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Self-efficacy and workaholism as initiators of the job demands-resources model

Self-efficacy and
workaholism

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Abstract

Purpose – This study aims to investigate school principals' well-being by using the job demands-resources (JD-R) model as a theoretical framework. It aims at making a significant contribution to the development of this model by considering not only job demands and job resources, but also the role of personal resources and personal demands as predictors of work engagement and burnout. In particular, it was hypothesised that job demands may mediate the relationship between workaholism and burnout, whereas job resources may mediate the relationship between self-efficacy and work engagement and burnout.

Design/methodology/approach – A survey study was conducted. In total, 224 school principals (67 percent women) during training activities completed a questionnaire.

Findings – The results of SEM analyses largely supported the hypotheses by showing that personal variables operate as initiators of health impairment and motivational processes.

Research limitations/implications – The study lends support to the literature on individual resources that underlines the role that personal resources play in work engagement and burnout. It contributes to the JD-R model by highlighting the role of personal demands (i.e. workaholism), which has an effect on the development of burnout in school principals.

Practical implications – The implications of these findings for interventions aimed at the promotion of school principals' well-being are discussed.

Originality/value – This study advances the understanding of the role played by personal resources and personal demands in the job demands-resources model. The value added is represented by the study of workaholism as personal demand, which in turn influences job demands and also the health impairment it triggers.

Keywords Burnout, Work engagement, Workaholism, Self-efficacy, School principals, Leaders, Quality of life, Retention

Paper type Research paper



Introduction

School principals of primary and secondary schools play important organisational roles. Many of the principals' daily activities are comparable to managerial activities, especially in terms of the hours worked per week. In Italy, school principals are

nowadays fully responsible for a wide range of organisational (e.g. the recruitment of fixed-term teaching personnel, organisational, and operational control), pedagogical (e.g. the quality of the teaching activity of the whole institution), and political (e.g. relationships with elected representatives of students' parents) activities.

Italian law is granting more and more autonomy to schools as organisations. This trend has made school principals directly responsible for a growing number of organisational tasks and outcomes. This changing role has produced a double effect. On the one hand, it has subjected school principals to pressure regarding results and placed them under stress; on the other hand, having gained managerial status their job may now be considered a more challenging one, making job engagement and commitment more likely. As Westman and Etzion (1999) pointed out, these kinds of professionals are exposed to many stressors; at the same time, however, they have a lot of autonomy in their jobs, which enables them to be engaged.

Given this, the job of school principal appears a good opportunity for capturing both positive and negative aspects of well-being.

The current study focuses on the well-being of school principals by using the Job Demands-Resources (JD-R) model as a theoretical framework. It aims to make a significant contribution to the development of this model by considering not only job demands and job resources, but also the roles of personal resources and personal demands as predictors of work engagement and burnout.

Burnout, work engagement, and the JD-R model

Burnout is usually defined as a syndrome of exhaustion, cynicism, and lack of professional efficacy (Maslach *et al.*, 2008). Exhaustion and cynicism are regarded as the "core components" of burnout (Schaufeli and Taris, 2005). In contrast to burnout, work engagement is defined as a positive, fulfilling, work-related state of mind characterised by vigour, dedication, and absorption (Schaufeli *et al.*, 2002). Vigour and dedication are considered the core dimensions of work engagement (Schaufeli and Bakker, 2004) and are the direct opposites of exhaustion and cynicism, respectively. The continuum that is spanned by vigour and exhaustion has been labelled "energy", whereas the continuum that is spanned by dedication and cynicism has been labeled "identification" (González-Romá *et al.*, 2006). Hence, work engagement is characterized by a high level of energy and strong identification with one's work, whereas burnout is characterised by the opposite: a low level of energy and poor identification with one's work. For this reason many studies have used only the two core dimensions of burnout and work engagement (e.g. Hakanen *et al.*, 2006; Schaufeli *et al.*, 2009b). Moreover the studies that have investigated burnout, work engagement, and workaholism simultaneously have found a role ambiguous for the dimension of professional efficacy and absorption. For example, Schaufeli, Taris and Van Rhenen (2008) found that professional efficacy loaded on the latent work engagement factor instead of the burnout factor; and absorption also loaded on the latent workaholism factor as well. All things considered, in the current study, only the core dimensions of burnout and work engagement were examined.

The potential antecedents of burnout and work engagement can be conceptualised using the JD-R model (Bakker and Demerouti, 2007). This model assumes that although every occupation has its own specific work characteristics, these characteristics can be classified in two general categories:

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- (1) job demands (JD); and
 - (2) job resources (JR).

According to the JD-R model, job demands and job resources are important because they evoke two relatively independent processes: a health impairment process in which high job demands exhaust employees' mental and physical resources and may, therefore, lead to energy depletion or burnout; and a motivational process in which job resources, because of their motivational potential, induce employees to fulfil their work goals and, in turn, may lead to work engagement (Bakker and Demerouti, 2007). There is a large body of evidence that confirms both processes simultaneously: for example, there is substantial evidence indicating an association between high job demands or a lack of resources and level of burnout (see Llorens *et al.*, 2006), as well as the association between job resources and work engagement (e.g. Hakanen *et al.*, 2006). In regards to the impact of job demands on work engagement, previous studies have shown that, in contrast to burnout, work engagement seems particularly correlated with the resources available in the organisation. In other words, the relationship between job demands and engagement seems not significant or weak and sometimes even negative (Llorens *et al.*, 2006; Hakanen *et al.*, 2008).

