

How to improve performance and prevent burnout in safety representatives

LAURA DAL CORSO¹, FRANCESCA CARLUCCIO², MALÌ SCARCELLA², GIOVANNI BATTISTA BARTOLUCCI³, ROSANA BIZZOTTO⁴, LIVIANO VIANELLO⁴, DORIANO MAGOSSO⁴, NICOLA ALBERTO DE CARLO¹

¹Department of Philosophy, Sociology, Education and Applied Psychology, University of Padua

²Department of Human Science (Communication, Training, Psychology), LUMSA University of Rome

³Department of Cardiac, Thoracic and Vascular Sciences, University of Padua

⁴SPISAL, AULSS 6 Euganea

KEY WORDS: Safety representatives; conflict; training; work engagement; performance; burnout

PAROLE CHIAVE: Rappresentanti dei lavoratori per la sicurezza; conflitto; formazione; work engagement; performance; burnout

SUMMARY

Background: *The present work is part of a greater research project, aimed to examine Safety Representatives' (SRs) role, twenty years after the appointment of this figure.* **Objectives:** *The study aims to investigate the role of some personal and organizational dimensions in the promotion of SRs' well-being, in terms of reducing burnout and improving performance.* **Methods:** *The study involved 455 SRs operating in North East Italy. They completed a self-report questionnaire, regarding conflicts with co-workers, ethical conflict, training satisfaction, work engagement, performance, and burnout.* **Results:** *Structural equation models show that work engagement partially mediates ($\gamma=-0.52$, $p<0.001$; $\beta=0.23$, $p<0.01$) the relationship between conflict with co-workers and performance ($\gamma=-0.26$; $p<0.01$), as well as partially mediating ($\gamma=0.14$, $p<0.05$; $\beta=0.23$; $p<0.01$) the relationship between training satisfaction and performance ($\gamma=0.21$, $p<0.001$). Moreover, it totally mediates the relationship between conflict with co-workers and burnout ($\gamma=-0.52$, $p<0.001$; $\beta=-0.40$, $p<0.001$), as well as totally mediating the relationship between training satisfaction and burnout ($\gamma=0.14$, $p<0.05$; $\beta=-0.40$, $p<0.001$). Finally, ethical conflict is positively associated with burnout ($\gamma=0.047$, $p<0.001$).* **Conclusions:** *This study provides useful information about the improvement of SRs' well-being, highlighting the importance of their involvement in this role.*

RIASSUNTO

«Come migliorare la performance e prevenire il burnout nei rappresentanti dei lavoratori per la sicurezza». **Introduzione:** *Il presente lavoro si colloca nell'ambito di un più ampio progetto di ricerca, volto ad approfondire il ruolo dei rappresentanti dei lavoratori per la sicurezza (RLS) a vent'anni dalla loro istituzione.* **Obiettivi:** *L'indagine si propone di indagare il ruolo che alcune dimensioni personali e organizzative rivestono nella promozione del benessere di tale figura, riducendone il rischio di burnout e migliorandone la percezione di performance.* **Metodi:** *L'indagine ha coinvolto 455 lavoratori impegnati nell'attività di RLS nel territorio padovano, i quali hanno completato un questionario self-report inerente al conflitto con i colleghi ed etico, alla soddisfazione per la formazione ricevuta, al work engagement, alla performance e al burnout.* **Risultati:** *I modelli di equazioni strutturali evidenziano che il*

Pervenuto il 4.4.2018 - Revisione pervenuta il 11.12.2018 - Accettato il 26.3.2019

