**Title**

Positive Benefits from Caring on Nurses' Motivation and Well-being: a Dairy Study about the Role of Emotional Regulation Abilities at Work

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## Abstract

***Background:*** Recent research reveals that not all job demands have negative effects on workers' well-being and suggests that the negative or positive effects of specific job demands depend on the occupational sector. Specifically, emotional job demands form the heart of the work for nurses and for this reason they can be interpreted by nurses as a challenge that promotes motivation and well-being among these professionals, especially if personal and job resources become available.

***Objectives:*** The study had two objectives. First, to examine whether daily emotional demands within a nursing work context have a positive effect on nurses' daily motivation at work (vigour) and well-being at home (vitality and positive affect). Second, to explore whether this positive effect could be enhanced by nurses' emotional regulation abilities.

***Design:*** This research used a diary design to explore daily experiences and to analyse how variations in specific job or personal characteristics can affect levels of motivation and well-being across days.

***Participants:*** Fifty-three nurses working in different Spanish hospitals and primary health care centres completed a general questionnaire and a diary booklet over 5 consecutive working days in two different moments, after work and at night (N= 53 participants and N = 265 observations).

***Results:*** In line with our hypotheses, multi-level analyses revealed that, on the one hand, day-level emotional demands at work had a positive effect on vigour at work and on vitality at home. On the other hand, analyses showed that nurses with higher emotional regulation abilities have more motivation at work and well-being at home when they have to face high emotional demands at work, showing a *spillover* effect after work.

***Conclusions:*** These findings support the idea that emotional demands from the nursing profession can act as challenges which promote motivation and well-being, especially if internal emotional resources become available.

**Key words:** emotional job demands; emotional regulation**;** nursing; positive affect; vigour; vitality.

• **What is already known about the topic?**

- Several studies show that job demands are positively associated with emotional exhaustion, while personal and job resources are positively related with engagement at work.
- Recent research shows that specific job demands (e.g. emotional demands) may be interpreted as positive challenges depending on the occupational sector. Moreover, positive effects from job demands may be attributed to the presence of personal and job resources.
- Job demands effects spill over into the non-work domain and continue their influence on the individual after the end of the working day.

• **What does this paper add?**

- This study highlights the importance of emotional job demands within a nursing context to promote nurses' daily motivation and well-being. Specifically, emotional job demands were positively associated with vigour at work and vitality at night.
- This positive effect is enhanced by nurses' emotional regulation abilities. Specifically, lower levels of emotional interference promote a higher positive association between emotional demand and vigour at work. Moreover, emotional clarity and emotional control allow nurses to achieve higher levels of vitality and positive affect at home at night when they have to face emotional demands at work.
- Findings draw the attention to the importance of considering emotional aspects from nursing profession and workers to explain their motivation and well-being.

## 1. Introduction

Nursing is considered to be a stressful profession because it requires coping with high emotional, cognitive and physical demands (McVicar, 2003). Continued exposure to these

demands is associated with stress, burnout and fatigue (Garrosa et al., 2008; Winwood et al., 2006), among other mental and physical problems. Nevertheless, helping others and working closely with people in need is a great source of motivation for nurses, which can also have many benefits (McCabe et al., 2005; McQueen, 2004). The desire to care for others and offering compassion are often motives to choose nursing profession and form part of the "ideal of nurse" that usually focuses on caring. Caring is perceived by nurses like a competence to be developed and like a source of challenge, motivation and satisfaction (Morgan y Lynn, 2009).

In this respect, little is known about how caring for patients is related motivation and well-being of nurses. For example, a recent study of Bakker and Sanz-Vergel (2013) shows how nurses' self-efficacy and optimism predict work engagement only in weeks when emotional demands were higher. This was not the case for work pressure that was perceived as a hindrance by nurses in order to fulfil their work (Janssen et al., 1999). Similar results were reported by De Jonge, Le Blanc, Peeters and Noordam (2008) in a study with nurses and others health employees, who found that high emotional demands predict creativity and work motivation when there are job resources available. These studies suggest that emotional demands could be interpreted by nurses as a challenge, leading to work engagement and positive experiences, whereas other demands (e.g. physical demands) could be interpreted as serious hindrances that lead to emotional exhaustion and lack of well-being (Crawford et al., 2010). Thus, it seems that emotional demands can have favourable effects on well-being among nurses. Therefore, the first objective of this study is to explore the daily role of emotional demands in the nursing profession when predicting high levels of daily vigour at work, and vitality and well-being at home.

