

# The Role of Co-worker and Supervisor Support in the Relationship Between Job Autonomy and Work Engagement Among Portuguese Nurses: A Multilevel Study

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**Abstract** The objective is to analyze the relationship between job resources (i.e., job autonomy and social support) and work engagement in nurses. Hypotheses have been tested through hierarchical linear modeling using data from 313 Portuguese nurses (individual level) nested in 33 work teams (team level), after aggregating individual perceptions to the group level and testing the agreement among these perceptions using the  $r_{wg(j)}$  and the intraclass correlations indices. Results confirmed first, that individual job autonomy and team-level social support (from the supervisor as well as from co-workers) are positively related to individual work engagement and second, that team-level social support has a moderating effect on the relationship between individual job autonomy and individual work engagement (but not in the case of co-workers' support). This study provides evidence that nurses' work engagement results from individual job autonomy and collective social support. Accordingly, fostering job autonomy and social support in order to promote work engagement among nurses can be useful for both hospital managers and practitioners.

**Keywords** Job autonomy · Social support · Work engagement · Nurses

## 1 Introduction

Nurses are heavily exposed to a myriad of psychosocial stressors in their daily work. Literature about how stressful the nursing profession can be is abundant (i.e., Abualrub et al. 2009). Therefore, we know a great deal about how much stress nurses can experience.

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A common recommendation in the nursing literature is that the next step in research should focus on fostering work engagement (Freeney and Tiernan 2009). Indeed, one important issue addressed in the recent health-care literature refers to the creation of healthy work environments that can promote nurse retention and safer patient care (Kohn et al. 2000; Maslove and Fooks 2002). In this research, we analyze whether job autonomy and social support are related to nurses' work engagement, with the added contribution of analyzing social support as a collective construct. To achieve this objective, we firstly review studies about the importance of work engagement among nurses, secondly we analyze the relationship between individual job autonomy and work engagement and finally we examine the role of collective social support in the previous relationship, as well as in work engagement.

## 1.1 Work Engagement

As Schaufeli et al. (2002) point out, work engagement is a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption. As Schaufeli et al. (2002) stated, rather than a momentary and specific state, work engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior. Vigor is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence even in the presence of difficulties. Dedication refers to being strongly involved in one's work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Absorption is characterized by fully concentrating on and being happily engrossed in one's work. Time passes quickly and it is difficult to detach oneself from work.

Although work engagement is the keystone of talent management and business success (Shuck and Reio 2010), the study of this variable within the nursing literature, as Freeney and Tiernan (2009) noted, is only dealt with on a minimal basis, with some exceptions (e.g., Laschinger et al. 2009; Simpson 2009). These exceptions have highlighted the critical protective function of work engagement in helping community nurses, to cope with adversity and negative factors that put them at risk of deep fatigue and near-burnout (Vinje and Mittelmark 2007). Researchers have explored a wide variety of potential predictors of work engagement, among which job resources play a major role (Halbesleben 2010). Consequently, the more job resources are available, the more likely it is that nurses will feel engaged. Job resources are "those physical, psychological, social, or organizational aspects of the job that may (a) reduce job demands and the associated physiological and psychological costs, (b) be functional in achieving work goals, and (c) stimulate personal growth, learning and development" (Demerouti et al. 2001: 501). The job resources included in this paper are job autonomy and social support. Next, both resources will be analyzed in nurses.

## 1.2 Job Autonomy

Job autonomy refers to the degree to which the job provides the employee with substantial freedom, independence, and discretion in scheduling the work and in determining the procedure to be used in carrying it out (Hackman and Oldham 1975). It has been considered an important job resource that promotes work engagement (Schaufeli and Salanova 2007).

