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Institutional and personal determinants of nursing educators' job satisfaction and turnover intention: a cross-sectional study

Sheila A. Boamah¹, Chiedozie James Alumona^{2,3*}, Ogochukwu Kelechi Onyeso² and Oluwagbohunmi Adetunji Awosoga²

Abstract

Background Nursing educators play a critical role in training future nurses, and high turnover can disrupt the training quality and process. This study identified the institutional and personal factors influencing Canadian nursing educators' job satisfaction and turnover intention.

Methods This cross-sectional study used an online survey to obtain the levels of job satisfaction, turnover intention, role description, and institutional and personal/demographic characteristics of nursing faculty across Canadian institutions. Data were analysed using descriptive statistics, chi-square, bivariate linear regression, and hierarchical linear regression.

Results A total of 645 participants, with a mean \pm SD age of 48.82 ± 10.11 years, returned a completed questionnaire. The average/maximum job satisfaction and turnover intention scores were $12.59/20 \pm 3.96$ and $6.50/15 \pm 3.05$, respectively. Higher job satisfaction was significantly associated with lower turnover intention ($\beta = -0.559, p < 0.001$). The multivariate analysis showed that having a partner or being married ($\beta = 0.086, p = 0.031$), working ≤ 40 h weekly ($\beta = -0.235, p < 0.001$), teaching ≤ 4 courses annually ($\beta = -0.115, p = 0.007$), and having higher than bachelor's degree qualification ($\beta = -0.091, p = 0.042$) predicted high job satisfaction, while high turnover intention was associated with faculty in the Prairie region ($\beta = 0.135, p = 0.006$) and working ≥ 41 h weekly ($\beta = 0.151, p = 0.001$).

Conclusion Having a partner, manageable workload, and advanced qualifications positively influenced job satisfaction, while high turnover intention was associated with high workloads. Institutions may benefit from ensuring proportionate faculty workloads, fostering career advancement, and providing robust support systems that can stabilise the workforce and preserve the quality of nursing education.

Keywords Nursing faculty, Post-secondary institution, Workload, Canada, Prairie region

*Correspondence:

Chiedozie James Alumona
chiedozejames@yahoo.com

¹Faculty of Health Sciences, School of Nursing, McMaster University, Hamilton, ON, Canada

²Faculty of Health Sciences, University of Lethbridge, Lethbridge, AB, Canada

³Department of Physiotherapy, College of Basic Medical Sciences, Chrisland University, Abeokuta, Ogun, Nigeria



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Introduction

The nursing profession is the backbone of the healthcare industry; however, the profession has been plagued with a workforce shortage [1]. Possible reasons for the nursing shortage include an ageing workforce, nurses' burnout, poor remuneration, and low nursing programme enrolment post-COVID-19 pandemic [2, 3]. Moreover, nursing is a female-dominated profession, with peak professional-productive years coinciding with childbearing and more family responsibilities [1]. The need for a family-work-life balance reduces the nursing workforce and creates high burnout among nurses [4]. The COVID-19 pandemic further exacerbated the nursing shortage, as many nurses lost their lives [5], and others quit their jobs due to the increased risk of morbidity and high job demands [6, 7].

The unprecedented nursing shortage places enormous demands on nurse faculty to train more nurses and provide extra clinical support in some settings. However, there are insufficient nursing educators/ instructors in Canada [8]. The shortage of nursing educators has been premised on low job satisfaction amidst multiple responsibilities and high-performance expectations [9]. Within the scope of this paper, "nursing educator" refers to nurses holding academic positions in post-secondary institutions, covering teaching, research, community service, and clinical roles [8].

Job satisfaction measures workers' contentment with their jobs [10]. It is the overall perception of workers towards different aspects of their work, including tasks, colleague relationships, compensation, work environment, and growth opportunities [11]. Workers with high job satisfaction find their jobs fulfilling, meaningful, and enjoyable, contributing to organisational performance and enhancing workplace productivity [12]. Job satisfaction has been studied extensively among Canadian nurses in the healthcare sector [13–17] with little or no attention given to nurse faculty despite their double role as clinical and classroom educators [5].

Turnover is the rate at which employees leave a workforce and are replaced [18]. Similar to job satisfaction, enormous research has focused on the turnover intention of nurses working in hospitals and continuing care facilities [3, 15, 18] but little emphasis on the factors influencing turnover intention among academically employed nurses. High turnover destabilises organisations and diminishes the quality and integrity of programs [19].

Recruitment and retention of qualified nursing educators is an institutional goal among nursing programmes [20]. Therefore, understanding the factors influencing nurse educators' job satisfaction and turnover decisions is paramount to nursing programme stability and the continual supply of graduate nurses for global health care needs. Our overarching study hypothesis was that there

would be significant associations among nursing educators' job satisfaction, turnover intention, and personal (demographic) factors, role characteristics, and institutional factors. Exploring these factors may help post-secondary institutions create and maintain a more robust and effective nursing workforce.

