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*Running Head:* Nurses' Burnout

## The Effects of Job Demands on Nurses' Burnout and Presenteeism through Sleep Quality and Relaxation

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### Abstract

*Aims and objectives:* The main aim of this study was to investigate the indirect effects of emotional dissonance and workload on presenteeism and emotional exhaustion through sleep quality and relaxation.

*Background:* Numerous investigations have found that job demands are related to employees' health and behaviors, but additional studies are needed among nurse samples. Specifically, little is known about the relationships between nurses' emotional dissonance and workload on one hand, and presenteeism and emotional exhaustion on the other hand. Moreover, research is needed to further explore the psychological mechanisms underlying these relationships.

*Design:* We used a cross-sectional design. Our study was carried out between October 2015 and February 2016. Precisely, we asked nurses from various French healthcare centers to fill out a questionnaire survey. We ensured to meticulously follow the STROBE guidelines for cross-sectional research in designing and reporting this study.

*Method:* An empirical study with a sample of 378 nurses was conducted.

*Results:* In line with our hypotheses, our findings revealed that emotional dissonance and workload were negatively linked to sleep quality and relaxation, which were, in turn, related to lower levels of presenteeism and emotional exhaustion. Workload and emotional dissonance were also directly and positively related to emotional exhaustion, while emotional dissonance was associated with higher levels of presenteeism. Finally, the indirect effects of emotional dissonance and workload on emotional exhaustion through sleep quality as well as the indirect effects of emotional dissonance on emotional exhaustion through relaxation were significant and positive.

*Conclusions:* Overall, our results provide insight into the effects of emotional dissonance and workload on presenteeism and emotional exhaustion through recovery processes.

*Relevance to clinical practice:* The present findings have some practical implications for reducing nurses' emotional exhaustion and presenteeism. Specifically, managers and organizations should try to design and craft jobs to decrease the presence of negative work characteristics (i.e., workload and emotional dissonance). Our results also suggest that recovery processes may be important factors to focus on.

*Keywords:* Job demands; recovery; nurses; burnout; presenteeism

## Introduction

Stressful psychosocial work characteristics have negative effects on nurses' behaviors, attitudes, and psychological health (Dhaini et al., 2016). Indeed, past research consensually showed that highly demanding work environments were associated with higher emotional exhaustion (Rizo-Baeza et al., 2018) and presenteeism (Miraglia & Johns, 2016). Yet, nurses' presenteeism (attending work while ill) is an important issue to consider as it had deleterious effects on subsequent mental and physical health (Miraglia & Johns, 2016). Moreover, prior studies found that nurses can severely suffer from burnout (Rizo-Baeza et al., 2018). For instance, between 20 and 40% of Australian nurses are concerned with burnout (McMillan et al., 2016). Yet, nurses' burnout is associated with detrimental outcomes such as medication errors, low quality of care, and patient falls (Nantsupawat, Nantsupawat, Kunaviktikul, Turale, & Poghosyan, 2016). Therefore, more research is needed to single out the job demands that predict nurses' burnout in order to propose interventions aiming at reducing the prevalence of this syndrome.

More generally, the influence of job demands on psychological health impairment and risk-taking organizational behaviors have gained attention in the literature (e.g., Demerouti, Le Blanc, Bakker, Schaufeli, & Hox, 2009). Recovery has been considered as one of the mechanisms that might underlie these relationships (Geurts & Sonnentag, 2006). Specifically, prior investigations emphasized that sleep is particularly important in the recovery process (Cropley, Dijk, & Stanley, 2006), and past research showed that job demands were negatively related to sleep quality (Hülshager, Walkowiak, & Thommes, 2018). Sleep quality was also found to negatively relate to emotional exhaustion (Giorgi, Mattei, Notarnicola, Petrucci, & Lancia, 2018) and presenteeism (Guertler et al., 2015). Similarly, past research demonstrated that job demands were associated with lower levels of relaxation (Molino, Cortese, Bakker, & Ghislieri, 2015), which is a critical recovery experience (Sonnentag & Fritz, 2007). Relaxation implies that, during off-job hours, nurses refrain from engaging in activities that would tap into those functional systems or personal resources that they already put a strain on at work. Relaxation implies a sense of peacefulness, of calm, and manifests as low activation and as enhanced positive affect (Sonnentag & Fritz, 2007). Relaxation is negatively related to emotional exhaustion (Xanthopoulou, Bakker, Oerlemans, & Koszucka, 2018) and presenteeism (van Scheppingen et al., 2014).

