RESEARCH ARTICLE

Licenced practical nurses' perceptions of their work environments and their intention to stay: A cross-sectional study of four practice settings

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Abstract

Aims and objectives: This study aimed to understand how licenced practical nurses perceive their work environments across different work settings and to analyse the association between these nurses' perceptions of their work environments and their intentions to stay employed at their current nursing unit.

Design: A cross-sectional descriptive survey was conducted with Licensed Practical Nurses in Alberta, Canada.

Methods: The study population consisted of 598 licenced practical nurses. Survey measures included demographic information, the Perceived Work Environment-Nursing Work Index, and an intention to stay scale. Descriptive statistics were calculated and mean scores for perceptions about the work environment were compared by work setting. The associations between perceived work environment and intention to stay were analysed using linear regression.

Results: Overall, licenced practical nurses rated their work environment as mixed, with statistically significantly lower scores in acute care settings. Nurse manager ability and adequate staffing and resources were the highest contributing variables.

KEYWORDS
cross-sectional survey, intention to stay, licenced practical nurses, nurse retention, work environment, workforce planning

1 | INTRODUCTION

Healthcare systems around the world faced marked financial strain and workforce vacancies, even previous to the COVID-19 pandemic (Ariste et al., 2019; Beech et al., 2019). Consequently, there have been negative outcomes for nurses working in sub-optimal conditions (Beech et al., 2019; Traynor, 2017). Demands on the nursing workforce continue to intensify with ageing populations and growing complexity of health needs (World Health Organization, 2020). These factors make retaining nurses increasingly important for employers. Previous research has shown that nursing turnover may be costly to an organization due to replacing employees, reduced productivity and negative effects in the organizational culture that can affect the organization's ability to give safe nursing care (Hayes et al., 2012). It is essential for nurse leaders to understand factors that enhance retention, including nurses' work environments.

The nurse work environment is recognized as a key area for understanding the retention of nurses (Van Bogaert et al., 2009; Ritter, 2011). Lake (2002) defined the nurse work environment as "the organizational characteristics of a work setting that facilitate or constrain professional nursing practice" (p. 178). A better understanding of nurse work environments may inform improvements to nurse retention and support safe, quality patient care (Aiken, Cimiotti, et al., 2011; Aiken et al., 2012; Aiken, Sloane, et al., 2011). The aims of this study were to compare licenced practical nurses' (LPNs) perceptions of their work environments across different work settings and analyse the association between nurse work environment and nurses' intention to stay in their current role.

2 | BACKGROUND

There are a variety of factors that influence nurses' perceptions of their work environment. Key characteristics of positive work environments include responsive and accessible leaders, participative management styles, opportunities for staff to participate in committees and projects of one's organization and sufficient resources to give quality care (Aeschbacher & Addor, 2018; Aiken, Sloane, et al., 2011; Twigg & McCullough, 2014). In turn, positive nurse work environments have been associated with better outcomes for nurses, patients and employers (Aiken, Sloane, et al., 2011; Hayhurst et al., 2005). The quality of the work environment has a statistically significant impact on both nurses and patients.

One such impact related to work environment is nursing retention. There is evidence supporting a link between poor quality nursing environments and nurses' intention to leave (Chan et al., 2013; de Oliveira et al., 2017). The consequences of low retention rates include staffing shortages, which negatively affects safe patient care (Aiken, Cimiotti, et al., 2011; Aiken et al., 2002; Rafferty et al., 2007). Improving work environments can support staff retention (Ritter, 2011) and decrease organizational costs (Hayhurst et al., 2005).

