The Spanish Journal of Psychology

Elucidating the Role of Recovery Experiences in the Job Demands-Resources Model

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Based on the Job Demands-Resources (JD-R) model, the current study examined the moderating role of recovery experiences (i.e., psychological detachment from work, relaxation, mastery experiences, and control over leisure time) on the relationship between one job demand (i.e., role conflict) and work- and health-related outcomes. Results from our sample of 990 employees from Spain showed that psychological detachment from work and relaxation buffered the negative impact of role conflict on some of the proposed outcomes. Contrary to our expectations, we did not find significant results for mastery and control regarding moderating effects. Overall, findings suggest a differential pattern of the recovery experiences in the health impairment process proposed by the JD-R model.
Keywords: job demands, recovery, health, well-being.

El estudio que aquí se presenta se fundamenta en el modelo de Demandas-Recursos Laborales y se centra en el análisis de las experiencias de recuperación (distanciamiento psicológico, relajación, búsqueda de retos y ocio) como moderadoras de la relación entre las demandas laborales (conflicto de rol) y la salud relacionada con el trabajo. Los resultados obtenidos con una muestra laboral española de 990 trabajadores muestra que el distanciamiento psicológico y la relajación median el impacto negativo del conflicto de rol en las medidas propuestas. Contrariamente a los resultados esperados, no se encontraron resultados significativos para las variables de recuperación, mastery y ocio. En general, los resultados sugieren un patrón diferencial de las experiencias de recuperación en el proceso de salud propuesto por el modelo de Demandas-Recursos Laborales.
Palabras clave: demandas laborales, recuperación, salud, bienestar.

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Researchers have begun to recognize that to understand the effects of job stressors on well-being, it is crucial to focus on variables that take place outside the work domain (Etzion, Eden, & Lapidot, 1998; Sonnentag, 2001; Sonnentag & Fritz, 2007). Within this perspective, recovery offers the individual resources to reduce the negative effects of job demands (Eden, 2001). The concept of recovery has been defined as a process opposite to the building up of stress, characterized by a psycho-physiological unwinding (Geurts & Sonnentag, 2006). During the recovery process, psycho-physiological systems return to a baseline level, giving the individual the opportunity to replenish resources and face new demands without entering into a chronic spiral of health problems (Meijman & Mulder, 1998).

In the field of organizational health psychology, the Job Demands-Resources (JD-R) Model emphasizes that job and personal resources may buffer the impact of job demands on stress reactions (e.g., Bakker, Demerouti, & Euwema, 2005; Bakker, van Veldhoven, & Xanthopoulou, 2010; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). According to this perspective, resources that offer recovery may be useful to reduce the negative impact of job demands on several outcomes. To achieve a complete picture of the role of recovery, Sonnentag and Fritz (2007) have classified external recovery into four different experiences (i.e., psychological detachment from work, relaxation, mastery experiences, and control over leisure time). These recovery experiences are understood not as activities per se, but as underlying psychological experiences through which people feel recovered. Lately, there has been a growing interest in analyzing recovery experiences as buffering mechanisms between demands and different outcomes; however, most of them offer a fragmented vision, focusing only on psychological detachment (Etzion et al., 1998; Moreno-Jiménez, Rodríguez-Muñoz, Pastor, Sanz-Vergel, & Garrosa, 2009; Moreno-Jiménez, Mayo et al., 2009). To our knowledge, there are only two studies examining the moderating role of the four recovery experiences in the stress-strain process (Kinnunen, Mauno, & Siltaloppi, 2010; Siltaloppi, Kinnunen, & Feldt, 2009).

Specifically, in this study we focus on a moderating effect on the relationship between one job demand, namely role conflict, and job-related outcomes (work-family conflict and workplace bullying) and health-related outcomes (somatic symptoms and anxiety). First, we focus on role conflict because it is one of the most classic job stressors studied in organizational psychology and its negative effects have been widely recognized (e.g., Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). Second, we have organized the dependent variables in two categories (job- and health-related outcomes) for clarity purposes. It's well known that job demands affect not only perceptions about work-related issues but also perceptions about the own health (Bakker & Demerouti, 2007). Regarding our job-related outcomes, it has been recognized that role conflict at work leads to higher levels of work-family conflict (Fu & Shaffer, 2001). Conflict at work may increase strain that spills over to the home domain, resulting in higher levels of work-family conflict. Moreover, organizational and situational factors are considered the main predictors of workplace bullying. For example, in a meta-analysis carried out by Bowling and Beehr (2006) it was found that role conflict was the strongest predictor of bullying at work. Role conflicts may escalate into workplace bullying because they trigger interpersonal aggression (Baillien & De Witte, 2009). Regarding health-related outcomes, it has been shown that being exposed to work demands affects to different indicators of health. For instance, Frone, Russell, and Cooper (1992) found that job stressors were directly related not only to high work-family conflict but also to high psychological distress.