These crucial recovery processes can however be seriously affected by nurses' work environment (Huyghebaert, Gillet, Lahiani, & Fouquereau, 2016). Yet, the major organizational changes that occurred, since the early 1990s, in healthcare organizations are a common source of work intensification (Green, 2004). This intensification has resulted in nurses' perceptions of a significant increase in their workload (Willis et al., 2015). "Workload refers to the amount of work an employee is required to complete in a given amount of time, along with the effort it takes to complete it" (Nixon, Mazzola, Bauer, Krueger, & Spector, 2011, p. 9). Yet, prior investigations demonstrated that it was associated with detrimental outcomes such as higher emotional exhaustion (Rizo-Baeza et al., 2018) and presenteeism (Miraglia & Johns, 2016). Nurses' work is also characterized by another critical demand, namely emotional dissonance, which entails an inconsistency between the emotions that nurses actually feel, and the emotions that they are required to display as part of their job (Holman, Chissick, & Totterdell, 2002). It is a significant job demand (Zapf, 2002), especially in the nursing context (Chambers, Kantaris, Guise, & Välimäki, 2015), for it necessitates taxing regulatory processes (Baumeister, Bratslavsky, Muraven, & Tice, 1998), which may interfere with nurses' ability to concentrate. A such, emotional dissonance has negative effects on nurses' emotional exhaustion (Andela & Truchot, 2017), and is positively related to nurse disengagement (Bakker & Heuven, 2006) and nurses' more frequent neglect and abusive behaviors (Andela, Truchot, & Huguenotte, 2018).

In this investigation, we examined the relationships between workload, emotional dissonance, sleep quality, relaxation, emotional exhaustion, and presenteeism in a sample of French nurses. More specifically, we aimed to identify the mechanisms that may explain the effects of emotional dissonance and workload on presenteeism and emotional exhaustion. In line with Geurts and Sonnentag (2006), recovery, assessed in the form of sleep quality and relaxation, was considered as a mediating process in these relationships. Indeed, past studies demonstrated that sleep quality and relaxation mediated the effects of job demands on psychological health (Bennett, Bakker, & Field, 2018; Gluschkoff et al., 2016). This

study extended these results by looking at other outcomes such as presenteeism. Indeed, numerous investigations underscored the necessity to examine the characteristics that could decrease presenteeism (Miraglia & Johns, 2016), especially in nurses (Cicolini, Della Pelle, Cerratti, Franza, & Flacco, 2016), as it is associated with negative job attitudes, health decline, and productivity loss (Miraglia & Johns, 2016).

In the next sections, our mediation model and hypotheses will be discussed. We first develop the hypotheses regarding the indirect effects of emotional dissonance and workload on presenteeism and emotional exhaustion and presenteeism through relaxation and sleep quality, and then the residual influence of emotional dissonance and workload on these outcomes.

### **Background**

#### **Job Demands, Recovery Processes, and Work Outcomes**

Increased workload is positively related to emotional exhaustion in various settings (Rizo-Baeza et al., 2018). High workload was also related to poor sleep quality (Hülshager et al., 2018) and low relaxation (Molino et al., 2015). Finally, workload was associated with higher levels of presenteeism (Miraglia & Johns, 2016). Similar results were reported for the effects of emotional dissonance (e.g., Andela & Truchot, 2017), and more generally for job demands (Demerouti et al., 2009). The allostatic load theory (McEwen, 1998), the conceptual approach of incomplete recovery (Geurts & Sonnentag, 2006), and the effort-recovery theory (Meijman & Mulder 1998) can explain these negative effects.

More specifically, Geurts and Sonnentag (2006) argued that incomplete recovery (e.g., poor sleep quality) mediates the effects of acute physiological stress reactions on health impairment. Indeed, being subjected to stressful work environments involves continually activating one's psychophysiological system, therefore preventing complete recovery, which may yield deleterious consequences like impaired sleep or psychosomatic complaints (Sluiter, Frings-Dresen, Van der Beek, & Meijman, 2001). As such, excessive workload and high emotional dissonance could lead to sleeping problems. In turn, the impairment of sleep quality is positively related to emotional exhaustion (Giorgi et al., 2018). Sleep quality is also negatively related to presenteeism (Guertler et al., 2015).