Methods

Study design

The study was an online cross-sectional survey. The design offers advantages such as reaching remote participants across Canada, reducing logistical costs, and allowing respondents to complete the survey at their convenience. Ethics approval was obtained from the Hamilton Integrated Research Ethics Board (HiREB-#1477). After providing a detailed explanation of the study protocol, informed consent was obtained from participants. Participants' anonymity, data confidentiality, and other guidelines from the Helsinki Declaration on research involving human subjects were strictly adhered to [21]. The study was reported following the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for reporting cross-sectional studies [22].

Participant eligibility

Participants were included in the study if they: (1) were nursing educators working full-time or part-time in Canadian universities and colleges, (2) had a nursing professional degree and working solely in a nursing programme, (3) had at least one year of working experience, and (4) completed an online informed consent form. Adjunct or visiting professors were excluded from the study.

Sampling and sample size

Potential participants were recruited through their institution's online profile using convenience sampling. A post hoc power analysis was performed using G*Power 3.1.9.4 software based on a 0.05 alpha level, 645 sample size, and 28 predictors under the linear regression fixed model. The calculated power of 0.99 was enough to detect a small effect size of 0.10. Hence, our study was sufficiently powered.

Instrument

The instruments for data collection were (1) a job satisfaction questionnaire, (2) a turnover intention questionnaire, and (3) a self-developed demographic questionnaire capturing the personal, role, and institutional characteristics. The job satisfaction survey was a five-point Likert scale that contained four questions about the extent to which participants agree with statements relating to their satisfaction with the job, their

desire to stay in the job until retirement, and the supportiveness of the working environment [23]. Higher scores indicate higher job satisfaction. The instrument's structural validity was established through the confirmatory factor analysis [23], and internal consistency was reported to be $\alpha=0.86$ [24]. The recalculated Cronbach's alpha based on the present data was 0.88.

The turnover intention questionnaire was a three-item instrument with five-point Likert response options [25]. A higher total score indicates a higher intention to leave the job. The scale is a common, reliable, and validated tool for assessing turnover intentions [25]. The internal consistency was reported to be $\alpha=0.92$ [25] and 0.76 in the present study. The demographic questionnaire obtained personal data such as gender, age, marital status, education level, and ethnicity. The role characteristics included academic rank, tenureship status, nature of appointment, years worked, weekly work hours, services on graduate thesis committees, the number of assigned courses annually, and percentage role distribution. Others include institutional characteristics such as institution type, size, and location.

Data collection procedure

The online survey was created using Qualtrics and shared via a web link. The link was emailed to the participants identified through their institution's online profile. Two reminders were sent to participants after the third and fourth week of the initial email. The data collection period was from May 2021 to July 2021. The first page of the survey contained the study's objectives and descriptions, participant eligibility criteria, data privacy and confidentiality information, and informed consent. The participants could either consent by clicking "yes" before proceeding to the questions or decline by clicking "no" and exiting the survey. Therefore, completing the questionnaire implied giving their consent. Completed surveys were securely saved on the Qualtrics database and later downloaded for analysis.

Variables

Primary outcomes were continuous variables, job satisfaction (5–20) and turnover intention (5–15). *Personal/demographic factors* were nominal variables: gender (male, female), age group (≤ 49 , ≥ 50 years), marital status (have partner, have no partner), ethnicity (Caucasian, non-Caucasian), and the ordinal variable, educational qualification (Bachelors, Masters, Doctorates). *Role characteristics* were nominal variables: years worked (≤ 10 years, ≥ 11 years), nature of appointment (full-time, part-time), academic rank (instructor, assistant professor, associate professor, full professor), and tenure status (tenured, tenure-track, non-tenure track, clinical track), work hours per week (≤ 40 , ≥ 41 h), graduate thesis

committee (yes, no), and number of courses per year (≤ 4 , ≥ 5), role distribution pattern (teaching, research, service, clinical work). *Institutional characteristics* were nominal variables: institution type (university, college), region of the institution (Central Canada/ Prairie/ West Coast/ Atlantic and Northern territories), and the ordinal variable, institution size (small, medium, large).

Data analysis

The data were analysed using the Statistical Package for Social Sciences (SPSS) version 29 software. The data had no missing values and met the statistical assumptions of normality (skewness test), univariate outliers (standardised z-score $> \pm 3.29$), and multivariate outliers (Mahalanobis distance) [26, 27]. Multicollinearity was read off the regression output via variance inflation factor < 4 [26, 27].

