAL RESEARCH

# Characteristics of commuting and non-commuting rural-dwelling nurses in eastern Washington

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## ABSTRACT

**Purpose:** The purpose of this study was to explore characteristics of rural-dwelling nurses who may or may not commute for work to an urban area. Rural communities often face a lack of healthcare provider access, including lack of access to registered nurses. With 40% of hospitals and other healthcare facilities located in rural areas, there is a critical need to obtain information about rural nurse workforce issues. Limited research has been conducted on RNs who commute to work in urban areas. To extend this research and provide more information about rural commuting nurses, a pilot study was completed in three rural counties in Washington State.

**Methods:** A convenience sample of 72 rural-dwelling nurses was recruited through email and mail invitation. Survey data were collected using Qualtrics software. Descriptive statistics were used to determine general characteristics. Chi-square analysis was used to compare respondents who commute to those who do not.

**Results:** Differences noted between the commuting and non-commuting nurses included non-commuters being more likely to be dissatisfied overall with their primary facility, current base salary, and salary range for their position than commuters. There were no nurses in advanced practice in the non-commuting group.

**Conclusions:** This pilot study supports the need for further research with larger samples and in more rural counties of eastern Washington to better assess needs and characteristics of both commuting and non-commuting nurses. This information can assist rural healthcare employers to develop and implement the most effective strategies to keep the rural nurse workforce in the community.

**Key Words:** Rural nurse workforce, Job satisfaction, Rural commute, Rural nurse retention

## 1. INTRODUCTION

The shortage of rural health care workers is a world-wide problem and strategies have been suggested to improve the numbers of health care workers in rural areas.<sup>[1]</sup> Yet, there still remains a problem with recruitment and retention of health workers, including nurses. In the US, rural hospitals and nurses are very important to rural communities that often face a lack of health care services and professionals, including hospital care, public health services, and long-term

care.<sup>[2]</sup> In fact, 40% of US hospitals that are registered with the American Hospital Association are rural or nonmetropolitan, meaning that they are located in a county with less than 50,000 residents.<sup>[3,4]</sup> Poor health outcomes due to chronic disease, old age, and poor health behaviors like smoking, lack of exercise, and obesity are more common among US rural residents as compared to urban residents.<sup>[2]</sup> Although nurses in rural areas work mainly in hospitals or other health facilities, they may also provide health education, primary

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and end-of-life care, home visits, and public health services to rural communities. With an estimated 10%-28% of the US population living in rural areas, nurses are a critical component in the care and health promotion for rural residents.<sup>[4]</sup> Just as in other areas of the world, recruitment and retention of rural nurses are a priority for US rural communities, including those in Washington State.<sup>[1,2]</sup>

### 1.1 Background

There is projected to be a 29% shortage of nurses in the US by 2020, which will greatly impact rural areas that already have fewer numbers of nurses.<sup>[5]</sup> Studies have shown that two important factors affecting rural nurse shortages are related to job satisfaction: career advancement and income.<sup>[6,7]</sup> It is difficult for nurses to advance their education in rural areas because schools offering career ladder options and continuing education are distant, and even if rural nurses do further their education, they can make significantly more money, better benefits, and have more opportunities for career advancement in an urban area. In a study conducted by the Washington, Wyoming, Alaska, Montana, and Idaho (WWAMI) Rural Health Research Center, it was found that rural nurses are more likely to only have an associate degree or diploma than urban nurses.<sup>[7]</sup> It was also found in this study that "RNs residing in rural areas who had baccalaureate or higher degrees earned the same or lower salaries than urban RNs with associate degrees or diplomas".<sup>[7]</sup> Lack of educational opportunities prevents rural nurses from moving up the career ladder through professional development that could potentially increase salaries.<sup>[8]</sup> This makes it difficult to recruit and retain rural nurses because they may move or travel to work in urban areas to make more money and to have more opportunities for career advancement.