Job demands (e.g., workload, emotional dissonance) require physical and psychological effort (Meijman & Mulder, 1998). Spending effort at work inevitably leads to normal load reactions. Yet, when individuals are continuously exposed to demanding work environments (e.g., excessive workload and emotional dissonance), these normal load reactions can gradually turn into more serious chronic load reactions. More precisely, the psychophysiological systems that are triggered during effort expenditure at work typically go back to baseline levels where they stabilize, after being allowed some respite from work. However, when exposed to excessive workload and emotional dissonance, nurses have to spend more resources to face these demands, consequently more time is needed to restore their resources (Sonnentag & Bayer, 2005). As a paradox, having too much work to do (i.e., excessive workload) often implies spending extra time at work, thus preventing this needed respite. Additionally, prolonged activation theory (Brosschot, Pieper, & Thayer, 2005) and the perseverative cognition hypothesis (Brosschot, Gerin, & Thayer, 2006) suggest that the ruminations that may be induced by demands like workload and emotional dissonance can also lead to sustained physiological activation (Van Laethem, Beckers, de Bloom, Sianoja, & Kinnunen, 2018). As a result of this cumulative process and the inherent incomplete recovery and overactivation of the psychophysiological systems, nurses may experience poor sleep quality, low relaxation, and high emotional exhaustion (Sluiter, de Croon, Meijman, & Frings-Dresen, 2003). Past studies also found that poor recovery experiences (e.g., low relaxation, poor sleep quality) are positively related to presenteeism (Schaufeli, Bakker, van der Heijden, & Prins, 2009). Indeed, nurses with impaired sleep quality may feel like they have to go to work to protect their colleagues from having to take care of their workload in their absence, even though they do not feel well enough to complete their tasks (i.e., presenteeism) (Miraglia & Johns, 2016).

The allostatic load theory (McEwen, 1998) further explains why job demands may lead to maladaptive outcomes through the impairment of sleep quality and low relaxation. McEwen (1998) argued that allostatic systems (e.g., nervous and metabolic systems) are important in the protection and adaptation of the organism to job demands. Yet, repeated or prolonged exposure to stressful work conditions may disrupt the homeostatic balance between sympathetic and parasympathetic activity (i.e.,

allostatic load). In this case, nurses may report frequent sleeping problems and poor recovery experiences, and negative outcomes may ensue (e.g., high emotional exhaustion and presenteeism).

Past studies tested this mediating hypothesis, wherein incomplete recovery explains the influence of job demands on detrimental consequences (Bennett et al., 2018). However, they mostly focused on job performance, and physical or psychosomatic consequences. For instance, Van Laethem et al. (2018) showed that the effect of job demands on job performance was mediated by sleep quality. Pereira and Elfering (2014) also demonstrated that the effect of job demands on psychosomatic health impairment was mediated by sleep quality. In the present research, we extend previous investigations by assessing a psychological consequence (i.e., emotional exhaustion) and behaviors (i.e., presenteeism) within a sample of nurses. More specifically, we examined the indirect effects of emotional dissonance and workload on presenteeism and emotional exhaustion through relaxation and sleep quality.

Prior research showed that the influence of emotional dissonance and workload on emotional exhaustion was stronger than that of these job demands on presenteeism (e.g., Baeriswyl, Krause, Elfering, & Berset, 2017; Demerouti et al., 2009). For instance, Huyghebaert, Gillet, Beltou, Tellier, and Fouquereau (2018) showed that the link between workload and emotional exhaustion ( $r = .48, p < .001$ ) was stronger than that between workload and presenteeism ( $r = .28, p < .001$ ). Moreover, numerous studies found that job demands had both direct and indirect effects (through various mediating variables) on emotional exhaustion (Baeriswyl, Krause, & Schwaninger, 2016; Fernet, Austin, Trépanier, & Dussault, 2013), while the effects of job demands on various behaviors (e.g., absenteeism, presenteeism) are rather fully mediated (De Boer, Bakker, Syroit, & Schaufeli, 2002; Deery, Walsh, & Zatzick, 2014). Finally, past research demonstrated that recovery processes were not able to fully explain the relationships between job demands and employees' psychological health (Gluschkoff et al., 2016; Sonnentag, Kuttler, & Fritz, 2010).

In line with the findings reported above, it is highly possible that sleep quality and relaxation would only partially mediate the influence of emotional dissonance and workload on emotional exhaustion (Fernet et al., 2013). Therefore, we expect direct and negative effects of emotional dissonance and workload on emotional exhaustion (e.g., Andela & Truchot, 2017; Rizo-Baeza et al., 2018). In contrast, the effects of job demands on presenteeism -through recovery processes- should be fully mediated. More specifically, the aforementioned rationale led to the following hypotheses.

*Hypothesis 1: Sleep quality and relaxation partially mediate the negative effects of emotional dissonance and workload on emotional exhaustion.*

*Hypothesis 2: Workload and emotional dissonance are associated with higher levels of emotional exhaustion.*

*Hypothesis 3: Sleep quality and relaxation fully mediate the negative effects of emotional dissonance and workload on presenteeism.*

## Method

### Design

We used a cross-sectional design. We ensured to meticulously follow the STROBE guidelines for cross-sectional research in designing and reporting this study (see Supplementary File 1).