Through the examination of all the above commented variables, we contribute to this field of research in various ways. First, we add to the limited number of studies examining the moderating role of the recovery experiences in the stress-strain process. Second, we analyze the four recovery experiences proposed by Sonnentag and Fritz (2007), so that it is possible to find out the specific role of each type of recovery. Third, to achieve a more complete picture of the role of recovery between job stress and well-being, the present study examines job-related outcomes on the one hand (work-family conflict and workplace bullying) and health-related outcomes on the other hand (somatic symptoms and anxiety). Most of these dependent variables have not been explored in previous studies examining the moderating role of recovery.

The JD-R Model and its association with recovery experiences

According to the JD-R Model, the characteristics of every occupation can be classified into two categories (i.e., job demands and job resources). *Job demands* refer to physical, social or organizational aspects of the job that require sustained physical or mental effort, whereas *job resources* are those aspects that reduce job demands and the associated costs (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). An important assumption in the JD-R is that high demands exhaust employees' mental and physical resources, leading to a depletion of energy and to health problems, which is known as the *health impairment process* (Demerouti et al., 2001; Bakker & Demerouti, 2007). However, it is possible to restore these depleted resources through unwinding processes, as it has been proposed by Hobfoll (1998) in the Conservation of Resources (COR) Theory. This theory states that stress takes place because people are threatened with a loss of resources or failing at gaining new resources. In the context of recovery, COR theory has been one of the most applied models, given that it offers a clear explanation of the role of recovery in the

stress-strain process (Geurts & Sonnentag, 2006; Sonnentag, 2001; Sonnentag & Fritz, 2007). From this perspective, recovery has been considered as a way to restore resources or to gain new resources, which helps to face job demands (Meijman & Mulder, 1998). Specifically, in the present study we focus on the four recovery experiences proposed by Sonnentag and Fritz (2007): psychological detachment from work, relaxation, mastery experiences, and control over leisure time.

Of these recovery experiences, *psychological detachment from work* has been the most widely studied, since the work of Etzion et al. (1998) who defined it as the sense of being not only physically but also mentally away from the work situation. It has been shown that this recovery experience helps to reduce strain and increase well-being. For instance, employing a diary design, Sonnentag and Bayer (2005) found that people who disconnected from work in the evening experienced positive mood and lower fatigue the next day.

Relaxation refers to a state in which the person has a low activation and a high positive affect (Stone, Kennedy-Moore, & Neale, 1995). Activities such as listening to music or taking a walk can be initiated deliberately by the person to achieve this state (Sonnentag & Fritz, 2007). Sonnentag, Binnewies, and Mojza (2008) have shown that relaxation in the evening predicted serenity the next morning.

Mastery experiences are activities outside the work domain that involve a challenge for the individual, providing competence or abilities (Sonnentag & Fritz, 2007). As noted by Fritz and Sonnentag (2006), learning a new hobby, practicing a sport or learning a language are activities that offer recovery because the individual gain new resources, such as specific skills or self-efficacy (Hobfoll, 1998). When the Recovery Experiences Questionnaire was developed, it was found that mastery was negatively associated to health-related outcomes such as emotional exhaustion and positively associated to life satisfaction (Sonnentag & Fritz, 2007), so it seems that although challenging experiences require investing an effort, they are positive for well-being.

Control over leisure time has been considered as an important resource in the recovery process, given that it offers the individual the opportunity to choose the leisure activities that he or she prefers (e.g., relaxing activities or challenging experiences). When people do not have the opportunity to organize their time outside the work domain, it is difficult that other recovery experiences take place. The positive effects of control have been also demonstrated, given that it has been negatively related to health-related outcomes, and positively related to life satisfaction (Sonnentag & Fritz, 2007).

Overall, results suggest that activities with the potential to distance the individual mentally from the work-related tasks offer recovery, reducing the strain reactions, and offering the individual the opportunity to rebuild depleted resources (e.g., through relaxing activities), as well as to gain new resources (e.g., through mastery experiences). Moreover, if people have the ability to disconnect from work and control their leisure time, it is easier to develop activities to feel recovered.