Job autonomy has been ranked as the most important job component among nurses (Buchan 1999; Finn 2001) and one of the most important factors contributing to nurses' job satisfaction (Stamps and Piedmonte 1986; Van der Heijden et al. 2010), work engagement (Bargagliotti 2012), and professional development (Hart and Rotem 1995). However, even

though professional autonomy is a key construct in the nursing profession, it is still restricted. The nursing profession continues to suffer from the effects of patriarchal dominance by the medical professional, as well as an adherence to an outdated bureaucratic management style (Carmel et al. 1988; Finn 2001; Manley 1995; Oermann and Bizek 1994).

### 1.3 Social Support

Social support refers to positive or helpful social interaction available from superiors, management, and co-workers in the workplace (Karasek and Theorell 1990).

Recent studies have shown the strength of the relationships between job resources (i.e., social support) and work engagement (Christian et al. 2011). In the nursing profession, supervisors and co-workers are often described as two important sources of social support, due to their ability to understand and address work-related stressors (Sundin et al. 2011), cope with stress and, consequently, promote nurses' well-being (Kaufmann and Beehr 1986) and enhance their professional growth and career development (Halbesleben and Rotondo 2007). Along these lines, findings show that lack of social support is associated with reduced well-being among nurses (Burke et al. 2012). More specifically, a supportive supervisor provides help, information and constructive feedback, and nurses believe that he/she facilitates their further development (Blancero et al. 1996; Langford et al. 1997). Moreover, supportive peers provide nurses with a perception that the workplace is a context where others help them and where they all share information and have high learning opportunities (Van der Heijden et al. 2010). Thus, there seems to be a direct effect of both job resources on work engagement, but social support has also been considered a moderator variable (Karasek and Theorell 1990). Social support may moderate the relationship between job autonomy and work engagement. If nurses receive strong social support from their supervisors and co-workers, they will feel even more secure and supported in their decisions, and job autonomy will have a stronger relationship with their work engagement than in situations with low social support from the supervisor and co-workers.

On the other hand, employees from the same context show common patterns in their perception of the way their contributions are valued and how their organization looks after their well-being (Eisenberg et al. 1990). As a result, workers in the same context may share their perceptions about the degree to which the entity is committed to them, as there may be a collective perception of organizational support (Sora et al. 2011). This assumption is consistent with the "bottom-up" process for constructing a collective perception (Kozlowski and Klein 2000) and the consensus composition model by Chan (1998), which suggests that agreement among the perceptions of the members of a group is the basis for the conceptualization and operationalization of a construct at higher levels of analysis with a functioning that is isomorphic with respect to the lower levels.

In this study, we analyzed the collective perception of the work team with regard to how much social support they receive from their supervisor and from one another, as a team. Along these lines, some studies have analyzed the effect of social support and define this construct as having of a collective nature (e.g., Bliese and Castro 2000; Gentry et al. 2007; Sora et al. 2011); while other studies show the importance of studying some constructs at the collective level of analysis when research is focused on collective constructs (Walumbwa et al. 2011; Whitman et al. 2010). Finally, Walumbwa et al. (2011) stress the need for future work at the team and organizational levels.

Therefore, three types of reasons allow us to use a collective measure of social support. First, there are theoretical reasons, as several theories describe the human tendency to

mimic vocalizations and expressions and state that our ability to empathize leads us to experience life experiences as shared experiences such as in the emotional contagion theory (Hatfield et al. 1994), the “bottom-up” process for constructing a collective perception (Kozlowski and Klein 2000), and the consensus composition model by Chan (1998). Second, there are empirical reasons, as collective social support derived individual scores has been used at the organizational level (Sora et al. 2011) and the team level (Bliese and Castro 2000). Finally, there are methodological reasons. Results from interrater agreement indices, such as  $r_{wg(j)}$  index (James et al. 1984) and the Intraclass Correlations Coefficient, -ICC(1) and ICC(2)- (LeBreton and Senter 2008), will allow us to understand that these individuals scores can be aggregated to create a collective measure.