### Participants

Our sample was made of 378 respondents. Precisely, 274 nurses and 104 nursing assistants agreed to take part in the study, including 37 men and 341 women. These participants' age ranked between 23 and 64 years ( $M = 44.61, SD = 9.54$ ).

### Data Collection

Data was collected by three undergraduate students between October 2015 and February 2016. Undergraduate students collected 378 completed paper-based questionnaires from a convenience sample. Because it is impossible to know precisely how many questionnaires were originally distributed, no response rate could be calculated. These nurses and nursing assistants were recruited in French healthcare centers (e.g., public and private hospitals), which had agreed to participate in this study when contacted by the undergraduate student who provided them with a short description of the research. Before proceeding with the data collection, participants in each organization received a survey packet including the

questionnaire, a cover letter explaining the general objectives, and a consent form stressing the anonymous and voluntary nature of participation. Questionnaires completion took about 15 minutes. Completed questionnaires were directly returned to the undergraduate students. No incentive was offered to take part in the study.

### **Ethical Considerations**

According to local regulations, no ethical scrutiny was required for the conduct of this study. However, an information document about the study was handed out to participants who were asked to complete a written informed consent form before answering the questionnaire survey. Confidentiality of the collected data was guaranteed, and participants were asked to keep their questionnaire anonymous. They were offered to secure their completed questionnaire and signed consent form in an unmarked envelope to be returned to the undergraduate students.

### **Measures**

**Workload** was assessed with Spector and Jex's (1998) scale (i.e., Quantitative Workload Inventory). Responses to the scale's five items (e.g., "How often does your job require you to work very hard?") were given on a five-point Likert-type scale ranging from 1 (never) to 5 (always).

**Emotional Dissonance** was measured with the Frankfurt Emotion Work Scale (Zapf, Vogt, Seifert, Mertini, & Isic, 1999), which includes five items (e.g., "Having to show certain feelings that do not correspond with the way I feel at that moment"). Nurses were asked to indicate their responses on a five-point scale ranging from 1 (never) to 5 (always).

**Sleep Quality** was evaluated with an item from the Pittsburgh Sleep Quality Index (PSQI; Buysse, Reynolds, Monk, Berman, & Kupfer, 1989). Nurses answered this single item measure ("During the past month, how would you rate your sleep quality overall?") on a four-point scale ranging from "Very Bad" to "Very Good".

**Relaxation** was measured with four items (e.g., "In the evening, after work, and when I am on a weekend/vacation, I do relaxing things") developed by Sonnentag and Fritz (2007), and responses were given on a five-point scale anchored by 1 (totally disagree) and 5 (totally agree).

**Presenteeism** was assessed through the Stanford Presenteeism Scale (Koopman et al., 2002), which is made of six items (e.g., "Because of my health problems, the stresses of my job were much harder to handle"). Nurses indicated their responses on a five-point Likert-scale ranging from 1 (strongly disagree) to 5 (strongly agree).

**Emotional Exhaustion** was measured with the Maslach Burnout Inventory-General Survey's (Schaufeli, Leiter, Maslach, & Jackson, 1996) five-item version (e.g., "I feel emotionally drained by my work"). Responses were given on a scale ranging from 1 (strongly disagree) to 5 (strongly agree).

### **Data Analysis**

A measurement model was first tested through structural equation modeling using Mplus 8.1 (Muthén & Muthén, 2018). Various fit indices were used to determine the goodness-of-fit of the model: The Tucker-Lewis Index (TLI), the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA). Values greater than .90 for the CFI and TLI, and values below .08 for the RMSEA indicate a reasonable fit (Hu & Bentler, 1999). Correlation analyses were then conducted. Our proposed model and alternative ones were tested through structural equation modeling using Mplus 8.1 (Muthén & Muthén, 2018). We specified paths based on our above mentioned hypotheses. More specifically, in our hypothesized model, workload and emotional dissonance predicted sleep quality, relaxation, and emotional exhaustion. Sleep quality and relaxation also predicted emotional exhaustion and presenteeism. A first alternative model (Model 1) was also tested. It included two additional paths from workload and emotional dissonance to presenteeism. Finally, a second alternative model (Model 2), only including a direct effect of emotional dissonance on presenteeism, was tested. The Akaike Information Criterion (AIC) was resorted to, in order to compare the different models, with the model displaying the lowest value on this index best fitting the data (Bozdogan & Ramirez, 1988). Finally, to further confirm the significance of mediations, bootstrapped confidence interval estimates of the indirect effects (Preacher & Hayes, 2008) were analyzed. This statistical method allows to randomly provide a

number of resamples of the original sample, in order to estimate parameters. In this study, the indirect effects were assessed with 95% confidence intervals computed from 5,000 bootstrap resamples.