Corrispondenza: Laura Dal Corso, Department of Philosophy, Sociology, Education and Applied Psychology, University of Padua, via Venezia 14, 35131 Padua (Italy) - E-mail: dalcorso@unipd.it

work engagement media parzialmente ($\gamma=-0.52, p<0.001; \beta=0.23, p<0.01$) *la relazione tra conflitto con i colleghi e performance* ($\gamma=-0.26; p<0.01$), *così come media parzialmente* ($\gamma=0.14, p<0.05; \beta=0.23; p<0.01$) *la relazione tra la soddisfazione per la formazione ricevuta e la performance* ($\gamma=0.21, p<0.001$). *Inoltre, il work engagement media totalmente la relazione tra conflitto con i colleghi e burnout* ($\gamma=-0.52, p<0.001; \beta=-0.40, p<0.001$), *così come la relazione tra soddisfazione per la formazione ricevuta e burnout* ($\gamma=0.14, p<0.05; \beta=-0.40, p<0.001$). *Infine, il conflitto etico risulta associato positivamente al burnout* ($\gamma=0.047, p<0.001$). **Conclusioni:** *Questo studio ha permesso di arricchire e approfondire le dimensioni utili al miglioramento del benessere del RLS, sottolineando l'importanza del suo coinvolgimento in tale ruolo e delineando riflessioni sulle possibili ricadute applicative.*

INTRODUCTION

The economic downturn over the last decade has brought to the forefront the topic of work and its protection, intended as the right to health and safety in the workplace. Many studies show that a company investing in its employees' well-being is a future-oriented business, more reliable for the customer and more competitive in the global market (45, 23, 52). In this view, the fight against accidents and occupational illnesses takes on ethical resonance and a truly strategic socio-economic meaning.

The polymorphic issues of health and safety at work require multi-disciplinary skills, which, in turn, call for an ongoing dialog between the various parties involved in health and safety. These include employers, managers, people in charge of prevention and protection services, health and safety representatives (SRs), occupational physicians, and employees, in order to broaden the participatory perspective as much as possible. They all work jointly in the health and safety management system (HSMS) – a set of elements designed to achieve health and safety organizational goals which involve the organizational structure, human and productive resources, internal rules, working practices, procedures, and responsibilities (7). The HSMS integrates health and safety goals into the planning and management of the production systems, pursuing the policy of prevention in accordance with the health and safety rules. According to OHSAS 18001 (12), the HSMS is based on Deming's cycle and consists of the well-known four steps: plan, do, check, and review (80).

In Italy, the legislative decree 81/2008 is a milestone for health and safety at work (for an accurate comparison between the two decrees, see: 81). SRs are elected or designated to represent workers' health

and safety interests. They are chosen among trade union representatives, to prevent the proliferation of representative bodies and to avoid the weakening of employees' defence (50, 75). SRs may face critical situations, some of which concern the relational dimension.

SRs also encounter the twofold ethical conflict deriving, on the one hand, from the possible medley of the two representative roles (e.g. using their role as a trade-union negotiation device) and, on the other, from the fact that SRs may experience ethical issues in terms of conflict of interest. Indeed, they hold a boundary position, bridging the gap between employer and employees. This status could require a choice between employer's expectations and employees' needs. Even though the SRs' mandate is to represent these needs, the possible repercussions on their work life pave the way for ethical conflicts. Boundary spanners share knowledge across different actors: they simplify information flows in order to reduce possible asymmetry and connect individuals (61). The effort to conciliate incongruent expectations and the relational nature of their role, which demands frequent personal interactions, concern, and care for co-workers, turns the organization into an emotionally-charged environment. Daily job activities thus require extra effort, which creates the basis for emotional distress, frustration, and anxiety (79). The latter, if protracted, can increase burnout risk (31).

Furthermore, Italian law requires SRs to participate in training activities and refresher courses. In particular, training sessions must have a minimum duration and be carried out during working hours. The SRs' right to an *ad hoc*-training on health and safety is also endorsed. The training is to cover certain topics: e.g. national and Community legal principles, health and safety legislation, awareness of the

actors involved and their duties, risk definition and identification, risk assessment, identification of preventive and protective measures, regulatory issues in relation to the representation activity, and basic principles of communication techniques.

