International Journal of Nursing Studies 147 (2023) 104589

Contents lists available at ScienceDirect

International Journal of Nursing Studies

journal homepage: www.elsevier.com/locate/ns

Modeling wellbeing for U.S. correctional nurses: A cross sectional survey

Elizabeth G. Keller [a,*], Beverly M. Hittle [a], Samantha Boch [a,b], Kermit Davis [c], Gordon L. Gillespie [a]

[a] University of Cincinnati, College of Nursing, Cincinnati, OH 45221, USA
[b] James M. Anderson Center for Health Systems Excellence, Cincinnati, OH 45229, USA
[c] University of Cincinnati, College of Medicine, Cincinnati, OH 45267, USA

ARTICLE INFO

Article history:
Received 10 April 2023
Received in revised form 11 August 2023
Accepted 14 August 2023
Available online xxxx

Keywords:
Occupational stress
Job demands–resources model
Occupational health
Forensic nursing
Manager support

ABSTRACT

Background: Nurses work in stressful environments, and this stress has negative consequences on health. Correctional nurses experience unique job stress in their roles. However, there has been limited research exploring how the correctional environment impacts nurse health and wellbeing.
Objective: This study aimed to evaluate the relationship between the variables of organizational characteristics (i.e., job demands, job control, manager support, peer support, workplace relationships), job stress, and wellbeing levels in a sample of U.S. correctional nurses, while exploring socio-demographic covariates.
Methods: Using a convenience sampling method, 270 U.S. correctional nurses completed a cross-sectional online survey. Informed by the Job Demands–Resources Theory, a conceptual model was created and tested in this sample. Analysis involved multiple linear regression and structural equation modeling.
Results: The model significantly fit the data (CI: 0.71–0.83, CFI = 0.51, SRMR: 0.37, and RMSEA = 0.08) revealing the direct relationship between job stress, job demands, job control, and workplace relationships and wellbeing. This study also provided evidence that job stress mediates the relationship of job control and job demands with wellbeing.
Conclusion: Results underscore the opportunity for correctional organizations to consider targeting job demands, job control, workplace relationships, and job stress in future interventions to improve the correctional nursing work environment and support correctional nurse wellbeing.
Tweetable abstract: A recent study found evidence for a relationship between organizational characteristics & job stress and U.S. correctional nurse wellbeing.

What is already known

- Nurses who work in correctional facilities face stressful workplace exposures related to violence, workplace bullying, secondary trauma, witnessing overcrowding, and risking moral injury when security protocols override administering adequate nursing care.
- Despite similar work environments, previous literature has focused primarily on correctional officers and the negative impact of the stressful work environment on their health, noting little about the stress correctional nurses may experience and the implications for their wellbeing.

What this paper adds

- A statistically significant direct relationship was found between wellbeing and organizational characteristics (job demands, job control, and workplace relationships) among correctional nurses.
- A statistically significant indirect relationship was also found between job demands and job control. Job stress mediated these relationships.

1. Introduction

Correctional work can be considered inherently risky, as evidenced by the punitive design and nature of carceral settings, and the health disparities observed in both incarcerated patients and among correctional staff related to high physical and psychosocial work demands (Dugan et al., 2022). Specifically in their roles, correctional nurses must adapt to safety concerns when they arise, advocate for patients' access to care, and use critical thinking to provide complex patient-focused care (Dhaliwal et al., 2021; Schoenly, 2015). Correctional nurses

* Corresponding author at: University of Cincinnati, College of Nursing, 223 Procter Hall, 3110 Vine Street, Cincinnati, OH 45221-0038, USA.
E-mail address: kellere4@mail.uc.edu (E.G. Keller)
Social media: @Elizabe89465483.

https://doi.org/10.1016/j.ijnurstu.2023.104589
0020-7489/

are often at risk for deleterious outcomes related to violence (Cashmore et al., 2012; Coffey, 1999), workplace bullying (El Ghaziri et al., 2019), working overtime hours (Almost et al., 2013; Hancock, 2020), secondary (or vicarious) trauma by interacting with individuals who have experienced traumatizing events (Newman et al., 2019; Munger et al., 2015), witnessing overcrowding in the prison and jail settings (Shelton et al., 2020; American Civil Liberties Union, 2023), and moral injury related to organizational policies that can override administering adequate nursing care (Almost et al., 2013; Dhaliwal and Hirst, 2016; Weiskopf, 2005). Working in such a unique and challenging environment may directly impact the health and wellbeing of nurses (Wu et al., 2010). Wellbeing encompasses positive aspects of mental and physical health and contributes to a state of thriving, or high quality of life, without high levels of distress (Dyrbye et al., 2018; Chari et al., 2018).

1.1. Background

Certain organizational characteristics of working environments can contribute to good practice and lower stress levels for workers broadly. These characteristics include job control (i.e., autonomy, how much say an individual has in their work), managerial and peer support (i.e., encouragement or resources provided by the organization and/or colleges), workplace relationships (i.e., positive interpersonal interactions/behavior), and job demands (i.e., workload, staffing, work hours/overtime) (Health and Safety Executive, 2021). Among the broader nursing workforce, good workplace relationships have been found to contribute to lower stress and improved nurse wellbeing and patient outcomes (Tran et al., 2018). In corrections, when there is shared value placed on healthcare for both officers and nurses, the environment is considered more supportive, and nurses can feel autonomous in their roles (Weiskopf, 2005). However, when the priorities of custody and care conflict between correctional officers and nurses, this conflict creates relational strain (Williams and Heavey, 2014). Moreover, correctional nurses may experience an increase in job demands when balancing care with security concerns and maintaining hypervigilance (Miller and Najavits, 2012), or when there is mandatory overtime due to inadequate staffing. An increase in job demands has been found to lead to poor health outcomes and increased stress among nurses (Bae and Fabry, 2014; Aiken et al., 2008).

High job stress may decrease quality of care provided to patients and adversely impact organizational outcomes (i.e., loss of productivity, reduced job satisfaction) (Khamisa et al., 2015). Job stress can also negatively impact wellbeing, by leading to sleeping difficulties, anxiety, depression, burnout, feelings of inadequacy, and risk for suicide among nurses (Khamisa et al., 2015; Wong et al., 2001; Centers for Disease Control and Prevention, n.d.-a; Carr, n.d.). Additionally, certain personal characteristics of the larger nursing workforce (i.e., age, gender, advanced educational degrees) have been shown to impact wellbeing (Lambert et al., 2018), as they have been associated with nurse burnout, job satisfaction, and intent to turnover (Van der Heijden et al., 2019; Shader et al., 2001; Ruggiero, 2005).

Despite the impact of stressful work on nurse wellbeing, there remains a paucity of evidence exploring the context of U.S. correctional nurses and how their unique work environment and organizational characteristics impact their overall health and wellbeing (Schoenly, 2015; Almost et al., 2013; Peternelj-Taylor and Woods, 2019).