### Validity and Reliability

In the present research, all the scales demonstrated good internal consistency:  $\alpha = .82$  for workload,  $\alpha = .76$  for emotional dissonance,  $\alpha = .86$  for relaxation,  $\alpha = .95$  for presenteeism, and  $\alpha = .84$  for emotional exhaustion. The measurement model also presented satisfactory fit indices,  $\chi^2(265) = 487.434$ ,  $p < .001$ , CFI = .942, TLI = .934, and RMSEA = .049 [.042; .056]. Moreover, all indicators were significantly related to their corresponding latent variable ( $\lambda$ s ranging from .498 to .905,  $p < .001$ ; see Table 1). These estimates confirm the validity and reliability of the measures we used in the present study.

## Results

### Preliminary Analyses

Correlation analyses (see Table 2) showed significant relationships between workload and respectively sleep quality ( $r = -.257$ ,  $p < .001$ ), relaxation ( $r = -.187$ ,  $p < .01$ ), emotional exhaustion ( $r = .478$ ,  $p < .001$ ), and presenteeism ( $r = .189$ ,  $p < .01$ ). Results showed significant correlations between emotional dissonance and respectively sleep quality ( $r = -.328$ ,  $p < .001$ ), relaxation ( $r = -.192$ ,  $p < .01$ ), emotional exhaustion ( $r = .422$ ,  $p < .001$ ), and presenteeism ( $r = .257$ ,  $p < .001$ ), as well as between sleep quality and respectively emotional exhaustion ( $r = -.536$ ,  $p < .001$ ) and presenteeism ( $r = -.373$ ,  $p < .001$ ). Relaxation was associated with lower levels of emotional exhaustion ( $r = -.448$ ,  $p < .001$ ) and presenteeism ( $r = -.298$ ,  $p < .001$ ).

### Main Analyses

Results revealed that our proposed model presented a satisfactory fit to the data,  $\chi^2(288) = 540.356$ ,  $p < .001$ , CFI = .936, TLI = .928, RMSEA = .050 [.044; .057], and AIC = 19263.237. In the first alternative model (Model 1), the link between workload and presenteeism was not significant ( $\beta = .047$ ,  $p = .442$ ), while the effect of emotional dissonance on presenteeism was significant and positive ( $\beta = .123$ ,  $p < .05$ ). In the second alternative model (Model 2), only including a direct effect of emotional dissonance on presenteeism, the effect on emotional dissonance on presenteeism was significant and positive ( $\beta = .138$ ,  $p < .05$ ).

Model 1 ( $\chi^2(286) = 534.717$ ,  $p < .001$ , CFI = .937, TLI = .928, RMSEA = .050 [.044; .057], AIC = 19261.692) and Model 2 ( $\chi^2(287) = 535.302$ ,  $p < .001$ , CFI = .937, TLI = .929, RMSEA = .050 [.043; .057], and AIC = 19260.276) provided better fit indices than our hypothesized model. As indicated by its lower AIC value, Model 2 including indirect and direct effects of emotional dissonance on presenteeism and emotional exhaustion, direct and indirect effects of workload on emotional exhaustion, and only indirect effects of workload on presenteeism provided a better fit than the two other models. Model 2 proved to be the most adequate model (see Figure 1).

Workload and emotional dissonance predicted sleep quality (respectively  $\beta = -.167$ ,  $p < .01$ ; and  $\beta = -.280$ ,  $p < .001$ ), relaxation (respectively  $\beta = -.145$ ,  $p < .05$ ; and  $\beta = -.159$ ,  $p < .05$ ), and emotional exhaustion (respectively  $\beta = .285$ ,  $p < .001$ ; and  $\beta = .178$ ,  $p < .01$ ). Emotional dissonance was also associated with higher levels of presenteeism ( $\beta = .138$ ,  $p < .05$ ). Finally, sleep quality and relaxation negatively predicted emotional exhaustion (respectively  $\beta = -.334$ ,  $p < .001$ ; and  $\beta = -.249$ ,  $p < .001$ ) and presenteeism (respectively  $\beta = -.276$ ,  $p < .001$ ; and  $\beta = -.177$ ,  $p < .05$ ).

