Risky Business: A Mediated Model of Antecedents and Consequences of Presenteeism in Nursing

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Background: Nurses are a high-risk group for presenteeism: When one is present at work but not fully engaged. Presenteeism can occur because of multiple work, personal, and event factors and is linked to negative nurse, patient, and organizational outcomes. A model that accounts for the multiple antecedents that lead to presenteeism, as well as its consequences, is needed.

Objective: The aim of this study was to evaluate our proposed presenteeism in nursing model among registered nurses in the United States by examining the fit of the data with the model.

Methods: Four hundred forty-seven registered nurses who provide direct patient care completed a cross-sectional survey on presenteeism, its antecedents and consequences, and demographics. Structural equation modeling was used to test relationships in the proposed model and overall model fit.

Results: The presenteeism in nursing model holistically accounted for significant presenteeism antecedents and consequences. There were significant relationships between work environment, perceived stress and work–life balance, and presenteeism. There were also significant relationships between presenteeism and missed care, and burnout.

Discussion: These relationships align with prior research and identify antecedents and consequences of presenteeism. This model can be used by practitioners and researchers to develop interventions addressing presenteeism to improve health system, nurse, and patient outcomes.

Key Words: nurses • patient safety • presenteeism • retaining nurses • work environment

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Improving patient outcomes is a priority for healthcare practitioners, organizations, and governments worldwide (World Health Organization, 2019). Although nurses are well positioned to improve patient and cost outcomes (Salmond & Echevarria, 2017), they report widespread fatigue, burnout, and dissatisfaction (Barker & Nussbaum, 2011; Poghosyan et al., 2010). Increased levels of fatigue and burnout result in decreased job performance of health professionals, negatively affecting patient outcomes and healthcare quality. Therefore, a fourth addition to the "triple aim" has been proposed: improving the work–life of healthcare providers to positively affect their ability to affect patient outcomes and healthcare costs (Berwick et al., 2008; Bodenheimer & Sinsky, 2014). Reducing presenteeism is a way to improve work environments, nurse effectiveness, and patient outcomes.

Presenteeism is when a person is physically at work but not fully engaged or functioning; it is inclusive of multiple factors that can affect a nurses' ability to affect patient outcomes and healthcare costs (Rainbow & Steege, 2017). Antecedents to presenteeism include acute or chronic illness, work environment factors, personal factors, or a combination of these (Johns, 2010; Rainbow & Steege, 2017). Presenteeism is thought to be more prevalent than absenteeism—common among healthcare workers—and expensive (Rantanen & Tuominen, 2011). The prevalence of presenteeism in nursing is higher than other work sectors (Aronsson et al., 2000; Rainbow et al., 2019). Moreover, presenteeism in nurses is associated with multiple negative consequences for patient care, such as missed care, patient falls, medication errors, spread of infectious illnesses to patients, and decreased likelihood to report patient errors (Cassie, 2014; Letvak et al., 2012; Rainbow et al., 2020; Widera et al., 2010). Addressing presenteeism and its multiple antecedents may positively affect patient care and provider health and well-being. However, a holistic conceptual framework or model that considers multiple antecedents and consequences of presenteeism is needed.

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The purpose of this study was to evaluate a model for presenteeism in nursing by examining the model's interrelationships and the fit of the data to the model.

THEORETICAL FRAMEWORK

Organizational behavior and occupational health scholars have studied presenteeism prevalence, risk factors, and consequences, and models of presenteeism have been proposed (Aronsson & Gustafsson, 2005; McGregor et al., 2014; Winona Pit & Hansen, 2016). However, no model is specific for presenteeism in nurses. Pragmatic adaptation of preexisting models for use in nursing can capitalize on existing research while incorporating what is known about presenteeism in the nursing context. We adapted Johns' (2010) dynamic model of presenteeism and absenteeism (DMPA) model to create our *presenteeism in nursing model* (PNM). The DMPA (Johns, 2010) takes into account health events, work context factors, and personal context factors and their relationship to presenteeism and absenteeism. The DMPA was originally developed as a part of a conceptualization and agenda for organizational management scholars on presenteeism. This makes the DMPA well suited for adaptation for nursing; all DMPA factors were identified as antecedents of presenteeism in a concept analysis of presenteeism in nursing (Rainbow & Steege, 2017).