The psychological literature evidences that workplace conflicts and training opportunities influence employees both in a negative and in a positive manner. Relational conflict reduces employees' well-being in terms of work engagement (83), performance (19, 63), and burnout (5, 51, 87). Ethical conflict increases burnout and reduces work engagement and performance (41, 47, 88). Conversely, training opportunities are important, because they can increase employees' resources (58, 68) and well-being (2, 30). Consequently, satisfaction with the training received entails positive outcomes, such as better performance (11, 10, 20), reduced burnout (9, 49, 76), and greater work engagement (1, 35, 42). The latter can increase performance (4, 36, 77, 82) and limit the effects of burnout. Indeed, even though some Authors argue that work engagement and burnout are two poles of the same *continuum* (57), other studies highlight the distinctiveness of the two constructs (18, 37, 71, 73). Based on this evidence, we believe

that work engagement can contribute to clarify the relations investigated.

The literature offers models to explain these relations, such as the Demand-Control Model (DCM; 48), the Effort-Reward Imbalance (ERI; 78), and the Job Demands-Resources Model (JD-R model; 21). The JD-R Model is among the most useful and flexible models (6, 69, 72). It divides job characteristics into two categories: job demands – that require efforts and are associated with costs for the individual – and job resources – that stimulate personal growth, while fostering goal achievement. The former triggers a health impairment process, with significant negative outcomes on strain levels. The latter attenuate the negative consequences mentioned and give rise to a motivational process, which enhances positive outcomes – such as performance – through greater levels of work engagement.

Hence, our desire to investigate the relationships between conflict with co-workers, ethical conflict, and training satisfaction on the one hand, and performance and burnout on the other, hypothesizing the mediating role of work engagement (figure 1).

This study present work is part of a greater research project (16) aimed to examine SRs' role

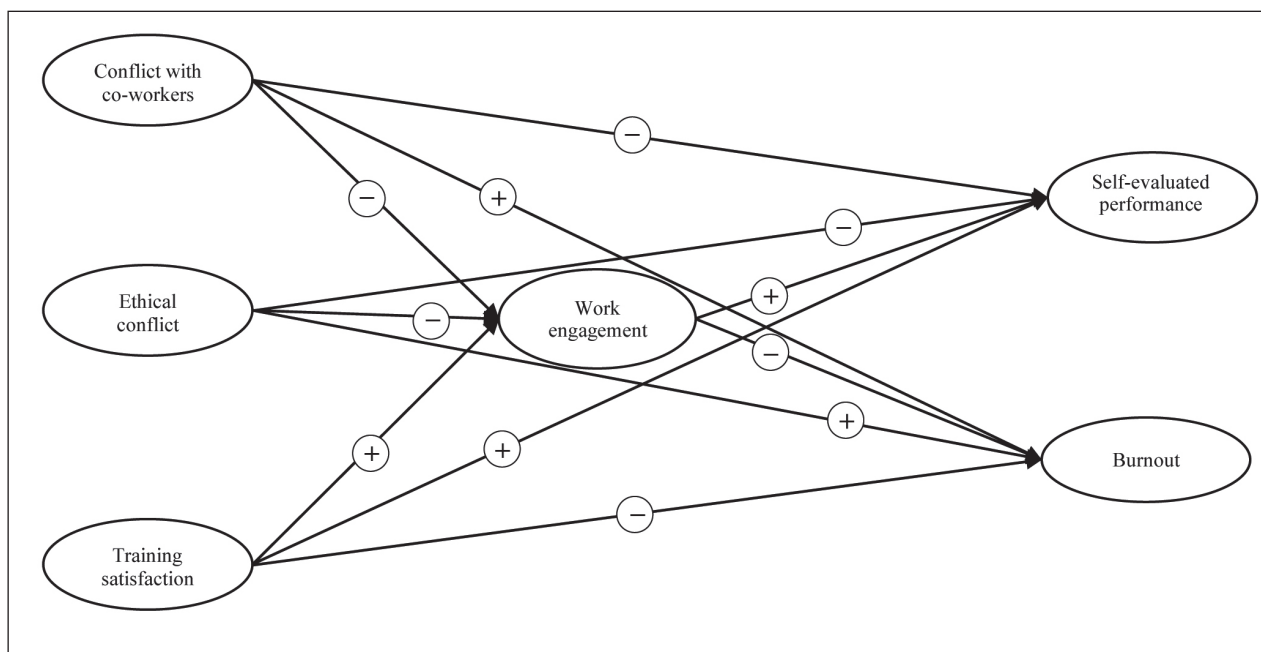


Figure 1 - Hypothesized model

twenty years after the appointment of this figure, to identify the actions to be promoted to overcome critical issues. The project involves SRs working in manufacturing, the services industry, schools, and healthcare in the Veneto Region¹.