Results from bootstrapping analyses showed that the indirect effects of workload on presenteeism ( $\beta = .046$ , CI = .015 to .085,  $p < .05$ ) and emotional exhaustion ( $\beta = .056$ , CI = .019 to .096,  $p < .05$ ) through sleep quality were significant and positive, while the indirect effects of workload on emotional exhaustion ( $\beta = .036$ , CI = .005 to .072,  $p = .079$ ) and presenteeism ( $\beta = .026$ , CI = .001 to .057,  $p = .138$ ) through relaxation were not significant. Moreover, the indirect effects of emotional dissonance on emotional exhaustion ( $\beta = .093$ , CI = .053 to .138,  $p < .001$ ) and presenteeism ( $\beta = .077$ , CI = .041 to .116,  $p < .001$ ) through sleep quality were significant and positive. The indirect effects of emotional dissonance on emotional exhaustion through relaxation were also significant and positive ( $\beta = .040$ , CI = .009 to .073,  $p < .05$ ). Finally, the indirect effects of emotional dissonance on presenteeism through relaxation were not significant ( $\beta = .028$ , CI = .003 to .065,  $p = .154$ ).

## Discussion

As expected, emotional dissonance and workload were negatively related to sleep quality and relaxation for nurses. Emotional dissonance and workload were both associated with higher levels of emotional exhaustion, while only emotional dissonance had significant and positive effects on presenteeism. Moreover, sleep quality and relaxation were negatively related to presenteeism and emotional exhaustion. Finally, sleep quality mediated the effects of emotional dissonance and workload on presenteeism and emotional exhaustion, while relaxation only mediated the effects of emotional dissonance on emotional exhaustion. These findings partially support our hypotheses and provide interesting insight for both researchers and practitioners.

### Theoretical Implications

First, workload and emotional dissonance were positively linked to nurses' maladaptive consequences (i.e., emotional exhaustion and presenteeism). These results are in line with those demonstrated in the nursing context (Dhaini et al., 2016; Rizo-Baeza et al., 2018), and more generally, with those showing that various job demands have a negative influence on employees' behaviors, attitudes, and health (Bakker & Heuven, 2006; Demerouti et al., 2009). Indeed, the job demands-resources model (Bakker & Demerouti, 2007) posits that job demands predict negative outcomes as they are associated with physiological and/or psychological costs.

Second, emotional dissonance and workload were associated with nurses' impaired sleep quality and low relaxation. These findings are concordant with those found in past research showing that job demands are harmful for recovery processes (Hülshager et al., 2018; Molino et al., 2015). Indeed, job demands are linked to impaired sleep quality as they are associated with a continuous activation of the psycho-physiological system (Sluiter et al., 2001). This prolonged high activation induced by job demands also spills over to nonwork time, job demands are thus negatively related to relaxation experiences (Brosschot et al., 2005). Our results therefore confirm workload and emotional dissonance (the job demands considered in the present study) to constitute hindrance stressors (i.e., job demands that unnecessarily obstruct personal growth and goal attainment) rather than challenge stressors (i.e., demands to be overcome in order to learn and achieve) (LePine, Podsakoff, & LePine, 2005). Hindrance stressors interfere with workers' self-actualization (Cavanaugh, Boswell, Roehling, & Boudreau, 2000) and need fulfillment (Albrecht, 2015). For this reason, they are likely to lead to a prolonged activation of psychophysiological systems (Geurts & Sonnentag, 2006) and persistent negative cognitive activation (Sonnentag & Fritz, 2015), as a result of being unable to attain personal goals (e.g., Syrek & Antoni, 2014). This persistent activation is thus likely to interfere with the work recovery process (e.g., Brosschot et al., 2006; Sonnentag & Bayer, 2005).

Third, sleep quality and relaxation have negative effects of nurses' presenteeism and emotional exhaustion. These results are concordant with those showing that poor recovery processes relate to adverse consequences (Guertler et al., 2015; van Scheppingen et al., 2014). Indeed, poor sleep quality has detrimental effects on cognitive processes and does not allow recovery from stress and elimination of fatigue, thus leading to negative consequences (Giorgi et al., 2018). Moreover, low relaxation experiences after work are associated with negative outcomes as they do not allow for previously depleted resources to be restored because of the high activation of the psychophysiological system that they imply (Xanthopoulou et al., 2018).

Fourth, the relationships of emotional dissonance and workload to nurses' presenteeism and emotional exhaustion were mediated by sleep quality but not by relaxation. In addition, relaxation mediated the negative influence of emotional dissonance on emotional exhaustion. These results are concordant with those found by Pereira and Elfering (2014) showing that the effects of job demands on psychosomatic health impairment were mediated by sleep disturbances. They also revealed that sleep quality was more able to explain the influence of job demands, especially on presenteeism, than relaxation. They confirm that sleep is very important in the recovery process (Cropley et al., 2006). More generally, our results provided support for the effort-recovery theory (Meijman & Mulder 1998), the allostatic load theory (McEwen, 1998), and the conceptual approach of incomplete recovery (Geurts & Sonnentag, 2006) as recovery processes explained the influence of job demands on nurses' presenteeism



and emotional exhaustion. In other words, high emotional dissonance and workload are associated with higher demands on recovery processes, and predict detrimental individual and organizational outcomes.