Due to specific characteristics and needs of rural nurses, there are strategies that can be tailored to rural areas and implemented to recruit and retain nurses. Some strategies are to develop nursing programs in conjunction with local community colleges, create opportunities for distance education (online classes), and nursing education loan repayment programs in exchange for working in a rural area.<sup>[9]</sup> Stroth notes that nursing management can use multiple strategies and assess job related factors such as satisfaction, supervision, or pay for possible changes by providing "realistic job descriptions... career planning for long-term-goal attainment, flexible scheduling or self-scheduling, education sessions, and means for in-house advancement opportunities" for their nurses and staff.<sup>[10]</sup>

Much research has been done on the job satisfaction and characteristics of rural nurses on a global, national, and regional level.<sup>[6-8,11]</sup> In the 2006 study conducted by the WWAMI

Rural Health Research Center investigating national trends, it was found that nurses who resided in small rural and isolated rural areas were much more likely to commute to a different area to work, primarily to urban areas.<sup>[7]</sup> However, one major gap noted in the WWAMI study was the lack of information about rural nurses who commute. Based on that finding, WWAMI conducted a follow up study to look at characteristics of rural nurses working in different communities using the same 2004 national survey data used in the 2006 study.<sup>[12]</sup> Partial results included higher nurse salaries in more urban areas are a reason for commuting, there were fewer older nurses who commuted, there were more commuters working in hospitals as compared to non-commuters, education level or home life (such as number of children at home) were not related to commuting patterns, and there were fewer commuting nurses in administrative or supervisory positions. It was also noted there were no differences in job satisfaction levels. However, each US state is different in its geography and rural nurse populations. In order to extend this research and provide more regional information about rural commuting nurses as compared to their non-commuting counterparts, a pilot study was completed in three rural counties in Washington State. Not knowing why rural nurses commute or stay and work in local facilities prevents rural healthcare employers from developing and implementing the most effective strategies that will keep the rural nurse workforce in the community.

### 1.2 Purpose of the study

The purpose of this study was to determine the characteristics of rural-dwelling nurses who commute to work versus those who do not in three rural counties in Washington State.

## 2. METHOD

This was a descriptive exploratory pilot study that surveyed rural nurses from three eastern Washington counties that surround a larger urban area.

### 2.1 Measurement

Permission was received from the Wyoming Department of Employment to use the Retention of Nurses in Wyoming survey used in their 2008 report.<sup>[13]</sup> Wyoming is primarily a rural/frontier state and includes 6 or fewer people per square mile in 17 of the 23 counties.<sup>[14]</sup> Many communities rely on critical access rural hospitals and clinics, and therefore the state has vested interest in retention of rural nurses in those communities, which is also a need for rural areas of Washington. Surveying the nurse workforce was needed due to many nurses leaving employment, especially in rural areas. The survey was created by the Research and Planning section of the Department of Employment.<sup>[13]</sup> The survey was devel-

oped after an extensive review of the literature and included two sets of questions that reflected satisfaction items and community scaled items (such as proximity to family). The purpose was to measure nurse satisfaction and influence on job retention. Once the instrument was developed, it was sent to a nurse advisory committee for review, comments, and changes. Exploratory factor analysis (EFA) was completed for the factor model with maximum likelihood and oblique rotation. Scree plots were used to determine numbers of factors for each group of items and items were kept if the absolute value score was  $\geq 0.3$ . A logistic regression model based on stated intent to leave was run following the EFA using all factors and all were significant at the  $p < .05$  level (please see Retention of Nurses in Wyoming 2008<sup>[13]</sup> for more details).

Because this survey instrument included rural nurse and community factors, it was chosen for this study. Some questions that related to licensure, intent to leave, and shift work from the original instrument were not used for this study and one extra question about mileage driven was added along with demographic questions, with permission from the Wyoming Department of Employment. These changes were made to help clarify “who” was commuting and how many miles they drove each week, since some studies are beginning to indicate driving home after long shifts increases risk and this information may be useful in a future study.