One factor that could explain that emotional demands bring forth well-being and motivation among nurses is the availability of personal and job resources to deal with them (Bakker & Sanz-Vergel, 2013; De Jonge et al., 2008). In this sense, emotional abilities to

manage emotional aspects related to work could be also a significant predictor of professional and personal well-being (Augusto-Landa, et al., 2006). Previous studies suggest that emotional regulation at work is an important factor to predict health indices, such as workers' mental and psychical health (Donaldson-Feilder & Bond, 2004), their positive affectivity (Liu, et al., 2010), emotional exhaustion (Biron & van Veldhoven, 2012) and work engagement (Bond et al., 2013). We will examine how emotional regulation can promote or inhibit the positive effect of these emotional demands. Because nursing work has a high emotional component, we expect that nurses' available emotional abilities will be a significant element to achieve optimal levels of personal and professional functioning (Cadman & Brewer, 2001). Thus, the second objective in this study is to explore how emotional regulation abilities can promote the positive effect of emotional demands on the daily motivation and well-being of nurses (*boosting effects*).

This study contributes to research in various ways. First, we add to the limited number of daily studies examining the positive impact of emotional demands on motivation and well-being among nurses on a daily level. Second, we analyse the way in which different emotional regulation abilities can enhance this relationship, so that it is possible to find out the specific role of each one. Finally, to achieve a more complete picture of the emotional regulation between emotional job demands and well-being, the present study examines on the one hand a job-related outcome (i.e. vigour at work) and on the other hand well-being outcomes at home (i.e. vitality and positive affect). In this way, we can see how the effects of emotional job demands are maintained from work to home (spillover effect).

### 1.1. Emotional demands, motivation and well-being in nursing profession

For over a decade, in the nursing profession there has been a more holistic view in relation to care offered to patients, which involves closer relationships with them (Williams, 2001). Caring is an essential characteristic of professional nursing practice and is defined as '*the mental, emotional, and physical effort involved in looking after, responding to, and*

*supporting others*' (Baines et al., 1991, pp.11). In the past, emotional demands derived from caring for patients were normally associated with higher emotional exhaustion and stress (van den Tooren & De Jonge, 2008). However, emotional demands from nursing could also be a source of motivation, flourishing and challenge at the same time (Bakker at al., 2007; Bakker & Sanz-Vergel, 2013; De Jonge et al., 2008). Emotional work with patients is one of the inherent features of nursing work and probably one of the reasons for choosing and enjoying this profession (Morgan & Lynn, 2009; Sundin et al., 2007). Nurses' motivation could be deeply connected with the meaning that they give to their work and with certain job demands from the health field (Edgar, 1998). These demands are in many cases the relationships with patients which can be perceived by nurses like a "gift" (Bolton, 2000). In their study among student nurses, McCabe et al. (2005), found that the most important reasons to choose the profession were (1) to help others; (2) to do interesting and challenging work; and (3) to work closely with people in need. Moreover, according to McQueen (2004), nurses enjoy the benefits from emotional work because they are satisfied with engaging with patients at a personal level. Being a nurse brings the opportunity to help others and make a difference in their lives (Morgan & Lynn, 2009). Hence, it is likely that potentially emotional work may lead to motivation, energy and well-being at work.

Emotional demands from nursing involve tasks such as paying attention, interpreting and understanding the patient's feelings, taking into account their affective needs, being able to put oneself in the place of another, handling intensely emotional situations (e.g. agitated patients or aggressive relatives) or making efforts to show a specific emotion for therapeutic or organisational purposes. Depending on the nature and dominance of one type of emotional requirement over another, nurses' tasks may become more stressful or challenging (Bakker & Sanz, 2013; Heuven at al., 2006; Pisaniello et al., 2012). For example, previous studies show that enhancing, faking or suppressing emotions to modify the emotional expression in response to the display rules for the organisation or job (*emotional labour)* has a negative

impact on nurses, generating emotional exhaustion (Morris & Feldmans, 1996). However, compliance with emotional display rules may lead also to rewards, including patient satisfaction, team morale, productivity and personal accomplishment, which could increase job satisfaction and employees' motivation (Zapf & Holz, 2006). Moreover, emotional demands offer employees the possibility for self-expression (Adelmann, 1995), for using and developing emotional intelligence and for evoking positive interpersonal encounters with patients. Thus, on the basis of the arguments and literature presented, we formulate the following hypothesis:

$H_1$. Emotional demands at work will be significant and positively related to (1a) vigour at work in the afternoon, (1b) vitality at night and (1c) positive affect at night.