1.2. Theoretical framework

The Job Demands–Resources Theory provides a dynamic framework that addresses stress and motivation in a variety of occupational environments and has been tested widely among occupational groups of nurses and correctional officers (McVicar, 2016; Laschinger et al., 2012; Moloney et al., 2018; Cho et al., 2020). This theory affirms how job demands and resources, considered as organizational characteristics in this research, can impact worker wellbeing and performance (Bakker and Demerouti, 2014; Bakker and Demerouti, 2017). The researchers determined variables of interest and created a conceptual model to be tested informed by this theory (Fig. 1). Due to previous literature suggesting a relationship between job demands and resources and job stress, as well as wellbeing (Xanthopoulou et al., 2007), job stress was decided as a mediator in the model. Socio-demographic variables of age, sex, race, ethnicity, nursing licensure, work environment, tenure in corrections, and employment location were also included in the conceptual model to be collected due to the evidence of socio-demographic variables as covariates (Bennett, 2000).

1.3. Purpose

Establishing how organizational characteristics and job stress relate to the wellbeing of correctional nurses in the U.S. may help to make predictions of wellbeing, influence future decisions about how to improve the correctional workplace and promote the health of nurses in these environments. Therefore, the purpose of this study was to empirically test a model of the relationship between organizational characteristics and correctional nurses' self-reported wellbeing. There are two aims:

1. Predict the effect of organizational characteristics on wellbeing, while controlling for covariates (i.e., age, sex, race, ethnicity, nursing licensure, work environment, tenure in corrections, and employment location).
2. Explore the mediating effect of job stress on the relationship between organizational characteristics and correctional nurse wellbeing.

1.3.1. Hypotheses

Based on the theoretical understanding, the researchers hypothesized that organizational characteristics (i.e., job demands, job control, managerial support, peer support, and workplace relationships) would have a significant and direct relationship with the wellbeing of correctional nurses. The researchers also hypothesized that job stress would mediate this relationship, and socio-demographic variables (i.e., age, sex, race, ethnicity, nursing licensure, work environment, tenure in corrections, and employment location) would act as covariates (Bennett, 2000).

2. Methods

This study followed a cross-sectional design and used a non-random, convenience sample of U.S. correctional nurses recruited from the American Correctional Nurses Association, the National Commission on Correctional Health Care, and through colleague connections. An a priori power analysis completed using G*Power (Faul et al., 2007) revealed the need for 270 participants to meet an acceptable power of 80 %, with an expected effect size of 0.35, based on prior nurse wellbeing literature which highlighted small to moderate effect sizes (Hrabe et al., 2017; Kunzler et al., 2022). Inclusion criteria for participants involved those 18 years of age or older, with at least three months of experience currently working as an Advanced Practice Nurse, Licensed Vocational Nurse/Licensed Practical Nurse, or Registered Nurse, in a U.S. correctional facility (i.e., prison, jail, juvenile detention center, community-based correctional facility). The significance level was set at 0.05.

2.1. Ethical considerations

This study was approved by the University of Cincinnati Institutional Review Board. A National Institute of Health Certificate of Confidentiality also was received so that participants' collected emails and data could not be compelled to be released.

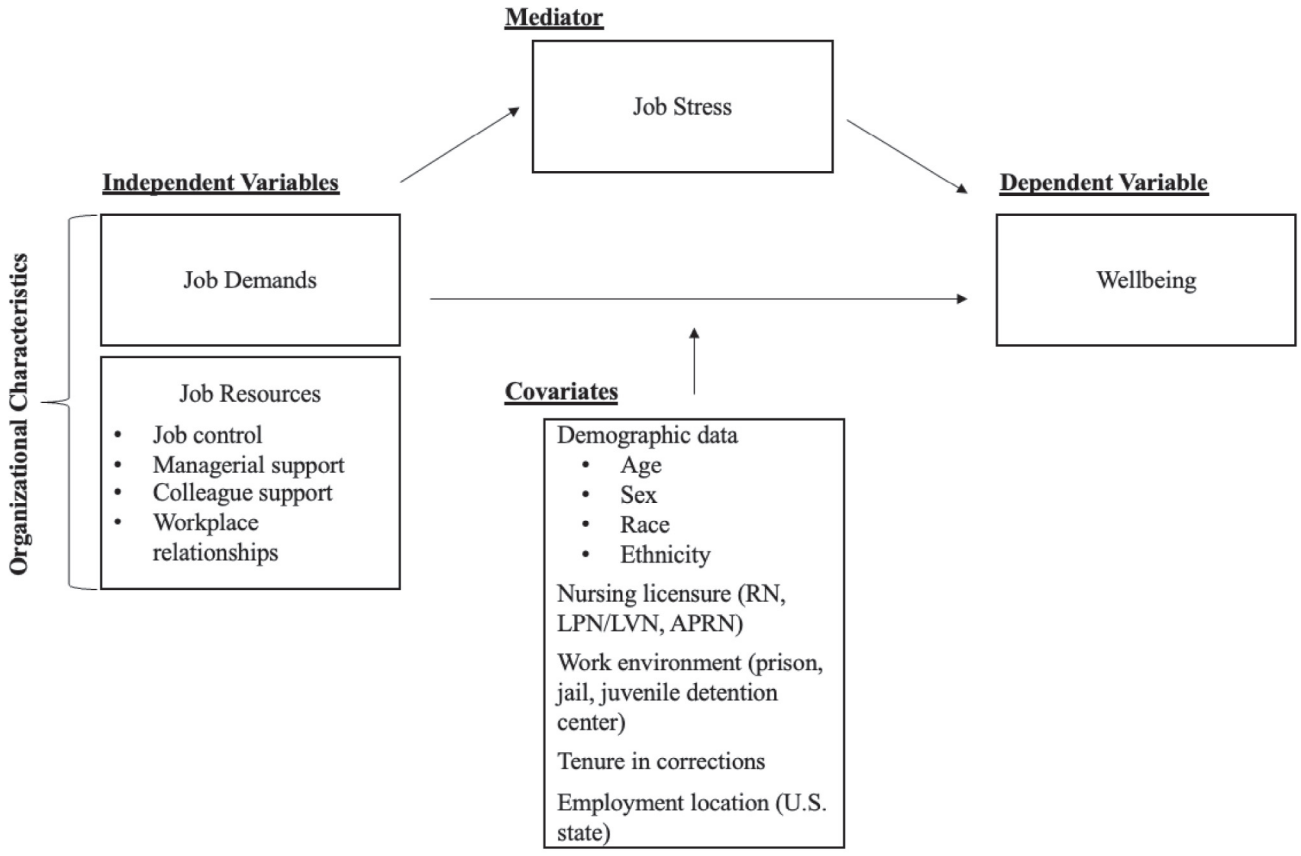

Fig. 1. Guiding conceptual model.

2.2. Procedures

An electronic flyer directed potential participants to the Research Electronic Data Capture software for the online survey from July to August 2022 (Harris et al., 2019). The participants answered screening questions to establish their eligibility and read the Information Sheet, as the Institutional Review Board waived the signing of an informed consent document. If participants agreed to continue, they completed 58 survey questions, taking approximately 20 min. All data were collected and managed on the Research Electronic Data Capture secure site, hosted at the researchers' university.

A total of 347 potential participants began the online survey but 77 either screen failed or did not submit a completed survey. The 270 U.S. correctional nurses who completed all three survey elements (not including the optional socio-demographic section) were used for analysis and received a $25 Amazon electronic gift card.

2.3. Instrumentation

Survey questions were from valid and reliable instruments to measure the variables of interest.