The PNM, illustrated in Figure 1, based on the DMPA, is specific to the nursing context. One major difference between the two models is that, although the DMPA considers both absenteeism *and* presenteeism, the PNM focuses only on presenteeism. Our decision to exclude absenteeism was primarily to give the PNM a clear focus without overcomplication. Other considerations were that presenteeism is estimated to be three times as costly as absenteeism (Hemp, 2004) and that nurses have lower rates of absenteeism because of health conditions than other professions (U.S. Department of Labor Bureau of Labor Statistics, 2016).

One important feature of the PNM is that it measures the potential for interaction between antecedents to reflect the multifaceted demands in the nurse work environment (Rainbow & Steege, 2017). Nurses may have more than one antecedent affecting their presenteeism; these antecedents may be additive. For example, nurses may feel the need to attend work even when sick if their unit lacks adequate staffing. In making the decision to attend work, nurses consider their health, the work environment of the unit, and their commitment to their patients and coworkers (Rainbow, 2019).

Another feature of the PNM is that it is adaptable to different work context antecedents, personal context antecedents, health, and consequences. This adaptability allows researchers to operationalize the model using different variables included in the model (e.g., a specific health problem or work context factor such as staffing) as needed based on the focus of their research and the needs of the field. The PNM also posits presenteeism as a mediator between antecedents and consequences. However, most of the relationships in the model between antecedents and consequences are partially mediated because controlling for a third variable (e.g., presenteeism) does not result in *no* relationship between antecedents and consequences (Gogineni et al., 1995).

For this evaluation of the relationships with the PNM and fit of the data to the model, we chose to use the holistic definition and measurement of presenteeism, inclusive of both job stress and sickness presenteeism. We also examined antecedents and consequences identified in a concept analysis, including the antecedents of work–life imbalance, a stressful work environment, poor health, and nursing professional identity, and the consequences of decreased patient care quality, increased healthcare costs, and negative nurse health and well-being (Rainbow & Steege, 2017). These identified antecedents and consequences fit the components leading to presenteeism and its consequences in both the DMPA and the PNM.

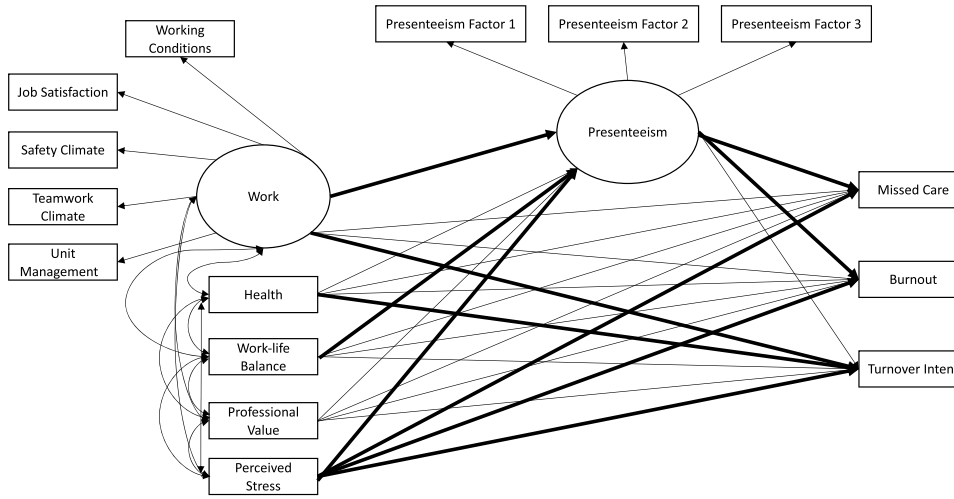

FIGURE 1. The presenteeism in nursing model with significant relationships bolded.

METHODS

Study Design and Setting

A cross-sectional design was used to examine the relationships between the antecedents and consequences of presenteeism.

Study Sample

A nationwide sample of nurses who met inclusion criteria (i.e., registered nurse, work on inpatient hospital units, and provide direct patient care) were recruited to take part in the online survey. Based on the 13 measured variables in the model, the sample size requirements for structural equation modeling (SEM) suggested a ratio of 20:1 (Kline, 2015) participants per parameter, so we sought to recruit a sample size of 260.