Participants' characteristics were summarised using descriptive statistics: frequency, percentage, mean, and standard deviation. Chi-square was used to analyse participant distribution (crosstabulation) between job tracks, workload, and employment duration. The bivariate association between personal (demographic) factors, role characteristics, institutional factors, job satisfaction, and turnover intention were analysed using simple linear regression. Differences in job satisfaction and turnover intentions between full-time and part-time nursing educators were analysed using independent-samples t-tests, and one-way ANOVA was used for tenure status (tenured vs. tenure-track vs. non-tenure track vs. clinical track). Since no subgroup differences were found (supplementary file 1), all participants were included in the multivariate regression models. Hierarchical linear regression was used to estimate the contributions of personal factors (step 1), role characteristics (step 2), and institutional factors (step 3) to the overall job satisfaction and turnover intentions of the participants. The alpha level was set at 0.05.

Results

Participants' characteristics

A total of 645 out of 1649 invited respondents returned a completed survey, accounting for 39% response rate. Respondents' mean \pm SD age was 48.82 ± 10.11 years. The average job satisfaction and turnover intention scores were 12.59 ± 3.96 (range 5 to 20) and 6.50 ± 3.05 (range 5 to 15), respectively. Table 1 shows that most respondents were females (93.6%), less than 50 years old (52.7%), married/had a partner (78.9%), Caucasians (83.1%), and master's degree holders (52.7%). The role distribution (Fig. 1) shows that 33.0% of the respondents were assigned concurrent teaching, research, and service responsibilities, and 18.3% had teaching, research, service, and extra clinical workload. Table 2 shows a significant association

Table 1 Participants' characteristics, institutional/role characteristics, and workloads (n = 645)

Parameter	Frequency	Percentage
Sex/gender		
Female	604	93.6
Male	36	5.6
Other	5	0.8
Age group		
≤ 49 years	336	52.7
≥ 50 years	301	47.3
Marital status		
Single	80	12.4
Married / Living common law	509	78.9
Divorced/Separated	49	7.6
Widowed	7	1.1
Education		
Bachelors / Diploma	85	13.1
Masters	340	52.7
PhD	220	34.2
Ethnicity		
Non-Caucasians	109	16.9
Caucasians	536	83.1
Institution type		
College	121	18.8
University	524	81.2
Institution size		
Small (< 12,000)	185	28.7
Medium (12,000–22,000)	215	33.3
Large (> 22,000)	245	38.0
Region of the institution		
Central Canada	212	32.9
The Prairie Provinces	201	31.2
The West Coast	133	20.6
The Atlantic Region	93	14.4
The Northern Territories	6	0.9
Years worked in the institution		
≤ 10 years	381	59.1
≥ 11 years	264	40.9
Nature of appointment		
Part-time	117	18.1
Full time	528	81.9
Academic rank		
Instructor	183	28.4
Assistant professor	144	22.3
Associate professor	230	35.7
Full professor	88	13.6
Tenure status		
Tenured	152	23.6
Tenure-track	252	39.1
Non-tenure track	149	23.1
Clinical track	92	14.3
Work hours per week		
≤ 40 h	207	32.1
≥ 41 h	438	67.9
Graduate thesis committee		
No	467	72.4

Table 1 (continued)

Parameter	Frequency	Percentage
Yes	178	27.6
Number of courses per year		
≤ 4 courses	357	55.4
≥ 5 courses	287	44.6