To sum up, the objective of this study is to analyze the direct effects of two types of job resources (i.e., job autonomy and social support) have on nurses’ work engagement. Job autonomy is measured as an individual perception, whereas social support is measured as a collective (i.e., team level) perception. Moreover, we will test whether social support affects work engagement not only directly, but also by moderating the relationship between job autonomy and work engagement in a multilevel way. Although we believe that the results from both types of social support will show the same tendency, we also analyze the effects of co-workers’ and the supervisor’s social support independently, in order to discover the effect of each of the sources of social support on both nurses’ work engagement and the relationship between autonomy and work engagement. Therefore, our hypotheses are:

**Hypothesis 1** Individual job autonomy is positively related to individual work engagement.

**Hypothesis 2** Team-level social support (from supervisor and co-workers) is positively related to individual work engagement (i.e., cross level relationship), controlling for the impact of individual job autonomy.

**H<sub>2a</sub>:** Social support from the supervisor (level-2) is positively related to individual work engagement (level-1), controlling for the impact of individual job autonomy

**H<sub>2b</sub>** Social support from co-workers (level-2) is positively related to individual work engagement (level-1), controlling for the impact of individual job autonomy

**Hypothesis 3** Team-level social support (from supervisor and co-workers) has a moderating effect on the relationship between individual job autonomy and individual work engagement.

**H<sub>3a</sub>** Social support from the supervisor (level-2) has a moderating effect on the relationship between individual job autonomy and individual work engagement (level-1)

**H<sub>3b</sub>** Social support from co-workers (level-2) has a moderating effect on the relationship between individual job autonomy and individual work engagement (level-1)

## 2 Method

### 2.1 Participants

The study was conducted using a convenience sample from a Portuguese public general hospital. This hospital was chosen due to its availability and its positive collaborative attitude toward our research. In order to collect the data, researchers contacted the director

of the hospital. The hospital's participation in the study was agreed on, and permission was obtained from the ethical committee. All the nurses were invited to participate, and researchers explained the study procedure to all the head nurses. Head nurses distributed and collected the questionnaires (which required 30 min to administer). Nurses completed the questionnaires anonymously and deposited them in a sealed envelope for their return. Researchers collected all the envelopes from the hospital when they were completed. The research team guaranteed confidential data processing and participation was voluntary.

Finally, the sample consisted of 313 nurses. 80.1 % were females, and their mean age was 33.9 years ( $SD = 11$ ). They belonged to 33 jobs that represent different services within the hospital (e.g., pediatrics, neurology, etc.), where nurses work together regularly. The rate of participation in the study was 86 % (total population in the hospital was 364). Nurses' work experience in their current service was: 55.5 % less than 3 years, 15.9 % between 4 and 6 years, 14 % between 7 and 10 years, and 14.6 % over 10 years (Mean = 5.27;  $SD = 5.9$ ).

## 2.2 Measurement

### 2.2.1 Job Autonomy

Job autonomy was measured using a Portuguese translation of the Job Content Questionnaire by Karasek et al. (1998), following Castanheira and Chambel (2010). This scale includes four items, and measures employees' job autonomy to make job-related decisions (e.g., "To what extent do you have the freedom to decide how to organize your work?") Cronbach alpha = 0.75. Items were scored on a five-point Likert scale, ranging from 1 ("Never") to 5 ("Very Often"), with high scores indicating high levels of job autonomy.

### 2.2.2 Social Support of Co-workers and Supervisors

The social support of both co-workers and supervisors was measured through a Portuguese translation of the Job Content Questionnaire (Karasek 1985), previously used in another study (Ângelo and Chambel 2014). The supervisor's social support was measured with five items (e.g., "My supervisor is concerned about the well-being of those under him"; Cronbach's alpha = 0.79, and six items were used to measure co-workers' social support (e.g., "The people I work with are helpful in getting the job done"; Cronbach's alpha = 0.81. Participants were asked to indicate the extent to which they agreed with each statement on a four-point scale ranging from 1 ("strongly disagree") to 4 ("strongly agree"), with high scores indicating high levels of social support. Although information about these variables was collected individually, after calculating interrater agreement indices among nurses in the same team, information was treated in a collective way, providing one common perception of the team. The entire aggregation process is explained in the aggregation analysis section within the results section.