Procedures

This study was reviewed and deemed exempt by the University of Wisconsin–Madison Institutional Review Board. Participants were recruited through listservs of nine state nursing associations across all regions of the United States, three hospital organizations (one academic medical center in the West and two in the Midwest), advertisements in *American Nurse Today*, and postings to nursing-related social media groups and hashtags on Facebook and Twitter. Participants were recruited between August 2017 and February 2018. Raffles for e-gift cards were used as incentives for participant recruitment. Only participants who responded in the affirmative to all three inclusion criteria were provided with a disclosure form, and if they selected "agree to participate," they were directed to the survey. The survey included 13 scales, demographic items, and three free-response items. The median length of time to complete the survey was 33 minutes. The analysis of the PNM model used 10 variables measured by scales and subscales described below and shown in Figure 1.

Measures

Nurse Characteristics Participants were asked their age, education, and gender. Participants were also asked about hours worked per week and years of experience as a registered nurse.

Presenteeism Measures Presenteeism, a latent concept, was measured using the five presenteeism measures psychometrically tested and described by Rainbow et al. (2019). The five measures were chosen to provide a holistic approach to measuring presenteeism based on the different facets of presenteeism measured (e.g., illness or job stress), approaches to measure presenteeism (e.g., measuring the consequences of or signs of presenteeism), and use in nursing. Of those instruments, the psychometrics of three were considered satisfactory and were used in the analysis: the Healthcare Productivity Survey (HPS), the Job-Stress-Related Presenteeism Scale (JSRPS), and the Nurses Work Functioning Questionnaire (NWFQ).

The HPS measures the extent to which workplace violence and trauma affect healthcare providers' ability to do their jobs (Gillespie et al., 2010). This scale seeks to measure the change in work productivity following a stressful work event, specifically a trauma or workplace trauma event (Gillespie et al., 2010). We did not include a measure of workplace trauma in the survey but did include a stress measure as an antecedent. The HPS has 29 items and uses a 5-point Likert scale ranging from −2 (decreased productivity) to +2 (increased productivity). A total score is tallied; a score less than 0 indicates that an employee needs to take time away because their work may be affected. The Cronbach's alpha across all subscales for this sample was .92.

The JSRPS measures the extent to which employees' cognitive energy is diverted from work because of job stress (Gilbreath & Karimi, 2012). The scale consists of six items and uses a 5-point Likert scale, with responses ranging from 0 (*never*) to 4 (*all the time*). A mean total score is calculated, with a higher score indicating more presenteeism. The Cronbach's alpha for this sample was .86.

The NWFQ was developed to assess impaired work functioning in nurses and allied health professionals because of health conditions (Gärtner et al., 2011). It has 50 items with seven subscales: cognitive aspects of task execution and general incidents, impaired decision-making, causing incidents at work, avoidance behavior, conflicts and irritations with colleagues, impaired contact with patients and their family, and lack of energy and motivation. Standardized sum scores are calculated for each subscale, ranging from 0 to 100. Higher scores indicate impaired work functioning, equated to presenteeism conditions (Gärtner et al., 2011). The Cronbach's alpha in our sample across all subscales was .91.

Presenteeism Antecedent Measures Work environment was assessed using the Safety Attitudes Questionnaire (SAQ), which was designed to measure the perceptions of teamwork, job satisfaction, management, safety climate, working conditions, and recognition of stress effects on the clinical team (Sexton et al., 2006). The scale has 36 items and uses a 5-point Likert response scale, ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). In this analysis, we included teamwork climate, safety climate, job satisfaction, perceptions of unit management, and working conditions. The SAQ has been used in over 500 healthcare institutions and in a benchmarking study promoted by the Agency for Healthcare Research and Quality (Sexton et al., 2006). The percentage of positive responses for each subscale is calculated and converted to a 100-point scale. A higher score indicates that the respondent perceives a safer work climate. The Cronbach's alpha across the subscales included in our sample was .83.

We also assessed perceptions of balance between work and personal lives using the work–life balance measure (Brough et al., 2014). The measure is composed of four items with

response options, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A mean score is calculated; higher mean scores signify better work–life balance. The Cronbach's alpha in our sample was .93.

The Perceived Stress Scale measured perceived stress (Cohen et al., 1983). The 10-item version of the Perceived Stress Scale was used as it has been shown to have superior psychometrics (Lee, 2012). Response options range from 0 (*never*) to 4 (*very often*), and a total score is calculated. Total scores range from 0 to 40, with a higher score indicating higher perceived stress. The Cronbach's alpha in our sample was .87.