Extending the JD-R model: the role of personal resources and personal demands

An important recent extension of the JD-R model pertains to the inclusion of personal resources. Personal resources are those aspects of the self-linked to resilience and concern the perception of individuals that they can successfully control and impact upon their environment (Hobfoll *et al.*, 2003). Xanthopoulou *et al.* (2007) examined the role of three personal resources (self-efficacy, organization-based self-esteem, and optimism) in predicting exhaustion and work engagement. Results of structural equation modelling analyses showed that personal resources partly mediated the relationship between job resources and work engagement. More recently, Xanthopoulou *et al.* (2009) showed that job resources, personal resources (i.e. self-efficacy, organisational-based self-esteem, and optimism), and work engagement are reciprocally related over time.

In the present study, we considered self-efficacy as a major personal resource. Social Cognitive Theory (Bandura, 1997, p. 3) defines self-efficacy as the "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments". Self-efficacy contributes to motivation by influencing the challenges that people pursue, the effort they spend, and their perseverance in the face of obstacles. Although most research has focused on the moderating role of self-efficacy in the relationship between stressors and strain (Stetz *et al.*, 2006), less attention has been paid to its relationship with positive states such as work engagement (Salanova *et al.*, 2010). There is some evidence, however, that self-efficacy may act as an important determinant of work engagement (Llorens *et al.*, 2007). Indeed, self-efficacy acts as a self-motivating mechanism: when people perceive their levels of competences to be high, they consequently set themselves goals and are motivated to spend considerable effort and persistence in overcoming obstacles. Moreover, people with high levels of self-efficacy seem to have low levels of burnout (Bandura, 1997). Finally, according to the Conservation of Resources (COR) theory (Hobfoll, 2001), self-efficacious employees may perceive or build more resources as a means to face demanding situations. Indeed,

the COR theory predicts that those who possess more resources are also more capable of resource gain (Hobfoll, 2001).

A new feature of the current study is that in addition to resources, personal demands are also included. In a recent study, Lorente *et al.* (2008, p. 359) suggested that it could be interesting to consider personal demands as well. "For example, personality traits like perfectionism and emotional instability, and goal setting and levels of expectations, could be relevant personal demands to be studied in future research on this intriguing topic". In the present study, we included workaholism as a personal demand. In a recent study, Schaufeli *et al.* (2009a) found that workaholism acts as an individual risk factor that contributes, independently from job context, to burnout and well-being. Despite its popularity, however, there is no consensus on the definition of workaholism beyond its core element: a substantial investment in work. In the current study, we adopt the description of Schaufeli, Taris and Bakker (2008), who consider workaholism the tendency to work excessively hard (the behavioural dimension) and being obsessed with work (the cognitive dimension), which manifests itself in working compulsively. This definition of workaholism agrees with an analysis of scholarly definitions that identified two key characteristics of workaholism:

- (1) working excessively hard; and
- (2) being propelled by an obsessive inner drive (McMillan and O'Driscoll, 2006).

Moreover, there is also agreement about the association between workaholism and job demands. In fact, workaholics are known to make their work more complicated than necessary, to accept new tasks before completing previous ones, and not to delegate their work (e.g. Machlowitz, 1980); in other words, to some extent they create their own job demands. At the same time, according to the dynamic interactionist perspective (Ickes *et al.*, 1997), people actively gravitate toward particular situations and avoid others in ways that reflect their personal characteristics. Consistent with this principle, Schaufeli *et al.* (2009a) demonstrated that role conflict fully mediated the relationships between workaholism (i.e. working excessively and working compulsively), on the one hand, and burnout and well-being (job satisfaction, happiness, and perceived health), on the other hand. In a similar vein, Taris *et al.* (2005) found that quantitative job demands (work overload) partially mediated the relationship between workaholism and exhaustion, a core dimension of burnout. In summary, these studies suggest that workaholism and burnout are indirectly related through job demands.

These relationships, to the best of our knowledge, have not been tested on sample principals. There has been prior research on school principals as a sample studying the relationships between self-efficacy and engagement only. In their study among female school principals, Bakker *et al.* (2006) found that those with most personal resources scored highest on work engagement. In particular, resilience, self-efficacy, and optimism contributed to work engagement and were able to explain the unique variance in engagement scores (in addition to social support from team members and colleague principals, opportunities for development, and social support from the intimate partner).

Also the results of Federici and Skaalvik (2011) of 300 Norwegian principals revealed that principal self-efficacy was positively related to work engagement.

The present work dually concurs with the literature on the JD-R model, firstly by introducing personal demand and secondly by verifying the relationship mentioned above, used on a sample of school managers.

Based on the previous considerations, we formulated the following hypotheses:

- H1.* Self-efficacy is positively related to job resources.
- H2.* Workaholism is positively related to job demands.
- H3.* Job resources mediate the relationship between self-efficacy and work engagement.
- H4.* Job resources mediate the relationship between self-efficacy and burnout.
- H5.* Job demands mediate the relationship between workaholism and burnout.