### 1.2. Emotional regulation as a resource to face emotional demands

Some researchers also note that the positive effect of emotional demands could be reflecting the presence of third variables. High emotional demands could predict engagement and well-being when job and personal resources are available to face them (Bakker et al., 2007; De Jonge et al., 2008; Xanthopoulou et al., 2013). More precisely, the positive effect of these resources could enable better coping with job demands when the resources match the demands, that is to say, when both share the same nature (De Jonge & Dormann, 2006). This phenomenon is called "*the matching principle*" (De Jonge & Dormann, 2006). For example, the study conducted by De Jonge et al. (2008) with health care employees showed that high emotional demands could predict work motivation and creativity when the employees had higher emotional job resources (i.e. support from colleagues). From this point of view, in the face of job emotional demands, an emotional self-regulation capability is likely to be also quite helpful (Daniels & De Jonge, 2010). In fact, job demands are first dealt with by attempting to turn to available internal resources (De Jonge & Dormann, 2006). If employees do not have the necessary emotional abilities or they have emotional difficulties to regulate emotions during their working day, it is less likely to see emotional demands like a challenge

which leads to daily motivational and well-being experiences. In this sense, the presence of emotional regulation abilities can enhance employees' motivation, and promote higher levels of energy and well-being at work (Albrecht, 2010), because emotional abilities provide feelings of confidence and control in an emotional work context, and in this way they are an important resource which helps employees to face emotional demands at work more effectively and to achieve their personal goals (Daniels & De Jonge, 2010; Kanfer & Kantrowitz, 2002). For this reason, the next step of this study will be to explore the role of emotional regulation abilities taking into account emotional demands that nurses face on a daily basis.

Most studies on how employees regulate their emotions in human service professions focus on how workers manage these emotions with specific organisational purposes (Morris & Feldmans, 1996), neglecting to explore how emotional regulation can promote (or impair) general employees' well-being. Both ideas are different: the first refers to an emotional requirement from job (i.e. *emotional labour* or *emotional work*), whereas the second implies personal resources to regulate one's own emotions for improving personal and professional well-being (Giardini & Frese, 2006). In this study, we will focus in the conceptualization of emotional regulation carried out by Gratz and Roemer (2004). According to these authors, emotion regulation can be conceptualized as adaptive ways of responding to emotions (regardless of their intensity/reactivity), including awareness and emotional clarity, accepting responses, a low emotional interference of negative emotions to implement behaviours in accordance with desired goals, and the ability to control behaviours with respect to emotional distress. In particular, e*motional awareness* is associated with paying attention to emotions while experiencing them, and *emotional clarity* with being able to label and discriminate among different emotions. In other words, the former relates to attentional aspects of the emotional processing, whereas the latter relates to knowledge of the array of emotions. Both types of emotional regulation abilities would be related to suitable emotional information

processing, and thus, to better adjustment (Extremera & Fernández-Berrocal, 2005). *Emotional acceptance* implies a tendency towards having a positive response to one's own negative emotions or accepting emotional reactions to distress. This involves willingness to experience negative emotions as part of pursuing meaningful activities in life and could be related with positive outcomes in part because it enhances distress tolerance and reduces emotional reactivity (Campbell-Sills et al., 2006). *Emotional interference* is referred to the ability to behave in accordance with desired goals when experiencing negative emotions. A lack of emotional interference is positive because it helps to achieve personal objectives (Hayes, 2004). Finally, *emotional control* concerns the ability to remain in control of one's behaviour when experiencing negative emotions, that is to say, to inhibit impulsive behaviours when experiencing negative emotions (Gratz & Roemer, 2004). While *emotional interference* relates to negative consequences of the presence of negative emotion on psychological processes (e.g. lack of concentration, blocking thought or developing an action plan for meeting goals), emotional control relates to ability to control behavioural impulses generated by negative emotions. The relative absence of any or all of these abilities would indicate the presence of difficulties in emotion regulation and, as a consequence, the presence of health problems or poor well-being (Aldao et al., 2010; Gratz & Roemer, 2004).

In the organisational context, the presence of emotional difficulties among employees could affect their well-being and job performance (Donaldson-Feilder & Bond, 2004; Iglesias et al., 2010). Specifically, employees with lower emotional awareness may be worse at identifying feelings of frustration and stress, and subsequently, they do not regulate those emotions or implement recovery behaviours to reduce stress after work (Sy et al., 2006). Similarly, employees who do not accept their negative emotions or who see their work activities compromised by the interference of negative feelings need to focus their attention on suppressing or transforming these emotions, because negative emotions are frustrating for them. In this way, they divert their energy into the specific issue of emotional content rather

than their work activities. That may lead to a poorer performance, a higher number of errors, and consequently they can feel worse later. In contrast, employees who accept their emotions need not to invest any effort in actively regulating their emotional reactions at present, and so they will have more energy and attention available to deal effectively with job demands (Biron & van Veldhoven, 2012). In short, employees with emotional abilities are likely to experience higher levels of energy and well-being at work because they can utilize their ability to appraise and manage emotions with more confidence and control over the task requirements of their job (Albrecht, 2010; Sy et al., 2006).