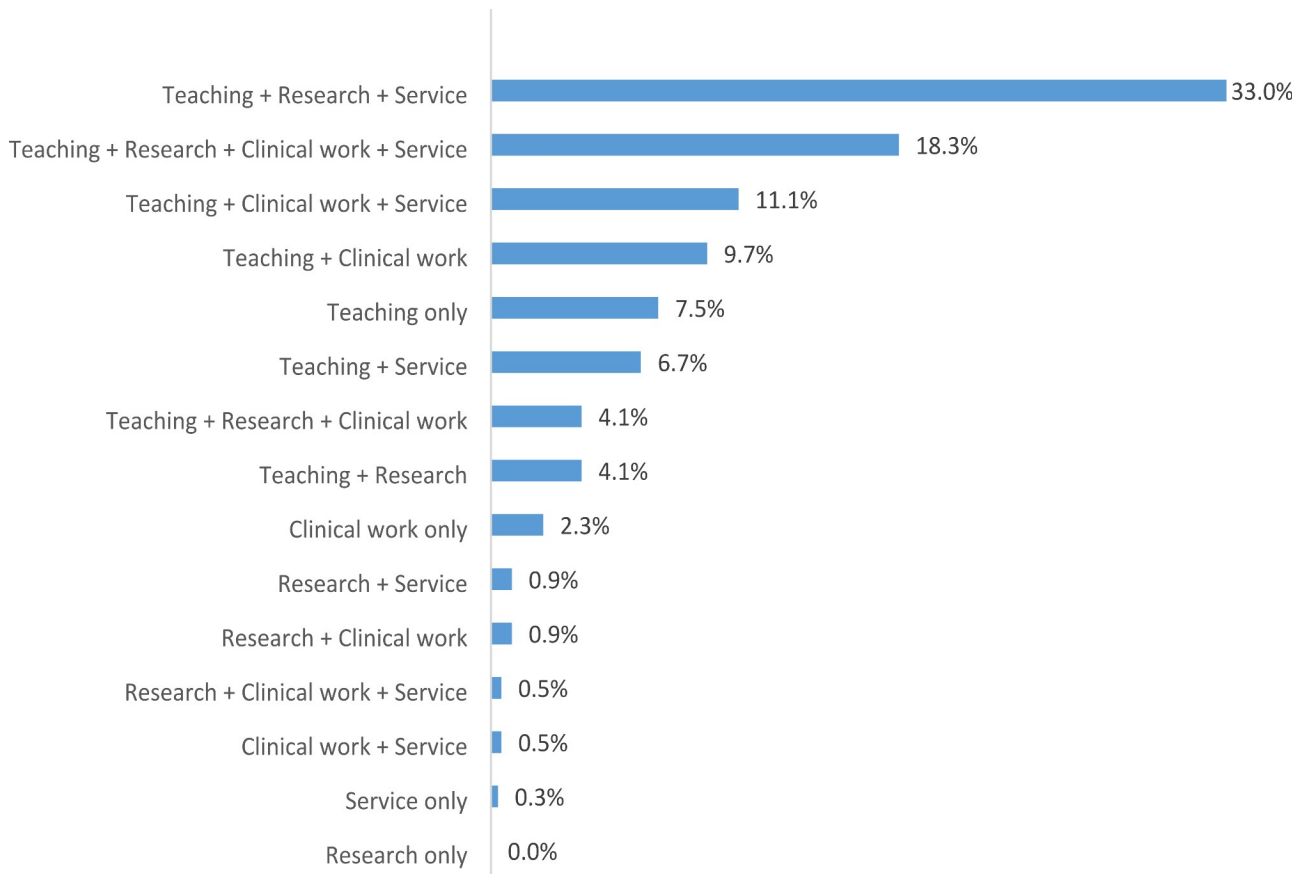


Fig. 1 Participants' role distribution

Table 2 Association between job track, course load, work hours, and years worked in the institution

Variable	Tenured f (%)	Tenure-track f (%)	Non-tenure track f (%)	Clinical track f (%)	χ^2 -statistic	p-value
Courses taught yearly					13.85	0.003*
Four or less	94 (61.8)	122 (48.4)	79 (53.0)	62 (68.1)		
Five or more	58 (38.2)	130 (51.6)	70 (47.0)	29 (31.9)		
Work hours (weekly)					44.27	< 0.001*
Forty or less	30 (19.7)	69 (27.4)	54 (36.2)	54 (58.7)		
Forty-one or more	122 (80.3)	183 (72.6)	95 (63.8)	38 (41.3)		
Years worked in the institution					58.82	< 0.001*
Ten or less	50 (32.9)	168 (66.7)	95 (63.8)	68 (73.9)		
Eleven or more	102 (67.1)	84 (33.3)	54 (36.2)	24 (26.1)		

* = χ^2 -statistic was significant at $p < 0.05$

between job tracks and annual course load ($\chi^2=13.85$, $p=0.003$), weekly work hours ($\chi^2=44.27$, $p<0.001$), and years of employment ($\chi^2=58.82$, $p<0.001$). The majority of the tenured faculty (67.1%) had spent over a decade in their institutions; 61.8% were teaching fewer than five courses annually, but 80.3% committed over 40 h weekly. In contrast, many nurse faculty on a clinical track (73.9%) had shorter employment duration in their institutions (10 years or less), 58.7% put in 40 h or less weekly, and 68.1% taught four or fewer courses annually. Supplementary File 2 shows a correlation matrix among all study variables.

Bivariate analysis

High job satisfaction was significantly associated with low turnover intention ($\beta=-0.559$, $p<0.001$). Table 3 shows that being an associate professor ($\beta=-0.092$, $p=0.019$), working ≥ 41 weekly hours ($\beta=-0.207$, $p<0.001$), teaching ≥ 5 courses per year ($\beta=-0.162$, $p<0.001$), and having concurrent teaching, research, service, and clinical role ($\beta=-0.092$, $p=0.020$) significantly associated with low job satisfaction. However, having a partner or being married ($\beta=0.091$, $p=0.020$) was significantly associated with high job satisfaction.