The moderating role of recovery experiences

The JD-R model also proposed that job resources may buffer the impact of job demands on stress reactions (Bakker et al., 2005), assuming a moderating role of resources in the relationship between demands and its negative effects. Moreover, the subsequent idea that not only job but also personal resources can play a role in the model's health impairment process (Bakker & Demerouti, 2007, 2008; Xanthopoulou et al., 2007) it is helpful to understand the role of recovery. *Personal resources* are aspects of the self that are generally linked to resilience and refer to individuals' sense of their competence to successfully control and impact their environment (Hobfoll, Johnson, Ennis, & Jackson, 2003). Xanthopoulou et al. (2007). Following this assumption of personal resources as buffers in the strain-stress relationship, we consider that the way in which people recover from job demands can be understood as a personal resource, reducing its negative effects on several outcomes. Apart from the JD-R model, the COR theory also offers an argument for the moderating role of resources between role conflict and negative outcomes. Grandey and Cropanzano (1999) applied the COR theory to the work and non-work domains arguing that having to perform different roles that are mutually incompatible can lead to stress because resources are lost in the process. For this reason, to avoid entering into a vicious circle, people need to restore depleted resources (Sonnentag & Fritz, 2007).

Taking into account the JD-R model and the COR theory, detaching from work or doing relaxing things can help the individual to recover from the effort expended to perform different roles, buffering the negative effects of role conflict on well-being.

In that way, people with high levels of recovery experiences may have less strain when stressors appear given that they have more resources to face new demands than people with problems to recover. For instance, it has been found that psychological detachment buffered the negative effects of work-family conflict and bullying on psychological strain (Moreno-Jiménez, Rodríguez-Muñoz et al., 2009; Moreno-Jiménez, Mayo et al., 2009). Moreover, relaxation has been considered as a protective factor, reducing the negative effects of time demands on exhaustion (Siltaloppi et al., 2009). In the case of mastery experiences, we consider that they may help individuals to distance from work-related issues given that through the development of challenging activities people change the focus of attention. In fact, through these types of activities, people can learn new abilities that may be helpful to juggle with job demands by increasing self-efficacy (Bandura, 1997). Finally, having control over the leisure time is a way to increase autonomy

outside the work domain. The perception of control can lead to a positive re-evaluation of the stressful situations, reducing strain and increasing well-being (Lazarus, 1966). It is important to have the opportunity to recover outside the work domain, performing activities or roles that the individual chooses. In that way, the negative effects of the role conflict experienced at work can be reduced when people stop performing incompatible roles and decide what to do in the non-work domain. Based on these arguments, we propose the next hypotheses:

Hypothesis 1: Recovery experiences (psychological detachment, relaxation, mastery and control) will buffer the negative impact of role conflict on job-related outcomes. Specifically, the positive association between role conflict and (a) work-family conflict and (b) workplace bullying will be stronger among people who score low on these recovery experiences than for people who score high.

Hypothesis 2: Recovery experiences (psychological detachment, relaxation, mastery and control) will buffer the negative impact of role conflict on health-related outcomes. Specifically, the positive association between role conflict and (a) somatic symptoms and (b) anxiety will be stronger among people who score low on these recovery experiences than for people who score high.

Method

Participants and Procedure

The sample was composed of 990 employees, working in the security sector. Participants were recruited from 28 organizations located in 10 different communities in Spain. The average age of participants (789 men and 201 women) was 39.22 years (*SD* = 8.8) and their average of work experience was 11.98 years (*SD* = 7.9). The majority of the participants (78.1%) had a partner, and at least one child (64.5%). Most of them (71.3%) had a university degree or completed secondary education. The average time worked per week was 48.5% hours (*SD* = 11.8), and the majority had permanent contracts (85.8%). We distributed 1900 questionnaires and finally, 1015 were returned (response rate 53.4%), of which 990 were usable surveys. This return rate is generally considered to be adequate for these designs (Rea & Parker, 1992).

Measures

Role Conflict. Work-related role conflict was measured using Rizzo, House, and Lirtzman's (1970) eight-item measure of role conflict (e.g., "At work, I must do things that should be done differently", "At work, I receive incompatible requests from two or more people"). Each item had seven response choices ranging from 1 (very false) to 7 (very true). Higher scores indicated greater perceived role conflict. Cronbach's alpha was .90.

Recovery experiences were measured using the Recovery Experience Questionnaire (Sonnentag & Fritz, 2007). Participants were asked to respond to the items with respect to their free time after work. We used the Spanish validation (Sanz-Vergel et al., 2010) of this questionnaire, where the structure was maintained but with 3 items per dimension instead of 4 items as in the original scale. Specifically, items 4, 5, 9, and 13 were deleted in this version. The items were rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Examples of items were ''I distance myself from my work'' (psychological detachment), ''I do relaxing things" (relaxation), ''I do something to broaden my horizons (mastery), and ''I determine for myself how I will spend my time (control). Cronbach's alpha was .87 for psychological detachment, .75 for relaxation, .85 for mastery, and .88 for control.