2.3.1. Health & Safety Executive Management Standards Indicator Tool

The Health & Safety Executive Management Standards Indicator Tool (Cousins et al., 2004) was used to measure organizational characteristics, including job demands, job control, managerial support, peer support, and workplace relationships. The questions were answered on a five-point Likert-type scale and responses to each characteristic were averaged for an individual score ranging from 1 (least desirable) to 5 (most desirable). In the literature, a Confirmatory Factor Analysis was completed on the scale with its 35-items and seven-factors (demands, control, relationships, role, change, manager's support, and peer support), revealing good data fit (CFI = 0.91, GFI = 0.92, and RMSEA = 0.05) (Edwards et al., 2008). Other prior testing of the scale has supported concurrent and construct validity (Marcatto et al., 2014), and it has been used in a sample of mental health nurses and healthcare workers that included nurses (Gibb et al., 2010; Ravalier et al., 2020). While this scale has a total of seven factors, only the five variables of job demands, job control, workplace relationships, and managerial support were included in this study based on their demonstrated relationship with wellbeing in the literature (De Jonge and Schaufeli, 1998; Oldham and Hackman, 1981; Warr, 1990). A Cronbach's alpha of 0.91 was found in this sample and is considered satisfactory (Bland and Altman, 1997).

2.3.2. The Nurse Wellbeing Index

The Nurse Wellbeing Index (Dyrbye et al., 2018) was used to evaluate nurses' self-reported wellbeing. This nine-item scale measures distress including depression, fatigue, burnout, anxiety, and mental/physical quality of life with yes/no responses and Likert-type questions. Responses to items are totaled and yield a score ranging from −2 (low risk for distress/higher wellbeing) to 9 (high risk for distress/lower wellbeing). This measurement has been validated through a literature review, expert panel consideration, used among 25,800 healthcare professionals, and correlated to other validated instruments, demonstrating external, construct, and concurrent validity (Dyrbye et al., 2011). It was tested previously in a sample of nurses (Dyrbye et al., 2018) showing acceptable interrater reliability (Dyrbye et al., 2011) and internal consistency reliability with a Cronbach's alpha of 0.68 (Dyrbye et al., 2010). In this study, the Cronbach's alpha was 0.89, which is considered acceptable.

2.3.3. Perceived Stress Scale

The 10-item Perceived Stress Scale (Cohen et al., 1983) measured feelings of job stress during the last month. As a Likert-type scale,

participant responses were summed for a cumulative score, ranging from 0 to 40, where 0–13 is considered low stress, 14–26 is considered moderate stress, and 27–40 is considered high stress (State of New Hampshire Employee Assistance Program, n.d.; Cohen, 1988). The 10-item Perceived Stress Scale has been found to have satisfactory reliability, with an internal consistency coefficient of 0.754 in previous literature (Huang et al., 2020), and an acceptable reliability within the present sample with a Cronbach's alpha of 0.91. The 2-factor model of "positive" and "negative" scale items from a Confirmatory Factor Analysis was previously reported as satisfactory (CFI = 0.778, GFI = 0.959, RMSEA = 0.076, SRMR = 0.055), supporting construct validity (Huang et al., 2020). This measurement also has been used in samples of nurses previously (Alharbi and Alshehry, 2019; Sathiya et al., 2016).

A 'prefer not to answer' option was added to these survey questions so participants could submit a completed survey if they preferred to skip a question that made them uncomfortable (i.e., "There is friction or anger between colleagues"). Participants could also answer an optional socio-demographic questionnaire. The questions of age, biological sex, race, ethnicity, nursing licensure, environment type, U.S. state of employment, and time spent in correctional role (or tenure), were informed by the Behavioral Risk Factor Surveillance System Survey (BRFSS) (Centers for Disease Control and Prevention, n.d.-b) and the Survey on Patient Safety Culture Database (Agency for Healthcare Research and Quality, n.d.).

2.4. Data analysis

Data were exported from the Research Electronic Data Capture and underwent cleaning and coding, and statistical analyses in the JMP Pro 16 (Cary, NC) statistical software. Single imputation with the least impactful value was used to determine scores for those who submitted a 'prefer not to answer' response for any question on the Wellbeing Index, 10-item Perceived Stress Scale or Health & Safety Executive Management Standards Indicator Tool. Responses for 'state of employment' were grouped as regions of the Midwest, Northeast, South, and West (United States Census Bureau, n.d.), to examine trends by certain areas. Responses for socio-demographic questions that were less than five for some groups (i.e., work environment) were collapsed into another comparable group. Additionally, 'prefer not to answer' or 'don't know' socio-demographic responses were treated as missing data and removed for analysis.

Correlational statistics were explored to determine relationships between variables, and multiple linear regression modeling was used to understand the relationship of organizational characteristics and job stress with wellbeing. A Least Absolute Shrinkage and Selection Operator regression analysis was used as an extraction technique to build the regression model, including our socio-demographic covariates. This method was chosen to constrain the complexity of the model and find parsimony of model fit (Ranstam and Cook, 2018). Retained variables from the Least Absolute Shrinkage and Selection Operator were run in multiple linear regression modeling and then structural equation modeling to explore the mediating effect of job stress, while controlling for error (Newman et al., 2009). Acceptable model fit was determined by consideration of fit indices (i.e., CFI > 0.9, GFI > 0.9, RMSEA < 0.05–0.08, SRMR < 0.8) (Effectsize, n.d.) and characteristics of the present dataset (i.e., independence, normality, linearity, homoscedasticity, and multicollinearity) (Ambrosius, 2007).

3. Results

3.1. Socio-demographics

The respondents identified primarily as female (n = 187, 69.8 %), White (n = 151, 56.8 %) or Black or African American (n = 41, 15.4 %), Asian (n = 33, 12.4 %), and non-Hispanic/Latino (n = 224, 86.8 %). Fewer respondents identified as male (n = 72, 27.8 %), American Indian or Native Alaskan (n = 22, 8.2 %), Multiracial/other (n = 10, 3.8 %), Native Hawaiian or other Pacific Islander (n = 9, 3.4 %), and Hispanic or Latino (n = 31, 12.2 %). Respondents on average were 40.4 years old. Reported experience (or tenure) in corrections averaged 8.5 years with some working as little as 5 months to veterans of 27 years. Most respondents worked in prisons (n = 112, 42.1 %), followed by jails (n = 81, 30.5 %). There were also responses from those who worked in community-based correctional facilities (n = 33, 12.4 %) and juvenile detention centers (n = 40, 15 %). The majority of respondents were Registered Nurses (n = 142, 53.4 %) or Licensed Vocational Nurses/Licensed Practical Nurses (n = 83, 31.1 %), but there were some Advanced Practice Nurses who responded (n = 42, 15.8 %). Respondents' place of employment was either state (n = 137, 52.5 %) or private agencies (n = 124, 47.5 %), mainly located in the South (n = 85, 31.7 %) and West (n = 77, 28.7) regions of the U.S. (Table 1).

3.2. Correlations

Initially, a row wise method in JMP was used to explore potential linear relationships between variables (JMP Statistical Discovery, n.d.). Results provide evidence of statistically significant correlations between organizational characteristics. Job stress scores and wellbeing scores also were correlated significantly to all organizational characteristic measures except managerial support. A detailed correlation matrix can be found in Table 2.