Method

Procedure and participants

The study was part of a broader research project on well-being. A total 224 school principals (response rate: 74 per cent) received the questionnaire during training activities. The majority were women (67 per cent); 72 per cent were married. A total of 15 per cent of the teachers were aged under 50 years, 44 per cent were aged between 50 and 55, 29 per cent between 56 and 60, and 12 per cent over 60. Concerning length of service as school principals, 59 per cent of them had at least ten years of experience. On average, participants worked 44.9 hours per week ($SD = 8.5$).

The anonymous and confidential nature of the data collected was guaranteed strictly conforming to requirements of privacy laws in Italy. As requested by Italian law, a consent form was written in the presentation page of the research questionnaire, making aware potential participants of their rights (not to answer, and/or ask for their data cancelled from database). All participants read and accepted it before questionnaire administration.

Measures

Personal resources. Self-efficacy at work was assessed by using an adapted version of the New General Self-efficacy Scale (Chen *et al.* 2001). For the Italian version, a standard translation-back translation procedure was used as recommended by Brislin *et al.* (1973). A sample item is: "In my job, I can accomplish most of my goals". Responses were given on a five-point frequency scale ranging from 1 ("totally disagree") to 5 ("totally agree").

Job resources. Opportunities to learn and to develop were assessed with five items from the Psychosocial Work Environment and Stress Questionnaire (Agervold and Mikkelsen, 2004; Italian version: Guglielmi *et al.*, 2011). A sample item is: "The job provides me with ample opportunities to use my skills and qualifications". Responses were given on a frequency scale ranging from 1 ("never") to 5 ("very often").

Influence and participation was assessed by using a three-item scale (Agervold and Mikkelsen, 2004; Italian version: Guglielmi *et al.*, 2011). A sample item is: "I can exercise influence over the planning of working". Responses were given on a frequency scale ranging from 1 ("never") to 5 ("very often").

Personal demands. Workaholism was assessed with a short version of the Dutch Work Addiction Scale (Schaufeli *et al.*, 2009c). For the Italian version, a standard translation-back translation procedure was used as recommended by Brislin *et al.* (1973). The scale includes two dimensions:

- (1) working excessively (e.g. “I find myself continuing work after my co-workers have called it quits”); and
- (2) working compulsively (e.g. “I feel that there’s something inside me that drives me to work hard”).

Both subscales were assessed on a four-point frequency scale ranging from 1 (“almost never”) to 4 (“almost always”).

Job demands. Work/family conflict was measured with three items (Guglielmi *et al.*, 2011) assessed on a five-point frequency scale ranging from 1 (“never”) to 5 (“very often”). An example item is: “Anxieties about work interfere with my ability to satisfy the needs of my family”.

Inequity was measured by a five-item scale (Van Yperen *et al.*, 1996; Italian version: Guglielmi *et al.*, 2011) assessed on a five-point frequency scale ranging from 1 (“never”) to 5 (“very often”). An example item is: “I invest more in my job than I gain from it”.

Work engagement was assessed by using the vigour and dedication subscales of the Italian adaptation of the short version of the Utrecht Work Engagement Scale (Schaufeli *et al.*, 2002; Italian version: Balducci *et al.*, 2010). Vigour was measured by three items (e.g. “In my job, I feel strong and vigorous”) as well as dedication (e.g. “I’m enthusiastic about my job”). All items in both scales were scored on a seven-point frequency rating scale ranging from 0 (“never”) to 6 (“always”).

Burnout was assessed by using the exhaustion and cynicism dimensions of the MBI-General Survey (Schaufeli *et al.*, 1996; Italian version: Borgogni *et al.*, 2005). Exhaustion was measured by five items (e.g. “I feel emotionally drained from my work”) and cynicism was measured by five items (e.g. “I have become less interested in my work since I started this job”). All items were scored on a seven-point frequency scale, ranging from “0” (never) to “6” (always).

Strategy of analysis

To test our hypotheses simultaneously, structural equation modelling methods were employed using the AMOS 5 software package (Arbuckle, 2003) with maximum likelihood estimation methods. Workaholism was indicated by working excessively and working compulsively, whereas self-efficacy included a single indicator (the average total score of the corresponding scale), which incorporates information on the reliability of the scale (i.e. the error variance was estimated by using the formula $(1-\alpha) * \sigma^2$ (Bollen, 1989)). The latent job demands variable was indicated by work/family conflict and inequity, whereas the latent job resources variable was indicated by opportunities to learn and develop, and influence and participation. Finally, burnout was indicated by exhaustion and cynicism, whereas work engagement was indicated by vigour and dedication.

Since job demands and job resources often correlate, meaning that high job demands may prevent the mobilisation of job resources, whereas high job resources may reduce job demands (Bakker and Demerouti, 2007), we correlated the error terms of job demands and job resources. Moreover, vigour and dedication were considered

the direct positive opposites of exhaustion and cynicism, respectively. Indeed, conceptually speaking, the relationship between burnout and work engagement can be described in terms of two underlying dimensions labelled energy and identification (González-Romá *et al.*, 2006). Exhaustion and vigour constitute the opposite poles of energy, whereas cynicism and dedication constitute the opposite poles of identification. For this reason, we correlated the error terms of burnout and work engagement.