Two job-related outcomes were included in the present study. *Work-family conflict (WFC)* was measured with the Spanish validation (Moreno-Jiménez, Sanz-Vergel, Rodríguez-Muñoz, & Geurts, 2009) of the SWING (Geurts et al., 2005). This subscale had eight items, and respondents used a 4-point scale ranging from 0 to 3 (*never, sometimes, often, and always*) to indicate the frequency with which they had experienced the situations described by each item (e.g., "How often does it happen that your work schedule makes it difficult for you to fulfil your domestic obligations?"). Cronbach's alpha was .86. *Workplace bullying* was measured with the 9-item Short-Negative Acts Questionnaire (S-NAQ; Notelaers & Einarsen, 2008). This questionnaire describes personal- and work- related negative acts which may be perceived as bullying when occurring on a regular basis (e.g., Spreading of gossip and rumours about you; Repeated reminders about your blunders or mistakes). Respondents were asked how often they experienced negative acts at work over the past six months, in a 5-point scale ranging from 1 (*never*) to 5 (*daily*). All items are formulated in behavioural terms, with no reference to the term bullying, and in line with previous studies (e.g., Rodriguez-Muñoz, et al., 2009), all items were included in one scale. Cronbach's alpha was .90.

Health-related outcomes were assessed using two dimensions of the 28-item version of the general health questionnaire (GHQ-28; Goldberg & Hillier, 1979). The GHQ-28 asks participants about medical complaints and how they felt over the past few weeks. For this study we used two categories, namely somatic symptoms (e.g., Have you been getting a feeling of tightness or pressure in your head?; Felt that you are ill?; $\alpha = 85$), and anxiety (e.g., Been getting scared or panicky for no good reason?; $\alpha = 90$). Responses are given on a 4-point scale, ranging from 0 to 3, higher scores indicating poorer health.

Control variables. In order to ensure that the hypotheses tests were appropriately conservative, several following

Table 1
Means, Standard Deviations, and Correlations

	M	*SD*	1	2	3	4	5	6	7	8
1. Role conflict	3.65	1.64	—							
2. Psychological detachment	3.70	1.03	–.14**	—						
3. Relaxation	4.00	0.85	–.11**	.43**	—					
4. Mastery experiences	3.79	0.90	.09**	.23**	.37**	—				
5. Control over leisure time	4.17	0.88	–.11**	.33**	.40**	.32**	—			
6. Work-family conflict	0.88	0.55	.35**	–.28**	–.28**	–.08**	–.24**	—		
7. Workplace bullying	1.35	0.59	.42**	–.17**	–.12**	–.03	–.04	.35**	—	
8. Somatic symptoms	0.59	0.48	.30**	–.25**	–.27**	–.07*	–.18**	.46**	.40**	—
9. Anxiety	0.50	0.56	.32**	–.34**	–.30**	–.10**	–.23**	.51**	.46**	.74**

*$p < .05$, **$p < .01$

controls were measured and included in all analyses. Specifically we included gender (0 = female; 1 = male), age (years), marital status (0 = Single; 1 = With partner), and number of hours worked per week as control variables, because these variables may covary with the variables under study (job- and health-related outcomes), causing possible spurious relations.

Statistical analyses

Hypotheses were tested by means of hierarchical regression analyses (list wise deletion) with a two-way interaction term (SPSS 17.0), following the steps outlined by Cohen, Cohen, West and Aiken (2003). In order to avoid multicollinearity problems, all independent variables were standardized prior to their entry in regression equations. The statistical significance of the interaction or moderation effect was assessed after controlling for all main effects. Control variables were entered first in the models (step 1 of the model), followed by the main effects of both role conflict and the four recovery experiences (step 2). Finally, in the third step the interaction between role conflict and each recovery experience was entered. We used the Durbin-Watson statistic as a diagnostic check for bias resulting from correlated errors terms. We found these values to be in the recommended range (1.5-2.5) for all reported equations (Durbin & Watson, 1971). Furthermore, we found no evidence of multicollinearity according to Kleinbaum, Kupper and Mueller's (1988) criteria for VIF and tolerance values.These tests indicate that multicollinearity did not present a biasing problem in the present data.