### 2.2.3 Work Engagement

The work engagement scales were developed by Schaufeli and Bakker (2003) and have been shown to be reliable in several studies (Schaufeli et al. 2002). We used the Portuguese translation previously used in another study (Chambel and Oliveira-Cruz 2010). *Vigor* was measured with four items, for example, "In my job, I feel bursting with energy", *dedication*

with four items “*My job inspires me*”, and *absorption* with five items “*Time flies when I am working*”. Cronbach’s  $\alpha = 0.86$ . All items used a seven-point response format ranging from 0 (“never”) to 6 (“every day”).

### 2.3 Data Analysis

Different data analyses were performed. First we calculated internal consistencies (Cronbach’s  $\alpha$ ), descriptive analysis and correlations among the variables under study, using the IBM-SPSS 21.0 program. Second, we analyzed whether any of the socio-demographical variables measured (i.e., gender, age and experience) had an effect of any construct under study. Third, because data were all self-reported, there are concerns that the results might be influenced by common method variance, understanding this as a bias that appears when we measure different constructs with the same method. The danger is that at least some of the observed covariation between them may be due to the fact that they share the same method of measurement (Podsakoff et al. 2012). Using IBM-AMOS 19.0, we conducted Harman’s one-factor test (Podsakoff et al. 2003). Fourth, since social support is measured at the work-unit level, we aggregated individual perceptions to the group and the agreement between these perceptions was checked using various indices. These indices are: the  $r_{wg(j)}$  index (James et al. 1984) which shows the interrater agreement to justify the creation of aggregated scores for the study variables; the Intraclass Correlations Coefficient, ICC(1) and ICC(2) of the study variables at the work-unit level (LeBreton and Senter 2008), where ICC(1) estimates the proportion of variance between participants that could be accounted for by differences in team membership, whereas ICC(2) estimates the reliability of the aggregated scores for each variable (i.e., supervisor’s social support and co-workers’ social support) at the team level (James 1982); and Analyses of Variance (ANOVAs), computed to test whether there was any statistically significant between-group discrimination on the measures.

Finally, our statistical analysis considers a macro–micro multilevel situation (Snijders and Bosker 1999), where a dependent variable measured at the lower level (i.e., individual) is predicted or explained by variables measured at that lower level or at a higher level (i.e., teams). In this study, a dependent variable  $Y$  (i.e., work engagement), measured at the lower level (level-1), is assumed to be influenced by explanatory variable  $X$  (i.e., job autonomy), also measured at the lower level, and by explanatory variable  $Z$  (i.e., social support), measured at the higher level (level-2). Our data were hierarchically structured in such a way that 313 individual-level cases (level-1) were nested within 33 work teams (level-2). Data were analyzed through Hierarchical Linear Modeling (HLM) (e.g., Hofmann and Gavin 1998; Hox 1995) using LISREL software. This method is suitable for analyzing data in a nested structure by constructing a separate sub-model at each of the levels in the data structure (Bryk and Raudenbush 2002). It allows us to make simultaneous inferences about the effects of variations in the independent variables at the individual (i.e., job autonomy) and team levels (i.e., co-workers’ and supervisor’s social support) on the dependent variables (i.e., work engagement), and the cross-level moderating effect of the independent variables on the dependent variable at the individual level. We decided to center predictor scores relative to the mean of the entire sample, using grand-mean centering, as suggested by Hoffman and Gavin (1998).