## 2.2 Setting

Washington State divides different areas of the state into workforce regions that have employment issues and industries in common in order to provide appropriate services and to monitor workforce populations. The counties studied are located in Washington State Workforce Development Areas 8 and 10, as these counties are rural on the far eastern region of the state and are within a three hour drive to a metropolitan area.<sup>[15]</sup> No town/city in any of the three counties has a population greater than 10,000.

## 2.3 Ethical consideration

Washington State University IRB granted exempt status. Participants received an explanation of the survey and its purpose, and were informed that they could opt out at any time.

## 2.4 Participants

All RNs living within the three county area were considered potential participants. To access the sample, the Washington State Nursing Commission was contacted to obtain e-mail and mailing addresses of rural dwelling nurses in the chosen counties. The original list contained a total of 592 listed RNs, which contained active and retired nurses. A number of addresses had missing data, did not match the actual county,

or were not updated, leaving a list of 342 RNs. The remaining RNs were invited to do the survey through email and/or postal mail, as many RNs did not have email addresses. Of 243 email invites, only 32 responses were received. Next, postal mail survey invites were sent to 200 RNs and 40 more responses were received. This resulted in a final response rate of 21% ( $N = 72$ ). Two of the survey respondents were included in overall demographic information but were removed for further analysis because they did not report miles travelled to work, which is how commuter/non-commuter status was determined.

## 2.5 Data collection and analysis

Data was collected using Qualtrics survey software.<sup>[16]</sup> Email respondents entered responses directly via the web. Data from mailed surveys were entered by hand into Qualtrics. Analysis of descriptive statistics was done using SPSS Version 22.<sup>[17]</sup> Descriptive statistics were run on the complete sample ( $n = 72$ ), followed by Chi square analysis using Fisher’s Exact Test to compare non-commuting nurses with commuting nurses ( $n = 70$ ). Fisher’s Exact test was used due to the small sample size.<sup>[18]</sup>

## 3. RESULTS

### 3.1 General descriptives

Reported demographics of the total sample included 29% in the age range of 21-40 years, 51% in the age range of 41-60 years, 19% in the age range of 61-70 years, 85% were female, and 83% were married or with a partner. There were 38% who reported children in the home, and 8% reported other adults in the home besides partner or spouse.

#### 3.1.1 Education and work characteristics

The majority (56%) of the RNs had an Associate degree or a Diploma. Only 35% reported having a Baccalaureate degree in nursing, and 10% reported having a graduate degree (Master’s, DNP, PhD). Those with advanced practice degrees included Certified Registered Nurse Anesthetists, Family Nurse Practitioners, and areas of nursing administration or education. The largest percentage of the nurses had 31-40 years of practice (26%), with the next highest being 6-10 years (18%). Only 19% of the respondents had 5 or less years of experience. For reported miles driven to work, 40% drove greater than 20 miles one way. Most nurses worked in a hospital as their primary facility (70%) and most were employed full time (64%). Other facilities included ambulatory care which covered clinics and offices (11%), nursing and residential care facilities (15%), with 4% listed as “other”. Areas of employment included 53% of respondents who worked in acute care, 25% who worked in management, administration, or education, 13% who worked in residential/home care or

corrections, and 10% who worked in primary care.

**3.1.2 Community satisfaction**

About 40% of respondents had lived in their current community for over 20 years, but a fair percentage (34%) was somewhat new to the area and had lived there less than 10 years. When asked to choose “which reason best describes why you live in your current community”, proximity to natural amenities, cultural reasons, and local schools for children were the most common choices. Other reasons listed by nurses were proximity to family and friends, existing job, spouse or partner’s job, or cost of living/affordable housing. The survey also asked how much the respondent agreed with the statement: “I am tied to this community and cannot leave.” 39% agreed/strongly agreed with this statement, 30% disagreed/strongly disagreed, and 31% neither agreed nor disagreed.