Results

Measurement model

Before testing the regression models, we examined a measurement model including all the study variables: role conflict, four recovery experiences, work-family conflict, workplace bullying, somatic symptoms and anxiety (nine-factor model). The four recovery dimensions were allowed to correlate. We also examined a one-factor model and a three-factor model (health Complaints, work-related factors, and recovery dimensions). The models were estimated through CFA with AMOS 7.0. The results indicated that the nine-factor model provided a reasonable fit to the data $\chi^2(751) = 2175.19$, $p < .001$; RSMEA = .04; TLI = .90, and CFI = .91. In addition, nine-factor model fitted better to the data than the one factor model, $\Delta\chi^2(12) = 726.9$; $p < .001$, and the three factor model, $\Delta\chi^2(5) = 439.5$; $p < .001$, which suggests the variables included in the study could be distinguished empirically, and that common method variance does not seem a significant contaminant of the results observed in this study.

Correlation analysis

Means, standard deviations, and correlations of all the study variables are presented in Table 1. Correlations among the variables were in the expected direction. Role conflict was strongly and positively related to job-related outcomes, whereas all recovery dimensions were negatively related with work-family conflict. However, regarding bullying only psychological detachment (r = -.17, $p < .01$) and relaxation (r = -.12, $p < .01$) showed a significant association. Furthermore, as expected, role conflict was also positively related to health-related outcomes. Regarding recovery, all dimensions were significantly and negatively correlated to both health complaints.

Moderation analysis

Results of the multiple regression analyses are presented in Table 2. Regarding job-related outcomes, role conflict was significantly and positively associated to work-family conflict and workplace bullying ($\beta = .30$, $p < .001$ and $\beta = .38$, $p < .001$, respectively). As can be seen in Step 2, three of the four recovery experiences showed a main effect

Table 2
Results of Hierarchical Regression Analyses

Steps and Variables[a]	Work-Family Conflict			Workplace Bullying			Somatic Symptoms			Anxiety		
	β Step 1	β Step 2	β Step 3	β Step 1	β Step 2	β Step 3	β Step 1	β Step 2	β Step 3	β Step 1	β Step 2	β Step 3
Gender	.02	.01	.01	.02	.03	.02	.13**	.13**	.14**	.02	.03	.03
Age	–.03	–.04	–.04	–.01	–.02	–.01	–.02	–.02	–.03	.05	.04	.03
Marital status	.11**	.06	.06	–.03	–.02	.01	.03	–.01	.01	–.02	–.06	–.06
Hours worked per week	.15***	.12***	.11**	.11**	.07*	.04	.01	.02	.03	.03	.02	.01
Role conflict		.30***	.29***		.38***	.38***		.26***	.25***		.22***	.21***
Psychological detachment		–.12**	–.09*		–.08*	–.05		–.11**	–.08*		–.20***	–.17***
Relaxation		–.19***	–.17***		–.09*	–.06		–.18***	–.17***		–.17***	–.16***
Mastery Experiences		–.04	–.03		–.08*	–.07*		–.01	–.01		–.05	–.04
Control over leisure time		–.15***	–.14***		–.02	–.03		–.11**	–.10*		–.11**	–.10*
Role conflict X Detachment			–.10**			–.11**			–.06			–.14***
Role conflict X Relaxation			–.05			–.10*			–.09*			–.02
Role conflict X Mastery			–.02			–.05			–.01			–.01
Role conflict X Control			–.01			–.02			–.01			–.02
R^2	.03***	.28***	.30**	.03	.23***	.27***	.02*	.22***	.24**	.01	.22***	.25***
ΔR^2	.03***	.25***	.02**	.02	.20***	.04***	.02*	.20***	.02**	.01	.21***	.03***

[a] Note. β are the standardized regression coefficients.
* $p < .05$. ** $p < .01$. *** $p < .001$

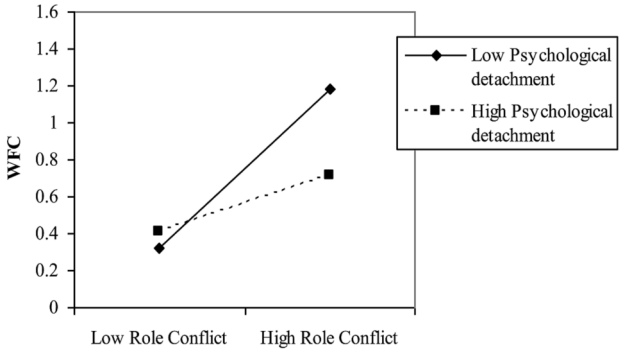

Figure 1. Interaction effects of role conflict and psychological detachment in predicting work-family conflict.