METHODS

Procedure and Participants

We did not have a list of the local SRs. Therefore, we considered companies in the Province of Padua, located through the archive of the INAIL (*Istituto Nazionale per l'Assicurazione contro gli Infortuni sul Lavoro*, National Institute for Insurance against Accidents at Work) Information Flows relating to 2011, based on the assumption that each company would have at least one SR. We then carried out a simple random sampling.

The local workplace prevention, hygiene, and safety agency called every company in advance to ascertain the presence of a SR and explain the aim of the project to employers. Companies that did not have SRs were replaced through a random procedure.

Then, the agency sent a letter to each company explaining the purpose of the project and how to take part in it. The letter included an anonymous questionnaire to be filled in by the SR and a personal invitation underlining the importance of every single SR's contribution. A self-addressed stamped envelope was enclosed for the receiver's convenience.

The questionnaire, consisting of several scales, was individually completed by SRs. To reduce apprehension during the evaluation, participants were reminded that there are no right or wrong answers, and were encouraged to provide assessments as close to their own opinions as possible.

Four hundred fifty-five questionnaires were completed by SRs working in companies in North East Italy and in charge of employee-safety representa-

tion activities. The sample was made up of 79.3% men and 20.7% women. 70.0% of participants were 31 to 50 years old, 25.0% were over 50, and 5.0% were under 30. For an accurate description of the sample, see table 1.

Measures

The instructions for completing the questionnaire invited participants to answer referring to their specific SR role.

Conflict with co-workers was assessed with four items taken from the Q_u-Bo test (17), anchored on a 6-point Likert scale (1=very much disagree, 6=very much agree). A sample item is the following: "There is a great deal of willingness to provide mutual support". The Cronbach's alpha for this scale is 0.65.

Ethical conflict was assessed with two items taken from the Q_u-Bo test, anchored on a 6-point Likert scale (1=very much disagree, 6=very much agree). A sample item is the following: "My organization consistently takes into account customers' needs". The Cronbach's alpha for this scale is 0.79.

Training satisfaction was assessed by asking: "How satisfied are you with the contents of the training received as a SR?" and "How satisfied are you with the duration of the training received as a SR?" Items were answered on a 6-point Likert scale (1=very dissatisfied; 6=very satisfied). The Cronbach's alpha for the scale is 0.79.

Work Engagement was assessed with the Utrecht Work Engagement Scale (UWES-9; 70). The 6-point response scale ranged from 1 (very rarely) to 6 (very often). A sample item in this scale is: "At my work, I feel bursting with energy". The Cronbach's alpha for the scale is 0.92.

Burnout was assessed with eight items taken from the Q_u-Bo test. The 6-point response scale ranged from 1 (very rarely) to 6 (very often). A sample item in this scale is: "My work is useless". The Cronbach's alpha for the scale is 0.84.

Self-evaluated performance was assessed with two items (28) answered on a 10-point Likert scale (from 10% to 100%). A sample item is: "We would kindly ask you to specify, using a percentage, how successful you were in reaching your work goals last year". The Cronbach's alpha for the scale is 0.87.

¹ Initiative aligned with the program "Il rappresentate dei lavoratori per la sicurezza (RLS) nel sistema di prevenzione aziendale. Analisi della percezione soggettiva del ruolo e attività di promozione e sostegno della figura". Prevention Regional Plan 2014-2018 (Decree 7/2015; Decree 10/2015)