**3.1.3 Primary facility**

Respondents were asked to rate their satisfaction with different aspects of their primary facility and community. For the whole sample, the majority of the respondents were satis-

fied/very satisfied particularly with salary, work environment factors, job security, intra-professional and inter-professional relationships, patient care, opportunities to use their skills, access to continuing education, and feeling that their work is important. However, approximately 20% of respondents were dissatisfied/very dissatisfied with the adequacy of RN staffing, adequacy of clerical support services, the amount of paperwork required, support from their nursing administration, and time available for patient education.

**3.2 Descriptives of commuting versus non-commuting population**

There were 26 non-commuters and 44 commuters in the sample (n = 70) and are described in Table 1. Highlighted differences included a larger proportion of older (41-60) nurses in the non-commuting group, a higher percentage of males who commuted, more dissatisfaction with job satisfaction factors in the non-commuting group, and more nurses who commuted in advanced practice or management roles. In fact there were no nurses in advanced practice in the non-commuting group.

**Table 1.** Descriptives of non-commuters and commuters (N=70)

Item	Non-commuter (n = 26)	Commuter (n = 44)
<b>Age</b>		
20-40	23% (n = 6)	32% (n = 14)
41-60	62% (n = 16)	48% (n = 21)
61+	15% (n = 4)	20% (n = 9)
<b>Gender</b>		
Female	88% (n = 23)	82% (n = 36)
Male	12% (n = 3)	18% (n = 8)
<b>Type of work</b>		
Admin/management	19% (n = 5)	30% (n = 13)
Advanced practice	0% (n = 0)	12% (n = 5)
<b>Job dissatisfaction</b>		
Base salary	27% (n = 7)	9% (n = 4)
RN staffing	39% (n = 10)	23% (n = 10)
Amount of paperwork	77% (n = 20)	45% (n = 20)
Personal safety	38% (n = 9)	14% (n = 6)
Advancement opportunity	61% (n = 16)	32% (n = 14)
Continuing Education opportunity	42% (n = 11)	27% (n = 12)
Importance of work	19% (n = 5)	9% (n = 4)

When asked how much they agree with the following statement: “I am tied to this community and cannot leave”, 36.4% of commuters agreed/strongly agreed while 42.3% of non-commuters did. The reasoning behind why the respondents live in their current community also differed between the

commuters and non-commuters. Non-commuters chose proximity to family/friends, proximity to natural amenities/cultural reasons/schools, existing job, and spouse or partner’s job as their top reasons. Commuters on the other hand first picked proximity to natural amenities/cultural rea-

sons/schools as their main choice followed by proximity to family/friends, cost of living/affordable housing, existing job, and spouse or partner's job.

### 3.3 Chi square with Fisher's exact test

The Fisher's Exact Test was used to determine whether the differences noted between the commuting and non-

commuting populations were significant and if the variables were related. There were several differences that were statistically significant ( $p < .05$ ), and others that may be clinically significant. Most of the differences were noted in the questions about satisfaction with the primary facility, as seen in Table 2. In some cases, survey questions were left blank, so sample numbers for each statistic vary slightly.

**Table 2.** Satisfaction differences between commuters and non-commuters ( $p < .05$ )

Survey Item	Chi-square	p-value (Fisher's Exact)	N
Overall satisfaction	8.092	.03	68
Current base salary	7.484	.04	70
Salary range for position	9.121	.02	70
Adequacy of clerical support services	7.746	.03	70
Amount of paperwork required	7.037	.03	70
Opportunities for advancement	15.984	.01	70
Opportunities to learn new skills	9.169	.02	69
Level of personal safety at facility*	7.089	.06	70

\* Not statistically significant.