Table 3 Bivariate regression (zero-order correlation) between participants' characteristics and job satisfaction and turnover intention

Variable	Job satisfaction		Turnover intention	
	β -statistic	p -value	β -statistic	p -value
Sex/gender (female)	-0.038	0.343	0.028	0.481
Age group (≥ 50 years)	0.044	0.272	0.053	0.178
Marital status (has a partner)	0.091	0.020*	-0.085	0.031*
Education				
Bachelors / Diploma	-0.074	0.059	0.018	0.656
Masters	0.019	0.623	-0.022	0.584
PhD	0.033	0.409	0.010	0.796
Ethnicity (Caucasian)	0.018	0.648	-0.062	0.116
Years worked in the institution (≥ 11 years)	0.001	0.976	0.060	0.131
Nature of appointment (full time)	-0.041	0.301	-0.056	0.153
Academic rank				
Instructor	0.043	0.278	-0.025	0.528
Assistant professor	0.021	0.597	0.035	0.375
Associate professor	-0.092	0.019*	0.080	0.042*
Full professor	0.047	0.233	-0.037	0.352
Tenure status				
Tenured	0.013	0.735	-0.087	0.027*
Tenure-track	-0.011	0.784	0.034	0.390
Non-tenure track	-0.010	0.799	0.240	0.811
Clinical track	0.011	0.781	0.047	0.235
Work hours per week (≥ 41 h)	-0.207	$<0.001^*$	0.085	0.031*
Graduate thesis committee (yes)	0.045	0.255	-0.092	0.020*
Number of courses per year (≥ 5 courses)	-0.162	$<0.001^*$	0.080	0.042*
Teaching only (yes)	0.028	0.478	0.029	0.458
Teaching and clinical work (yes)	0.042	0.288	-0.031	0.435
Teaching, research, and service (yes)	0.008	0.837	-0.036	0.365
Teaching, clinical work, and service (yes)	0.013	0.747	-0.031	0.426
Teaching, research, service, and clinical work (yes)	-0.092	0.020*	0.010	0.795
Institution type (university)	0.033	0.397	-0.063	0.107
Institution size				
Small ($< 12,000$)	-0.010	0.792	0.015	0.713
Medium (12,000–22,000)	-0.012	0.757	-0.046	0.240
Large ($> 22,000$)	0.022	0.585	0.031	0.425
Region of the institution				
Central Canada	0.028	0.470	-0.082	0.038*
The Prairie Provinces	-0.073	0.063	0.124	0.002*
The West Coast	0.036	0.368	0.006	0.878
The Atlantic/Northern territories	0.017	0.666	-0.060	0.131

* = standardised regression coefficient (β) was significant at $p<0.05$

Low turnover intention was significantly associated with having a partner or being married ($\beta=-0.085, p=0.031$), working in an institution in (Ontario or Quebec) central region ($\beta=-0.082, p=0.038$), being a tenured staff ($\beta=-0.087, p=0.027$), and sitting on graduate thesis committees ($\beta=-0.092, p=0.020$). Conversely, working in the Prairie region ($\beta=0.124, p=0.002$), being an associate professor ($\beta=0.080, p=0.042$), working ≥ 41 h per week ($\beta=0.085, p=0.031$), and teaching ≥ 5 courses per year ($\beta=0.080, p=0.042$) were significantly associated with high turnover intention.

Multivariate analysis

Table 4 shows a three-step hierarchical linear regression model for predictors of job satisfaction, including personal factors (step 1), role characteristics (step 2), and institutional factors (step 3). Step 1 (only demographic/personal factors) did not show any significant predictor of job satisfaction. When the model was adjusted for both personal factors and role characteristics (Step 2), having a partner or being married ($\beta=0.086, p=0.031$), higher than bachelor's degree qualification ($\beta = -0.091, p=0.042$), less than 41-hour work per week ($\beta = -0.235, p<0.001$), and teaching less than five courses per year (β

Table 4 Hierarchical linear regression showing the predictors of job satisfaction