To test the hypotheses, several nested models were compared by means of Chi-squared differences tests (Jöreskog and Sörbom, 1993). Moreover, to establish the fit of the models to the data, the following indexes were used for all tests the:

- χ^2 goodness-of-fit statistic;
- Comparative Fit Index (CFI; Bentler, 1990);
- Non-Normed Fit Index (NNFI; Tucker and Lewis, 1973); and
- Root Mean Square Error of Approximation (RMSEA; Steiger, 1990).

Because χ^2 is sensitive to sample size, the use of relative goodness-of-fit measures is strongly recommended (Bentler, 1990). The fit can be considered acceptable when the CFI and NNFI are greater than 0.90 and the RMSEA is equal to or less than 0.08 (Bentler, 1990).

Results

Descriptions

The means, standard deviations, correlations, and internal consistencies were computed for all study variables (Table I).

All significant relationships between the variables were in the expected direction. Moreover, as shown in Table I, internal consistencies (Cronbach's α) of scores on all scales satisfied the criterion of 0.70 (Nunnally and Bernstein, 1994).

Testing the model

As shown in the first row of Table II, the proposed model (M1) fit reasonably to the data with all indexes meeting their respective criteria. All structural paths between the latent factors were significant and in the expected direction. In a similar vein, the correlations between workaholism and job demands, and between self-efficacy and job resources behaved as expected. Therefore, both *H1* and *H2* were supported.

In the next series of analysis, we compared the full mediation model with the partial mediation model, including the direct paths from workaholism to burnout, and from self-efficacy to work engagement and to burnout (M2). The results showed that the inclusion of these additional paths did not improve the model fit ($\Delta\chi^2(3) = 4.43, ns$). Consistent with this finding the paths from workaholism to burnout ($\gamma = 0.13, ns$) and from self-efficacy to burnout ($\gamma = -0.03, ns$) were non-significant, whereas the path from self-efficacy to work engagement ($\gamma = 0.15, p = 0.03$) reached a modest significance. All structural paths are depicted in Figure 1.

Subsequent Sobel tests supported the mediating role of job demands in the relationship between workaholism and burnout ($z = 3.01, p < 0.01$); and supported the mediating role of job resources in the relationship between self-efficacy and work engagement ($z = 5.46, p < 0.001$), and burnout ($z = -3.52, p < 0.001$).

Table I.
Means, Standard deviation, Cronbach's alphas (in parentheses), and Correlations among the study variables (n = 224)

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Gender (1 = male)	-	-	-															
2. Civil status (1 = married or cohabiting)	-	-	0.13	-														
3. Age (1 = over 55 years)	-	-	0.15*	-0.02	-													
4. Tenure (1 = over 10 years)	-	-	0.05	-0.02	0.33**	-												
5. Hours worked per week	44.90	8.39	0.07	0.03	0.06	-0.03	-											
6. Self-efficacy	3.74	0.61	-0.01	0.01	0.05	-0.03	0.03	(0.91)										
7. Opportunities to learn and to develop	4.01	0.63	0.01	0.07	0.05	-0.18**	-0.03	0.48**	(0.83)									
8. Influence and participation	3.79	0.73	0.08	0.06	-0.01	-0.12	-0.04	0.42**	0.60**	(0.77)								
9. Working excessively	3.04	0.62	-0.14*	-0.07	-0.11	0.01	0.21**	-0.11	-0.12	-0.07	(0.79)							
10. Working compulsively	2.45	0.75	-0.03	-0.06	0.11	0.02	0.15*	-0.04	-0.04	-0.07	0.48**	(0.81)						
11. Work-family conflict	2.68	1.09	-0.09	-0.07	-0.11	0.06	0.14*	-0.20*	-0.30**	-0.20**	0.55**	0.36**	(0.88)					
12. Inequity	3.40	0.85	0.02	0.04	0.03	0.06	0.19**	-0.17*	-0.32**	-0.19**	0.41**	0.37**	0.58**	(0.81)				
13. Vigor	4.41	0.96	0.02	0.04	0.18**	-0.17*	0.01	0.56**	0.55**	0.38**	0.02	0.09	-0.22**	-0.16*	(0.80)			
14. Dedication	4.36	1.03	0.01	0.03	0.15**	-0.18**	0.01	0.48**	0.75**	0.44**	-0.14*	-0.01	-0.30**	-0.28**	0.71**	(0.83)		
15. Exhaustion	2.41	1.37	-0.07	-0.04	-0.21**	0.06	0.08	-0.28**	-0.43**	-0.29**	0.45**	0.25**	0.63**	0.42**	-0.43**	-0.46**	(0.86)	
16. Cynicism	1.40	1.22	-0.03	-0.03	-0.12	0.17	-0.05	-0.23**	-0.45**	-0.32**	0.20	0.17	0.31**	0.26**	-0.34**	-0.50**	0.45**	(0.73)

Notes: * p < 0.05; ** p < 0.01

In a next step, we conducted an additional analysis to check for potential confounders (i.e. gender, age, and job tenure as school principal). Specifically, each control variable was included in the proposed model as a manifest variable and was permitted to have an effect on all variables in the model that had reached a significant association in the previous correlation analyses (see Table I). After controlling for confounding variables, the path coefficients were virtually the same as those of the proposed model, but the model fit decreased ($\chi^2(67) = 151.75$, NNFI = 0.88, CFI = 0.92, RMSEA = 0.08). These results indicate that the relationships between control variables and the model variables were weak and inconsistent. Importantly, the control variables did not affect the structural paths in the model. Therefore, the control variables were removed from the final model in Figure 1.