Taking all the above into account, we believe that the presence of emotional regulation abilities at work can enhance the positive impact of emotional demands on nurses' levels of well-being and motivation (*boosting effects*). On the basis of all the arguments that have been presented, we formulate the following hypotheses:

$H_2$. Emotional demands at work will be more positively associated with (2a) vigour at work in the afternoon, (2b) vitality at night and (2c) positive affect at night among employees with high emotional awareness at work, as opposed to a low level of it.

$H_3$. Emotional demands at work will be more positively associated with (3a) vigour at work in the afternoon, (3b) vitality at night and (3c) positive affect at night among employees with a low level of lack of emotional clarity at work, as opposed to a high level of it.

$H_4$. Emotional demands at work will be more positively associated with (4a) vigour at work in the afternoon, (4b) vitality at night and (4c) positive affect at night among employees with a low level of emotional non-acceptance at work, as opposed to a high level of it.

$H_5$. Emotional demands at work will be more positively associated with (5a) vigour at work in the afternoon, (5b) vitality at night and (5c) positive affect at night among employees with a low level of emotional interference at work, as opposed to a high level of it.

$H_6$. Emotional demands at work will be more positively associated with (6a) vigour at work in the afternoon, (6b) vitality at night and (6c) positive affect at night among employees with a low level of lac of emotional control at work, as opposed to a high level of it.

## 2. Methods

### 2.1. Sample and Procedure

Nurses from various hospitals and primary care centres in Spain took part in the study. Participants were recruited through a snowball technique, using the social networks of the researchers. Seventy-five nurses received a package that included: (a) a letter describing the objective of the study and assuring anonymity and confidentiality, (b) instructions about the completion of the surveys, and (c) the general and daily questionnaires. They had to fill the general questionnaire and, subsequently, they had to complete daily questionnaires two times per day (in the afternoon after work and at night before going to bed) for five consecutive working days from Monday to Friday. The study protocol was approved by the ethical committee of the university. To guarantee confidentiality, responses were matched using anonymous codes provided by the participants.

Of the 75 surveys distributed, 53 were returned (response rate = 70%; 45 women and 8 men) from hospitals (74.5%) and primary care centres (25.5 %). The hospital nurses belonged to different care units (i.e. intensive care unit, surgical unit, reanimation unit, cardiology, oncology and emergencies). They filled in a general questionnaire and a daily questionnaire for five working days ($N$ = 5 x 53 = 265 occasions). The mean age was 40.71 years ($SD$ = 10.23) and the majority of the participants had partners (81.1%). Most employees worked 39 hours per week ($SD$ = 4.78), the average years of work experience was 17.80 ($SD$ = 10.03), and the average years of tenure in their work centres was 10.01 ($SD$ = 8.92). Regarding the type of contract, 54.7% had a permanent contract, 32.1% were contracted, and the rest had a temporary contract (3.8% missing). Concerning the time that they interacted with their patients, 74.5 % interacted more than 50% in their working day.

### 2.2. Measures

We collected the data with the same general and daily paper-based questionnaires. Specifically, we assessed emotional demands, difficulties on emotional regulation and vigour at work in the afternoon; and vitality and positive affect were reported at night. Daily measures of all variables used modifications of items from the corresponding general-scale, which were reworded for daily administration. Moreover, for daily measures we used the same answer categories as for the general measure. This method of developing state-level analogs of general measures has been used successfully in the past (Nezlek, 2012). Information about the reliability of all scales is showed in table 1.

#### *2.2.1. Daily emotional demands*

Emotional demands were measured with the subscale "Emotional Requirements Derived from Task" from the Emotional Labour Questionnaire (TREMO, Moreno- Jimenez et al., 2004). Emotional requirements derived from task is related to the emotional load, the valence and the variety of the same as well as its relation with the characteristics of the job (i.e. *"In my work, being aware of emotions is important"*. The measure contains 5 items which participants endorse on a seven point likert scale, ranging from "*rarely*" to "*constantly*". To daily measure, the items were adjusted so that they referred to the preceding working day, (i.e. "*Today, to do my work properly, I had to know empathize with patient's needs"*.

#### *2.2.2. Daily emotional regulation difficulties*

Emotional regulation difficulties was measured via the Spanish adaptation of the Difficulty of Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). The adapted scale and used for this study (Hervás & Jódar, 2008) contains 28 items divided into 5 subscales: Emotional awareness ("*I am attentive to my feelings*"), Lack of clarity ("*I have no idea how I am feeling*"), Emotional non-acceptance ("*When I'm upset, I feel guilty for feeling that way*"), Emotional interference ("*When I'm upset, I have difficulty getting work done*") and Lack of

control ("*When I'm upset, I feel out of control*"). The instrument format is a graduated Likert scale from 1 ("*almost never"*) to 5 ("*almost always*"): the higher the score, the greater the difficulty of emotion regulation, except in the case of emotional awareness. To daily measure, the items were adjusted so that they referred to the preceding working day (i.e. "*Today at work, when I was upset, I had difficulty concentrating*"). The overall DERS score and subscale scores have been found to have high internal consistency within both clinical and nonclinical populations. Moreover, supports for the construct validity of DERS have also been found (e.g., Hervás & Jódar, 2008).