Predictors	Step 1 Personal factors		Step 2 Role characteristics		Step 3 Institutional factors	
	β -statistic	p-value	β -statistic	p-value	β -statistic	p-value
Constant	-	<0.001*	-	<0.001*	-	<0.001*
Sex/gender (ref: male)	-0.041	0.303	-0.034	0.393	-0.034	0.391
Age group (ref: ≤ 49 years)	0.042	0.305	0.058	0.203	0.046	0.318
Marital status (ref: have no partner)	0.074	0.068	0.086	0.030*	0.085	0.033*
Education (ref: masters)						
Bachelors / Diploma	-0.059	0.156	-0.091	0.042*	-0.088	0.051
PhD	0.008	0.838	-0.010	0.833	-0.007	0.882
Ethnicity (ref: non-Caucasian)	-0.002	0.968	0.004	0.917	0.016	0.691
Years worked (ref: ≤ 10 years)			-0.017	0.716	-0.015	0.752
Nature of appointment (ref: part-time)			0.054	0.285	0.050	0.347
Academic rank (ref: instructor)						
Assistant professor			-0.004	0.941	-0.009	0.874
Associate professor			-0.073	0.192	-0.071	0.215
Full professor			0.013	0.796	0.017	0.741
Tenure status (ref: non-tenure track)						
Tenured			-0.046	0.440	-0.042	0.489
Tenure-track			-0.008	0.888	-0.002	0.966
Clinical track			-0.013	0.804	-0.006	0.906
Work hours per week (ref: ≤ 40 h)			-0.235	<0.001*	-0.235	<0.001*
Graduate thesis committee (ref: no)			0.038	0.468	0.033	0.551
Number of courses per year (ref: ≤ 4 courses)			-0.115	0.007*	-0.109	0.011*
Teaching only (ref: no)			0.002	0.959	0.006	0.901
Teaching and clinical work (ref: no)			0.033	0.462	0.033	0.471
Teaching, research, and service (ref: no)			-0.004	0.951	0.002	0.976
Teaching, clinical work, and service (ref: no)			0.029	0.519	0.020	0.665
Teaching, research, service, and clinical work (ref: no)			-0.031	0.535	-0.031	0.535
Institution type (ref: college)					0.011	0.828
Institution size (ref: medium)						
Small					-0.010	0.838
Large					0.026	0.584
Region of the institution (ref: Central Canada)						
The Prairie Provinces					-0.014	0.769
The West Coast					0.062	0.208
The Atlantic/Northern territories					0.034	0.479
F-statistics	F(6, 626) = 1.449, p = 0.194		F(22, 610) = 2.906, p < 0.001*		F(28, 604) = 2.384, p < 0.001*	
R-statistics	AR ² = 0.004, Δ R ² = 0.014		AR ² = 0.062, Δ R ² = 0.081		AR ² = 0.058, Δ R ² = 0.005	

* = standardised regression coefficient (β) was significant at $p < 0.05$. AR² = adjusted R squared. Δ R² = R squared change

= -0.115, $p=0.007$) were significant predictors of higher job satisfaction. The best model (significant F -statistics and highest R -squared change) was obtained in Step 2: $F(22, 610)=2.906, p<0.001$, adjusted $R^2=0.062, R^2$ change=0.081. All significant predictors in Step 2, except academic qualification, remained significant in Step 3 when the model was controlled for institutional factors.

A multivariate model (Step 1) showed no significant association between personal factors and turnover intention (Table 5). The best model for the predictors of turnover intention was obtained in Step 2 after adjusting for role characteristics ($F[22, 610]=1.977, p=0.005$, adjusted

$R^2=0.033, R^2$ change=0.054) with working more than 40 h weekly ($\beta=0.151, p=0.001$) being the only significant predictor. After controlling for institutional characteristics in Step 3, high workload ($\beta=0.151, p=0.001$) and working in the Prairie region ($\beta=0.135, p=0.006$) became the significant predictors of high turnover intention.

Discussion

Nursing educators play a critical role in training future nurses, and high turnover can disrupt the training quality and process. From a policy perspective, addressing the nursing educator shortage requires a comprehensive

Table 5 Hierarchical linear regression showing the predictors of turnover intention

Predictors	Step 1 Personal factors		Step 2 Role Characteristics		Step 3 Institutional factors	
	β -statistic	p -value	β -statistic	p -value	β -statistic	p -value
Constant	-	<0.001*	-	<0.001*	-	<0.001*
Sex/gender (ref: male)	0.031	0.433	0.034	0.395	0.040	0.317
Age group (ref: ≤49 years)	0.059	0.145	0.055	0.233	0.065	0.162
Marital status (ref: have no partner)	-0.064	0.110	-0.073	0.068	-0.065	0.108
Education (ref: masters)						
Bachelors / Diploma	0.015	0.722	0.011	0.813	-0.002	0.968
PhD	0.010	0.816	0.0072	0.117	0.069	0.136
Ethnicity (ref: non-Caucasian)	-0.063	0.124	-0.058	0.151	-0.060	0.151
Years worked (ref: ≤10 years)			0.080	0.085	0.080	0.086
Nature of appointment (ref: part-time)			-0.077	0.139	-0.084	0.115
Academic rank (ref: instructor)						
Assistant professor			-0.006	0.916	0.014	0.818
Associate professor			0.079	0.167	0.053	0.363
Full professor			-0.009	0.861	0.000	0.994
Tenure status (ref: non-tenure track)						
Tenured			-0.048	0.431	-0.074	0.226
Tenure-track			0.033	0.538	0.018	0.737
Clinical track			0.062	0.237	0.053	0.320
Work hours per week (ref: ≤40 h)			0.151	0.001*	0.151	0.001*
Graduate thesis committee (ref: no)			-0.092	0.086	-0.084	0.128
Number of courses per year (ref: ≤4 courses)			0.041	0.339	0.033	0.441
Teaching only (ref: no)			0.003	0.951	-0.004	0.930
Teaching and clinical work (ref: no)			-0.068	0.138	-0.072	0.121
Teaching, research, and service (ref: no)			-0.015	0.791	-0.009	0.873
Teaching, clinical work, and service (ref: no)			-0.077	0.097	-0.076	0.105
Teaching, research, service, and clinical work (ref: no)			-0.058	0.247	-0.059	0.244
Institution type (ref: college)					-0.047	0.345
Institution size (ref: medium)						
Small					0.080	0.087
Large					0.058	0.219
Region of the institution (ref: Central Canada)						
The Prairie Provinces					0.137	0.005*
The West Coast					0.038	0.445
The Atlantic/Northern territories					-0.006	0.908
F-statistics	F(6, 626) = 1.355, $p=0.230$		F(22, 610) = 1.977, $p=0.005^*$		F(28, 604) = 2.070, $p=0.001^*$	
R-statistics	AR ² = 0.003, ΔR ² = 0.013		AR ² = 0.033, ΔR ² = 0.054		AR ² = 0.045, ΔR ² = 0.021	