Table 1 - Sample characteristics

	N	Valid %		N	Valid %
Gender			Duration of service as SR		
Male	348	79.3	Up to 5 years	215	48.9
Female	91	20.7	6 to 15 years	189	43.0
Missing	16		15 years or more	36	8.2
Total	455	100.0	Missing	15	
			Total	455	100.0
Age			Sector		
31 to 50	308	70.0	Industry/craftsmanship	287	65.7
Over 50	110	25.0	Services	88	20.0
Under 30	22	5.0	Trade	62	14.2
Missing	15		Missing	18	
Total	455	100.0	Total	455	100.0
Educational level			Company size		
High school	247	56.3	16 to 50 workers	143	32.6
Elementary junior high school	140	31.9	5 to 15 workers	120	27.3
University	52	11.8	51 to 250 workers	110	25.1
Missing	16		Over 250 workers	35	8.0
Total	455	100.0	Up to 4 workers	31	7.1
			Missing	16	
			Total	455	100.0

Statistical Analyses

We tested the hypotheses estimating structural equation models (SEM) with latent variables, using the Lisrel 8.80 software (46). SEM is a technique that allows the observation not only of the indicators directly measured by the researchers, but also of the latent variables, which are inferred indirectly (22). The fundamental difference is that the observed variables contain a measurement error, while the latent factors do not. Because most of the variables are normally distributed and the deviations from normality are not too extreme, we applied the Maximum Likelihood method, which is the most widely used fitting function for SEM (74).

To assess the model fit, we used the chi-square test (χ^2). A model shows a good fit to the data if χ^2 is nonsignificant. Given that χ^2 is sensitive to sample size, we considered additional fit indices (39), representing different classes of goodness-of-fit criteria, as recommended by Mueller (62). In particular, we

considered the normed fit index (NFI), the standardized root mean residual (SRMR), and the root mean square error of approximation (RMSEA). Values close to or greater than 0.90 for NFI, values close to or smaller than 0.10 for SRMR, and values close to or smaller than 0.08 for RMSEA indicate an acceptable fit (74).

To verify the significance of the indirect effects, 95% asymmetric confidence intervals were considered, based on the distribution of the multiplication term. We used this technique to manage the non-normality derived from the *path a* * *path b* multiplication, as recommended by MacKinnon's procedure (PRODCLIN; 54, 56). If the confidence interval does not contain zero, the mediation is significant (55).

Finally, to obtain a more parsimonious solution, we fixed all non-significant paths to zero.

Before analyzing the data, we excluded participants with missing values. Consequently, the final sample consisted of 353 participants.

RESULTS

Variables means, standard deviations (SD), and Pearson's correlations are presented in table 2.

Conflict with co-workers has a mean of 2.20 ($SD=0.82$); ethical conflict has a mean of 2.53 ($SD=1.01$); training satisfaction mean is 4.58 ($SD=0.91$); work engagement has a mean of 4.38 ($SD=0.81$); burnout mean is 1.65 ($SD=0.66$); finally, self-evaluated performance has a mean of 6.76 ($SD=1.62$).

We then estimated the hypothesized structural model. Fit indices show an acceptable adaptation to the data, considering $\chi^2(89)=268.90$, $p=0.00$; NFI=0.92; SRMR=0.06; RMSEA=0.08. In the model, conflict with co-workers is negatively associated with work engagement ($\gamma=-0.52$, $p<0.001$) and performance ($\gamma=-0.22$, $p<0.05$). Ethical conflict is positively associated with burnout ($\gamma=0.56$, $p>0.001$). Training satisfaction is positively associated with work engagement ($\gamma=0.15$, $p<0.05$) and self-evaluated performance ($\gamma=0.21$, $p<0.001$). Work engagement is positively associated with self-evaluated performance ($\beta=0.25$, $p<0.05$) and negatively associated with burnout ($\beta=-0.49$, $p<0.001$). The following paths are not statistically significant: conflict with co-workers – burnout ($\gamma=-0.20$, $p>0.05$); ethical conflict – work engagement ($\gamma=0.007$, $p>0.05$); ethical conflict – self-evaluated performance ($\gamma=-0.04$, $p>0.05$); training satisfaction – burnout ($\gamma=-0.003$, $p>0.05$).