Canada's nursing workforce includes nurse practitioners (NPs) (1.5%), Registered Nurses (RNs) (68%), registered psychiatric nurses (RPNs) (1.5%) and licenced practical nurses (LPNs) (29%). The distinction between the roles of these groups can vary between regulatory areas in Canada and among different care settings. The role of the LPN includes conducting nursing assessments and diagnoses and providing treatment and education while collaborating with patients and other regulated and non-regulated health providers (College of Licensed Practical Nurses of Alberta, 2013). The LPN role differs from RN roles in that LPNs give care to patients that have an established care plan in place and emphasize health promotion and illness prevention (Canadian Institute for Health Information, 2019). RNs and LPNs often work side by side, managed by a common nurse manager for a clinical area. Individuals who want to practice in Canada as an LPN must obtain a license from their local provincial

What does this paper contribute to the wider global clinical community?

- As licenced practical nurses and other roles become increasingly common in nursing worldwide, it is important to consider their perceptions of their work environment to support nurse retention.
- Licenced practical nurses working in acute care given lower ratings across all areas of their work environment than those working in other care settings.
- A positive nurse work environment with strong leadership and adequate staffing resources is positively associated with the intention to stay

organization (Canadian Institute for Health Information, 2019). In the province where this study was conducted, LPNs are required to complete an accredited 2-year diploma practical nurse education program for entry-to-practice into the profession and pass the Canadian Practical Nurse Registration Examination, a national standardized nursing examination (College of Licensed Practical Nurses of Alberta, 2007).

Although considerable research has been conducted on the Registered Nurse work environment, limited attention has been placed on other nursing roles, specifically LPNs, which comprise a vital part of the healthcare workforce. LPN utilization is becoming an increasingly prominent part of nursing care (Canadian Institute for Health Information, 2017). Internationally, roles similar in scope to the Canadian LPN are on the rise, such as Nursing Associates in the United Kingdom (Department of Health & Social Care., 2017). It is important to assess perceptions of the work environment for LPNs, as LPNs are a growing proportion of the nursing workforce worldwide (World Health Organization, 2020). It is known that their care environments are influenced by hierarchies, driven in part by a role's proximity to patients (Van Dongen & Elema, 2010). It is important to explore the impact of the work environment for LPNs, to understand if the positioning of this role creates different outcomes than published examples from RN populations. This study aimed to assess perceptions of the work environment for LPNs, given that the different scope of practice for LPNs may lead to different work environment experiences than RNs.

3 | AIM

This study had two aims; first, to compare LPNs' perceptions of their work environment across different work settings and second, to analyse the association between LPNs' perceptions of their work environments and their intentions to stay employed at their current nursing unit. These results were then compared with published examples of RN perceptions of work environments, to assess for any

differences between the roles. It is known that nurses' care environments are influenced by hierarchies, driven in part proximity to patients (Van Dongen & Elema, 2010). It is important to explore the impact of the work environment for LPNs, to understand if the positioning of this role creates different outcomes than published examples from RN populations.

4 | METHODS

4.1 | Study design

This article presents part of a multijurisdictional partnership for an observational, cross-sectional study of work environment and intention to stay among LPNs. Independent cross-sectional surveys were distributed to each regulatory body. The current study reports the results for the LPN population in Alberta, Canada.

4.2 | Participant recruitment

This study received Research Ethics Committee approval from the university research ethics board, REB16-0481. The entire population of Alberta's LPNs (n = 15,860) received an email invitation with study information and a link for the online survey. LPNs were informed that their participation was voluntary and that completion of the survey implied consent. The required sample size was calculated as 376 based on the entire LPN population of 15,860 using a 95% confidence level and a 5% margin of error. A total of 793 LPNs completed the anonymous online survey. For this study, only LPNs that indicated they were employed, either full-time, part-time or casual,

were selected (n = 598). Survey measures included demographics, perceived work environment and intention to stay.

4.3 | Demographics

Demographic information gathered included: age, sex, years as an LPN, years at their present employer, work status and work setting. Table 1 defines the work settings used in this study.