3.3. Multiple linear regression modeling

To test the conceptual model and explore the effect of predictor variables (i.e., five organizational characteristic measures, job stress) on wellbeing, the Least Absolute Shrinkage and Selection Operator regression analysis was completed as an extraction technique. Variables of job demands, job control, job stress, and workplace relationships were retained in the model, while including all socio-demographic variables and holding them constant as covariates (see Supplemental material Table 1 for results). The four retained variables then were run in a multiple linear regression to determine the estimates, confidence intervals, and residuals. Residual plots were checked and all VIF's were less than nine. The assumptions for multiple linear regression were met, including linearity, normal distribution of errors, and homoscedasticity (see Supplemental material for Table 2 and Figs. 1–3 that were checked).

Table 1
Majority socio-demographic characteristics.

Characteristics of sample (N = 270)		n	%
Biological sex	Female	187	72.2
	Male	72	27.8
Race	Black or African American	41	15.4
	White	151	56.8
Ethnicity	Hispanic or Latino	26	12.2
Workplace	Jail	81	30.5
	Prison	112	42.1
Licensure	Registered Nurse	142	53.4
	Advanced Practice Nurse	42	15.8
	Licensed Vocational Nurse/Licensed Practical Nurse	83	31.1
Employment	Through private agency	124	47.5
	Through the state	137	52.5
	Age	40.4	10.5
	Job stress score	16.3	7.14
	Wellbeing score	1.8	3

Characteristics of sample (N = 270)		Mean	SD
Organizational characteristics	Job demands score	3.6	0.92
	Job control score	3.6	0.8
	Managerial support score	3.1	0.4
	Peer support score	3.9	0.6
	Relationship score	3.7	0.95

Table 2
Row wise correlation of organizational characteristics, job stress and wellbeing among a sample of U.S. correctional nurses.

	Job demands	Job control	Managerial support	Peer support	Workplace relationship	Job stress	Wellbeing
Job demands							
Job control	0.75*						
Managerial support	−0.01	−0.07					
Peer support	0.62*	0.57*	0.19*				
Workplace relationships	0.79*	0.62*	0.09	0.57*			
Job stress	−0.66*	−0.6*	0.07	−0.54*	−0.51*		
Wellbeing	−0.79*	−0.71*	0.018	−0.57*	−0.68*	0.73*	

* Significance.

Results of the multiple linear regression suggest a statistically significant direct relationship between job demands (−1.1), job control (−0.7), workplace relationships (−0.5), and job stress (0.1) and wellbeing (Table 3). Specifically, there was statistically significant evidence that for every one unit increase in job demands (better scores), it is estimated to decrease wellbeing scores (better wellbeing) by 1.08 ($p < 0.0001$, CI: −1.5, −0.6). There was statistically significant evidence that for every one unit increase in job control (better scores), it is estimated to decrease wellbeing scores (better wellbeing) by 0.69 ($p = 0.0005$, CI: −1.08, −0.3). There was statistically significant evidence that for every one unit increase in workplace relationship scores (a better score), it is estimated to decrease wellbeing scores (better wellbeing) by 0.47 ($p = 0.0054$, CI: −0.8, −0.14). There was statistically significant evidence that for every one unit increase in job stress (worse stress), it is estimated to increase wellbeing scores (worse wellbeing) by 0.14 ($p < 0.0001$, CI: 0.12, 0.18). R squared was 0.724, suggesting that 72 % of the variance found in wellbeing can be explained by job stress, job demands, job control, and workplace relationships.

3.4. Structural equation modeling

The second aim to determine the mediating possibility of job stress was informed by the Job Demands–Resources Theory. Structural equation modeling was used to explore the pathways of how variables of job demands, job control, and workplace relationships could influence wellbeing through job stress. Findings provide model indices (CI: 0.71–0.83, CFI = 0.51, SRMR: 0.37, and RMSEA = 0.08). Despite a CFI < 0.9, the researchers considered additional parameters within range to establish acceptable model fit (Smith and McMillan, 2001). For instance, the RSMEA is between 0.05 and 0.08, indicating fair fit (Smith and McMillan, 2001), and the model was determined to fit the data well based on independence, normality, linearity, homoscedasticity (Ambrosius, 2007). Both job demands (−3.8) and job control (−2.4) were found to have a statistically significant indirect effect on wellbeing through job stress. Specifically, for every one unit increase in job demands (better score), it is estimated that job stress will decrease (less stress) by 3.8 ($p < 0.0001$). It also is estimated that for every one unit increase in job control (better score), job stress decreases (less stress) by 2.4 ($p = 0.0005$). However, the effect of workplace relationships on wellbeing through job stress was not statistically significant ($p = 0.61$). See Fig. 2 for the study conceptual model reflecting the statistically supported pathways between variables.

4. Discussion

This study set out to determine the relationship between organizational characteristics and correctional nurses' self-reported wellbeing, while controlling for socio-demographic covariates and exploring the mediating effect of job stress. Findings from this study reiterate evidence in previous nursing literature (Dhaliwal et al., 2021; Wu et al., 2010; Choudhry et al., 2017), supporting that better workplace relationships (i.e., reduced colleague conflict), improved job demands (i.e., reduced workload and time pressure), less job stress, and more job control (i.e., increased feelings of autonomy) would improve overall correctional nurse wellbeing. While there are similarities among general nurses and correctional nurses, correctional nurses have a unique work environment, requiring specific consideration.

Because mediators specify how relationships occur (Bennett, 2000), the mediation analysis in this research revealed that job demands and job control have a statistically significant indirect relationship with wellbeing through job stress. As hypothesized, better job control and reduced job demands improve wellbeing by lowering stress levels. Similarly, previous evidence has revealed high work demands of correctional nurses in Canada contribute to job stress, involving inadequate staffing and limited resources (Almost et al., 2013). Inadequate staffing limits the ability to replace those calling off sick or taking lunch breaks, and it creates challenges of adequately caring for patients and getting work done by the end of shift. Conversely, Flanagan has reported on how job control, or higher levels of autonomy, is a source of job satisfaction among correctional nurses, leading to lower levels of job stress (Flanagan, 2006). Therefore, reducing job demands and improving job control may decrease job stress, and subsequently improve nurse wellbeing.

Job stress did not mediate the relationship of workplace relationships on wellbeing and was not statistically significant in this study. However, prior literature has reported the relational conflict between correctional nurses and correctional officers as a source of stress (Almost et al., 2013). Further, positive workplace relationships in corrections have been found to minimize the negative impact of job stress on health (Waters, 1999). Therefore, additional research may be warranted to explore job stress as a mediator for workplace relationships and wellbeing among correctional nurses.

Surprisingly, manager support, peer support, and the moderating socio-demographic variables from the original model were not retained in the Least Absolute Shrinkage and Selection Operator regression

Table 3
Parameter estimates for predictors of wellbeing in the multiple linear regression.

Variable	Estimate	Std error	t ratio	Prob > |t|	Lower 95 %	Upper 95 %	VIF
Intercept	7.55	0.86	8.83	<0.0001*	5.87	9.24	
Workplace relationships	−0.47	0.17	−2.81	0.0054*	−0.8	−0.14	2.64
Job stress	0.14	0.02	7.63	<0.0001*	0.11	0.18	1.85
Job demands	−1.08	0.22	−4.97	<0.0001*	−1.5	−0.65	4.08
Job control	−0.69	0.19	−3.51	0.0005*	−1.08	−0.3	2.4

* Significance.