We also verified the significance of the four specific indirect effects: conflict with co-workers on self-evaluated performance and on burnout, and

ethical conflict on self-evaluated performance and on burnout. The asymmetric confidence interval for the relationship between conflict with co-workers and self-evaluated performance, through work engagement, does not contain zero; the unconventional estimate is -0.57 , 95% CI $[-1.028, -0.209]$. We can now conclude that work engagement mediates the relationship between conflict with co-workers and self-evaluated performance. In addition, when controlling the effect of work engagement, the negative relationship between conflict with co-workers and self-evaluated performance remains significant ($\gamma=-0.22$, $p<0.05$). Therefore, we conclude that the mediation is partial.

The asymmetric confidence interval for the relationship between conflict with co-workers and burnout through work engagement does not contain zero; the unconventional estimate is 0.42 , 95% CI $[0.200, 0.701]$. Thus, we can conclude that work engagement mediates the relationship between conflict with co-workers and burnout. Moreover, when controlling the effect of work engagement, the positive relationship between conflict with co-workers and burnout is not significant ($\gamma=-0.20$, $p>0.05$). We therefore conclude that such mediation is total.

The asymmetric confidence interval for the relationship between training satisfaction and self-evaluated performance through work engagement does not contain zero; the unconventional estimate is 0.08 , 95% CI $[0.014, 0.178]$. Thus, we can conclude that work engagement mediates the relationship between training satisfaction and self-evaluated performance. Moreover, when controlling the effect of work engagement, the positive relationship between

Table 2 - Variables means, standard deviations, and Pearson's correlations

Variable	M	SD	1.	2.	3.	4.	5.	6.
1. Conflict with co-workers	2.20	0.82	1.00					
2. Ethical conflict	2.53	1.01	0.25**	1.00				
3. Training satisfaction	4.58	0.91	-0.20**	-0.11**	1.00			
4. Work engagement	4.38	0.81	-0.34**	-0.37**	0.24**	1.00		
5. Burnout	1.65	0.66	0.40**	0.23**	-0.15**	-0.41**	1.00	
6. Self-evaluated performance	6.76	1.62	-0.30**	-0.29**	0.29**	0.37**	-0.24**	1.00

N=353, ** $p<0.01$

training satisfaction and self-evaluated performance remains significant ($\gamma=-0.21, p<0.001$). Consequently, we conclude that such mediation is partial.

The asymmetric confidence interval for the relationship between training satisfaction and burnout through work engagement does not contain zero; the unconventional estimate is -0.06, 95% CI [-0.121, -0.011]. Thus, work engagement mediates the relationship between training satisfaction and burnout. Moreover, when controlling the effect of work engagement, the negative relationship between training satisfaction and burnout is not significant ($\gamma=-0.003, p>0.05$). Hence, we conclude that such mediation is total.

Subsequently, to obtain a more parsimonious solution, we estimated another model (figure 2), where non-significant paths were set to zero. Given that this constrained model, which takes into consideration fewer parameters, is more parsimonious and it does not perform worse than the unconstrained model ($\Delta\chi^2=4.59, p=0.33$), it is preferable. Fit indices show an acceptable fit to the data, considering $\chi^2(93)=273.49, p=0.00$; NFI=0.92; SRMR=0.06; RMSEA=0.08. In this model, conflict with co-workers and training satisfaction are associated with work engagement ($\gamma=-0.52, p<0.001$; $\gamma=0.14,$

$p<0.05$; respectively), which, in turn, is positively associated with both self-evaluated performance ($\beta=0.23, p<0.05$) and burnout ($\beta=-0.40, p<0.001$). In addition, conflict with co-workers and training satisfaction are directly associated with self-evaluated performance ($\gamma=-0.26, p<0.01$; $\gamma=0.21, p<0.001$; respectively), thus emphasizing the role of work engagement as a partial mediator. Furthermore, work engagement totally mediates the relationships of conflict with co-workers and training satisfaction with burnout. Ethical conflict is directly and positively associated only with burnout ($\gamma=0.47, p<0.001$).