The Nurses Professional Values Scale–Revised (NPVS-R) was used to measure professional self-identity (Weis & Schank, 2009). The NPVS-R has 26 items, and response options range from 1 (*not important*) to 5 (*most important*). Total scores range from 26 to 130, with higher scores indicating stronger nurse professional value orientation. The Cronbach's alpha in our sample was .93.

A self-rated health question was used to measure health (Lorig et al., 1996). This one question asks, "In general, would you say your health is…" and gives respondents a 5-point Likert scale, ranging from 1 (*excellent*) to 5 (*poor*). This question is reliable and has been used in multiple studies (Schoenfeld et al., 1994).

Presenteeism Consequences Measures Turnover intent was measured using a single item (Hinshaw & Atwood, 1983). The item stated, "Do you plan to leave this facility within the next year?" The item was scored on a 1 (*not at all*) to 7 (*I surely do*) Likert-type scale. This intent item has been used in prior studies of nurses (Beecroft et al., 2008).

The Professional Quality of Life Scale is a 30-item scale with three subscales: compassion satisfaction, burnout, and secondary traumatic stress (Stamm, 2005). The response scale ranges from 1 (*never*) to 5 (*very often*). Subscale scores range from 5 to 50. Because of the link between nurse burnout and mental health (Khamisa et al., 2015), we used the burnout subscale as a variable. Higher scores indicate higher risk for burnout. The burnout subscale used in this analysis had a Cronbach's alpha of .76.

The MissCare Survey Part A was used to assess the frequency of missed nursing care (Kalisch & Williams, 2009). The 22-item scale asks how frequently nursing care tasks are missed on a scale of 1 (*never missed*) to 5 (*always missed*). A total mean score is then calculated, with higher scores indicating more missed tasks. The Cronbach's alpha on this survey was .85.

Data Analysis

All survey items were analyzed for missing completely at random using Little's (1988) test. Each scale was scored based on published guidelines, and the distribution of scores for each scale was assessed. Based on these results, we felt confident imputing all our survey items, except for MissCare Items 16 and 17, which were excluded from this analysis as a result. Items were imputed using the multiple imputation by chained equations command in Stata (StataCorp, 2017) using the steps outlined by UCLA: Statistcial Consulting Group (n.d.): creating 10 data sets, running imputation diagnostics, and pooling the data sets. After imputation, scales were rescored following published guidelines. The direction of the HPS was reversed to align with the directionality of other presenteeism scales in the study for ease of interpretation. Therefore, for all three presenteeism measures, higher scores were interpretable as decreased performance at work, presenteeism. Descriptive statistics of the scale scores were compared to preimputation distributions, and confirmatory factor analysis (CFA) of each scale was completed using Stata (StataCorp, 2017; see Table 1 for a descriptive of each scale).

For SEM, we created a latent variable for work using five SAQ subscales (teamwork climate, safety climate, job satisfaction, perceptions of unit management, and working conditions) and a congeneric measurement model for the latent variable, presenteeism, using the three presenteeism measures. A congeneric measurement model of presenteeism was created based on the subscale level for use in our structural model (see Figure 1). We chose to use subscales rather than individual items so that the level of measurement across the presenteeism measures could be the same. Congeneric measurement models are the least restrictive and allow for the use of different scales, degrees of precision, and error across items (Graham, 2006). CFA was used to assess and finalize the latent variables.

SEM using maximum likelihood estimation was conducted in Stata (StataCorp, 2017). Model fit was assessed using comparative fit index (CFI; .95 or higher), root mean square error of approximation (RMSEA) and standardized root-mean-square residual (SRMR; less than 0.08; Kenny et al., 2014). Different models were compared using Akaike information criterion (AIC) and Bayesian information criteria (BIC). Mediation was tested using the procedure described by Baron and Kenny (1986) to test the hypothesis that presenteeism was a mediator between the antecedents and consequences in the proposed model. One of the limitations of this study and the model is that we know there are variables beyond those measured that influence the consequences variables in this model. Therefore, we sought to explore if presenteeism partially, completely, or not at all mediated the relationships proposed in our literature-based PNM rather than the degree of mediation.