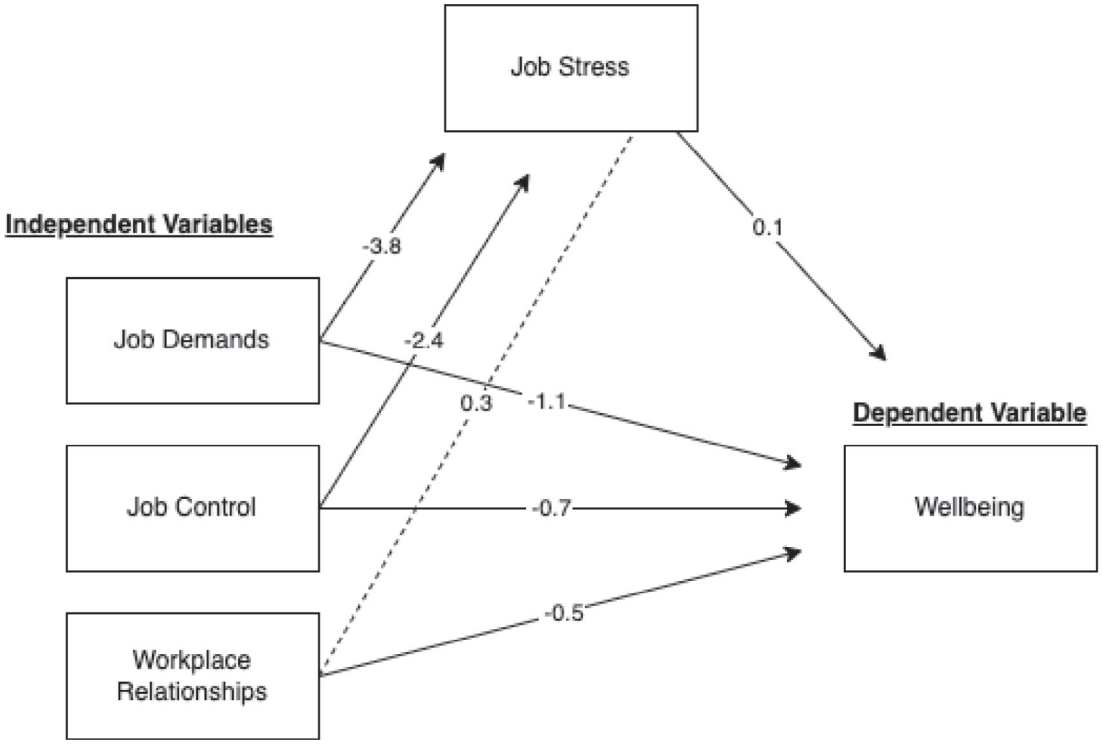

Fig. 2. Updated model of direct and indirect effects on wellbeing in a sample of U.S. correctional nurses.
Note.
Increasing "Job Demands" scores represent decreased workload, work hours, and time pressures.
Increasing "Job Control" scores represent increased levels of autonomy to make decisions about work.
Increasing "Workplace Relationships" scores represent increased positive interactions with others at work.
Increasing "Job Stress" scores indicate increased adverse physiologic responses.
Increasing "Wellbeing" scores indicate decreased positive aspects of mental and physical health.
Solid lines indicate statistically significant relationships.
Dotted lines indicate relationships that were not statistically significant.

analysis. However, smaller and weaker relationships may not have been detected due to the stronger relationships that were present (i.e., job demands with wellbeing). Prior literature has supported that certain socio-demographic characteristics (i.e., marital status, caretaking for children) typically have a positive effect on wellbeing for health care workers generally, protecting against the consequences of stress (Peng et al., 2022; He et al., 2018; Osório et al., 2021). Moreover, manager support and peer support have shown to be key sources of satisfaction among nurses generally, which may contribute to more positive mental health (Suliman and Aljezawi, 2018). Therefore, future studies may complete more exhaustive exploratory analysis with structural equation modeling to reveal the nuances of relationships between all variables, including job demands, job control, workplace relationships, manager support, peer support, and socio-demographics in this sample.

4.1. Wellbeing promotion considerations

The U.S. Surgeon General has offered a framework outlining five essential strategies to promote workplace mental health and wellbeing, because work plays a significant role in the lives of employees, especially nurses. The identified five essential strategies include, 'protection from harm', 'connection and community', 'work–life harmony', 'mattering at work', and 'opportunity for growth' (U.S. Department of Health and Human Services OotUSSG, n.d.). While continued research is needed to test the effectiveness of these essential strategies in this population, they may be valuable to consider in combination with study results, to implement changes in the correctional nursing environment to promote correctional nurse wellbeing.

'Protection from harm' involves creating physically and psychologically safe working conditions. To support this, correctional organizations may consider strategies to reduce job stress and job demands for their nurses. For example, occupational training programs and education on job stress can be implemented to provide nurses with additional skills and understanding to not only self-assess levels of job stress and wellbeing frequently (Dyrbye et al., 2018), but also improve their coping strategies that manage job stress effectively when it arises (Wu et al., 2010). Fostering a good working environment with appropriate resources and manageable workloads also may mitigate job stress (Michie, 2002). Hiring adequate numbers of staff for safe nurse–patient ratios and focusing on improving retention rates may assist in creating a safe and healthy work environment overall (Shelton et al., 2018).

Elements that support 'connection and community' in corrections may be considered in the promotion of positive workplace relationships. For instance, organizations can develop peer support groups across the types of correctional worker groups to alleviate certain workplace relationship challenges, enhance positive social support, and create a sense of belonging and acceptance (Dhaliwal et al., 2021).

'Work–life harmony' includes aspects of autonomy and flexibility. This can be fostered through enhancing the job control of correctional nurses for where and how they accomplish their work tasks. Specifically, correctional organizations can begin to implement mentorship programs for new nurses to strengthen their confidence and autonomy in an educational and collaborative orientation process. Managers also should be trained to provide support and clear instructions for nurses, adequately preparing them for their role in corrections.

'Mattering at work' highlights the importance of being valued as an integral member of the healthcare team, where nurses feel that their

work is important. Correctional organizations can cultivate a sense of dignity and respect for nurses by sharing a clear organizational mission and broad purpose for all staff (Neely et al., 2022). This mission may further reduce community stigma and highlight the important healthcare work that occurs in correctional facilities.

Finally, 'opportunity for work', encompasses learning and accomplishment. Organizations can consider offering refresher trainings on practical skills so nurses may continue meeting the demands of their patient population (Choudhry et al., 2017). Previous research has outlined workforce development methods for correctional nurses, which include establishing an orientation checklist, ensuring baseline competencies for nurses are met, and providing resource manuals that help nurses feel supported in this environment (Shelton et al., 2010).