Discussion

The purpose of this study was to explore the roles of personal demands and personal resources in the JD-R model among school principals. More specifically, we hypothesised that workaholism constitutes a personal demand that has a positive impact on job demands, which in turn have a positive impact on burnout. Concerning the motivational process, it was assumed that self-efficacy constituted a personal

Model	χ^2	df	RMSEA	NNFI	CFI	GFI	Model comparison	$\Delta\chi^2$	Δdf
M1. Hypothesized Model	91.43*	38	0.08	0.93	0.95	0.93	-	-	-
M2. Partial Mediation Model	87.00*	35	0.08	0.92	0.95	0.93	M1-M2	4.43	3

Notes: RMSEA = Root Mean Square Error of Approximation; NNFI = Non-Normed Fit Index; GFI = Goodness-of-Fit Index; CFI = Comparative Fit Index; * $p < 0.001$

Table II.
Goodness-of-Fit indices of the nested models ($n = 224$)

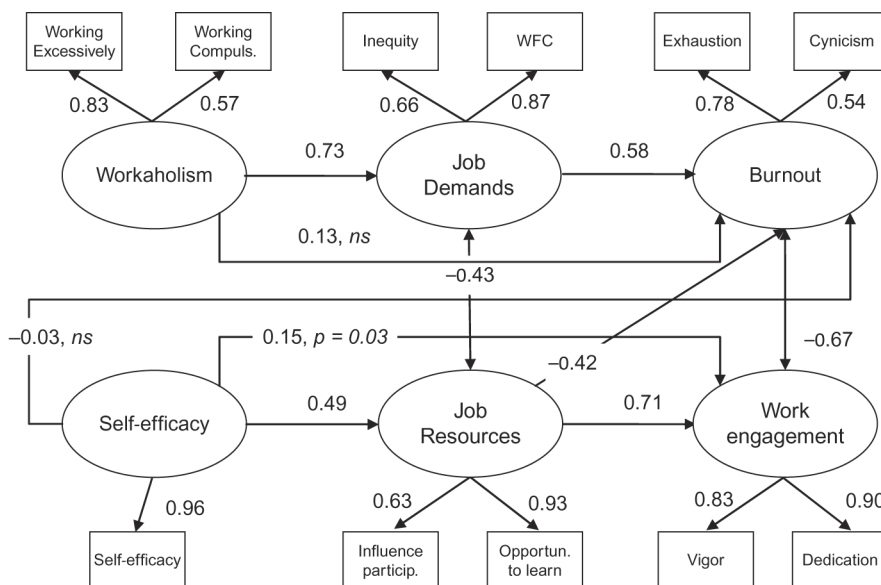


Figure 1.
Standardized path coefficients ($p < 0.05$) of the partial mediation model (M2)

resource that has a positive impact on job resources, which in turn have a positive impact on work engagement. In addition, a mediating role was hypothesised of job resources in the relationship between self-efficacy and burnout. Thus, we hypothesised that personal variables operate as initiators of the health impairment and the motivational process. Our results supported all hypotheses. In particular, job demands mediated the relationship between workaholism and burnout, whereas job resources mediated the relationship between self-efficacy and work engagement and burnout.

Therefore, this study lends support to the literature on individual resources that underlines the role that personal resources play in work engagement and burnout (Xanthopoulou *et al.*, 2007). This is also in line with Social Cognitive Theory of Bandura (1997), which suggests that personal resources determine how employees perceive their work environment. Indeed, our results revealed that school principals who are confident about their capabilities may identify more aspects of their work environment that are resourceful, which in turn might lead to higher levels of work engagement and lower levels of burnout. In addition, our study contributes to the JD-R model by highlighting the role of personal demands (i.e. workaholism), which has an effect on the development of burnout in school principals. Indeed, and in line with previous studies (Taris *et al.*, 2005), our findings revealed that workaholism and burnout are related to the mediation of job demands (i.e. work/family conflict and inequity).

The idea to expand the JD-R model with individual aspects (e.g., personal resources and demands) is partly based on the interactive perspective in psychology (Pervin, 1989), which indicates that behaviour, attitudes, and well-being are determined jointly by the person and the environment. Seen in this way, it seems important to prevent burnout and to promote work engagement among school principals by means of interventions at both the organisational (e.g. job redesign and training programs) and the individual level (e.g. through counselling). Beyond of the type of intervention (i.e. at the individual and/or organisational level), the focus should be the roles of school principals, because they are the formal leaders of their schools.