One difference between the populations was that non-commuters were likely to be more dissatisfied overall with their primary facility than commuters ( $\chi^2 = 8.092$ ,  $DF = 3$ ,  $n = 68$ ,  $p = .03$ ). Non-commuters were more likely to be dissatisfied with their current base salary ( $\chi^2 = 7.484$ ,  $DF = 3$ ,  $n = 70$ ,  $p = .04$ ) and the salary range for their position ( $\chi^2 = 9.121$ ,  $DF = 3$ ,  $n = 70$ ,  $p = .02$ ). One significant finding that stood out was that non-commuters were less likely to be satisfied with opportunities for advancement ( $\chi^2 = 15.984$ ,  $DF = 3$ ,  $n = 70$ ,  $p = .01$ ), and less likely to be satisfied with opportunities to learn new skills ( $\chi^2 = 9.169$ ,  $DF = 3$ ,  $n = 69$ ,  $p = .02$ ).

Some of the results were not statistically significant, but may be important to consider when trying to recruit and retain rural Washington nurses. Commuters were more likely to live as a couple only with no children or to have children in the home while non-commuters were more likely to live with other adults in the home. Commuters were also more likely to be satisfied with the skill of RNs where they work. Non-commuters were less likely to be satisfied with the level of personal safety at the facility where they work. It may also be clinically significant that more commuters reported their reason for living rurally as affordable housing/cost of living (none of the non-commuters chose that reason), and more of the non-commuters reported their reason as their existing job and proximity to family/friends.

## 4. DISCUSSION

Although this was a pilot study with a small sample, approximately 59% of the respondents to this survey commute

to work in a larger area. Commuting is typical of nurses who live in isolated small rural areas, but this percentage was much higher than in the WWAMI 2006 study that used national data.<sup>[7]</sup> One finding was that 22%-38% of rural nurses commute to a larger area for work. In the WWAMI follow up study, a similar percentage was noted; however when RN commuters were divided into geographic regions, there were far fewer commuters in the West, which is much different than results for this study.<sup>[12]</sup> Perhaps commuters in this study were more willing to respond to the survey which might account for the higher percentage for this study, or there is a different attitude about commuting within the smaller geographic area. It is also possible that since there are fewer employment opportunities in these rural areas, nurses must commute in order to find work. Some of the respondents may prefer to work in their local area but there may be no openings due to the number of the hospitals and clinics available, types of job positions, or older nurses not retiring. However, it does suggest that a higher proportion of nurses in rural eastern Washington may commute to larger areas for work than in the national nursing population. This finding should be explored further to see if the other rural areas in Washington have similar commuting rates and the factors that affect them.

One possible health issue with the higher percentage of rural commuters is that longer commutes may put these nurses at risk for more traffic accidents, more medical errors on the job, as well as having to plan for the costs or difficulties of commuting.<sup>[19]</sup> A large number of the sample (40%) drove

over 20 miles one way to work. In Eastern Washington, snow and icy roads are common in winter, with occasional road closures. Nurses are also working 12 hour shifts, adding to fatigue for the home commute. This topic may need to be considered in a future survey along with driving injury data. Knowing this information may give rural facilities additional information for recruitment, to show the commuting costs and costs of injury, as compared to differences in pay rates. It may also assist commuting nurses in making good choices in work schedules and work places.

In the US national population, only about 25%-35% of rural RNs had a baccalaureate degree or higher.<sup>[7,9]</sup> In this population, 38.9% of respondents had either a baccalaureate degree in nursing, a Master's degree in nursing, or a Post-master's degree. It has been reported that 8.4% of the national urban RN population has advanced degrees, while only 5% to 6.4% of rural RNs do.<sup>[7]</sup> However, 8.4% of the respondents of this survey work in some type of advanced practice or administration, and were part of the "commuters" sub-sample, who worked in a larger town and not the small rural areas of their communities. This was directly opposite to the WWAMI study of 2012 that found there were fewer commuting RNs that were in administrative or other types of clinical management positions.<sup>[12]</sup>

The sample in this study was more likely to work in a hospital (65.3%) than the national rural (50.1%-57.5%) or urban (60.4%) nursing population.<sup>[7]</sup> Almost 16% of this group of rural eastern Washington nurses worked in nursing and residential care facilities, which is typical considering the greater percentage of older populations in rural areas as compared to urban areas that require that type of care.<sup>[7]</sup>