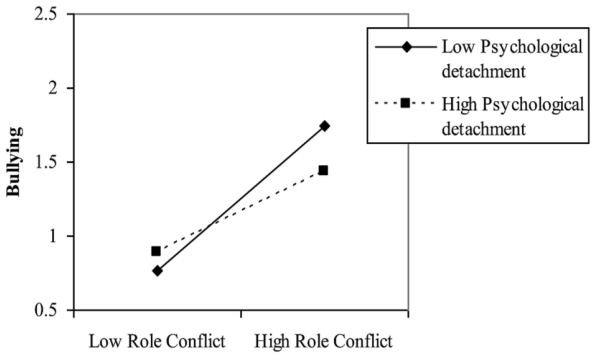

Figure 2. Interaction effects of role conflict and psychological detachment in predicting workplace bullying.

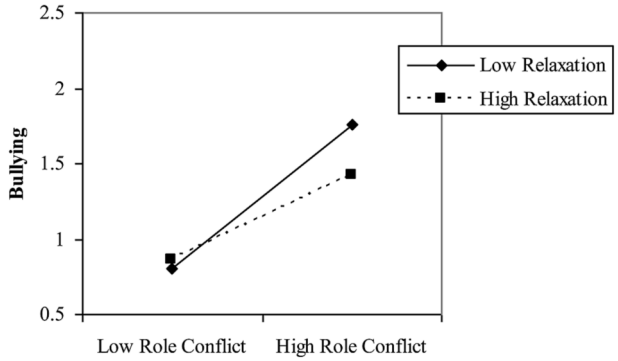

Figure 3. Interaction effects of role conflict and relaxation in predicting workplace bullying.

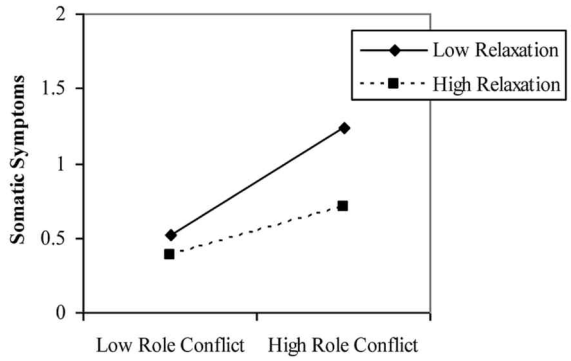

Figure 4. Interaction effects of role conflict and relaxation in predicting somatic symptoms.

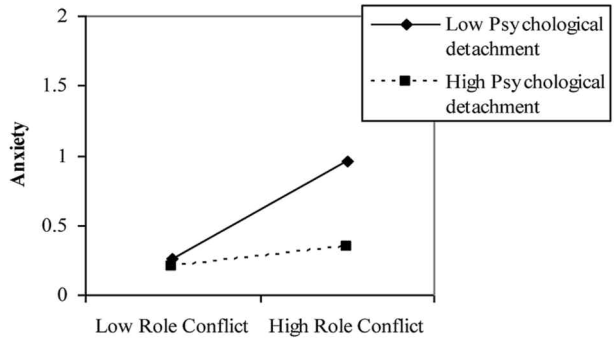

Figure 5. Interaction effects of role conflict and psychological detachment in predicting anxiety.

on WFC and only one on workplace bullying. Regarding the moderating effects, we found a significant moderating effect of psychological detachment on the relationship between role conflict and WFC (β = -.10, $p < .01$), as well as on the relationship between role conflict and workplace bullying (β = -.11, $p < .01$). In addition, we also found a moderating effect of relaxation on the association of role conflict with workplace bullying (β = -.10, $p < .05$).

To clarify the nature of the moderating effects, we plotted the interactions using the standardized regression coefficients of the regression lines for employees high (1 *SD* above the mean) and low (1 SD below the mean) on the moderator variable (Cohen et al., 2003). The significant interaction terms were studied by means of simple slopes analyses (Aiken & West, 1991; Cohen et al., 2003). Figure 1 shows that role conflict is stronger related to WFC in conditions of low psychological detachment ($b = .70$, $t(985) = 11.1$, $p < .01$), compared to high levels of detachment ($b = .46$, $t(985) = 9.78$, $p < .01$). Figure 2 shows that role conflict is stronger related to workplace bullying in conditions of low psychological detachment ($b = .66$, $t(986) = 10.80$, $p < .01$), compared to high levels of detachment ($b = .49$, $t(986) = 8.95$, $p < .01$). Similarly, Figure 3 shows that the association between role conflict and bullying was higher for those with low levels of relaxation ($b = .60$, $t(984) = 8.06$, $p < .01$), compared to high levels of this variable ($b = .47$, $t(984) = 6.73$, $p < .01$). Thus, hypothesis 1 was partially supported.

