

ORIGINAL RESEARCH

An examination of retention factors among registered practical nurses in north-eastern Ontario, Canada

B Nowrouzi¹, E Rukholm¹, M Larivière¹, L Carter², I Koren¹, O Mian¹

¹Laurentian University, Sudbury, Ontario, Canada

²Nipissing University, North Bay, Ontario, Canada

Submitted: 9 July 2014; Revised: 9 September 2014; Accepted: 27 October 2014; Published: 20 May 2015

Nowrouzi B, Rukholm E, Larivière M, Carter L, Koren I, Mian O

An examination of retention factors among registered practical nurses in north-eastern Ontario, Canada
Rural and Remote Health 15: 3191. (Online) 2015

Available: <http://www.rrh.org.au>

ABSTRACT

Introduction: Literature from the past two decades has presented an insufficient amount of research conducted on the nursing practice environments of registered practical nurses (RPNs). The objective of this article was to investigate the barriers and facilitators to sustaining the nursing workforce in north-eastern Ontario (NEO), Canada. In particular, retention factors for RPNs were examined.

Methods: This cross-sectional research used a self-administered questionnaire. Home addresses of RPNs working in NEO were obtained from the College of Nurses of Ontario (CNO). Following a modified Dillman approach with two mail-outs, survey packages were sent to a random sample of RPNs ($N=1337$) within the NEO region. Logistic regression analyses were used to determine intent to stay (ITS) in relation to the following factor categories: demographic, and job and career satisfaction.

Results: Completed questionnaires were received from 506 respondents (37.8% response rate). The likeliness of ITS in the RPNs' current position for the next 5 years among nurses aged 46–56 years were greater than RPNs in the other age groups. Furthermore, the lifestyle of NEO, internal staff development, working in nursing for 14–22.5 years, and working less than 1 hour of overtime per week were factors associated with the intention to stay.

Conclusions: Having an understanding of the work environment may contribute to recruitment and retention strategy development. The results of this study may assist with addressing the nursing shortage in rural and northern areas through improved retention strategies of RPNs.

Key words: Canada, licensed practical nurses, recruitment, registered practical nurses, retention, workplaces.



Introduction

In Canada, insufficient research has been undertaken on the practice environments of registered practical nurses (RPNs) and registered nurses (RNs) with regards to effects on retention¹. Overall, 18% of the Canadian population live in rural and remote areas served by 17.5% RPNs. Furthermore, there are two registered nurses working for every one RPN in rural Canada². In the province of Ontario, with large metropolitan centers in the south, Northern Ontario contains 90% of Ontario's land mass and has only 6% of the province's population³⁻⁵. Given concerns about the decreasing numbers of RPNs working in rural Canada² and how this challenges health organizations, decision-makers, and health human resources investigators⁶, this area of research is in demand. The issue is recognized as complex and multifaceted and affects every sector of health care and the healthcare environment.

Recruiting nurses in environments where there are staff shortages and high turnover not only affects healthcare workers but also directly influences the safety of health care and outcomes generally. With many RPNs approaching retirement and fewer individuals entering the profession, nursing is experiencing a serious workforce shortage^{7,8}. It is understood that nursing is an especially stressful occupation with unique physical and psychosocial stressors in rural and northern nursing settings. Moreover, northern Ontario residents have higher rates of chronic disease than the average provincial rate and have a higher proportion of the population that are overweight or obese⁵. Moreover, a higher proportion of the population are heavy drinkers and smokers⁹.

In 2013, 33 855 RPNs were employed in nursing in Ontario¹⁰. Growing fiscal constraints coupled with a persistent shortage of health human resources warrants a greater understanding of the work environment of RPNs including retention factors¹¹⁻¹³. Much of the research on nursing retention has focused on the registered nurse as opposed to RPNs, particularly in northern and rural contexts. Examining and understanding this workforce, their work environments, and nurses' responses to their environments is

an important antecedent to formulating retention strategies and bolstering health services that promote improved patient, nurse, and organizational outcomes¹.