RESULTS

Participant Characteristics

We had 829 clicks on our survey link; 590 interested individuals met the inclusion criteria, and 447 participated. Our sample came from 40 states, and 51 reported having a bachelor's

TABLE 1. Description of Sample and PNM Variables

Construct	Variable	Minimum–maximum	Mean (*SD*)
Demographics of sample			
Sample characteristics	Hours worked weekly	0–72	34.0 (8.7)
	Age	20–70	37.7 (12.7)
	Years of experience as nurse	1–48	11.3 (10.1)
Descriptives of PNM variables			
Personal context factors	Perceived stress	1–36	15.7 (6.7)
	Work–life balance[a]	1–5	3.3 (1.1)
	Nurses' professional value	52–130	101.3 (13.8)
Health	Health	1–5	2.3 (0.8)
Work context factors	Work environment (SAQ total score)	8.3–100	72.7 (20.2)
Presenteeism	Nurses Work Functioning Questionnaire		
	-Cognitive aspects of task execution and general incidents	0–89.3	19.1 (15.9)
	-Impaired decision making	0–100	17.4 (25.1)
	-Causing incidents at work	0–62.5	7.6 (9.1)
	-Avoidance behavior	0–87.5	18.6 (16.8)
	-Conflicts and irritations with colleagues	0–92.9	22.1 (19.1)
	-Impaired contact with patients and their family	0–79.2	16.9 (14.8)
	-Lack of energy and motivation	0–100	23.3 (20.8)
	Job Stress-Related Presenteeism[a]	0–3.3	1.1 (0.6)
	Healthcare Productivity Survey	–56 to 53	–15.1 (15.0)
Consequences	Burnout	10–46	22.1 (5.9)
	Turnover intent	1–7	2.7 (2.2)
	Missed care[a]	2.0–3.9	2.8 (0.4)

Note: PMN = presenteeism in nursing model; SAQ = Safety Attitudes Questionnaire.
[a]Total score of scale comes from a mean score.

degree. Those who provided race and gender identity were mostly White (92%) and female (94%). Participants worked on various hospital units, with 29% of respondents reporting working on more than one-unit type. Most participants worked in large (400+ beds) hospitals (40%) and on day shift (44%); 39% reported working overtime in the last month. A description of the sample and variables can be found in Table 1.

Latent Variable Analysis

To build the work latent variable, we used CFA with the different subscales. The lowest AIC and BIC were attained when using the teamwork climate, safety climate, job satisfaction, perceptions of unit management, and working conditions subscales. The fit measures were AIC = 13157.8, BIC = 13219.3, CFI = .98, SRMR = 0.03, and Tucker–Lewis index = .95.

Our factor analysis of the JSRPS and HPS and the NWFQ subscales identified three factors of presenteeism. All factors that loaded below .7 were removed. Presenteeism Factor 1 (behavior and relationships at work) included items that assessed avoidance behavior at work and interactions with coworkers. This factor included the NWFQ avoidance behavior (factor loading = .73) and NWFQ conflicts and irritations with colleagues (factor loading = .73). Presenteeism Factor 2 (role to workplace violence) included the four subscales of the HPS (factor loadings A = .75, B = .80, C = .79, D = .80), which assess presenteeism because of workplace violence. All the subscales included in this factor ask participants to think back on a workplace violence incident and respond about how that affected performance at work (Gillespie et al., 2010). Presenteeism Factor 3 (consequences at work) assesses presenteeism by asking about consequences in work performance that could be signs of presenteeism. This factor included the NWFQ subscales for cognitive aspects of task execution (factor loading = .70) and NWFQ impaired contact with patients and their families (factor loading = .71). All three presenteeism factors had high internal consistency: (a) behavior and relationships at work (Cronbach's α = .89, interitem correlation = .82), (b) role of workplace violence (Cronbach's α = .87, interitem correlation = .66), and (c) consequences at work (Cronbach's α = .83, interitem correlation = .70).

SEM Findings

For each single subscale variable (e.g., burnout), a mean across all scale items was calculated for use in the model alongside the

latent variables that were created and used for presenteeism and work. Model fit was CFI = .92, SRMR = 0.05, RMSEA = 0.075, BIC = 32631.41, and AIC = 32340.13. Significant relationships in the model included the following (see Table 2 for all relationships):

- Missed care was related to presenteeism and perceived stress. Directionality suggests that higher presenteeism was linked to increased missed care whereas lower perceived stress was associated with less missed care.
- Burnout was related to perceived stress and presenteeism. Directionality of the relationship suggests that higher presenteeism and perceived stress were both linked to increased burnout.
- Turnover intent was related to perceived stress, health, and work. Directionality of the relationships suggests that lower perceived stress was linked to lower turnover intention whereas better health and positive work environment were both linked to increased turnover intention.
- Higher perceived stress, less work–life balance, and a positive work environment are related to presenteeism.