Practical implications

There is consistent evidence linking leadership in organisations to the psychological well-being of employees, including outcomes related to both ill health (e.g. stress, burnout) and more positive conceptualisations of health (e.g. work engagement, positive moods). In a recent review, Kelloway and Barling (2010) showed that although the effects of leadership on worker well-being are considerable, leadership training is only rarely considered an occupational health intervention despite empirical data supporting such an approach. Moreover, the focus of most studies on changing leaders in order to change employees underestimates that when leaders are confronted by increasing demands (such as when they have to enhance group performance through more efficient human resources management), the level of their resources is crucial. According to this perspective, it is also important to enhance the health of leaders themselves to create the precondition for an efficient exercise of leadership. For example, as Kelloway and Barling (2010) noted, when leadership development intervention results in leaders having a greater sense of their own self-efficacy this may result in a greater sense of well-being for the leaders themselves. In the same view, insofar as school principals learn to delegate their work whenever possible, to take breaks, to detach and recover from a hard day's work, and generally speaking to

change their harmful workaholic behaviours, this may result in a lower sense of burnout. This is important because the costs for the workaholics themselves (in terms of ill health) are high (Shimazu *et al.*, 2010).

This picture is depicted in Italy, where traditionally school principals were considered more “teachers of their teachers” than managers. Such perspective excluded them from any managerial training until the government changed the law, recognising in the late 1990s their roles and starting to train and select them on the basis of their managerial skills. In particular it should be recognized that the principals can count on a staff of colleagues to whom they can partly delegate their responsibilities, but due to country-specific features school principals are not always willing or able to share their activities. Based on these considerations, training on leadership and learning how to delegate may be one the most powerful development tools for school principals.

We think that examining the effects of leadership intervention on the health of the leaders themselves by considering both individual and organisational variables is an interesting and fruitful area of future enquiry within the JD-R model. Although school principals typically learn “on the job” (Male and Male, 2001), one could also consider intentional, programmed interventions. At the individual level, training programmes aiming for both a deeper mastery of job demands and a more efficient use of job resources should be considered. Meanwhile, at the organisational level, a reasonable balance between job demands and job requirements for school principals should be considered when designing roles and responsibilities.

Study limitations

The current study has some limitations that should be mentioned. First, the findings come from a study of cross-sectional design, which precludes casual inferences. Although our design does not allow the investigation of causal relationships, we implicitly assumed a causal direction, because we expected that workaholics create their own job demands. This is in line with previous research that demonstrates that workaholics make their work more complicated than necessary, create more work than they actually have, and they do not delegate their work (e.g. Machlowitz, 1980). At the same time, however, the work environment may play an important role in stimulating their work addiction: indeed, some researchers have shown that high work demands may prompt workaholic behaviour (Mudrack, 2006). The same applies to the relationship between workaholism and burnout (in line with the Effort Recovery approach proposed by Meijman and Mulder (1998), it cannot be ruled out that exhausted workers tend to display workaholic behaviours) as well as to self-efficacy and its relationships with job resources and work engagement (Xanthopoulou *et al.*, 2009). There is consequently a need for more longitudinal studies so that reciprocal relationships can be further investigated.

Second, the data were based on self-reported measures, which increased the likelihood of common method variance effects. In order to assess the influence of common method variance in our study, we also applied Harman’s one-factor test (Podsakoff *et al.*, 2003) in our collected data. The results show that no general factor is apparent. While the results of these analyses do not preclude the possibility of common method variance, they do suggest that common method variance is not of great concern and thus is unlikely to confound the interpretations of results.

Finally, we considered only one personal resource and one personal demand. We believe that future studies should contemplate not only self-efficacy and workaholism

but also other personal resources (e.g. optimism, ability to recover, and emotional competence) as well as individual demands (e.g. perfectionism and emotional instability).