* = standardised regression coefficient (β) was significant at $p<0.05$. AR²=adjusted R squared. ΔR²=R squared change

understanding of the factors influencing job satisfaction and turnover intentions. Therefore, we explored the personal, role, and institutional correlates of Canadian nursing educators' job satisfaction and turnover intentions. Our findings highlight important areas that may require policy actions to stabilize and enhance the nursing education workforce.

The sociodemographic characteristics were similar to the profiles obtained among nursing professionals in Canada [7, 14], corroborating that the nursing profession comprises mainly females. One-third of the participants had the traditional post-secondary job description, including teaching, research, and community service, whereas 18.3% had an added clinical responsibility. The mean job satisfaction and turnover intention were moderate. Although Limbocker and Richardson [28] reported that the intention to leave usually overestimates the actual turnover; management should take cognizance of this factor as it can result in low morale among faculty and negatively impact job satisfaction, leading to poor training quality.

The bivariate association showed that an increase in job satisfaction was associated with a decrease in turnover intention. Low job satisfaction was correlated with being an associate professor and having a high workload, while having a partner or being married was associated with high job satisfaction. Concurrently, high turnover intention was associated with being an associate professor, having a high workload, being single, and working in the Prairie region. Conversely, working in Central Canada and being a tenured staff member were associated with less turnover intention. The multivariate analysis showed that having a partner or being married, higher than bachelor's degree qualification, and lower workloads predicted high job satisfaction, while high turnover intention was associated with faculty in the Prairie region and higher workloads.

Zhang et al. [29] corroborated the negative association between job satisfaction and turnover intention, implying that satisfied nursing educators are less likely to seek other employment opportunities. Employees with high job satisfaction tend to be more committed to the institution [30], connect with colleagues [31], experience lower levels of work stress and burnout, and maintain work-life balance [4], thereby reducing the inclination to leave their jobs [32]. Similar to our findings, Saner and Eyüpoğlu [33] reported that married people were satisfied with their jobs, leading to a low turnover intention. Having a household income to which partners contribute may allow them to focus more on enjoying their jobs and worry less about money. Additionally, partnerships' emotional/ social support may equip individuals to cope with workplace challenges. Beyond job satisfaction, married people with children tend to maintain specific jobs and

reside longer in a particular location to enhance family stability [34].

Our findings showed that being an associate professor and having a high workload were associated with low job satisfaction and high turnover intention. Consistent with our findings, Fuegen and Hatchett [35] reported that psychology associate professors were more likely to seek another position elsewhere. Though Fuegen and Hatchett [35] did not discuss the reasons for this observation, anecdotally, faculty members usually appear stagnated at the associate professorial level as they spend many years before being promoted to full professor. Associate professors tend to have high workloads to meet the demands of publishing articles, securing grants, and excelling in teaching and administrative responsibilities [35]. Previous studies reported that faculty leave their institutions because of excessive workloads [32, 36]. Moreover, nurse faculty have an additional clinical workload aside from the usual responsibilities of post-secondary educators [8]. The lack of or delayed career progression and increased workload may lead to feelings of frustration and job dissatisfaction, which in turn increases the turnover intention. The high turnover intention may create a cycle where the departure of experienced faculty exacerbates the shortage, further increasing the workload and dissatisfaction among the remaining staff.

Consistent with our findings, Bender and Heywood [37] reported an association between being a tenured academic and job satisfaction, reducing turnover intention. Being tenured offers greater autonomy, institutional support, and remuneration, reduces the concerns of losing jobs, and provides long-term career stability [38], decreasing the desire to seek employment elsewhere. Khan et al. [39] reported that faculty members may leave their institutions due to denial of tenure status. Nurse faculty are often required to teach, research, and engage in clinical and community services. Anecdotally, a nonuniformity in the distribution of these responsibilities may result in disparity among colleagues, with consequences for professional growth, job satisfaction, and turnover intention. It appears that faculty members on the tenure track put in more hours and had higher course loads with less time for research and community services. Relative to the tenured staff, people on non-tenure and clinical tracks taught fewer courses annually, committed fewer hours, and had shorter employment time, highlighting the importance of being tenured for program stability and staff retention.