In addition to the PNM, additional models were tested through mediation testing.

Mediation Testing Model Findings

In assessing whether presenteeism was a mediator between the antecedents and consequences, we found that presenteeism did affect the strength of the relationships between perceived stress and missed care and the relationships between work–life balance, work environment, and perceived stress and burnout, but it was not a complete mediator (see Table 3 for mediation testing output by step). In the first step of mediation testing of the antecedents to presenteeism, presenteeism was related to both higher perceived stress and negative work environment. In the second step, presenteeism was positively related to missed care, burnout, and turnover intent. The third step that tested the model without presenteeism showed relationships between work and perceived stress with each of the consequence variables and a relationship between health and turnover intent. In comparing the model without presenteeism with the PNM (Step 4 of mediation testing) to the prior steps, we found that when presenteeism was added to the model,

- the direct effect between work and missed care, and work and burnout were no longer significant, and the direction of the

TABLE 2. Presenteeism in Nursing Model Relationship Estimates

Relationship	Standardized coefficient	*SE*	Z	*p*	95% Confidence interval
Presenteeism measurement model and antecedents variables to consequences variables relationship coefficients					
Presenteeism → Missed care	0.53	0.10	5.43	<.05	[0.34, 0.73]
Health → Missed care	–0.07	0.05	–1.53	.17	[–0.16, 0.02]
Nurses' professional value → Missed care	0.02	0.04	0.62	.54	[–0.06, 0.12]
Work–life balance → Missed care	0.04	0.05	0.68	.50	[–0.07, 0.14]
Work → Missed care	0.14	0.08	1.74	.08	[–0.02, 0.31]
Perceived stress → Missed care	–0.29	0.06	–5.00	<.05	[–0.41, –0.18]
Presenteeism → Burnout	0.67	0.09	7.23	<.05	[0.49, 0.85]
Health → Burnout	0.05	0.04	1.20	.23	[–0.03, 0.13]
Nurses' professional value → Burnout	–0.04	0.04	–1.02	.31	[–0.12, 0.04]
Work–life balance → Burnout	–0.01	0.04	–0.16	.87	[–0.09, 0.08]
Work → Burnout	–0.08	0.08	–0.93	.35	[–0.23, 0.08]
Perceived stress → Burnout	0.17	0.05	3.18	<.05	[0.06, 0.27]
Presenteeism → Turnover intent	0.16	0.10	1.63	.10	[–0.03, 0.34]
Health → Turnover intent	0.09	0.05	2.10	<.05	[0.07, 0.18]
Nurses' professional value → Turnover intent	0.04	0.04	0.98	.33	[–0.04, 0.13]
Work–life balance → Turnover intent	–0.00	0.05	–0.05	.96	[–0.10, 0.09]
Work → Turnover intent	0.38	0.07	4.97	<.05	[0.23, 0.53]
Perceived stress → Turnover intent	–0.15	0.06	–2.61	.01	[–0.26, –0.04]
Antecedent variables to presenteeism measurement model relationship coefficients					
Perceived stress → Presenteeism	0.31	0.05	6.30	<.05	[0.22, 0.41]
Nurses' professional value → Presenteeism	–0.05	0.05	–1.05	.29	[–0.14, 0.04]
Work–life balance → Presenteeism	–0.11	0.05	–2.18	.03	[–0.21, –0.01]
Work → Presenteeism	0.52	0.06	9.42	<.05	[0.42, 0.63]
Health → Presenteeism	0.06	0.05	1.22	.22	[–0.03, 0.15]

Note. Work indicates work environment as measured by the Safety Attitudes Questionnaire.