References

- Agervold, M. and Mikkelsen, E.G. (2004), "Relationships between bullying, psychosocial work environment and individual stress reactions", *Work & Stress*, Vol. 18 No. 4, pp. 336-51.
- Arbuckle, J.L. (2003), *Amos Users' Guide (Version 5.0)*, Smallwaters, Chicago, IL.
- Bakker, A.B. and Demerouti, E. (2007), "The job demands-resources model: state of the art", *Journal of Managerial Psychology*, Vol. 22 No. 3, pp. 309-28.
- Bakker, A.B., Gierveld, J.H. and Van Rijswijk, K. (2006), "Sucesfactoren bij vrouwelijke schoolleiders in het primair onderwijs: Een onderzoek naar burnout, bevoegenheid en prestaties (Success Factors among Female School Principals in Primary Teaching: A Study on Burnout, Work Engagement, and Performance)", Right Management Consultants, Diemen.
- Balducci, C., Fraccaroli, F. and Schaufeli, W.B. (2010), "Psychometric properties of the Italian version of the Utrecht work engagement scale (UWES-9): a cross-cultural analysis", *European Journal of Psychological Assessment*, Vol. 26 No. 2, pp. 143-9.
- Bandura, A. (1997), *Self-efficacy: The Exercise of Control*, WH Freeman, New York, NY.
- Bentler, P.M. (1990), "Comparative fit indexes in structural models", *Psychological Bulletin*, Vol. 107 No. 2, pp. 238-46.
- Bollen, K.A. (1989), "A new incremental fit index for general structural models", *Sociological Methods and Research*, Vol. 17 No. 3, pp. 303-16.
- Brislin, R.W., Lonner, W.J. and Thorndike, R.M. (1973), *Cross-cultural Research Methods*, Wiley, New York, NY.
- Centro Formazione Schweitzer Borgogni, L., Galati, D. and Petitta, L. (2005), "Il questionario checkup organizzativo", *Manuale dell'adattamento Italiano*, O.S. Organizzazioni Speciali, Firenze.
- Chen, G., Gully, S.M. and Eden, D. (2001), "Validation of a new general self-efficacy scale", *Organizational Research Methods*, Vol. 4 No. 1, pp. 62-83.
- Federici, R.A. and Skaalvik, E.M. (2011), "Principal self-efficacy and work engagement: assessing a Norwegian principal self-efficacy scale", *Social Psychology of Education*, Vol. 14 No. 4, pp. 575-600.
- González-Romá, V., Schaufeli, W.B., Bakker, A. and Lloret, S. (2006), "Burnout and engagement: independent factors or opposite poles?", *Journal of Vocational Behaviour*, Vol. 68 No. 1, pp. 165-74.
- Guglielmi, D., Paplomatas, A., Simbula, S. and Depolo, M. (2011), "Prevenzione dello stress lavoro correlato: validazione di uno strumento per la valutazione dei rischi psicosociali nella scuola", *Psicologia della salute*, Vol. 3, pp. 53-74.
- Hakanen, J.J., Bakker, A.B. and Schaufeli, W.B. (2006), "Burnout and work engagement among teachers", *Journal of School Psychology*, Vol. 43 No. 6, pp. 495-513.
- Hakanen, J.J., Schaufeli, W.B. and Ahola, K. (2008), "The job demands-resources model: a three-year cross-lagged study of burnout, depression, commitment, and work engagement", *Work & Stress*, Vol. 22 No. 3, pp. 224-41.

- Hobfoll, S.E. (2001), "The influence of culture, community, and the nested-self in the stress process: advancing conservation of resources theory", *Applied Psychology: An International Review*, Vol. 50 No. 3, pp. 337-421.
- Hobfoll, S.E., Johnson, R.J., Ennis, N. and Jackson, A.P. (2003), "Resource loss, resource gain, and emotional outcomes among inner city women", *Journal of Personality and Social Psychology*, Vol. 84 No. 3, pp. 632-43.
- Ickes, W., Snyder, M. and Garcia, S. (1997), "Personality influences on the choice of situations", in Hogan, R., Johnson, J.A. and Briggs, S.R. (Eds), *Handbook of Personality Psychology*, Academic Press, San Diego, CA, pp. 165-95.
- Jöreskog, K.G. and Sörbom, D. (1993), *LISREL 8: Structural Equations Modelling with the SIMPLIS Command Language*, Scientific Software International, Chicago, IL.
- Kelloway, E.K. and Barling, J. (2010), "Leadership development as an intervention in occupational health psychology", *Work & Stress*, Vol. 24 No. 3, pp. 260-79.
- Llorens, S., Bakker, A.B., Schaufeli, W.B. and Salanova, M. (2006), "Testing the robustness of the job demands-resources model", *International Journal of Stress Management*, Vol. 13 No. 3, pp. 378-91.
- Llorens, S., Schaufeli, W.B., Bakker, A.B. and Salanova, M. (2007), "Does a positive gain spiral of resources, efficacy beliefs and engagement exist?", *Computers in Human Behavior*, Vol. 23 No. 1, pp. 825-41.
- Lorente, L., Salanova, M., Martinez, I. and Schaufeli, W.B. (2008), "Extension of the job demands-resources model in the prediction of burnout and engagement among teachers over time", *Psicothema*, Vol. 20 No. 3, pp. 354-60.
- McMillan, L. and O'Driscoll, M.P. (2006), "Exploring new frontiers to generate an integrated definition of workaholism", in Burke, R.J. (Ed.), *Research Companion to Working Time and Work Addiction*, Edward Elgar, Cheltenham, pp. 89-107.
- Machlowitz, M. (1980), *Workaholics: Living with Them*, Simon & Schuster, New York, NY.
- Male, T. and Male, D.B. (2001), "Special school headteachers' perceptions of role readiness", *European Journal of Special Needs Education*, Vol. 16 No. 2, pp. 149-66.
- Maslach, C., Leiter, M.P. and Schaufeli, W.B. (2008), "Measuring burnout", in Cooper, C.L. and Cartwright, S. (Eds), *The Oxford Handbook of Organizational Well-being*, Oxford University Press, Oxford, pp. 86-108.
- Meijman, T.F. and Mulder, G. (1998), "Psychological aspects of workload", in Drenth, P.J.D. and Thierry, H. (Eds), *Handbook of Work and Organizational Psychology*, Psychology Press, Hove, pp. 5-33.
- Mudrack, P.E. (2006), "Understanding workaholism: the case of behavioral tendencies", in Burke, R.J. (Ed.), *Research Companion to Working Time and Work Addiction*, Edward Elgar, Cheltenham, pp. 108-28.
- Nunnally, J.C. and Bernstein, I.H. (1994), *Psychometric Theory*, 3rd ed., McGraw-Hill, New York, NY.
- Pervin, L.A. (1989), "Persons, situations, interactions: the history of a controversy and a discussion of theoretical models", *Academy of Management Review*, Vol. 14 No. 3, pp. 350-60.
- Podsakoff, P.M., MacKenzie, S.M., Lee, J. and Podsakoff, N.P. (2003), "Common method variance in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.
- Salanova, M., Schaufeli, W.B., Xanthopoulou, D. and Bakker, A.B. (2010), "The gain spiral of resources and work engagement", in Bakker, A. and Leiter, M. (Eds), *Work Engagement:*

Recent Developments in Theory and Research, Psychology Press, New York, NY, pp. 118-31.