The objective of this article was to investigate the barriers and facilitators to sustaining the nursing workforce in north-eastern Ontario (NEO), Canada. In particular, factors reported to influence RPNs' intent to stay in a nursing position within the next 5 years, based on data from a survey of RPNs working in all nursing sectors of NEO, were explored.

Differences between RNs and RPNs in Ontario

In Ontario, nursing is a profession with two discrete categories: the RN and the RPN. Both categories have a legislated scope of practice, and important practice differences exist between both occupations. RNs in Ontario graduate with a baccalaureate degree in nursing (4 years), while RPNs graduate with a 2-year practical nursing diploma¹⁴. In their educational preparation, disparities between the two groups exist in three main areas: depth and breadth of knowledge, competencies required, and expectations for clinical performance. All nursing students learn from the same body of nursing knowledge; RNs study for a longer period of time, thus allowing for greater depth and breadth of foundational knowledge. RPNs study for a shorter period of time, resulting in a more focused body of foundational knowledge¹⁵.

Methods

Participants

Participants in this cross-sectional study were RPNs working in direct and indirect patient care settings in all specialties across NEO. The home addresses of nurses working in NEO who consented to participate in the study were obtained from the College of Nurses of Ontario; using a simple random sampling strategy and a modified Dillman approach¹⁶, including two mail-outs, survey packages were sent to all RPNs (N=1337) working in NEO. The Dillman approach was modified by increasing the time frame between mailings, and recorded delivery/registered mail was not used. The



Northeastern Local Health Integration Network (LHIN) defined the geographic boundaries of NEO. A LHIN is a not-for-profit corporation that works with local health providers and community members to determine health service priorities of their regions in Ontario¹⁷.

Data collection

The survey package, comprising a cover letter, consent form, business reply envelope and questionnaire, was sent in two separate mailings approximately 4 weeks apart. Questionnaires were tracked and the second mailing was sent to nurses who had not returned a questionnaire prior to the start of the second mailing. Data collection began in March 2011 and continued until July 2011. A lottery prize was offered to one participant and this procedure was in compliance with Laurentian University Research Ethics Board guidelines and protocols.

Measures

The questionnaire was adapted by the authors that focused retention and recruitment issues from an earlier study of RNs in NEO¹⁸. The RPN questionnaire comprised 32 questions that inquired about demographics, nursing education, employment, factors influencing recruitment and retention, knowledge of workplace recruitment and retention policies, and awareness of community engagement in the recruitment of nurses. The instrument took approximately 15–20 minutes. This study was part of a larger project evaluating the retention and recruitment factors of RPNs, RNs and Bachelor of Science in Nursing students.

Data analysis

Prior to performing inferential statistical procedures, potential correlates of job satisfaction for rural acute care RPNs were identified based on the literature specific to nurses in rural and northern practice areas^{11,19,20}. Variables included those relating to individual RPNs (sociodemographic, health, and professional), the workplace (organization), the community context, and satisfaction with

the workplace and the community where the RPN lived and worked. Variables for analysis were selected based on their putative association with the intent to stay in their current position for the next 5 years^{11,21,22}. Data analysis was performed using STATA v11.0 (StataCorp; <http://www.stata.com>).

Dependent variable—Intent to stay in your current position for the next 5 years:

The following item was an indicator of the dependent (outcome) variable of intention to leave nursing position: ‘Do you intend to stay in your current position for the next five years?’ The respondent was offered two choices: ‘yes’ or ‘no’. Because the average age of working nurses is increasing, nurses who chose that they were leaving their current position may have been indicating an anticipated retirement or a decision to leave the profession. As the average age of RPNs working is increasing, nurses leaving their current position may act as a reliable proxy of them retiring or leaving the profession.

Inter-rater agreement:

Inter-rater agreement was evaluated using Cohen’s kappa. All of the paper questionnaires were entered and coded by the primary rater in an electronic database. A second rater was provided a random sample of 25% of the RPN questionnaires. The second rater coded the answers independently of the first rater for six randomly selected questions for each questionnaire. Inter-observer agreement was achieved for RPN ($n=506$) questionnaires. Cohen’s kappa was situated between 0.92 and 1.00, indicating a close agreement between observers for both groups.