4.4 | Perceived work environment

Perceptions of work environment was measured using the Practice Environment Scale of the Nursing Work Index (PES-NWI) (Lake, 2002). The PES-NWI examines varied work environment characteristics including nurse participation, manager ability, availability of staff and resources and relationships among staff (Lake, 2002; Lake & Friese, 2006) through five subscales (see Table 2). The five subscales are scored on a four-point Likert scale, ranging from 1 (strongly disagree) to 4 (strongly agree). Higher scores indicate more positive perceptions of the work environment. A composite score can be calculated from the average of the five subscale scores.

The PES-NWI has been used with international nursing populations (Amaral et al., 2012; Van Bogaert et al., 2009; Eunhee et al., 2011; Liou & Cheng, 2009; Ogata et al., 2011; Swiger et al., 2017; Twigg & McCullough, 2014; Warshawsky & Havens, 2011), and varied practice settings, including psychiatric (Hanrahan, 2007) and rural (Havens et al., 2012) settings.

The internal consistency for the PES-NWI subscales have been reported as ranging between 0.70–0.89 (Parker et al., 2010). Work

TABLE 1 Definitions of work settings

Acute care	Includes hospital settings where urgent and routine health care is delivered, including acute care hospitals, obstetrics, mental health, cancer care/oncology and rehabilitation
Continuing care	Includes Long Term Care, Supportive Living, Hospice and end-of-life care
Community care	Includes the formal delivery of the provincial public health services including inner city care, group homes, physician clinics, primary care networks or family care centres and home care
Other	Includes roles in nursing education, administration and research

TABLE 2 Subscale definitions of the Practice Environment Scale of the Nursing Work Index (PES-NWI)

Subscale	Definition
PES-NWI Participation	The extent to which nurses feel they can participate in hospital and nursing department affairs, such as internal governance, policy decisions and committees
PES-NWI Foundations	The degree in which the nursing environment allows for a high standard of patient care, has a pervasive nursing philosophy, a nursing (rather than a medical) model of care and nurses' clinical competence
PES-NWI Manager	Focuses on the critical role of the nurse manager as a supportive leader in the nursing environment
PES-NWI Staffing and resources	Perceptions about having adequate staff and support resources to give quality patient care
PES-NWI Relationships	Perceptions of the nature of the working relationships between nurses and physicians

Note: Adapted from (Lake, 2002, Lake, 2007, Lake & Friese, 2006).

environments can be categorized as *favourable* (4 or 5 subscales with mean scores greater than 2.5), *mixed* (2 or 3 subscales with mean scores greater than 2.5) or *unfavourable* (none or only one subscale with a mean of 2.5) with all means being equally weighted (Aiken et al., 2008; Lake & Friese, 2006).

4.5 | Intention to stay

The outcome variable was intention to stay and was measured using 12 items adapted by Goldsworthy (2015) from the Kim et al. (1996) intention to stay measure. The items are categorized into three subscales, with four items in each. The subscales are designed to measure a nurse's intent to stay at three different levels: (1) in their current unit, (2) in their organization and (3) in the nursing profession (Goldsworthy, 2015). Items are scored along a four-point scale ranging from 1 (highly unlikely) to 4 (highly likely). To limit response and acquiescence bias, two items in each subscale have reversed question structures, therefore, must be reversed scored. After reverse

TABLE 3 Participant demographic data, $N = 598$

Continuous variables	Mean (SD)
Age	44 (12)
Years as an LPN	13 (17)
Years at present employer	7 (8)
Categorical variables	
Sex	**N (%)**
Female	557 (95)
Male	31 (5)
Work setting N (%)	
Acute care	349 (63)
Continuing care	90 (16)
Community care	101 (18)
Other	16 (3)
Employment status N (%)	
Full-time	247 (41)
Part-time	271 (45)
Casual	80 (13)

scoring is done, the items in each subscale are summed for a possible maximum score of 16. The reliability of the intent to stay measure of Kim et al. (1996) was reported with a Cronbach's alpha of 0.85 with medical personnel. In the current study, the subscale 'intention to stay in their current unit' was used in the regression model, because leaving their current unit would probably be the first factor LPNs would change.