TABLE 3. Estimates From Each Step of the Mediation Testing

Relationship	Standardized coefficient	*SE*	*Z*	*p*	95% Confidence interval
Mediation Testing Step 1: Antecedents variables to presenteeism measurement model					
Perceived stress → Presenteeism	0.31	0.05	6.30	<.05	[0.22, 0.41]
Nurses' professional value → Presenteeism	−0.05	0.05	−1.20	.23	[−0.14, 0.03]
Work–life balance → Presenteeism	−0.09	0.05	−1.74	.08	[−0.19, 0.01]
Work → Presenteeism	−0.56	0.05	−10.62	<.05	[−0.66, −0.46]
Health → Presenteeism	0.06	0.05	1.2	.23	[−0.03, 0.15]
Mediation Testing Step 2: Presenteeism measurement model to consequences variables					
Presenteeism → Missed care	0.42	0.05	9.21	<.05	[0.33, 0.51]
Presenteeism → Burnout	0.72	0.033	22.00	<.05	[0.65, 0.78]
Presenteeism → Turnover intent	0.35	0.05	7.33	<.05	[0.26, 0.44]
Mediation Testing Step 3: Antecedents variables to consequences variables (model without presenteeism)					
Health → Missed care	−0.04	0.05	−0.92	.36	[−0.13, 0.05]
Nurses' professional value → Missed care	0.00	0.04	0.09	.93	[−0.08, 0.09]
Work–life balance → Missed care	−0.02	0.05	−0.41	.68	[−0.12, 0.08]
Work → Missed care	0.44	0.05	8.45	<.05	[0.34, 0.54]
Perceived Stress → Missed care	−0.13	0.05	−2.59	<.01	[−0.23, −0.03]
Health → Burnout	0.05	0.04	1.20	.23	[−0.03, 0.13]
Nurses' professional value → Burnout	−0.04	0.04	−1.02	.31	[−0.12, 0.04]
Work–life balance → Burnout	−0.08	0.04	−1.86	.06	[−0.16, 0.00]
Work → Burnout	0.30	0.05	6.53	<.05	[0.21, 0.39]
Perceived stress → Burnout	0.37	0.04	9.29	<.05	[0.29, 0.45]
Health → Turnover intent	0.10	0.04	2.30	<.05	[0.02, 0.19]
Nurses' professional value → Turnover intent	0.04	0.04	0.82	.41	[−0.05, 0.12]
Work–life balance → Turnover intent	−0.02	0.05	−0.39	.70	[−0.11, 0.07]
Work → Turnover intent	0.47	0.05	9.30	<.05	[0.37, 0.57]
Perceived stress → Turnover intent	−0.10	0.05	−2.00	<.05	[−0.19, −0.00]

Note: Work indicates work environment as measured by the Safety Attitudes Questionnaire.

relationship between work and burnout changed from positive to negative;
- the indirect effect between work–life balance to presenteeism was now significant; and
- the relationship between presenteeism and turnover intent was no longer significant.

DISCUSSION

We conceptualized presenteeism as presence at work when not fully engaged and/or performing. This conceptualization was broader than previous conceptualization of presenteeism due specifically to work stress or sickness (Aronsson et al., 2000; Gilbreath & Karimi, 2012). We identified a three-factor measurement model of presenteeism for this conceptualization. Our study was the first to consider nurse presenteeism across multiple measures and focus on antecedents and consequences spanning the personal and work realms in a U.S. nursing sample and to propose and test a theoretical model for nurse presenteeism.

We found significant relationships between work environment, perceived stress, and work–life balance and presenteeism. Consistent with prior research, stress and presenteeism were positively related in this study (Jordan et al., 2016; Martinez & Ferreira, 2012). The relationship between stress and presenteeism among nurses highlights the importance of addressing stress.

Our finding that work–life balance was negatively related to presenteeism aligns with prior research that identified a relationship between work–life imbalance and presenteeism in the hospitality industry (Cullen & McLaughlin, 2006). We posit that individuals who have good work–life balance can be fully present in both their work and lives outside work, leading to less presenteeism. These findings highlight the potential of addressing work–life imbalance to reduce presenteeism. Researchers have found improving work–life balance improves employee performance and engagement at work (Khatri & Behl, 2013). Furthermore, work environment, stress, and work–life balance are all related and can contribute to each other. If a nurse works in a negative work environment, both the stress levels and work–life balance may be affected. One of the strengths of the PNM is that it accounts for how the different presenteeism antecedents are related to each other and to other constructs in the model.