#### 4.1 Job satisfaction

In Molinari and Monserud's study on rural nurses in the Northwest United States, nurses reported their salary and benefits as being some of the least satisfying aspects of their job.<sup>[11]</sup> Skillman *et al.* also discussed how rural RNs make less than urban RNs even if their educational level is equal to or more than an urban RN.<sup>[7]</sup> Rural RNs can receive higher salaries when they commute to work in larger rural or urban areas.<sup>[7,12]</sup> In this study, non-commuters were more likely to be dissatisfied with their current base salary and the salary range for their position, while none of the commuters were dissatisfied with either of these factors. Both groups were mostly satisfied with their employee benefits. Since none of the commuters in this study were dissatisfied with their salary, that factor could be part of the reason that they work outside of their local community.

According to the literature, a poor work environment, which

includes job satisfaction, is linked to nurse turnover and difficulty recruiting new nurses.<sup>[9,11]</sup> Interestingly, the WWAMI study of 2012 found that both commuting and non-commuting rural nurses were moderately or extremely satisfied with their jobs.<sup>[12]</sup> However, issues such as administrative support, support services, staffing adequacy, and participation in decision making can affect the work environment and whether or not a nurse will remain working at the facility.<sup>[9]</sup> Baernholdt and Mark discussed the difficulty that rural nurses face in obtaining continuing education and the lower proportion of nurses with a baccalaureate degree or higher. Newhouse *et al.* noted how rural hospitals are often over 40 miles from educational settings, which makes recruiting BSN graduates difficult.<sup>[4]</sup> It also makes it difficult for rural nurses to attend RN-to-BSN programs.<sup>[4]</sup> These issues were reflected in this study as well, unlike the 2012 study. Commuters in this study were more likely to be satisfied with their positions. About one fifth of the nurses in this study reported being dissatisfied/very dissatisfied with the support from their nursing administration, which can decrease nurse's satisfaction with the work environment. The commuters were more likely to be satisfied with the adequacy of clerical support services than non-commuters, possibly making them more satisfied with their job and contributing to their reasons for commuting. A fair percentage of the nurses reported being dissatisfied with the adequacy of RN staffing, which can contribute to dissatisfaction with their job and intentions to leave. Although the majority of the nurses were satisfied with their involvement in policy and management decisions, 13.9% were dissatisfied/very dissatisfied. Most of the nurses were also satisfied with opportunities for continuing education; however, only 57.7% of non-commuters were satisfied/very satisfied while 72.7% of commuters were. The non-commuters were also less likely to be satisfied with the amount of paperwork required of them.

The rural eastern Washington nurse's satisfaction could be improved with more support from nursing administration, increased clerical support services, adequate RN staffing, involvement in policy and management decisions, more opportunities for continuing education, and more efficient charting or electronic medical records. Improving these factors in rural areas may help keep nurses working in their local area. As mentioned in the literature review, continuing education can be improved by forming relationships with local colleges, providing opportunities for distance education or online classes, and offering loan repayment programs for working in a rural area.<sup>[9]</sup> RN staffing could be improved by hiring and retaining more nurses through other means of improving job satisfaction.

Another factor that increases job satisfaction is interactions

with other staff members. Molinari and Monserud found that supportive and positive coworkers increased job satisfaction, while negative interactions decreased satisfaction.<sup>[11]</sup> In this study, over 80% of the respondents reported being satisfied/very satisfied with the support from the nurses they work with, interactions with physicians, interactions with other non-nursing staff, and interactions with patients. The one area that could be improved was the support from their nursing administration, as only about half of the nurses were satisfied. This is especially important since rural nurses rate support from management as more important than urban nurses.<sup>[9]</sup> Some comments from nurses in this study about their concerns with management included: “inexperienced administration”, “No help from administration”, and “the management is poor where I work”. Providing more support from management and involvement in decision making could help retain rural nurses as well as further study to provide information to management about what rural nurses need.