Descriptive statistics (eg frequencies, percentages, cross-tabulations, and multivariate odds ratio estimates) were computed using STATA v11.0. Logistic regression models were fitted to provide estimates of multivariable odds ratios and corresponding 95% confidence intervals. Backward stepwise logistic regression analysis was performed using STATA v11.0 using a cut-off of $p<0.05$ for inclusion. Binary logistic regression was also performed, and intention to stay (‘yes’, ‘no’) was the dependent dichotomous variable. Six variables were included as independent predictor variables in the demographics and related factors model: gender, marital status, age, years living in NEO, and whether



respondents and their spouses were born and/or raised in NEO. Similarly, eight variables were included as the occupation and career satisfaction factors: child care, workload allocation, internal staff development, the lifestyle of NEO, years of nursing experience, number of hours worked per week, number of overtime hours worked per week, education level, and employment status. Both unadjusted and adjusted logistic regression models were reported.

Ethics approval

The study received ethics approval from the Research Ethics Board at Laurentian University (REB #2011-04-13).

Results

Table 1 shows the demographics of the 506 RPN (37.8% response rate) respondents who participated in this study. The mean age of RN respondents was 48.0 years (SD=10.5) and the mean age for RPN was 47.4 years (SD=10.6). The sample was mainly female (93.3%) and a diploma level of education was the highest education level attained by the majority of RPN respondents. The RPNs had, on average, 19.6 years (SD=11.8) of experience in the workplace. In terms of the participants' current workplace, 35% of the RPNs indicated working in a general hospital. With respect to their intent to stay in their practice, 70.5% of the RPNs reported that they planned to leave their present nursing position within the next 60 months.

Multivariable factors associated with ITS among RPNs

Demographic and career satisfaction factors: In the unadjusted model, statistically significant variables are shown in Table 2. The adjusted odds logistic regression analysis of RPNs who intended to remain in their current position for the next 5 years suggested that age equal to or greater than 56 years of age (odds ratio (OR): 0.11; 95% confidence interval (CI): 0.04–0.32) was a statistically significant factor of ITS. Similarly, those respondents who had lived for between 27 and 37 years (OR: 3.14, 95% CI: 1.27–7.81) in NEO were also more likely to stay. Similarly, a statistically significant association was shown for those who lived in NEO between 37 and 48 (OR: 3.78, 95% CI: 1.17–12.2). No

other variables were determined to be statistically significant with ITS (Table 2).

Occupation and career satisfaction factors: The unadjusted model findings are presented in Table 3. In the adjusted model, staffing ratios between RN and RPNs (OR: 2.61, 95% CI: 1.17–12.2), involvement in decision-making processes (OR: 3.11, 95% CI: 1.52–6.37), and the NEO lifestyle (OR: 2.31, 95% CI: 1.16–4.58) were statistically significant factors related to ITS. Furthermore, RPNs with between 9 and 18 years of work experience (OR: 3.30, 95% CI: 1.40–7.75) were more likely to stay while those with greater than 30 years (OR: 0.29, 95% CI: 0.14–0.59) were likely to leave their current position.

Discussion

What is already known about this topic

- In northern and rural settings such as northern Ontario, Canada, positive work environments are essential to the recruitment and retention of healthcare professionals.
- There is a global shortage of healthcare practitioners including registered practical nurses (RPNs) and the health human resources crisis will be exacerbated with an ageing workforce, rising rates of chronic diseases, and an increased demand on health services.

What this article adds

- The likeliness of RPNs' intent to stay (ITS) in their current position for the next 5 years was greater in the 46–56-years age group than among RPNs in the other age groups.
- The lifestyle of north-eastern Ontario, Canada, internal staff development, working in nursing for 14–22.5 years, and working less than 1 hour of overtime per week were factors associated with ITS.
- This provides preliminary evidence regarding retention factors related to ITS among RPNs in rural and northern regions.