Future research would gain into operationalizing recovery in an alternative manner. In this study, we measured relaxation and sleep quality, yet other measures like psychological detachment (Sonnentag & Fritz, 2015) or problem-solving pondering (Cropley & Zijlstra, 2011) may be used in the future. Future studies should also consider stress-related physiological activation and assess salivary cortisol (Cropley, Rydstedt, Devereux, & Middleton, 2015) and parasympathetic nervous activity (e.g., heart rate variability) during the night (Vahle-Hinz, Bamberg, Dettmers, Friedrich, & Keller, 2014). More generally, because recovery processes only fully mediated one of the five significant indirect effects found in the present study, additional studies are needed to identify other mechanisms (e.g., psychological need satisfaction and thwarting, organizational dehumanization) that may explain why emotional dissonance and workload are positively related to nurses' presenteeism and emotional exhaustion. Future investigations are also needed to extend the current results by looking into other outcomes of interest such as nurses' turnover and quality of care.

### **Limitations**

First, this study was solely based on self-reported data, which is known to be sensitive to social desirability and may imply self-report biases. It would be highly informative for future studies to expand on the current results using more objective measures (e.g., biological measures of emotional exhaustion, official turnover data), coupled with informant (e.g., supervisors, colleagues, patients) reports of nurses' functioning. Second, a single-item was used to assess sleep quality. When compared to multi-item measures, single-item measures tend to be more unreliable and to provide a more limited content coverage. It would thus be interesting to seek to confirm the results from our study with more solid measurement scales and physiological sleep data. Third, our treatment of the covariables as either predictors (i.e., job demands) or outcomes (i.e., presenteeism and emotional exhaustion) of recovery processes was based on theoretical considerations (Geurts & Sonnentag, 2006). Our design and the limitations of our analytical possibilities made it impossible to rigorously assess the directionality (e.g., reverse causality, reciprocity) of the associations among job demands, recovery processes, and nurses' functioning, which may be further explored in future studies. Finally, we did not control for the effects of sociodemographic variables such as duration of work or level of education. In addition, the present research relied on a convenience sample of French nurses, which cannot be considered to be representative of the population of French nurses. Future research could examine the extent to which similar results would emerge across distinct samples of nurses and in different countries. Such evidence of generalizability would help to demonstrate the robustness of our findings and the value of implementing intervention strategies based on such results.

### **Conclusion**

We examined whether sleep quality and relaxation mediated the influence of emotional dissonance and workload on nurses' presenteeism and emotional exhaustion. Precisely, we found recovery processes to play a significant role in explaining the association between job demands and nurses' health and behaviors. We hope that the present results inspire scholars to look into how the effects of job demands and resources on health, attitudes, and behaviors play out in nurses from other cultures and countries.

### **Relevance to Clinical Practice**

Results from this study suggest that healthcare organizations would gain into acknowledging the costs associated with work overload and into reconsidering human resource policies and practices to protect nurses and organizations from such costs. For instance, it is known that the transfer of patients is critical in enhancing nurses' workload (Blay, Roche, Duffield, & Gallagher, 2017). It could therefore be fruitful that ward and bed transfer rates be considered in nursing workload measurement, to allow for staffing needs to be more accurately assessed. Administrative and clerical tasks have also contributed to modify the nursing practice, and some nurses need additional training so that the difficulties associated with these administrative duties do not turn into additional workload. Alternatively, leaders and policymakers could devote some effort into finding a better alignment between the various non-nursing

demands that have increasingly become part of nurses' practice and the idea that nurses have of their main nursing tasks, their professional identity (Rizo-Baeza et al., 2018).

Additionally, organizations could offer training to support nurses in identifying healthy strategies that they may use to articulate their authentic emotions in healthy ways (Grandey, Rupp, & Brice, 2015), rather than experiencing emotional dissonance. Finally, focus groups could also be implemented so that nurses collectively brainstorm and share advice to find practical solutions and strategies through which they could meet organizational emotion rules and norms while displaying their genuinely felt emotions (Huyghebaert, Gillet, Fernet et al., 2018).