As regards health-related outcomes, as expected, role conflict was significantly and positively related to somatic symptoms (β = .26, $p < .001$) and anxiety (β = .22, $p < .001$). All recovery experiences, with the exception of

mastery, had a main effect on both somatic symptoms and anxiety. Regarding the moderating effects, we found a significant moderating effect of relaxation on the relationship between role conflict and somatic symptoms (β = -.09, $p < .05$). Figure 4 shows that role conflict is stronger related to somatic symptoms in conditions of low relaxation (b = .56, $t(982) = 8.12$, $p < .01$), compared to high levels of relaxation ($b = .38$, $t(982) = 7.21$, $p < .01$). Furthermore, we found that psychological detachment moderated the association between role conflict and anxiety (β = -.14, $p < .001$). As can be seen in Figure 5 role conflict is stronger related to anxiety in conditions of low psychological detachment ($b = .65$, $t(985) = 10.12$, $p < .01$), compared to high levels of detachment ($b = .44$, $t(985) = 9.11$, $p < .01$). Thus, hypothesis 2 was partially supported.

Discussion

The aim of the present study was to examine the moderating role of the four recovery experiences proposed by Sonnentag and Fritz (2007) on the relationship between role conflict and job- and health-related outcomes. Regarding the job-related outcomes, we found that psychological detachment from work moderated the relationship between role conflict and our two dependent variables (i.e., work-family conflict and workplace bullying). Moreover, relaxation buffered the positive association between role conflict and workplace bullying. However, mastery and control are not playing a moderating role in this process. Taken together, these findings provide partial support for hypothesis 1. Results regarding health-related outcomes also support hypothesis 2 partially. One the one hand, psychological detachment mitigated the negative impact of role conflict on anxiety. On the other hand, relaxation moderated the relationship between role conflict and somatic symptoms.

Overall, findings suggest that of the four recovery experiences, psychological detachment and relaxation seem to be the most protective against the negative effects of role conflict both on job- and health-related outcomes. Results are in line with previous studies showing the mitigating effect of these recovery experiences. For instance, Moreno-Jiménez, Rodriguez Muñoz et al. (2009) found that psychological detachment moderated the relationship between role conflict and workplace bullying. Moreover, Siltaloppi et al. (2009) demonstrated that psychological detachment was a protective mechanism under poor job control, reducing the need for recovery. In the same line, relaxation buffered the negative impact of time demands on job exhaustion.

Our findings can be interpreted based on the JD-R model (Bakker et al., 2005; Demerouti et al., 2001) and COR theory (Hobfoll, 1998). As proposed by the JD-R model, recovery experiences could be understood as personal resources that buffer the negative impact of job demands on stress. This in in line with Xanthopoulou et al. (2007) who pointed out that people with personal resources can deal more effectively with demanding conditions, which prevents them from negative outcomes. Also in line with these authors, we combine this explanation with COR theory to analyse the buffering effect of recovery experiences. Specifically, when people have a conflict between different roles, they have to do an extra effort to perform well at work, which may have an impact on several outcomes. Through recovery experiences, in this case, psychological detachment from work and relaxation, people can restore energy resources and recovery from the effort expended, reducing the negative effects of role conflict. After a hard working day, thinking about non-work-related issues and doing activities such as reading a book or taking a walk are useful resources that people invest to avoid entering into a loss spiral. As Hobfoll (1989) suggested, people invest their resources in order to deal with stressful conditions and prevent themselves from negative outcomes.

An interesting finding is that psychological detachment but not relaxation interacts with role conflict in the prediction of WFC. However, both detachment and relaxation interact with role conflict in predicting bullying. A possible explanation for these findings has to do with the nature of the dependent variables and also the nature of these two recovery experiences. First, WFC implies interference between roles, given that strain that builds up at work makes it difficult to attend to family responsibilities. If someone continues thinking about job-related issues at home, they cannot focus on home tasks, which increase WFC. However, if they disconnect from work, they can be active to engage in different activities. The nature of relaxation is different. As Sonnentag and Fritz (2007) pointed out, this recovery experience is characterized by a state of low activation. One could argue that to engage in family responsibilities, people have to forget about work, and be actively engaged in home tasks. Therefore, a state of low activation does not help in this case. It seems that this strategy is useful to reduce somatic symptoms because of this state of low activation.