Table 1: Characteristics of registered practical nurse respondents

Characteristic	n	%
Gender (n=506)		
Female	472	93.3
Male	34	6.7
Age (n=498)		
23–38 years	117	23.5
39–48 years	122	24.5
49–55 years	121	24.3
≥56 years	138	27.7
Marital status (n=490)		
Married/sommon-law	327	66.7
Single	96	19.6
Divorced	35	7.1
Separated	19	3.9
Widowed	13	2.7
Born and raised in north-eastern Ontario (n=504)		
Yes	410	81.3
No	94	18.7
Was your spouse/significant other born and/or raised in north-eastern Ontario? (n=489)		
Yes	343	70.1
No	83	17.0
Not applicable	63	12.9
Highest attained nursing education (n=499)		
Registered Practical Nurse Diploma	408	81.8
Other	91	18.2
Current work setting (n=375)		
Hospital	169	45.1
Community	90	24.0
Long-term care	116	30.9
Intend to stay in current position in the next 5 years (n=481)		
Yes	339	70.5
No	142	29.5

The purpose of the present study was to examine factors related to retention of RPNs in NEO. Based on the nurses' demographics and the related factors model, the adjusted odds logistic regression analyses revealed that RPNs who had 9–18 years of work experience were more likely to stay in their present work settings than other nurses. Research indicates that, as age and years of experience increase, the desire to leave a position decreases²³. The RPNs with greater than 30 years of work experience were more likely to leave current positions for various reasons including retirement²⁴

and increasing workloads^{25,26}. The findings of this study are, therefore, consistent with the existing literature.

The study also revealed that staffing proportions between RNs and RPNs, involvement in decision-making processes, and the NEO lifestyle were statistically significant factors related to ITS and retention rates of RPNs. Other studies have shown that staff allocation and increased decision-making capacity among rural nurses^{27,28} lead to higher job satisfaction²⁹ and lower levels of work stress³⁰.



Table 2: Multivariable adjusted odds ratio estimates and approximate 95% confidence intervals of demographic and related factors associated with intent to stay of registered practical nurses

Characteristic	Intent to stay in current practice n(%)		Unadjusted odds ratio estimate	95% CI	Adjusted odds ratio estimate	95% CI
	No	Yes				
Sex (n=475)						
Female	130(29.4)	313(70.7)	1		1	
Male	12(37.5)	20(62.5)	0.69	0.68–3.04	0.45	0.16–1.24
Marital status (n=459)						
Not married	47(32.0)	100(68.0)	1		1	
Married	91(29.2)	221(70.8)	1.14	0.57–1.34	0.70	0.36–1.36
Age (n=467)						
23–38 years	22(20.4)	86(79.6)	1.91**		1	
39–48 years	13(11.2)	103(88.8)	2.61**	2.42–8.32	1.68	0.58–4.83
49–55 years	20(16.8)	99(83.2)	0.09**	1.54–4.42	0.80	0.28–2.26
≥56 years	85(68.6)	39(31.5)	0.39*	0.5–0.14	0.11**	0.04–0.32
Years living in NEO (n=403)						
1 to 26	22(20.4)	86(79.6)	1.91*	1.14–3.21	1	
27–37	13(11.2)	103(88.8)	4.49**	2.42–8.32	3.14*	1.27–7.81
37–48	20(16.8)	99(83.2)	2.61**	1.54–4.42	3.78*	1.17–12.2
≥49	39(31.5)	85(68.5)	0.088	0.05–0.14	1.13	0.35–2.64
Born and/or raised in NEO						
No	31(35.6)	56(64.4)	1		1	
Yes	110(28.5)	276(71.5)	1.39	0.84–2.27	0.87	0.32–2.35
Partner born and/or raised in NEO						
No	22 (28.6)	55(71.4)	0.97	0.56–1.68	1	
Yes	95(29.2)	230(70.8)	1		0.91	0.45–1.81

* $p < 0.05$, ** $p < 0.01$

CI, confidence interval. NEO, north-eastern Ontario

The utilization of RPNs has moved from community and teaching hospitals into institutions such as nursing homes, retirement homes, and rehabilitation settings³¹. A more recent development is the employment of RPNs in home-based nursing services, including those administered through public health departments and visiting nursing organizations^{2,32}.