*2.2.3. General and daily vigour at work*

Vigour was measured with the Spanish version of the vigour subscale from the Utrecht Work Engagement Scale (UWES; Schaufeli et al., 2002). This scale measure with 6 items the levels of energy and mental resilience while working, the willingness to invest effort in one´s work, the ability to not be easily fatigued, and persistence in the face of difficulties (i.e: *During the task, I felt full of energy*). The scale was scored on a seven-point Likert scale (0=*never*, 6=*most of the time*). Daily vigour at work was measured with the same scale modified so that the items referred to the present moment. An example item is: "*At this moment, I feel strong and vigorous with regard to my job*".

*2.2.4. General and daily subjective vitality*

Subjective vitality was measured with the Spanish version of Ryan and Frederick´s Vitality Scale (Rodríguez-Carvajal et al., 2010; Ryan & Frederick, 1997). This scale assessed the degree to which participants felt physically and mentally vigorous and alert in every domains. The measure contains seven items (i.e. "*In general, I feel alive and vital*") which participants endorse on a seven point likert scale, ranging from "*not at all*" to "*very true*". Of the seven items, one is negatively worded and thus reversed scored. Daily vitality was measured with the same scale modified so that the items referred to the present moment. An example item is: "*At this moment, I feel alive and vital"*.

*2.2.5. General and daily positive affect*

Positive affect was measured with the Spanish short version of Positive and Negative Affect Schedule (PANAS; Robles & Páez, 2003; Mackinnon et al. 1999), rated from 1 (*very slightly*) to 5 (*extremely*). The positive subscale assesses with five items the general tendencies to feel activated and positive (e.g., "*enthusiastic*", ''*happy*"). Daily positive affect was measured with the same scale modified so that the items referred to the present moment. An example item is: *"At this moment, I feel happy"*.

**2.3 Statistical analysis**

For hierarchically structured data, as in the present study, the most appropriate approach is multilevel analysis, which has been commonly known as hierarchical linear modeling (Nezlek, 2012). Our data set is composed of two levels, with repeated measurements at the day-level or Level 1 (i.e. daily emotional demands at work, daily difficulties of emotional regulation at work, vigour in afternoon, vitality and positive affect at night), and measurements at the person-level or Level 2 (i.e. type of health centre and general measure of vigour, vitality and positive affect). We centered predictor variables at the person-level around the grand mean, and predictor variables at the day-level around the respective person mean. Centering day-level variables at the person mean implies that all between-person variance in these variables is removed, that is to say, this method ensures that relations on the day level are unconfounded by person-level variance (Hox, 2002). In this way, interpretations of our results referring to stable differences between persons can be ruled out because we used person-level variable as control variables before entering day-level variables in subsequent models of analysis (Nezlek, 2012). Data was analyzed using MLwiN 2.28 software.

**3. Results**

*3.1. Preliminary analysis*

In order to examine the total variance at the within-person level, we estimated the intra-class correlation coefficient (see table 1). All predictor variables showed an intra-class

correlation coefficient above 25% (Hox & Roberts, 2011). Overall, these findings suggest that a substantial portion of the variance in our variables can be attributed to within-person variation across the 5 days, which supports the usage of multilevel analysis. Table 1 also shows the means, standard deviations, Cronbach's alphas and correlations among all the study variables. The type of health centre and the general measure of the dependent variable (i.e: general vigour, vitality and positive affect) were significantly related to our daily dependent variables (i.e. daily vigour, vitality and positive affect), so we took into account these control variables to control its effect in further analyses.

### *3.2. Hypothesis Testing*

The results of our multilevel analyses testing hypothesis 1 are presented in Tables 2, 3 and 4 (in Model 2). The results support hypothesis 1a ($B$ = .28, SE = .08, $t$ = 3.27, $p$ < .001) and hypothesis 1b ($B$ = .22, SE = .09, $t$ = 2.32, $p$ < .01), but not hypothesis 1c ($B$ = .17, SE = .09, $t$ = 1.81, n.s). Thus on days that emotional demands are high nurses feel more vigour at work and more vitality at home, but do not have higher levels of positive affect at night.

In order to test hypothesis 2 to hypothesis 6, the interaction terms were incorporated into the last model (Model 4 in the tables). For the significant moderating effect, we conducted simple slope tests in order to examine the pattern of the interaction (Preacher et al., 2006).