4.6 | Data analysis

Mean scores and standard deviations were calculated for continuous variables (including age, years as an LPN and years at present employer, in the demographics data, and perceived work environment and intention to stay) and counts and percentages for the categorical variables (the remainder of the demographic data). The mean scores for each PES-NWI category was compared by work setting (acute, continuing care, community care and other). The differences in mean PES-NWI scores among the work settings were tested using Analysis of Variance (ANOVA). For statistically significant ANOVA results, Bonferroni post-hoc tests were used to determine that groups were different from each other.

Linear regression was used to analyse the association between work environment and intention to stay in their nursing unit. In step one, statistically significant factors were identified using a univariate analysis. Each potential factor was entered into the model, and if it was statistically significantly associated with the outcome, it was retained for the adjusted model. In step two, the statistically significant factors were included in the general linear model using a forward stepwise method. All statistical analyses were performed with SPSS version 23. All tests were two-sided with a p-value of <.05 considered statistically significant and a 95% Confidence Interval was used.

5 | RESULTS

A total of 598 LPNs were included in the sample. Table 3 presents the participants' demographic information.

The sample in this study is representative of the demographic makeup of the nursing population in this jurisdiction.

TABLE 4 Mean scores and *SD* for Perceived Work Environment and Intention to Stay

	Participation	Foundations	Manager	Resources	Relationships	Composite	Intention to Stay (Unit)
All settings	2.20 (0.73)	2.71 (0.64)	2.54 (0.89)	2.02 (0.84)	2.92 (0.84)	2.46 (0.62)	11.26 (2.80)
Acute care	2.09 (0.69)	2.60 (0.63)	2.44 (0.86)	1.86 (0.75)	2.90 (0.84)	2.37 (0.65)*	11.01 (2.82)
Continuing care	2.38 (0.76)*	2.95 (0.59)*	2.61 (0.93)	2.03 (0.83)	2.99 (0.84)	2.61 (0.65)	11.55 (2.78)
Community care	2.30 (0.75)	2.77 (0.64)	2.72 (0.93)	2.41 (0.92)*	2.92 (0.88)	2.51 (0.65)	11.73 (2.66)
Other	2.74 (0.76)*	2.97 (0.57)	2.63 (0.90)	2.5 (1.03)*	3.08 (0.62)	2.77 (0.64)	12.11 (2.84)

Note: *indicates statistically significant differences ($p = .05$).

Mean scores were calculated for the composite score and each subscale of the PES-NWI and intention to stay in the current unit. These results are depicted in Table 4. Participants from acute care scored statistically significantly lower on the composite PES-NWI than participants working in other areas. The intention to stay scores were largely consistent across practice settings.

Table 5 gives the results of the general linear model, illustrating the factors associated with a nurse's intention to stay after controlling for potential confounding effects.

Participant perceptions of their work environment did impact intention to stay. As work environments improved, LPNs' intention to stay increased. Overall, 18% of the variance was explained. In the univariate analysis conducted in step one of the linear regression, factors found not to be statistically significantly related to intention to stay were deemed confounding and excluded from the final model. Work environment and age were the only variables in this model associated with intention to stay. The composite scale was highly co-linear with other scales, so it was removed from the regression model. The results of the final model show that, at a 95% confidence interval, increasing age, supportive leadership and adequate staffing and resources are the statistically significant factors associated with LPNs' intention to stay.