- Schaufeli, W.B. and Bakker, A.B. (2004), "Job demands, job resources, and their relationship with burnout and engagement: a multi-sample study", *Journal of Organizational Behavior*, Vol. 25 No. 3, pp. 293-315.
- Schaufeli, W.B. and Taris, T.W. (2005), "The conceptualization and measurement of burnout: common ground and worlds apart", *Work & Stress*, Vol. 19 No. 3, pp. 256-62.
- Schaufeli, W.B., Bakker, A.B. and Van Rhenen, W. (2009b), "How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism", *Journal of Organizational Behavior*, Vol. 30 No. 7, pp. 893-917.
- Schaufeli, W.B., Shimazu, A. and Taris, T.W. (2009c), "Being driven to work excessively hard. The evaluation of a two-factor measure of workaholism in The Netherlands and Japan", *Cross-Cultural Research*, Vol. 43 No. 4, pp. 320-48.
- Schaufeli, W.B., Taris, T.W. and Bakker, A.B. (2008), "It takes two to tango. Workaholism is working excessively and working compulsively", in Burke, R.J. and Cooper, C.L. (Eds), *The Long Work Hours Culture. Causes, Consequences and Choices*, Emerald Publishing Group, Bingley, pp. 203-26.
- Schaufeli, W.B., Taris, T.W. and Van Rhenen, W. (2008), "Workaholism, burnout and work engagement: three of a kind or three different kinds of employee well-being?", *Applied Psychology: An International Review*, Vol. 57 No. 2, pp. 173-203.
- Schaufeli, W.B., Bakker, A.B., Van der Heijden, F.M.M.A. and Prins, J.T. (2009a), "Workaholism, burnout and well-being among junior doctors: the mediating role of role conflict", *Work & Stress*, Vol. 16 No. 4, pp. 249-72.
- Schaufeli, W.B., Leiter, M.P., Maslach, C. and Jackson, S.E. (2008), "The MBI-General Survey", in Maslach, C., Jackson, S.E. and Leiter, M.P. (Eds), *Maslach Burnout Inventory Manual*, 3rd ed., Consulting Psychologists Press, Palo Alto, CA, pp. 19-26.
- Schaufeli, W.B., Salanova, M., González-Romá, V. and Bakker, A.B. (2002), "The measurement of engagement and burnout: a two sample confirmatory factor analytic approach", *Journal of Happiness Studies*, Vol. 3 No. 1, pp. 71-92.
- Shimazu, A., Schaufeli, W.B. and Taris, T. (2010), "How does workaholism affect worker health and performance? The mediating role of coping", *International Journal of Behavioral Medicine*, Vol. 17 No. 2, pp. 154-60.
- Steiger, J.H. (1990), "Structural model evaluation and modification: an interval estimation approach", *Multivariate Behavioural Research*, Vol. 25 No. 2, pp. 173-80.
- Stetz, T.A., Stetz, M.C. and Bliese, P.D. (2006), "The importance of self-efficacy in the moderating effects of social support on stressor-strain relationships", *Work & Stress*, Vol. 20 No. 1, pp. 49-59.
- Taris, T.W., Schaufeli, W.B. and Verhoeven, L.C. (2005), "Workaholism in The Netherlands: measurement and implications for job strain and work-nonwork conflict", *Applied Psychology: An International Review*, Vol. 54 No. 1, pp. 37-60.
- Tucker, L.R. and Lewis, C. (1973), "A reliability coefficient for maximum likelihood factor analysis", *Psychometrika*, Vol. 38 No. 1, pp. 1-10.
- Van Yperen, N.W., Hagedoorn, M. and Geurts, S. (1996), "Intent to leave and absenteeism as reactions to perceived inequity: the role of psychological and social constraints", *Journal of Occupational and Organizational Psychology*, Vol. 69 No. 4, pp. 367-72.
- Westman, M. and Etzion, D. (1999), "The crossover of strain from school principals to teachers and vice versa", *Journal of Occupation and Health Psychology*, Vol. 4 No. 3, pp. 269-78.

Xanthopoulou, D., Bakker, A.B., Demerouti, E. and Schaufeli, W.B. (2007), "The role of personal resources in the job demands-resources model", *International Journal of Stress Management*, Vol. 14 No. 2, pp. 121-41.

Xanthopoulou, D., Bakker, A.B., Demerouti, E. and Schaufeli, W.B. (2009), "Reciprocal relationships between job resources, personal resources and work engagement", *Journal of Vocational Behavior*, Vol. 74 No. 3, pp. 235-44.

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