**Table 1** Means, standard deviations, and correlations among variables (N = 313)

	M	SD	$\alpha$	1	2	3	4
1. Supervisor social support	3.01	0.67	0.79	–			
2. Co-workers social support	3.10	0.46	0.81	0.40**	–		
3. Job autonomy	3.54	0.67	0.75	0.25**	0.17**	–	
4. Work engagement	4.35	0.85	0.86	0.18**	0.16**	0.16**	–

\*  $p < 0.05$ ; \*\*  $p < 0.01$

**Table 2** ANOVA among variables (N = 313)

	Gender		Age		Experience		Service	
	F	$p$	F	$p$	F	$p$	F	$p$
Supervisor social support	0.53	0.46	1.13	0.27	0.81	0.80	1.04	0.41
Co-workers social support	1.61	0.21	1.33	0.10	1.22	0.18	1.12	0.27
Job autonomy	1.01	0.31	0.91	0.64	1.32	0.10	1.19	0.19
Work engagement	0.10	0.75	1.31	0.10	0.89	0.69	0.91	0.64

### 3 Results

#### 3.1 Descriptive Analysis

Means, standard deviations, internal consistencies (Cronbach's alpha), and correlations are shown in Table 1. All scales showed acceptable internal consistencies. The table shows that all variables were positively and significantly related to work engagement. Moreover, results from ANOVA and Student  $t$  analysis confirmed that none of the socio-demographic variables measured had an effect of any of the constructs under study (see Table 2).

Harman's single factor test with Confirmatory Factor Analysis (CFA) was computed, using individual data, for the variables in the study. The model with one single factor revealed a poor fit to the data ( $\chi^2 = 599.91$ ;  $p = 0.000$ ; RMSEA = 0.10; GFI = 0.81; CFI = 0.76; IFI = 0.77). However, the competitive model with four latent factors (i.e., job autonomy, supervisor's and co-workers' social support, and work engagement), revealed a significantly higher fit than the model with one single factor, and its fit indices were suitable ( $\chi^2 = 333.63$ ;  $p = 0.000$ ; RMSEA = 0.07; GFI = 0.89; CFI = 0.90; IFI = 0.90, Delta  $\chi^2(x) = 266.28$ ,  $p < 0.001$ ). These results show that one single factor could not account for the variance in the data in employees. We can consider that common method variance is not a deficiency in this dataset of nurses.

#### 3.2 Aggregation Analysis

In the case of team variables (supervisor's social support and co-workers' social support), interrater agreement on team-level measures using the  $r_{wg(j)}$  index (James et al. 1984) reveals strong agreement among team members. The mean  $r_{wg(j)}$  value for co-workers' social support at the work-unit level was 0.71 ( $SD = 0.20$ ), which is above the commonly

used 0.70 threshold (Bliese 2000). The same thing occurs with the supervisor’s social support, with a  $r_{wg(j)}$  mean value of 0.72 ( $SD = 0.18$ ).

The ICC(1) values for the variables were: 0.17 supervisor’s social support, and 0.15 for co-workers’ social support. The ICC(1) values were within the acceptable criterion for ICC(1) reported in previous reviews of multilevel research (cf. Bliese 2000). The ICC(2) value for supervisor’s social support was 0.65 and for co-workers’ social support it was 0.62. Again, these values compare favorably with estimates reported in earlier studies of this type (Schneider et al. 1998).

### 3.3 Multi-level Analysis and Hypotheses Testing

Table 3 summarizes the HLM results of the effects of job autonomy, and supervisor’s and co-workers’ social support on work engagement. In this table Model 1 refers to the null model.