6 | DISCUSSION

This study aimed to compare LPNs' perceptions of their work environments across different work settings and to analyse the association between LPNs' work environments and their intention to

TABLE 5 Factors associated with increased intention to stay

	β (Unadjusted)	β (Adjusted)
R-squared		0.18
Age	0.04**	0.04**
Years as nurse	0.03**	-
Years with employer	0.03	-
Sex (male is reference)	0.25	-
Employment Status (casual is reference)		
Fulltime	−0.15	-
Part-time	−0.30	-
Setting (other is reference)		
Acute care	−1.10	-
Continuing care	−0.57	-
Community care	−0.38	-
Work Environment		
Participation	1.23**	-
Foundations	1.28**	-
Manager	1.18**	0.87**
Resources	0.98**	0.39*
Relationships	0.83**	0.34

Note: $*p < .05$ $**p < .01$.

stay in their current units. Overall, LPNs reported mixed perceptions of their work environments with a score of 2.46, indicating they considered their workplaces to have some positive aspects (e.g., good relationships with colleagues), while lacking in other areas (e.g., adequate resources). Furthermore, LPNs in acute care reported statistically significantly lower workplace satisfaction than their counterparts in community, long-term care and other settings. This is among the lower PES-NWI scores reported, falling below reported studies of Registered Nurses (Aiken, Sloane, et al., 2011; Gardner et al., 2007; Havens et al., 2012; Warshawsky & Havens, 2011). Other studies have produced similar PES-NWI scores among Registered Nurses working in acute care (Moisoglou et al., 2020), with higher scores reported in rural areas (Havens et al., 2012). Studies of multiple workplaces demonstrated a similar range of findings, with all outcome mean scores between 2–3 (Kirwan et al., 2013; Lake & Friese, 2006). This study indicates LPNs working in acute care may have negative perceptions of their work environments, related to the published examples from RNs. Researchers could investigate further whether nurses in LPN roles have lower positive perceptions of their work environments than RNs consistently across other samples.

LPNs work environments were positively associated with their intention to stay in their current role. Perceptions of the quality of managers was the most influential factor in this study. The results of this study highlight the importance of managers in promoting positive practice environments and increasing the intention to stay. Previous research echoes the statistically significant role of nurse leaders and managers in creating positive work environments (Anthony et al., 2005; Eltaybani et al., 2018; Force, 2005; Kleinman, 2004; Twigg & McCullough, 2014; Zaghini et al., 2020), with perception of nurse manager leadership ability being the most influential factor in other studies as well (Boev, 2012; Ritter, 2011). This study found that LPNs prioritize similar factors as RNs, with supportive leadership being crucial to both nursing groups. Assessing nurse management has been a priority in studying work environments (Norman & Sjetne, 2017). With the growing availability of leadership training for nurses, leadership may be more modifiable than factors such as staffing levels, which are often dependent on funding decisions beyond the control of the unit or organization. Nurse managers have a critical role in creating a positive work environment and retaining staff.

Participants in this study also reported that their perceptions of their work environment were positively influenced by having adequate staffing and resources. This result is consistent with other studies (Aiken et al., 2002; Cho et al., 2016; National Institute of Health Research, 2019; Zúñiga et al., 2015). RN and LPN populations both value adequate staffing and resources in their workplaces, which is positively associated with intention to stay. Efforts to improve workplaces may increase retention, and subsequently reinforce positive perceptions of the working environment.

Although this study addresses a gap in the nursing literature by focussing on the understudied LPN nursing population, it is not

without its limitations. The low response rate and sample size limits the potential representativeness of this sample. Researchers can be encouraged to broaden the research around LPNs and other nursing roles, with larger samples.

7 | CONCLUSION

Overall, participating LPNs had mixed perspectives of their work environments, particularly in acute care. This study found that LPNs reported lower PES-NWI scores than published examples with RN populations. It would be worthwhile to investigate whether LPNs consistently report lower positive perceptions of their work environments than RNs across other samples. Participants' perceptions of their work environments were closely associated with intention to stay across all work settings. Their perceptions of their workplace were statistically significantly associated with effective management and adequate resources. This result suggests that professional development for nurse managers may be a worthwhile strategy in efforts to retain LPNs.

CONFLICT OF INTEREST
The author declares no conflicts of interest.

DATA AVAILABILITY STATEMENT
Data are available from the authors on reasonable request.

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