Roberge mentions in her introduction that rural nurses are less satisfied with their opportunities for promotion.<sup>[6]</sup> Newhouse *et al.* discuss how a clinical ladder, which offers opportunities for advancement, can help with nurse retention.<sup>[4]</sup> Stroth also discussed how providing in-house opportunities for advancement can help increase job embeddedness and nurse retention.<sup>[10]</sup> In the current study, commuters were more likely to be satisfied with opportunities for advancement than non-commuters. Perhaps one of the reasons they chose to commute was because they were not satisfied with their opportunities for advancement in their local area. Implementation of some kind of clinical ladder or more opportunities for advancement and promotions can possibly help rural areas retain their nurses.

#### 4.2 Challenges and limitations

There were many challenges during this study due to the fact that it was a pilot study. One major challenge was receiving enough responses to the survey. The original list of registered nurses contained 592 names, with 243 e-mail addresses. An e-mail invitation was sent to those with email addresses to take the survey. Only 32 responses were received after the e-mail, so a letter invitation was mailed out to more nurses on the original list. This only received 3 responses. Next, a paper version of the survey was mailed out to more nurses with a stamped return envelope and that received 25 responses. One last mailing of the paper survey was sent out and 12 responses were received. Of all methods of requesting survey responses, mailing a paper copy with a stamped return envelope was most successful for this sample. It is unknown if this was just a one-time problem or if this method was preferred due to the older ages of the nurses responding who

may not have felt comfortable with surveys via the internet. One possible solution may be to get assistance collecting data at RN work sites or through the Nursing Commission with a survey flyer and link sent with license renewal forms.

Another limitation is that all of the information is self-reported. That is useful for satisfaction ratings, but other information such as community size may not be accurate. That could explain why 7% of respondents reported that they lived in a community with a population greater than 10,000, but no city or town in the three counties surveyed has a population greater than 10,000.

Another issue was that on the first mailing of hard copy surveys, a printing mistake left off the question asking what county the respondent lives in. Also, several respondents interpreted “county” as “country” and incorrectly entered the answer as “USA”. This means that 26.4% of respondents did not list a county. However, we did not compare between counties in the analysis, so the results should not have been affected, as the survey was only mailed to three possible counties.

A final limitation of this study was that a premade survey was used from the Wyoming rural nurse study. The questions were not specific to the eastern Washington nurse population and did not ask some important questions, such as zip code of residence and zip code of work, which would have helped capture actual commute distances.

#### 5. CONCLUSION

This pilot study on the characteristics of commuting and non-commuting rural eastern Washington nurses supports the need for further research on rural nursing workforce issues especially in regional areas. Differences in rural communities throughout the US may dictate why and when nurses will commute outside of their community for employment. Studies should be done with more of a local focus if strategies are to be effective.

Regionally, another study should be done with a larger sample and in more rural counties of eastern Washington to better assess the needs and characteristics of both commuting and non-commuting nurses, as well as projected healthcare facility needs. Based on the findings that commuters in this study were more likely to be satisfied with their current base salary and salary range for their position, opportunities for advancement, and opportunities to learn new skills, employers in rural areas need to assess community resources that may provide more benefits to workers in lieu of monetary compensation, since most rural hospitals are unable to compete with urban market salaries. A next step would be to conduct focus groups to ask rural nurses why they commute

and what would be needed for them to stay in their rural communities. Another possibility is to investigate partnerships with schools of nursing to offer career advancement and continuing education opportunities within the rural setting.

More information through surveys and focus groups is needed about these issues to find out what rural nurses see as possible solutions to increase retention in rural health facilities from both a commuting and non-commuting standpoint. Besides increasing satisfaction with job factors, recruiting

nurses who prefer the rural lifestyle and have social connections in the community may also help retain rural nurses in their local area. With the projected increased demand for nurses, especially in rural areas, more data can assist in devising more effective strategies to retain rural nurses in their own communities.

## CONFLICTS OF INTEREST DISCLOSURE

The authors declare that there is no conflict of interest.

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