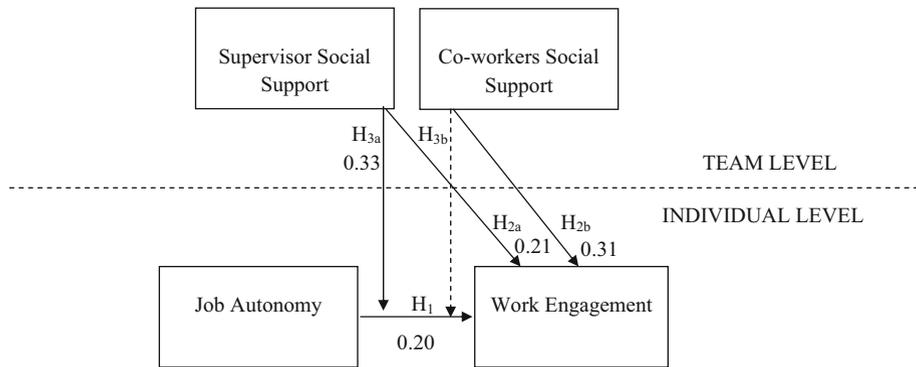
The multilevel hypotheses are also summarized in Fig. 1.  $H_1$  proposes a relationship at the individual level. This hypothesis predicted that job autonomy would relate to work engagement positively. As shown in Table 2 (Model 2), the relationship was significantly positive ( $\beta = 0.20, p < 0.001$ ), therefore  $H_1$  is supported.

**Table 3** Hierarchical linear models results (individual level  $N = 313$ ; team level  $N = 33$ )

Parameters	Model 1	Model 2	Model 3a	Model 3b	Model 4a	Model 4b
<i>Individual level</i>						
Intercept	4.35 (0.05)***	4.35 (0.05)***	4.35 (0.05)***	4.35 (0.05)***	4.33 (0.05)***	4.35 (0.05)***
Job autonomy		0.20 (0.07)***	0.17 (0.07)**	0.17 (0.07)**	0.20 (0.07)***	0.18 (0.07)***
<i>Team level</i>						
Supervisor social support			0.22 (0.11)*		0.21 (0.11)**	
Co-workers social support				0.30 (0.11)*		0.31 (0.12)***
Supervisor social support $\times$ job autonomy					0.33 (0.16)**	
Co-workers social support $\times$ job autonomy						0.16 (0.16)n.s.
$\sigma^2$ individual level	0.70 (0.08)***	0.72 (0.10)***	0.71 (0.10)***	0.70 (0.10)***	0.70 (0.09)***	0.70***
$\sigma^2$ work-unit level	0.04 (0.24)***	0.04 (0.27)	0.04 (0.27)	0.03 (0.27)	0.04 (0.27)	0.03
$-2 \times \log$	856.43	888.61	885.86	884.65	883.87	884.16
$\Delta -2 \times \log$		32.18	3.01		1.99	
$gI$	3	6	7	7	8	8
$R^2$		2.9	1.3	2.7	1.4	–

n.s. non significant

\*\*\*  $p < 0.000$ ; \*\*  $p < 0.01$ ; \*  $p < 0.05$



**Fig. 1** Multilevel relational model

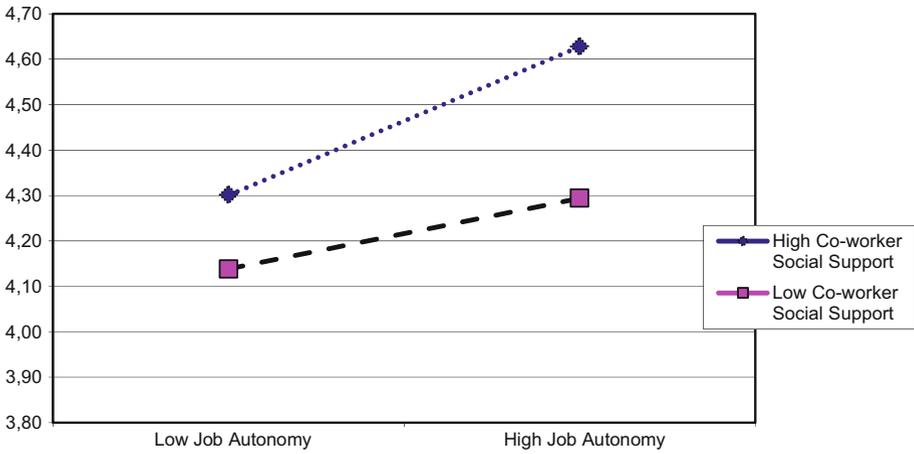
$H_{2a}$  and  $H_{2b}$  predict that social support (supervisor's and co-workers' social support, respectively) is positively related to work engagement. These hypotheses propose a cross-level relationship. In the case of  $H_{2a}$  as shown in Table 2 (Model 3<sub>a</sub>), the relationship was significantly positive ( $\beta = 0.22$ ,  $p < 0.01$ ). For  $H_{2b}$  (Model 3<sub>b</sub>), the relationship was also significantly positive ( $\beta = 0.31$ ,  $p < 0.001$ ). Consequently, both  $H_{2a}$  and  $H_{2b}$  are supported. Moreover, all results are summarized in Fig. 1, where we show the significant paths for each relationship.