There are several limitations to this study. The representativeness of participants is of potential concern. Although a simple random sampling strategy was used, the sample population was confined to NEO and cooperation by the participants is rarely perfect, which means that random sampling seldom results in random samples³³. Therefore, the results may not be generalizable to other RPNs in other areas of Ontario. Nurses who had left the nursing profession were

not reflected in the sample and may provide a different view of the relationship between retention and ITS than generated in the study. Selection bias may also have influenced the results. Size of the organization, size and location of the community, continuing education opportunities, organizational structure, and leadership are factors meriting investigation for their possible impact on the quality of work life and stress among nurses and, in return, the retention of nurses. Inherently, with every instrument, its psychometric properties need to be rigorously evaluated and this is a drawback of this study. However, retention is not consistently measured, making it difficult to interpret and compare. Therefore, empirical evidence demonstrating validity and reliability of existing indices, including the one used in this study, is warranted.



Table 3: Multivariable adjusted odds ratio estimates and approximate 95% confidence intervals of job and career satisfaction factors associated with intent to stay of registered practical nurses

Job and career satisfaction factor	Intent to stay in current practice n(%)		Unadjusted odds ratio estimate	95% CI	Adjusted odds ratio estimate	95% CI
	No	Yes				
Workload allocation (n=462)						
Not important	11(50.0)	11(50.0)	1		1	
Important	120(27.3)	320(72.7)	2.67	1.13–6.31	0.65	0.16–2.67
Staffing mix of RN/RPN (n=464)						
Not important	19(38.8)	30(61.2)	1		1	
Important	115(27.7)	300(72.3)	1.65	0.89–3.05	2.67*	1.11–6.41
Involvement in decision-making ^y (n=459)						
Not important	32(47.8)	35(52.2)	1		1	
Important	98(24.9)	295(75.1)	4.07**	2.42–6.84	3.11**	1.52–6.37
NEO lifestyle (n=460)						
Not important	244(71.7)	96(28.3)	1		1	
Important	35(49.3)	36(50.7)	2.75**	1.62–4.68	2.31*	1.16–4.58
Years of nursing experience (n=463)						
1.5–8.5	27(25.5)	79(74.5)	1.32	0.80–2.15	1	
9–18	14(11.8)	105(88.2)	4.22**	2.32–7.70	3.30**	1.40–7.75
19–29	24(21.1)	90(78.9)	1.82**	1.10–3.01	1.49	0.71–3.14
≥30	73(58.9)	51(41.1)	0.24**	0.11–0.26	0.29**	0.14–0.59
Number of hours worked per week (n=474)						
0–31.5	38(34.2)	73(65.8)	0.74	0.47–1.16	1	
32–37.4	23(30.3)	53(69.7)	0.95	0.56–1.62	0.65	0.26–1.63
37.5–39.5	39(31.7)	84(68.3)	0.86	0.55–1.34	0.63	0.23–1.70
≥40	39(23.8)	125(76.2)	1.53	0.99–2.34	10.85	0.33–2.18
Number of overtime hours worked per week (n=400)						
0–1	63(27.9)	163(72.1)	1.09	0.72–1.63	1	1
>1–4	37(31.6)	80(68.4)	0.83	0.53–1.31	0.60	0.32–1.13
>4	32(27.6)	84(72.4)	1.08	0.68–1.73	0.51	0.26–1.01
Employment status (n=389)						
Full-time	78(26.1)	221(73.9)	1.17	0.75–1.83	1	
Part-time	41(29.3)	99(70.7)	0.85	0.55–1.33	0.66	0.32–1.35

* $p < 0.05$, ** $p < 0.01$. The question asked respondents to rate how important the factor was to keep them working as a registered practical nurse in their current workplace. NEO, north-eastern Ontario. OR, odds ratio. RN, registered nurse. RPN, registered practical nurse.