4.2. Strengths & limitations

This study had both strengths and limitations to note. For example, our study was non-experimental and cross-sectional in design so we were only able to look at associations (Polit and Beck, 2004), the resulting associations may have been impacted by only measuring the specific variables of interest — potentially leaving out other factors that have an influence on outcomes, and the sample was not random, risking selection bias and reducing generalizability. However, the design was chosen as an efficient way to collect a large amount of data from a national sample of U.S. correctional nurses. Differences in correctional nurse wellbeing may have been due to preexisting differences in the sample initially, but certain socio-demographic variables (i.e., age, tenure, nursing licensure) were included in the linear regression model to test potential significant relationships.

While the researchers used valid and reliable tools that were tested in nursing samples previously, the study is limited by not conducting validity testing, and variables were measured using self-report, risking participant bias. The researchers aimed to control for potential bias by recruiting from groups of the desired sample, so that results may be more generalizable to the population of interest. The use of the Perceived Stress Scale also may have led to bias because this tool measures stress generally. However, the brevity of this scale supports a reduction of participant burden, and participants were clearly directed to answer questions within the context of their job and work environment. Further, because the socio-demographic questionnaire was optional for participants, we cannot be sure of the representativeness of study results, nor of their application for those individuals with different demographic characteristics. Yet this part of the survey was optional so that participants could still complete the survey without fear of revealing their personal data.

Notable strengths include how this study dove deeper into the pathways beyond the initial relationships that were found, through structural equation modeling. The structural equation modeling was appropriately used to evaluate the indirect effects of hypothesized variables in this study, allowing the researchers to test the conceptual model of interest, yielding interpretable results (Tomarken and Waller, 2005). Additionally, the post hoc power analysis showed a large effect size ($f^2 = 1.849$), where 100 % power was achieved, lowering the risk of making a Type II error (Shreffler and Huecker, 2020). Finally, we used a theoretical framework to inform this research, which is valuable in helping the discipline to understand the experience of job stress and the process of how organizational characteristics directly and indirectly relate to wellbeing among correctional nurses.

5. Conclusion

The present study determined the statistically significant relationship between job stress and organizational characteristics of job control, job demands, and workplace relationships, and U.S. correctional nurse wellbeing. Continued attention is needed to ensure correctional nurses are provided with adequate supports to complete their jobs safely and effectively in a working environment that values wellbeing. Correctional organizations may begin to take steps that improve the job control of nurses (e.g., through mentorship programs and practical skill refresher trainings), mitigate job stress (e.g., by offering education on stress reduction and personal coping methods), reduce job demands (e.g., ensuring adequate staff are hired and retained), and foster positive workplace relationships between colleagues (e.g., through the creation of peer support groups).

Funding

This research was supported by the National Institute for Occupational Safety and Health through the Pilot Research Project Training Program of the University of Cincinnati Education and Research Center Grant #T42OH008432, and the International Association of Forensic Nurses Grant funding #1018248.

CRediT authorship contribution statement

Elizabeth G. Keller: Writing – review & editing, Writing – original draft, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Beverly M. Hittle:** Writing – review & editing, Supervision, Methodology, Formal analysis, Conceptualization. **Samantha Boch:** Writing – review & editing, Methodology, Formal analysis, Conceptualization. **Kermit Davis:** Writing – review & editing, Methodology, Formal analysis, Conceptualization. **Gordon L. Gillespie:** Writing – review & editing, Supervision, Methodology, Formal analysis, Conceptualization.

Data availability

The data are not publicly available due to their containing information that could compromise the privacy of research participants.

Declaration of Competing Interest

None.

Acknowledgments

We would like to acknowledge and thank Dr. Joshua Lambert for his statistical expertise and guidance through the data analysis process.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijnurstu.2023.104589.

References

Agency for Healthcare Research and Quality, d. Hospital Survey on Patient Safety. https://www.ahrq.gov/sops/surveys/hospital/index.html.

Aiken, L.H., Clarke, S.P., Sloane, D.M., Lake, E.T., Cheney, T., 2008. Effects of hospital care environment on patient mortality and nurse outcomes. J. Nurs. Admin. 38 (5), 223–229. https://doi.org/10.1097/01.NNA.0000312773.42352.d7 (May).

Alharbi, H., Alshehry, A., 2019. Perceived stress and coping strategies among ICU nurses in government tertiary hospitals in Saudi Arabia: a cross-sectional study. Ann. Saudi Med. 39 (1), 48–55. https://doi.org/10.5144/0256-4947.2019.48.

Almost, J., Doran, D., Ogilvie, L., et al., 2013. Exploring work–life issues in provincial corrections settings. J. Forensic Nurs. 9 (1), 3–13.

Ambrosius, W.T., 2007. Topics in Biostatistics. Springer.

American Civil Liberties Union, 2023. Prisoners' Rights: Cruel, Inhumane, and Degrading Conditions.

Bae, S.H., Fabry, D., 2014. Assessing the relationships between nurse work hours/overtime and nurse and patient outcomes: systematic literature review. Nurs. Outlook 62 (2), 138–156. https://doi.org/10.1016/j.outlook.2013.10.009 (Mar–Apr).

Bakker, A.B., Demerouti, E., 2014. Job demands–resources theory. Work and Wellbeing: A Complete Reference Guide. John Wiley & Sons, Inc., pp. 1–28.

Bakker, A.B., Demerouti, E., 2017. Job demands–resources theory: taking stock and looking forward. J. Occup. Health Psychol. 22 (3), 273–285. https://doi.org/10.1037/ocp0000056 (Jul).