To test  $H_3$ , we included the cross-level interaction.  $H_{3a}$  and  $H_{3b}$  stated that social support (supervisor's and co-workers' social support, respectively) would moderate the relationship between job autonomy and work engagement, so that the relationship is stronger when social support is stronger. Model 4<sub>a</sub> was significant and positive ( $\beta = 0.33$ ,  $p < 0.01$ ). However, Model 4<sub>b</sub> shows no significant effect of a cross-level interaction. These results show the moderator effect of the supervisor's social support in the relationship between job autonomy and work engagement, revealing that the effect of job autonomy on work engagement is even stronger when the nurses on the team perceive that their supervisor supports them, but this is not true in the case of their co-workers' support. This significant interaction effect is represented graphically in Fig. 2.

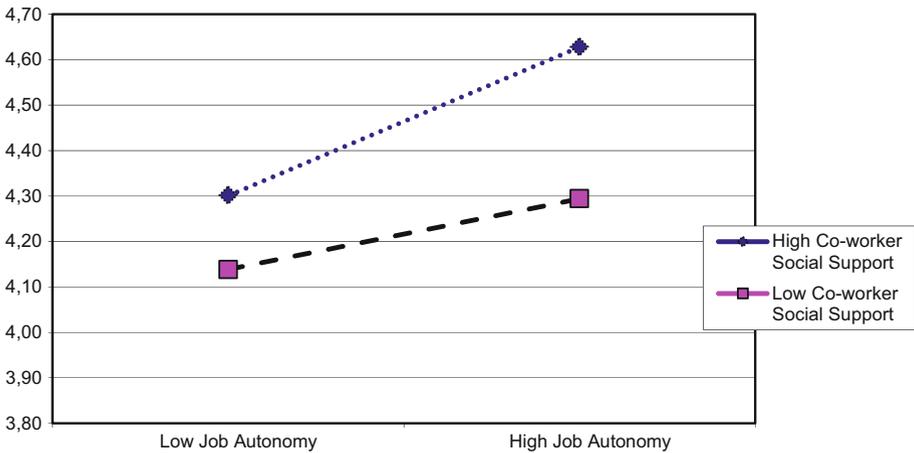
Values of the moderator variable were chosen at 1 SD above and below the mean. Figure 2 shows that nurses who report higher levels of work engagement have high job autonomy and high supervisor social support. In the case of low levels of supervisor social support, levels of work engagement are similar at both levels of job autonomy, that is, high and low. Finally, as we noted above,  $H_{4b}$  was not supported. The cross-level effect of co-workers' social support on the job autonomy interaction was not significant (see Fig. 3). The effect of co-workers' social support is similar at high and low levels of job autonomy.

## 4 Discussion

We have confirmed, as in previous studies (e.g., Halbesleben 2010), that there is a significant and positive relationship between job resources (i.e., job autonomy and social support) and work engagement among nurses. In addition we have gone a step further by analyzing the cross-level effect of social support (both from the supervisor and from co-workers) on the relationship between job autonomy and work engagement. Our results



**Fig. 2** Interaction effect job autonomy X supervisor social support



**Fig. 3** Interaction effect job autonomy X co-workers social support

show that this cross-level effect exists only in the case of supervisor social support. However, this cross-level effect does not appear in the case of co-workers’ social support. Along these lines, a study by Othman and Nasurdin (2013) found that whereas supervisor social support was positively related to work engagement, co-worker social support was not. Cortese et al. (2010) showed that, in the end, the supervisor is the one who has the ability to influence autonomy.