Conclusions

Research gaps continue to exist regarding the retention of nurses, and there is a need for large-scale and methodologically rigorous quantitative and qualitative investigations that examine the factors that influence rural nursing practice and retention. In NEO, the Northern Ontario School of Medicine, a rurally focused, community-

based medical school that actively recruits students from Northern Ontario and other northern, rural, remote, Aboriginal, and Francophone backgrounds, has an important role to play in addressing these gaps³⁴. This approach may be adopted by the schools of nursing in NEO in order to provide a workforce that is more inclined to live and work in the region. Addressing the challenges of health human resources in rural and northern communities requires examination of not only health professionals but also their spouses, access to



leisure activities and the proximity of family and friends. The influence of rural background on personal and professional relationships and questions of work–life balance likewise require investigation. Through understanding what constitutes positive quality of work life as well as personal life, retention of RPNs in NEO and similar geographic regions may lead to enhanced retention of these important health professionals. Collaboration between academic health research centers, governments, and communities is recommended to achieve this goal.

References

1. Tourangeau AE, Coghlan AL, Shamian J, Evans S. Registered nurse and registered practical nurse evaluations of their hospital practice environments and their responses to these environments. *Nursing Leadership* 2005; **18(4)**: 54.
2. MacLeod MLP, Pitblado JR, Koren I, Stewart NJ, Kulig JC. Planning for the regulated nursing workforce in rural and small town Canada. Vancouver, BC: Annual CAHSPR Conference, 2013.
3. Canadian Institute for Health Information. *Regulated nurses: Canadian trends, 2007 to 2011*. Canadian Institute for Health Information, 2013.
4. Ministry of Finance – Ontario. *Ontario population projections update*. Toronto, ON: Queen’s Printer for Ontario, 2012.
5. Ministry of Health and Long Term Care. *Rural and northern health care framework*. Toronto, ON: Ministry of Health and Long Term Care, Government of Ontario, Canada, 2011.
6. Hayes LJ, O’Brien-Pallas L, Duffield C, Shamian J, Buchan J, Hughes F, et al. Nurse turnover: a literature review – an update. *International Journal of Nursing Studies* 2012; **49(7)**: 887-905.
7. Vandewater D. *Retirement and retention of late career nurses*. Halifax, NS: College of Registered Nurses of Nova Scotia, 2005.
8. Murphy GT, MacKenzie A. Using evidence to meet population healthcare needs: successes and challenges. *Healthcare Papers* 2013; **13(2)**: 9-21.
9. North West Local Health Integration Network. *Integrated health services plan*. Thunder Bay, ON: North West Local Health Integration Network, 2013.
10. College of Nurses of Ontario. *Membership statistics report*. Toronto, ON: College of Nurses of Ontario, 2013.
11. Stewart NJ, D’Arcy C, Kosteniuk J, Andrews ME, Morgan D, Forbes D, et al. Moving on? Predictors of intent to leave among rural and remote RNs in Canada. *Journal of Rural Health* 2011; **27(1)**: 103-113.
12. Lea J, Cruickshank M. Factors that influence the recruitment and retention of graduate nurses in rural health care facilities. *Collegian* 2005; **12(2)**: 22-27.
13. Seago JA, Spetz J, Chapman S, Dyer W. POLICY perspectives: can the use of LPNs alleviate the nursing shortage?: Yes, the authors say, but the issues – involving recruitment, education, and scope of practice – are complex. *American Journal of Nursing* 2006; **106(7)**: 40-49.
14. College of Nurses of Ontario. *Practice guidelines: utilization of RNs and RPNs*. Toronto, ON: College of Nurses of Ontario, 2004.
15. Dillman DA. The design and administration of mail surveys. *Annual Review of Sociology* 1991; **17**: 225-249.
16. Health Force Ontario. *Nursing roles Toronto*. ON: Queen’s Printer For Ontario, 2014.
17. Ministry of Health and Long-Term Care. *Local Health System Integration Act 2006. Frequently asked questions about LHINs*. (Online) 2012. Available: http://www.health.gov.on.ca/english/public/legislation/lhins/lhins_faq.html#1 (Accessed 5 June 2012).
18. Rukholm E. *Northeastern Ontario nursing recruitment and retention study*. Sudbury, ON: Ministry of Health and Long-Term Care, 2005.