Bennett, J.A., 2000. Mediator and moderator variables in nursing research: conceptual and statistical differences. Res. Nurs. Health 23 (5), 415–420. https://doi.org/10.1002/1098-240x(200010)23:5<415::aid-nur8>3.0.co;2-h (Oct).
Bland, J.M., Altman, D.G., 1997. Statistics notes: Cronbach's alpha. Bmj 314 (7080), 572.
Carr, J., d. National study confirms nurses at higher risk of suicide than general population. University of California San Diego: School of Medicine. https://health.ucsd.edu/news/releases/Pages/2020-02-03-national-study-confirms-nurses-at-higher-risk-of-suicide.aspx.
Cashmore, A.W., Indig, D., Hampton, S.E., Hegney, D.G., Jalaludin, B.B., 2012. Workplace violence in a large correctional health service in New South Wales, Australia: a retrospective review of incident management records. BMC Health Serv. Res. 12 (1), 245. https://doi.org/10.1186/1472-6963-12-245 (2012/08/09).
Centers for Disease Control and Prevention, d. Healthcare workers: work stress & mental health. The National Institute for Occupational Safety and Health (NIOSH) https://www.cdc.gov/niosh/topics/healthcare/workstress.html.
Centers for Disease Control and Prevention, d. Behavioral risk factor surveillance system: prevalence data & data analysis tools. https://www.cdc.gov/brfss/questionnaires/index.htm.
Chari, R., Chang, C.-C., Sauter, S.L., et al., 2018. Expanding the paradigm of occupational safety and health: a new framework for worker well-being. J. Occup. Environ. Med. 60 (7).
Cho, S., Noh, H., Yang, E., et al., 2020. Examining the job demands–resources model in a sample of Korean correctional officers. Curr. Psychol. 39, 1521–1534.
Choudhry, K., Armstrong, D., Dregan, A., 2017. Prison nursing: formation of a stable professional identity. J. Forensic Nurs. 13 (1), 20–25.
Coffey, M., 1999. Stress and burnout in forensic community mental health nurses: an investigation of its causes and effects. J. Psychiatr. Ment. Health Nurs. 6 (6), 433–443. https://doi.org/10.1046/j.1365-2850.1999.00243.x (Dec).
Cohen, S., 1988. Perceived Stress in a Probability Sample of the United States.
Cohen, S., Kamarch, T., Mermelstein, R., 1983. A global measure of perceived stress. J. Health Soc. Behav. 24, 385–396.
Cousins, R., MacKay, C.J., Clarke, S.D., Kelly, C., Kelly, P.J., McCaig, R.H., 2004. 'Management Standards' work-related stress in the UK: practical development. Work Stress. 18 (2), 113–136. https://doi.org/10.1080/02678370410001734322 (2004/04/01).
De Jonge, J., Schaufeli, W.B., 1998. Job characteristics and employee well-being: a test of Warr's Vitamin Model in health care workers using structural equation modelling. J. Org. Behav. 19 (4), 387–407.
Dhaliwal, K., Hirst, S., 2016. Caring in correctional nursing: a systematic search and narrative synthesis. J. Forensic Nurs. 12 (1), 5–12.
Dhaliwal, K.K., Hirst, S.P., King-Shier, K.M., Kent-Wilkinson, A., 2021. The implementation of correctional nursing practice—caring behind bars: a grounded theory study. J. Adv. Nurs. 77 (5), 2407–2416.
Dugan, A.G., Namazi, S., Cavallari, J.M., et al., 2022. Participatory assessment and selection of workforce health intervention priorities for correctional supervisors. J. Occup. Environ. Med. 64 (7), 578–592. https://doi.org/10.1097/jom.0000000000002525 (Jul 1).
Dyrbye, L.N., Szydlo, D.W., Downing, S.M., Sloan, J.A., Shanafelt, T.D., 2010. Development and preliminary psychometric properties of a well-being index for medical students. BMC Med. Educ. 10 (1), 8. https://doi.org/10.1186/1472-6920-10-8 (2010/01/27).
Dyrbye, L.N., Schwartz, A., Downing, S.M., Szydlo, D.W., Sloan, J.A., Shanafelt, T.D., 2011. Efficacy of a brief screening tool to identify medical students in distress. Acad. Med. 86 (7), 907–914. https://doi.org/10.1097/ACM.0b013e31821da615 (Jul).
Dyrbye, L.N., Johnson, P.O., Johnson, L.M., Satele, D.V., Shanafelt, T.D., 2018. Efficacy of the well-being index to identify distress and well-being in U.S. nurses. Nurs. Res. 67 (6).
Edwards, J.A., Webster, S., Van Laar, D., Easton, S., 2008. Psychometric analysis of the UK Health and Safety Executive's Management Standards work-related stress Indicator Tool. Work Stress. 22 (2), 96–107. https://doi.org/10.1080/02678370802166599 (2008/04/01).
Effectsize, d. Interpret of CFA/SEM indices of goodness of fit https://easystats.github.io/effectsize/reference/interpret_gfi.html#references.
El Ghaziri, M., Dugan, A.G., Zhang, Y., Gore, R., Castro, M.E., 2019. Sex and gender role differences in occupational exposures and work outcomes among registered nurses in correctional settings. Ann. Work Expo. Health 63 (5), 568–582. https://doi.org/10.1093/annweh/wxz018 (May 21).
Faul, F., Erdfelder, E., Lang, A.-G., Buchner, A., 2007. G*Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behav. Res. Methods 39 (2), 175–191.
Flanagan, N.A., 2006. Testing the relationship between job stress and satisfaction in correctional nurses. Nurs. Res. 55 (5), 316–327. https://doi.org/10.1097/00006199-200609000-00004 (Sep-Oct).
Gibb, J., Cameron, I.M., Hamilton, R., Murphy, E., Naji, S., 2010. Mental health nurses' and allied health professionals' perceptions of the role of the Occupational Health Service in the management of work-related stress: how do they self-care? J. Psychiatr. Ment. Health Nurs. 17 (9), 838–845. https://doi.org/10.1111/j.1365-2850.2010.01599.x (Nov).
Hancock, S.L., 2020. The emotional burden of the correctional health care advanced practice nurse. J. Correct. Health Care 26 (4), 315–326. https://doi.org/10.1177/1078345820953219 (Oct).
Harris, P.A., Taylor, R., Minor, B.L., et al., 2019. The REDCap consortium: building an international community of software platform partners. J. Biomed. Inform. 95, 103208. https://doi.org/10.1016/j.jbi.2019.103208 (2019/07/01).
He, F.X., Turnbull, B., Kirshbaum, M.N., Phillips, B., Klainin-Yobas, P., 2018. Assessing stress, protective factors and psychological well-being among undergraduate nursing students. Nurse Educ. Today 68, 4–12.
Health and Safety Executive, 2021. What are the Management Standards?
Hrabe, D.P., Melnyk, B.M., Buck, J., Sinnott, L.T., 2017. Effects of the nurse athlete program on the healthy lifestyle behaviors, physical health, and mental well-being of new graduate nurses. Nurs. Adm. Q. 41 (4), 353–359.
Huang, F., Wang, H., Wang, Z., et al., 2020. Psychometric properties of the perceived stress scale in a community sample of Chinese. BMC Psychiatry 20 (1), 130. https://doi.org/10.1186/s12888-020-02520-4 (2020/03/20).
JMP Statistical Discovery, d. Color map on correlations https://www.jmp.com/support/help/en/16.2/index.shtml#page/jmp/color-map-on-correlations-2.shtml.
Khamisa, N., Oldenburg, B., Peltzer, K., Ilic, D., 2015. Work related stress, burnout, job satisfaction and general health of nurses. Int. J. Environ. Res. Public Health 12 (1), 652–666.
Kunzler, A.M., Chmitorz, A., Röthke, N., et al., 2022. Interventions to foster resilience in nursing staff: a systematic review and meta-analyses of pre-pandemic evidence. Int. J. Nurs. Stud. 134, 104312.
Lambert, E.G., Jiang, S., Liu, J., Zhang, J., Choi, E., 2018. A happy life: exploring how job stress, job involvement, and job satisfaction are related to the life satisfaction of Chinese prison staff. Psychiatry Psychol. Law 25 (4), 619–636.
Laschinger, H.K.S., Grau, A.L., Finegan, J., Wilk, P., 2012. Predictors of new graduate nurses' workplace well-being: testing the job demands–resources model. Health Care Manag. Rev. 37 (2), 175–186.
Marcatto, F., Colautti, L., Larese Filon, F., Luis, O., Ferrante, D., 2014. The HSE Management Standards Indicator Tool: concurrent and construct validity. Occup. Med. 64 (5), 365–371. https://doi.org/10.1093/occmed/kqu038.
McVicar, A., 2016. Scoping the common antecedents of job stress and job satisfaction for nurses (2000–2013) using the job demands–resources model of stress. J. Nurs. Manag. 24 (2), E112–E136.
Michie, S., 2002. Causes and management of stress at work. Occup. Environ. Med. 59 (1), 67. https://doi.org/10.1136/oem.59.1.67.
Miller, N.A., Najavits, L.M., 2012. Creating trauma-informed correctional care: a balance of goals and environment. Eur. J. Psychotraumatol. 3. https://doi.org/10.3402/ejpt.v3i0.17246.
Moloney, W., Boxall, P., Parsons, M., Cheung, G., 2018. Factors predicting Registered Nurses' intentions to leave their organization and profession: a job demands–resources framework. J. Adv. Nurs. 74 (4), 864–875.
Munger, T., Savage, T., Panosky, D.M., 2015. When caring for perpetrators becomes a sentence: recognizing vicarious trauma. J. Correct. Health Care 21, 365–374. https://doi.org/10.1177/1078345815599976.
Neely, J., Sampath, R., Kirkbride, G., Meeks, S.L., Durham, M.L., 2022. Health care quality and safety in a correctional system: creating goals and performance measures for improvement. J. Correct. Health Care 28 (3), 141–147. https://doi.org/10.1089/jchc.20.07.0058 (Jun).
Newman, K., Vance, D., Moneyham, L., 2009. Interpreting evidence from structural equation modeling in nursing practice. J. Res. Nurs. 15 (3), 275–284. https://doi.org/10.1177/1744987109346666 (2010/05/01).
Newman, C., Eason, M., Kinghorn, G., 2019. Incidence of vicarious trauma in correctional health and forensic mental health staff in New South Wales, Australia. J. Forensic Nurs. 15 (3), 183–192. https://doi.org/10.1097/jfn.0000000000000245 (Jul/Sep).
Oldham, G.R., Hackman, J.R., 1981. Relationships between organizational structure and employee reactions: comparing alternative frameworks. Adm. Sci. Q. 66–83.
Osório, F.L., Silveira, I.L.M., Pereira-Lima, K., et al., 2021. Risk and protective factors for the mental health of Brazilian healthcare workers in the frontline of COVID-19 pandemic. Front. Psychiatry 12. https://doi.org/10.3389/fpsyt.2021.662742 (Original Research, July-28 2021).
Peng, J., Wu, W.H., Doolan, G., et al., 2022. Marital status and gender differences as key determinants of COVID-19 impact on wellbeing, job satisfaction and resilience in health care workers and staff working in academia in the UK during the first wave of the pandemic. Front. Public Health 10.
Peternelj-Taylor, C., Woods, P., 2019. Saskatchewan provincial correctional nurses: roles, responsibilities, and learning needs. J. Correct. Health Care 25 (2), 177–190. https://doi.org/10.1177/1078345819833661 (2019/04/01).
Polit, D.F., Beck, C.T., 2004. Nursing Research: Principles and Methods. Lippincott Williams & Wilkins.
Ranstam, J., Cook, J., 2018. LASSO regression. J. Br. Surg. 105 (10), 1348.
Ravalier, J.M., McVicar, A., Boichat, C., 2020. Work stress in NHS employees: a mixed-methods study. Int. J. Environ. Res. Public Health 17 (18), 6464.
Ruggiero, J.S., 2005. Health, work variables, and job satisfaction among nurses. JONA 35 (5), 254–263.
Sathiya, N., Ruwaidha, R., Nusrath, F.S., Fathima, F., Gomathy, T., Shailendra, H.K., 2016. Perceived stress levels and its sources among doctors and nurses working in a tertiary care teaching hospital, Kancheepuram, Tamil Nadu. Natl. J. Community Med. 7 (7), 603–608.
Schoenly, L., 2015. Research priorities in correctional nursing practice: results of a three-round Delphi study. J. Correct. Health Care 21 (4), 400–407.
Shader, K., Broome, M.E., Broome, C.D., West, M.E., Nash, M., 2001. Factors influencing satisfaction and anticipated turnover for nurses in an academic medical center. JONA 31 (4).
Shelton, D., Weiskopf, C., Nicholson, M., 2010. Correctional nursing competency development in the Connecticut correctional managed health care program. J. Correct. Health Care 16 (4), 299–309.
Shelton, D., Barta, B., Reagan, L., 2018. Correctional nurse competency and quality care outcomes. J. Evid. Based Pract. Correct. Health 2 (1), 3.
Shelton, D., Maruca, A.T., Wright, R., 2020. Nursing in the American justice system. Arch. Psychiatr. Nurs. 34 (5), 304–309. https://doi.org/10.1016/j.apnu.2020.07.019 (Oct).
Shreffler, J., Huecker, M.R., 2020. Type I and Type II Errors and Statistical Power.
Smith, T.D., McMillan, B.F., 2001. A Primer of Model Fit Indices in Structural Equation Modeling.
State of New Hampshire Employee Assistance Program, d. Perceived stress scale. https://www.das.nh.gov/wellness/docs/percieved%20stress%20scale.pdf.