#### *3.2.1. Vigour at work*

In the case of vigour at work in afternoon (see table 2), model 4 that included the five interactions terms showed an improvement in the fit compared to Model 3 (difference of -2 x log = 26.869, df = 5, $p$ < .001). Specifically, there was a significant interaction between emotional demands at work and emotional interference at work on vigour in afternoon ($B$ = -0.558, SE = .278, $t$ = -2.00, $p$ < .05). Moreover, emotional awareness at work had a direct and significant positive relation with vigour in afternoon ($B$ = .213, SE = .07, $t$ = 2.95, $p$ < .01). Simple slope tests showed that emotional demands were more positively related to vigour in

afternoon on days that emotional interference at work was low (see figure 1), in line with Hypothesis 5a ($\gamma = 0.176$, SE = 0.081, z = 2.16, $p < .05$), whereas emotional demands were unrelated to vigour in days that emotional interference at work was high ($\gamma = 0.037$, SE = 0.108, z = 0.34, n.s.). Hypotheses 2a, 3a, 4a and 6a were rejected.

### *3.2.2. Vitality at night*

In the case of vitality at night, we can see in table 3 that the model 4 added the interaction terms and increased the model fit (difference of -2 x log = 26.069, df = 5, $p < .001$). Firstly, there was a significant interaction between emotional demands at work and lack of emotional clarity at work on vitality at night ($B = -0.637$, SE = .188, $t = -3.38$, $p < .001$), as can be seen in Fig 2. Simple slope tests showed that emotional demands were more positively related to vitality at night in days that lack of emotional clarity was low ($\gamma = 0.428$, SE = 0.167, z = 2.564, $p < .01$), while they were more negatively related on days that lack of emotional clarity was high ($\gamma = -0.272$, SE = 0.106, z = -2.55, $p < .01$), in line with Hypothesis 3b.

Moreover, there was also a significant interaction between emotional demands at work and lack of emotional control at work on vitality at night ($B = -0.692$, SE = .299, $t = -2.31$, $p < .01$). As can be seen in Fig. 3, emotional demands were positively related to vitality at night in days that lack of emotional control was low ($\gamma = 0.477$, SE = 0.240, z = 1.99, $p < .05$), while they were more negatively related on days that lack of emotional control was high ($\gamma = -0.283$, SE = 0.125, z = -2.25, $p < .05$). These results are in concordance with Hypothesis 6b. Moreover, this difficulty and emotional non-acceptance had a direct and significant relation with vitality at night ($B = .234$, SE = .119, $t = 1.96$, $p < .05$ and $B = -.244$, SE = .107, $t = -2.28$, $p < .05$ respectively). Hypotheses 2b, 4b and 5b were rejected.

### *3.2.3. Positive affect at night*

In the prediction of positive affect at night (see Table 4), the model 4 added the interaction terms and increased the model fit (difference of -2 x log = 20.267, df = 5, $p <$

.001). There was also a significant interaction between emotional demands at work and lack of emotional clarity at work on positive affect at night ($B$ = -0.548, SE = .185, $t$ = -2.96, $p$ < .01). As can be seen in Fig. 4, emotional demands were positively related to positive affect at night on days that lack of emotional clarity was low (γ = 0.242, SE = 0.075, z = 3.21, p < .001), whereas emotional demands were unrelated to positive affect on days that lack of emotional clarity was high (γ = -0.031, SE = 0.095, z = -0.329, n.s.). These results are in concordance with Hypothesis 3c.

Finally, there was also a significant interaction between emotional demands at work and lack of emotional control at work on positive affect at night ($B$ = -0.597, SE = .296, $t$ = -2.01, $p$ < .05). Simple slope tests showed that emotional demands were positively related to positive affect at night (see figure 5) in days that lack of emotional control was low (γ = 0.207, SE = 0.089, z = 2.33, p < .01), whereas emotional demands were unrelated to positive affect in days that lack of emotional control was high (γ = -0.091, SE = 0.125, z = -0.72, n.s.). These results are in concordance with Hypothesis 6c. However, Hypotheses 2c, 4c and 5c were rejected.

### *3.3. Additional analysis*

Due to the relative small $N$ and because interaction terms usually have non-normal distributions (MacKinnon, et al., 2002), we conducted the same analyses by including one interaction at a time. Results showed that the all interactions between emotional demands and the five emotional regulation difficulties were significant for vigour at work and for vitality at night and in the expected direction. In the case of positive affect at night all the interactions except one were significant (emotional demands X emotional awareness). Results of multilevel analyses are available by the first author upon request.