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Table 1

*Standardized Factor Loadings ( $\lambda$ ) and Uniquenesses ( $\delta$ ) for the Preliminary Measurement Model*

| Items                | $\lambda$ | $\delta$ |
|----------------------|-----------|----------|
| Emotional dissonance |           |          |
| Item 1               | .652      | .575     |
| Item 2               | .498      | .752     |
| Item 3               | .790      | .376     |
| Item 4               | .508      | .742     |
| Item 5               | .746      | .444     |
| Workload             |           |          |
| Item 1               | .788      | .379     |
| Item 2               | .878      | .229     |
| Item 3               | .575      | .669     |
| Item 4               | .642      | .587     |
| Item 5               | .655      | .572     |
| Relaxation           |           |          |
| Item 1               | .660      | .564     |
| Item 2               | .844      | .287     |
| Item 3               | .893      | .203     |
| Item 4               | .751      | .436     |
| Emotional exhaustion |           |          |
| Item 1               | .691      | .523     |
| Item 2               | .801      | .359     |
| Item 3               | .771      | .405     |
| Item 4               | .811      | .343     |
| Item 5               | .512      | .737     |
| Presenteeism         |           |          |
| Item 1               | .854      | .270     |
| Item 2               | .882      | .223     |
| Item 3               | .865      | .252     |
| Item 4               | .881      | .224     |
| Item 5               | .905      | .181     |
| Item 6               | .819      | .330     |

*Note.*  $\lambda$ : Factor loading;  $\delta$ : Item uniqueness.

Table 2

*Correlations between Variables*

| Variable                | 1       | 2       | 3       | 4       | 5      | 6 |
|-------------------------|---------|---------|---------|---------|--------|---|
| 1. Workload             | -       |         |         |         |        |   |
| 2. Emotional dissonance | .339**  | -       |         |         |        |   |
| 3. Sleep quality        | -.257** | -.328** | -       |         |        |   |
| 4. Relaxation           | -.187*  | -.192*  | .346**  | -       |        |   |
| 5. Presenteeism         | .189*   | .257**  | -.373** | -.298** | -      |   |
| 6. Emotional exhaustion | .478**  | .422**  | -.536** | -.448** | .498** | - |

*Note.* \*  $p < .01$ ; \*\*  $p < .001$ .



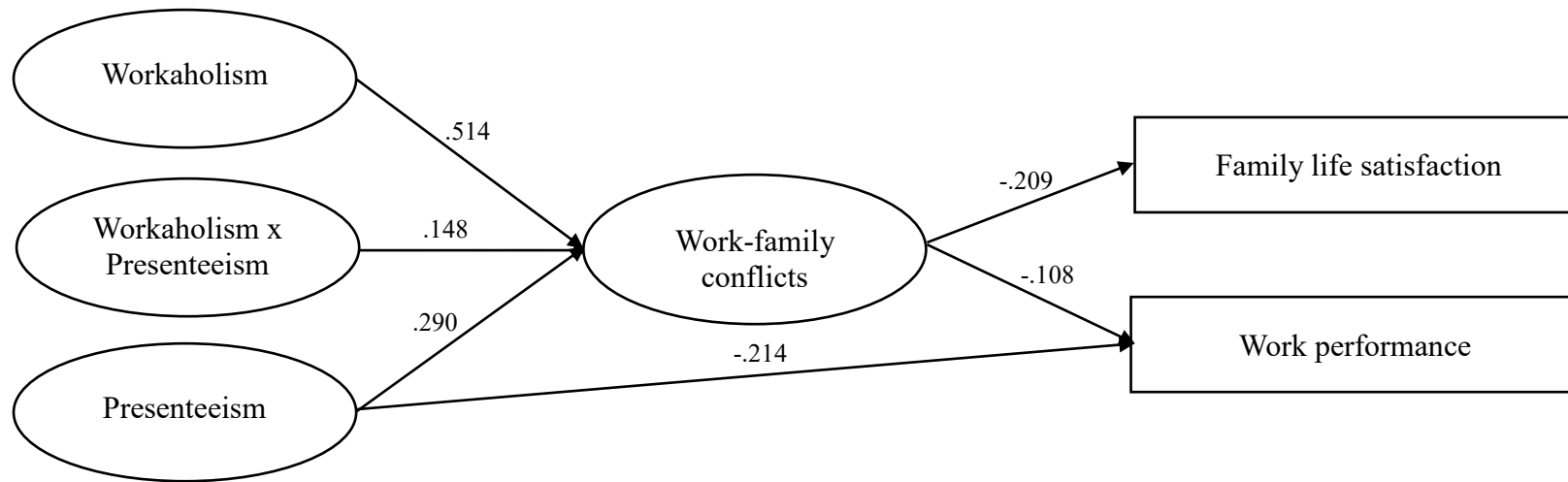


Figure 1. Results from the Hypothesized Model

*Note.* Standardized coefficients are reported. All paths are significant ( $p < .05$ ).