In line with the findings of an association between nursing educators in the Prairie region and high turnover intention, Farenhorst et al. [40] reported that more than one-third of the region's natural sciences and engineering (NSE) faculty had considered quitting their jobs. Prairie faculty turnover intention can be attributed to lower

remuneration and high workload [40, 41]. Over two-thirds of the NSE faculty in the Prairie reported insufficient time to complete their enormous tasks, with more than half dissatisfied with their work-family balance [40]. Regional differences in turnover intentions suggest the need for localised strategies to address specific regional challenges. This might include adjusting compensation to meet local living costs, providing additional professional development opportunities, and improving institutional facilities to enhance overall job satisfaction.

Implications for nursing education

Job satisfaction is pivotal in educators' willingness to continue in their positions. With moderate levels of job satisfaction and turnover intention reported, there is a clear need for strategies to enhance job satisfaction to retain quality educators. For instance, recognising the significant impact of workload on job satisfaction, educational institutions could implement policies to manage and distribute the workload more effectively among nursing educators, especially those with additional clinical responsibilities. Flexible work arrangements, part-time faculty hiring, and job-sharing can alleviate workload without significant financial burden [42]. Studies show that these strategies improve job satisfaction and reduce turnover, ultimately stabilizing staffing levels and controlling costs. Additionally, efficiency improvements through technologies such as Learning Management Systems, simulation software, virtual reality, automated grading tools, and telehealth platforms, along with wellness programs, can enhance job satisfaction [43]. By adopting these balanced approaches, institutions can improve nursing educators' job satisfaction and retention without compromising staffing needs or financial stability.

The dissatisfaction among associate professors, who report higher turnover intentions, indicates a need for transparent and supportive promotion processes alongside mentorship programs to assist associate professors in advancing their careers, which might enhance job satisfaction and reduce turnover. Improving nursing educators' job satisfaction will not only stabilise the workforce but will also contribute to the overall goal of improving the quality of nursing education, thereby ensuring a competent and effective nursing workforce for the future.

Limitations

The non-probability sampling method could limit the generalizability of the study findings. Faculty members who were unresponsive or whose contact information was unavailable from their institution's website were not included in the study, a limitation inherent in convenience sampling. Additionally, we did not obtain a comprehensive administrative record of all Canadian colleges and universities offering nursing programs or link

specific nursing faculty members to their institutions to avoid breaching our ethics agreement. Consequently, we cannot account for the proportion of Canadian nursing institutions and faculty members represented in this study.

Although our demographic distribution was similar to the previous Canadian nurse educator survey, a 39% response rate can result in non-response bias – where non-responders could have significantly affected the results. Common among questionnaire-based studies, the authors cannot ascertain the veracity of responses, including self-report bias, job satisfaction, and turnover intention. The respondents' subjective report of weekly work hours and percentage breakdown of their workload under the four duty areas, should not be misconstrued as an objective measure of workload among respondents.

Conclusion

The study identified some personal, role-related, and institutional factors influencing Canadian nursing educators' job satisfaction and turnover intentions. Higher job satisfaction, linked to marital status, advanced qualifications, and manageable workloads, significantly diminishes the propensity for turnover. Conversely, factors such as being an associate professor, high workloads, and working in the Prairie region escalate turnover intentions. Our findings may prompt reflection on institutional strategies to manage workloads, foster career advancement, and provide robust support systems that can stabilise the workforce and preserve the quality of nursing education.

Abbreviations

COVID-19	Coronavirus Disease 2019
HiREB	Hamilton Integrated Research Ethics Board
NSE	Natural Sciences and Engineering
SD	Standard deviation
SPSS	Statistical Package for Social Sciences
STROBE	Strengthening the Reporting of Observational Studies in Epidemiology

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12912-024-02245-9>.

Supplementary Material 1

Acknowledgements

We appreciate our research assistants and all the nurse faculty who participated in the study.

Author contributions

SAB contributed to the conception of this study. SAB, CJA, OKO, and OAA substantially contributed to the design, data acquisition, and statistical analysis. CJA and OKO were responsible for drafting the article. SAB, CJA, OKO, and OAA contributed to its critical revision. All authors approved the final manuscript for publication.

Funding

The study was funded by the Canadian Institutes of Health Research (#478306)

Data availability

The dataset for this study is available from the corresponding authors upon reasonable request.

Declarations

Ethics and consent to participate

The authors obtained ethics approval to conduct this study from the Hamilton Integrated Research Ethics Board (HiREB-#1477). The objectives of the study were clearly explained to the participants, who then signed an informed consent form. Participants' anonymity, privacy, confidentiality, and other guidelines from the Helsinki Declaration on research involving human subjects were strictly adhered to.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Received: 8 May 2024 / Accepted: 8 August 2024

Published online: 26 August 2024

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