19. Andrews ME, Stewart NJ, Pitblado JR, Morgan DG, Forbes D, D'Arcy C. Registered nurses working alone in rural and remote Canada. *Canadian Journal of Nursing Research* 2005; **37(1)**: 14-33.
20. Stewart NJ, D'Arcy C, Pitblado JR, Morgan DG, Forbes D, Remus G, et al. A profile of registered nurses in rural and remote Canada. *Canadian Journal of Nursing Research* 2005; **37(1)**: 122-145.
21. Golubic R, Milosevic M, Knezevic B, Mustajbegovic J. Work-related stress, education and work ability among hospital nurses. *Journal of Advanced Nursing* 2009; **65**: 2056-2066.
22. Gunnarsdottir S, Clarke SP, Rafferty AM, Nutbeam D. Front-line management, staffing and nurse-doctor relationships as predictors of nurse and patient outcomes. A survey of Icelandic hospital nurses. *International Journal of Nursing Studies* 2009; **46(7)**: 920-927.
23. O'Brien-Pallas L, Murphy GT, Shamian J, Li X, Hayes LJ. Impact and determinants of nurse turnover: a pan-Canadian study. *Journal of Nursing Management* 2010; **18(8)**: 1073-1086.
24. Wieck KL, Dols J, Landrum P (Eds). Retention priorities for the intergenerational nurse workforce. *Nursing Forum*; 2010; **45(1)**: 7-17.
25. Al-Kandari F, Thomas D. Adverse nurse outcomes: correlation to nurses' workload, staffing, and shift rotation in Kuwaiti hospitals. *Applied Nursing Research* 2008; **21(3)**: 139-146.
26. Sveinsdottir H, Biering P, Ramel A. Occupational stress, job satisfaction, and working environment among Icelandic nurses: a cross-sectional questionnaire survey. *International Journal of Nursing Studies* 2006; **43(7)**: 875-889.
27. Pinikahana J, Happell B. Stress, burnout and job satisfaction in rural psychiatric nurses: a Victorian study. *Australian Journal of Rural Health* 2004; **12(3)**: 120-125.
28. Albion MJ, Fogarty GJ, Machin MA. Benchmarking occupational stressors and strain levels for rural nurses and other health sector workers. *Journal of Nursing Management* 2005; **13(5)**: 411-418.
29. Hayes B, Douglas C, Bonner A. Work environment, job satisfaction, stress and burnout in haemodialysis nurses. *Journal of Nursing Management* 2013, doi: 10.1111/JONM.12184.
30. Lu H, Barriball KL, Zhang X, While AE. Job satisfaction among hospital nurses revisited: a systematic review. *International journal of Nursing Studies* 2012; **49(8)**: 1017-1038.
31. McGilton KS, Boscart VM, Brown M, Bowers B. Making tradeoffs between the reasons to leave and reasons to stay employed in long-term care homes: perspectives of licensed nursing staff. *International Journal of Nursing Studies* 2014; **51(6)**: 917-926.
32. Alameddine M, Laporte A, Baumann A, O'Brien-Pallas L, Croxford R, Mildon B, et al. Where are nurses working? Employment patterns by sub-sector in Ontario, Canada. *Healthcare Policy* 2006; **1(3)**: 65.
33. Polit DF, Beck CT. Generalization in quantitative and qualitative research: myths and strategies. *International journal of Nursing Studies* 2010; **47(11)**: 1451-1458.
34. Strasser R, Neusy AJ. Context counts: training health workers in and for rural and remote areas. *Bulletin of the World Health Organization* 2010; **88(10)**: 777-782.