## 4. Discussion

The present study investigated the role of daily emotional demands at work on nurses' daily motivation and well-being, and how daily emotional regulation at work influences this

relationship. We hypothesized that emotional demands at work would be significant and positively related to vigour at work in the afternoon, and on vitality and positive affect at home at night and that the presence of emotional regulation abilities at work would enhance the positive impact of emotional demands on these positive outcomes. In this sense, our study extends previous research by demonstrating the potential positive effect of daily emotional demands within a health work context and the role of emotional regulation skills to enhance motivation and well-being inside and outside the workplace (Albrecht, 2010; Bakker & Sanz-Vergel, 2013; De Jonge et al., 2008; Giardini & Frese, 2006).

Overall, the findings indicate that emotional demands at work have positive effects on motivation (i.e. vigor at work) and well-being (i.e. vitality and positive affect) among nurses. In addition, the results also show that nurses with higher emotional regulation abilities could have more motivation at work and well-being at home at night when they have faced high emotional job demands, showing a spillover effect after work. The first hypothesis regarding the positive effect of emotional job demands was partly confirmed. Results show that on days when emotional demands at work were high, vigour at work and vitality at night were also high. It suggests that emotional demands from nursing work are critical daily work experiences that not only influence the energy level when being at work (vigour at work), but also *spill over* to the non-work domain by influencing positively the energy level at home (vitality at night). However, we did not find significant relationships to positive affect at night. It appeared that emotional demands at work have a higher positive effect on variables related to psychological well-being (i.e. vigour at work and vitality) than on variables related to emotional well-being (i.e. positive affect). It may be due to the fact that nurses perceive emotional demands as challenges that provide an opportunity to grow and to develop personal and professional abilities (Bakker & Sanz-Vergel, 2013), which are closely linked with psychological well-being (Ryan & Deci, 2001). According to Ryan and Frederick (1997), conditions conducive to intrinsic motivation (e.g. nursing work) are associated with a greater

subjective sense of energy and vitality. Specifically, they argue that vitality is a function of conditions that support agency, self-congruence and growth (e.g. contexts that support psychological competence or relatedness). Caring is often perceived by nurses like a competence to develop and like a source of challenge, motivation and satisfaction (Morgan y Lynn, 2009), which could lead nurses to report more energy and vitality. In addition, when nurses are offering compassion and care to patients, they could feel higher congruence between their actions and the "ideal of nurse" that they usually have (which is focused on caring), and thus, to report more motivation and liveliness.

The hypothesis regarding the boosting effects of emotional regulation abilities were partly confirmed. These results are consistent with earlier research with health employees that revealed beneficial consequences of emotional demands at work when personal resources are available (Bakker-Sanz-Vergel, 2012; Bakker et al., 2007; De Jonge et al., 2008). The findings are also in line with the recent developments in occupational health psychology about *the matching principle* (De Jonge & Dormann, 2006), which predicts that high (but not overwhelming) job demands stimulate positive psychological or physiological states best as long as employees possess sufficient functional, corresponding kinds of resources. In this way, emotionally challenging work in combination with sufficient emotional resources may enhance motivation and well-being among nurses. The presence of emotional regulation abilities in a context of high emotional demands can enhance nurses' vigour and well-being because emotional abilities provide feelings of confidence and control in this context (Albrecht, 2010), and thus, builds an important resource which helps employees to achieve their professional and personal goals (Daniels & De Jonge, 2010; Giardini & Frese, 2006; Kanfer & Kantrowitz, 2002).

Specifically, emotional demands at work were more positively related to vigour in the afternoon in days when emotional interference at work was low. This means that nurses who have the ability to behave in accordance with desired goals when experiencing negative

emotions can feel more vigour at work. This might be due to the fact that nurses with a low emotional interference divert their energy and attention available into dealing effectively with work activities, rather than into negative emotional issues. Vigour at work reflects high levels of energy, persistence and effort in the task, despite setbacks and difficulties (Schaufeli et al., 2002). In this sense, if nurses suffered daily hindrances (i.e. emotional interferences of negative emotions) in their work when they face emotional demands, it could impede them from feeling daily vigour at work. However, our hypotheses regarding the positive effect of emotional demands at work on vigour among nurses with high emotional awareness, emotional clarity, emotional acceptance and emotional control were not confirmed. This may partly be explained due to the relative small *N* and because interactions terms usually have non-normal distributions, which could mask significant findings (MacKinnon et al., 2002). In additional analyses, in which we conducted the same analyses by including one interaction at a time (i.e. emotional demands at work X each emotional skill), results showed that all interactions were significant for vigour. However, one possible caution is that our analyses indicated a very high relation between some regulation abilities (i.e. emotional non-acceptance, emotional interference and lack of emotional control). To test their empirical distinction, we conducted five confirmatory factor analyses (CFA), one per day. In these analyses we could note that a model of five independent factors showed better fit than a model in which all regulatory strategies collapsed in one factor. This indicates that the five regulatory strategies represent distinct constructs.