Second, regarding why both detachment and relaxation interact with role conflict in predicting bullying, we base on the mood regulation strategies of Parkinson and Totterdell (1999). Sonnentag and Fritz (2007) referred to these strategies to explain the nature of the recovery experiences. Specifically, detachment and relaxation were considered "*diversionary strategies*", so that people focus on different activities and not on the stressor. In the case of bullying, being exposed to work stressors might produce negative emotional and behavioral responses that encourage victimization. However, through diversionary strategies such as detachment or relaxation, people can avoid being cognitively occupied with the stressful situation and replenish resources to face new demands. In that way, and in line with Lazarus' model (1966), they will perceive the environment as less stressful because they consider they have resources to cope with difficult situations.

Contrary to our expectations, mastery experiences and control over leisure time did not moderate the relationship between role conflict and any of our dependent variables. Although other studies have found some evidence of the potential buffering effects of these two recovery experiences (Kinnunen et al., 2010; Siltaloppi et al., 2009), in most of the studies psychological detachment from work showed the most significant results, so it seems to be the most powerful recovery experience, as Sonnentag and Fritz (2007) already suggested. A possible explanation for the lack of clarity regarding the role of mastery and control is that they are recovery experiences with a different underlying mechanism. To engage into challenging experiences or to organize and control time outside the work domain, people need to invest extra resources. Then, it might be argued that these recovery experiences are more related to motivational aspects, so that its effects may be more pronounced in the motivational process proposed by the JD-R model. Given that in this study we have focused on the health impairment process, we do not know if mastery and control may play a moderating role on the relationship between job resources and positive outcomes such as work engagement. Future research should explore recovery experiences in the health impairment process as well as in the motivational process to achieve a better understanding of the role of recovery experiences in the JD-R model.

Strengths and limitations

The present study has some strengths and limitations that should be taking into account when interpreting the results. First, this study relies on cross-sectional data, which implies that it is impossible to conclude in causal terms. Other forms of causation among variables, such as reverse and reciprocal, may be present. However, the current findings were in line with the JD-R model assumptions (Bakker & Demerouti, 2007; Demerouti et al., 2001), which propose that job demands and resources predicts outcomes, and not the other way around. Also worthy of mention, is that we used a large sample, which may affect effect sizes and power of the results (Frazier, Tix, & Barron, 2004). We calculated the power of our results following the procedure proposed by Cohen et al. (2003), and found that the power of our regressions to detect interaction effects was .99 with an alpha level of .01. Thus, the power of our results was close or above the .80 value recommended (Cohen, 1992), and clearly exceed values found in previous research. For example, Aguinis, Boik, and Pierce (2001) found that the power to detect interaction effects in a typical study is .20 to .34. On the other hand, the effect sizes found in the current study were small. In this sense, it has been pointed out that effect sizes for interactions are usually small, especially in non-experimental studies (Frazier et al., 2004). However & Cohen (1992) showed that R^2 values of .02 and above would signify unique contributions to the overall variance. Regarding the sample, we must also indicate that it was not representative of the Spanish working population.

Another drawback of the study is that it's based on self-report measures, which may increase the possibility of common-method variance (CMV). However, we followed several of the recommendations of Podsakoff, MacKenzie, Lee, and Podsakoff (2003) for minimizing the effect of CMV in the results. For example, a confirmatory factor analysis where all items loaded into a single factor, fitted poorly to the observed data, which suggests that a single factor cannot account for all of the variance in our data. Furthermore, previous research has found that although main effects might have been affected by CMV, interactions are hardly attributable to method bias (Cohen et al., 2003). To the contrary, CMV is likely to attenuate rather than to strengthen interactions (Wall, Jackson, Mullarkey, & Parker, 1996).

Practical Implications

Our findings reveal some implications for practice. For example, when people are exposed to job demands, it is likely that they do not find ways to feel recovered. It has been recognized that organizations have to improve working conditions by reducing job demands (Sonnentag & Kruel, 2006). An appropriate design of the job, with clear tasks will make the individual to experience the work environment as less stressful. Moreover, organizations should offer employees facilities to recover and promote the development of leisure activities to help them disengage from the daily strains of work (Sonnentag & Fritz, 2007).

A second step should be aimed at providing employees with skills to better achieve recovery by developing training programs. For instance, specific strategies to detach from work or to relax are avoiding ruminating about unpleasant experiences through mediation, yoga, progressive muscle relaxation or breathing exercises (e.g., Grossman, Niermann, Schimidt, & Walach, 2004). Along the same line, Sonnentag and Bayer (2005) based on positive psychology, have suggested some techniques to detach from work, such as relaxation exercises or the initiation of flow experiences during leisure time activities. In any case, as Demerouti, Bakker, Geurts, and Taris (2009) pointed out, what is more important is that individuals need to discover those recovery activities that suit to their personal needs.To conclude, the present study extends the JD-R model, by examining recovery experiences as personal resources that may buffer the negative effects of job stressors.

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