Suliman, M., Aljezawi, M., 2018. Nurses' work environment: indicators of satisfaction. J. Nurs. Manag. 26 (5), 525–530.
Tomarken, A.J., Waller, N.G., 2005. Structural equation modeling: strengths, limitations, and misconceptions. Annu. Rev. Clin. Psychol. 1, 31.
Tran, K.T., Nguyen, P.V., Dang, T.T.U., Ton, T.N.B., 2018. The impacts of the high-quality workplace relationships on job performance: a perspective on staff nurses in Vietnam. Behav. Sci. (Basel) 8 (12). https://doi.org/10.3390/bs8120109 (Nov 23).
U.S. Department of Health and Human Services OotUSSG, d. The U.S. Surgeon General's framework for workplace mental health & well-being. Current Priorities of the U.S. Surgeon General. https://www.hhs.gov/surgeongeneral/priorities/workplace-well-being/index.html.
United States Census Bureau. Terms and Definitions. n.d.
Van der Heijden, B., Brown Mahoney, C., Xu, Y., 2019. Impact of job demands and resources on nurses' burnout and occupational turnover intention towards an age-moderated mediation model for the nursing profession. Int. J. Environ. Res. Public Health 16 (11), 2011.
Warr, P.B., 1990. Decision latitude, job demands, and employee well-being. Work Stress. 4 (4), 285–294.
Waters, J.E., 1999. The impact of work resources on job stress among correctional treatment staff. J. Addict. Offender Couns. 20 (1), 26–34.
Weiskopf, C.S., 2005. Nurses' experience of caring for inmate patients. J. Adv. Nurs. 49 (4), 336–343. https://doi.org/10.1111/j.1365-2648.2004.03297.x (2005/02/01).
Williams, T., Heavey, E., 2014. How to meet the challenges of correctional nursing. Nursing. 44 (1), 51–54. https://doi.org/10.1097/01.Nurse.0000438716.50840.04 (Jan).
Wong, D., Leung, S., So, C., Lam, D., 2001. Mental health of Chinese nurses in Hong Kong: the roles of nursing stresses and coping strategies. Online J. Issues Nurs. 5 (2), 1–22.
Wu, H., Chi, T.S., Chen, L., Wang, L., Jin, Y.P., 2010. Occupational stress among hospital nurses: cross-sectional survey. J. Adv. Nurs. 66 (3), 627–634.
Xanthopoulou, D., Bakker, A.B., Demerouti, E., Schaufeli, W.B., 2007. The role of personal resources in the job demands–resources model. Int. J. Stress. Manag. 14, 121–141. https://doi.org/10.1037/1072-5245.14.2.121.