Mediation testing revealed that the direct effects between work and burnout and missed care were both no longer significant when presenteeism was added to the model. However, the indirect effects between work and presenteeism, and presenteeism and missed care, and burnout were significant. Presenteeism influences the relationship between the work environment, and burnout and missed care, which means that the role of the work environment on levels of provider burnout and missed care needs to be further explored in a longitudinal study. Our findings on the relationships between presenteeism and missed patient care align with prior findings (Cassie, 2014; Dhaini et al., 2017). We hypothesize that nurses who are present may focus on tasks that are evaluated regularly, like medication administration times and charting. This may hide their presenteeism and prevent disciplinary action from their employer. Alternatively, when mentally distracted by coping with stress and resisting presenteeism, they may forget to perform less salient tasks. In either case, this can leave important nursing care not done. Missed patient care is an indicator of overall quality and safety (Ball et al., 2014). Nurse burnout, specifically exhaustion, and presenteeism have cyclic relationships in longitudinal studies, with nurses who have higher presenteeism having higher burnout and then higher presenteeism at subsequent time points (Demerouti et al., 2009). The relationship between burnout and presenteeism longitudinally needs to be explored further. Finally, the relationship between presenteeism and turnover intention also needs to be further explored. The significance of the relationship during mediation testing indicates that the relationship between presenteeism and additional factors that have been linked to turnover intention, like availability of other jobs and job security, should be studied.

We did not identify relationships between health or nurses' professional value and presenteeism. A relationship between health and presenteeism has been described by multiple researchers inside and outside nursing (Letvak et al., 2012; Stacy et al., 2012). It is possible that a more extensive health scale would have been superior to the one-item predictor that we used. Other researchers often consider a specific illness and its effect on presenteeism (e.g., back pain or depression; Letvak et al., 2012). In this study, we wanted to assess overall health rather than any specific health condition. Future work should look at more advanced measures of health in relation to a broad conceptualization of presenteeism.

Prior research has identified high professional identity as crucial to the nursing profession (Moyo et al., 2016; Weis & Schank, 2009). It is possible that there is a threshold of professional value that counteracts presenteeism behaviors, but other factors may lead to presenteeism. For example, nurses who have very high professional value may be aware of their limits and respond accordingly, whereas other nurses who view their primary identity as a helper may be at risk for presenteeism (or the reverse may be true). It is also possible that a different measure of nurse professional value may provide better insight into the extent to which nurses view their role as helpers. Although the NPVS-R was developed for use in nursing and has been used multiple times in studies of nursing (Fowler, 2013; Yarbrough et al., 2017), a study of measures of nurse professional identity found poor psychometric properties for the NPVS-R (Cowin et al., 2013). Future work should explore other measures of professional value for use in this population. It would also be helpful to conduct qualitative research to enrich our understanding of how nurses' professional values affect their job performances and psychological states.

Implications

Presenteeism's relationship to perceived stress, work–life balance and work environment, and missed care and burnout suggest that interventions to reduce stress and improve the work environment and work–life balance could decrease missed care and burnout among nurses. In nursing, where the work is physical, emotional, and mental, the separation is often difficult to define and measure (Kim & Windsor, 2015). This means that interventions to address presenteeism will need to span both work and personal context antecedents. Work interventions will need to overcome multiple factors in the nurse work system. Human factors interventions that focus on the entire healthcare system are well suited to address these multiple factors in the healthcare work system (Carayon et al., 2014). Personal interventions will need to be developed to address the salient presenteeism antecedents for individuals. For example, a nurse who has poor work–life balance may need a different intervention than a nurse who has a negative work environment. These personalized interventions can be tailored to be effective.

Limitations

The limitations of this study are common to cross-sectional survey studies. We used retrospective self-report measures for all variables. The issues with retrospective self-report measurement tools include participant memory recall and response bias issues (Banaji & Hardin, 1994). As a latent variable, presenteeism is difficult to measure and is often measured through various measures and approaches. Because of this, it is important to examine the different variables in the model, including presenteeism, through a combination of objective and subjective data. For example, the consequences of presenteeism could be measured through patient outcomes data and input from patients, as well as actual turnover. We also tested the hypothesis that presenteeism may mediate the other relationships in the PNM. Mediation findings in cross-sectional data are tentative and should be followed with longitudinal studies that can examine causal relationships.

Conclusion

Presenteeism in nursing is related to multiple antecedents spanning the work environment and the individual nurse. This

is the first study to examine presenteeism as occurring because of multiple antecedents and across multiple measures within the U.S. nursing population. The PNM considers personal, health, and work factor antecedents that can lead to presenteeism and tests the role of presenteeism as a mediator between these antecedents and multiple consequences. Presenteeism is a growing body of research, especially in nursing. However, the prevalence of presenteeism, its antecedents, and its consequences found in this study revealed the importance of addressing presenteeism for nurses, patients, and healthcare organizations. Future work to address presenteeism can target the multiple antecedents of presenteeism studied in this model. These interventions to address presenteeism may improve other nurse work issues, such as turnover and quality of life.

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