**4.1 Theoretical and Practical Contributions**

As far as theoretical contributions are concerned, this study has shown that nurses’ work engagement is not only explained by their own perception of their resources, but also by the team’s perception of their resources (e.g., supervisor social support). Thus, we have

extended the role of the work context in explaining nurses' well-being. Moreover, we have shown that job resources are related to work engagement in two different ways: directly and indirectly through interaction. Until now, the moderating effect of social support in this population had only been tested in relationships between stress constructs and job satisfaction (e.g., Abualrub et al. 2009).

Regarding practical contributions, our results show that although both sources of social support affect work engagement, supervisor social support is especially important among nurses, because it helps to strengthen the relationship between job autonomy and work engagement. It is important for nurses' administrators and managers to consider adopting strategies that will demonstrate support for their nurses. As Van der Heijden et al. (2010) stated, managers in healthcare institutions should be much more aware of this, and focus on measures aimed at increasing nurses' engagement with their work and its social environment. Fostering appropriate supervisor support will be a source of work engagement among nurses.

## 4.2 Strengths of the Study

This study has two main strengths. The first is that it studies a positive construct, work engagement, in the nursing profession. The study of this variable within the nursing literature, as Freeney and Tiernan (2009) noted, has only been done on a minimal basis, with some exceptions (e.g., Laschinger et al. 2009; Simpson 2009) and we think it is the path to follow. Second, the present study analyzes social support in a collective way because, as Bliese and Castro (2000) stated, aggregate ratings of constructs such as support allow one to assess the contextual work environment in ways that cannot be done by relying only on individual-level variables. As occupational research becomes more complex, it is clearly important to consider how social and contextual variables will be integrated into research and theory. This paper provides one example.

## 4.3 Weaknesses and Future Research

Despite its contributions, this study has some limitations. The most important one is that there is only one time lag in this study. Therefore, we cannot talk about causal relationships between job resources and work engagement. Future research should use a longitudinal design to test both causal and reciprocal relations among job resources and work engagement over time.

Second, all our measures are self-reports. Although the shared perception of the teams of nurses reduces this weakness (i.e., agreement), it would be far better to have objective data. However, the results of Harman's single-factor test revealed that common method variance was not necessarily a serious deficiency in this dataset. In future research it would be advantageous, for instance, to collect the common perception of social support in a more objective way.

Third, although this study is about nurses, some of the theoretical and empirical references we have used to explain and validate the relationship variables have been tested with other populations, but not with nurses. As we explained above, studies about nurses are usually more focused on the negative side (i.e., burnout) than on the positive side (i.e., work engagement), although we firmly believe that future studies will solve this problem in the coming years.

Fourth, all the nurses belong to one hospital. Therefore, future research should replicate this study with samples from other hospitals and, above all, from other countries.

Fifth, we are aware of the lack of inclusion of other basic and important covariates in the study of work engagement, such as salary, education, chance of promotion, etc. As work engagement is a complex concept, further research is needed with these and other variables.

Finally, recently Persson et al. (2012) found that conducting highly similar work does not lead to highly similar reports on the Job Content Questionnaire. However this conclusion does not mean that this scale cannot be used in a collective way. Nurses are asked about the supervisor or about their colleagues, and we have tested whether, within the same group, they agreed about their perceptions or not.

## 5 Conclusion

This study has demonstrated that job resources at the individual level (i.e., job autonomy) and at the team level (i.e., co-workers and supervisor social support), have a direct positive relationship with individual work engagement in nurses. It also shows that the team supervisor's social support moderates the relationship between individual job autonomy and individual work engagement: the job autonomy-work engagement relationship is stronger when the team supervisor's social support is high than when this support is low.

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