Furthermore, emotional demands at work were more positively related to vitality and positive affect at night in days when lack of emotional clarity and lack of emotional control at work were low. These findings suggest that the spillover process from emotional demand at work on nurses' well-being during off-job time is promoted by some emotional regulation abilities during work hours. Specifically, nurses who identify and understand the emotions they are experiencing, and who have the ability to remain in control of their behaviour when

experiencing negative emotions at work, have more vitality and positive affect at home at night. However, we could not confirm the hypothesis regarding the boosting effect of emotional awareness, emotional acceptance and emotional interference. Again, it may be explained due to the methodological issues noted above (MacKinnon et al., 2002). It should be also noted that although we tested the interactions in a conservative way, still results show that specific strategies are influential. Emotional clarity allows better emotional information processing and it may be a relevant personal resource to work with emotional content. Moreover, people who identify and understand their emotions at work can regulate them better and, subsequently, implement behaviours to enhance or reduce these emotions depending on their professional or personal goals. In short, emotional clarity as a resource within an emotional context could help to make work easier and fulfilling, which may at the same time promote personal well-being after work. Finally, nurses' ability to control emotions and their behaviours can affect the quality of their relationship with their patients, especially in terms of communication, interaction, therapeutic collaboration and outcomes of treatment (Akerjordet & Severinsson, 2004). By modifying and influencing on their internal states according with the task requirements and patient's needs, they can achieve more easily professional and personal goals, and thus, a higher positive self-concept and professional recognition. For this reason, emotional control could also enhance personal well-being outside work. Taken together, in this study we uncovered that emotional regulation influences motivation and well-being not only in the form of a buffer to reduce the impact of emotional demands, such as reported in previous studies, but also as a booster to enhance the positive effect from emotional demands at work, such as reported in recent empirical studies (Bakker & Sanz-Vergel, 2013; Xanthopoulou et al., 2013).

### 4.1. Limitations and future research

The current study has some limitations. Firstly, we assessed all data with self-report measures raising concerns about common-method variance. By using person-centred scores in

the analyses, we eliminated the potential influence of response tendencies stemming from individual differences, and we thereby reduced the problems associated with common-method variance. However, we hypothesized that emotional regulation abilities at work could enhance the positive effect of emotional job demands on vigour in the afternoon, after work. Emotional regulation abilities at work were measured retrospectively after work, together with vigour. In this sense, the relations may be increased by common method variance. Future research should try to minimize this problem by temporally separating predictor and outcome variables. Secondly, participants were not randomly selected. It is possible that people who are highly "engaged" in their work participated in the study. Moreover, there was a small number of nurses from primary health centres. Thus, it is possible that potential selection biases might have influenced the results. By controlling the "centre" variable in our analysis, we ruled out some potential biasing effects. However, future studies should try to replicate the results with a randomized and representative sample of nurses. Thirdly, participants of this study are day-shift workers. Emotional regulation ability could vary by different shift workers depending on certain work conditions. In the case of the night shifts, nurses could have different emotional demand from their patients or different levels of workload which affect to their emotional regulation. For example, working and living with non-standard work schedules necessitates spending more energy in coping with personal and social demands, and therefore offers fewer degrees of freedom for intensive interaction with patients at work (Poissonnet & Véron, 2000). Again, future studies should try to replicate the results with a representative sample of workers with different shifts. Fourthly, one dimension of the DERS measured in the diary (lack of emotional clarity) showed low Cronbach's alpha coefficients during some days, indicating low reliability of this subscale. Future researchers on emotional regulation at work are challenged to investigate more thoroughly whether adaptation of general scales is the best way to measure emotional regulation at work on the day level. Finally, we cannot draw conclusions about causal relations between our variables.

Experimental studies or intervention studies manipulating emotional regulation are needed to confirm the causal links of the proposed relations.

### 4.2. Conclusion and Practical implications

This study shows that emotional demands at work could also have a positive side and promote motivation experiences and well-being within a health care work context, among nurses. Importantly, this association becomes more evident when nurses do not have difficulties to manage their own emotions, allowing emotional demands at work not to be perceived as a hindrance.

Our study suggests practical implications that may help nurses to be more motivated at work and show higher well-being outside it. It is important that nurses have emotional regulation abilities because they work in a high emotional work context. Nurses with emotional regulation abilities could benefit from a sense of control and confidence in that emotional context, and therefore feel higher motivation and well-being within their job and in their personal life. In the field of applied occupational psychology we can see intervention studies that show how nurses can improve their levels of personal and professional well-being by improving variables of emotional regulation explored in this study (Shapiro et al., 2005). For this reason, workers and supervisors should pay more attention to the issue of how to learn and how to develop emotional regulation abilities at work in order to manage emotional job demands, particularly in trainee nurses.

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