DISCUSSION

The SR's role is a multifaceted and complex function. It is not limited to consulting with co-workers, nor to being familiar with all the possible organizational risks. This figure's range of activities comprises active participation and proposing solutions addressing both possible real risks and the improvement of existing situations. Therefore, the importance of promoting SRs' well-being – in terms of increasing performance and decreasing burnout – is undeniable.

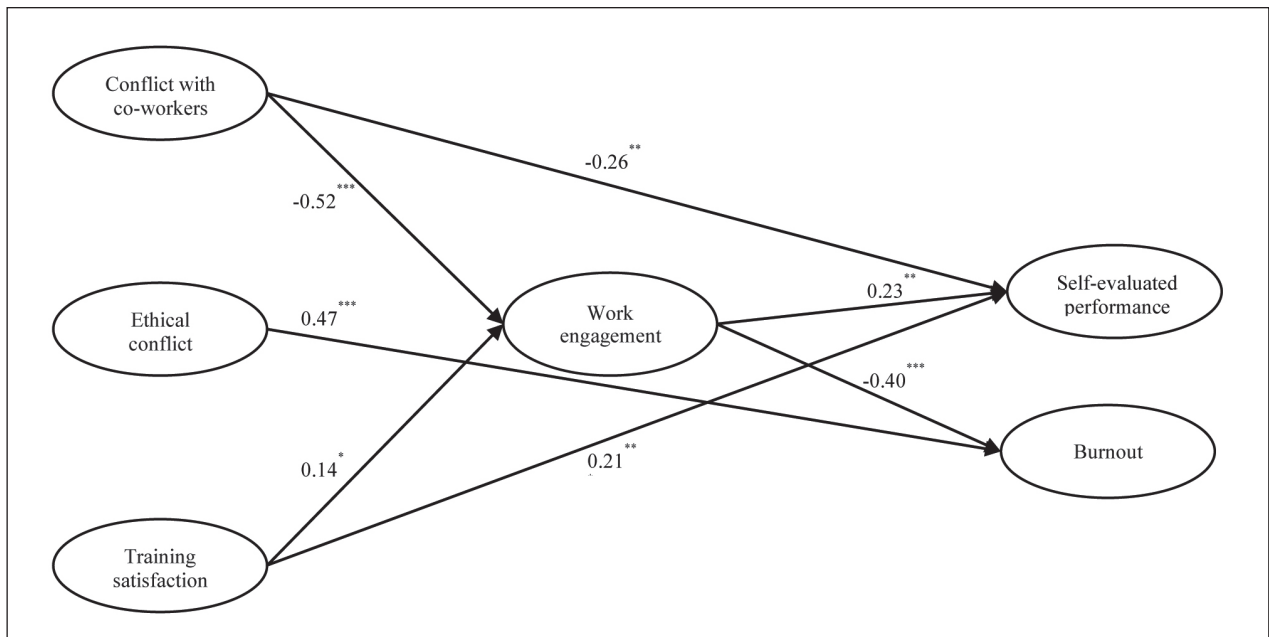


Figure 2 - Final model

The results display a rather positive situation, which allows room for improvement. Indeed, SRs experience limited conflict with co-workers, combined with moderate ethical conflict. Moreover, they are quite satisfied with the training received, in terms of both duration and contents. Vigor, dedication, and absorption – namely work engagement – which SRs put into the exercise of this role, appear moderate. In addition, the levels of burnout are limited and performance is moderate.

Our results confirm what the literature affirms (figure 2). We found that work engagement partially mediates the relationship between conflict with co-workers and self-evaluated performance, which confirms the literature data. Conflict with co-workers is negatively associated with work engagement (83) and performance (19, 63), the latter being increased by work engagement (8, 84). Work engagement partially mediates the relationship between training satisfaction and self-evaluated performance, an association already supported by some evidence: training satisfaction increases both work engagement (35, 42) and performance (10, 11). Additionally, work engagement totally explains the relationships between conflict with co-workers and burnout on the one hand (5, 51, 87), and training satisfaction and burnout on the other (9, 49, 76). Although not significantly associated with work engagement nor with self-evaluated performance, ethical conflict is directly and positively associated with burnout, as highlighted by Kammeyer-Muller and colleagues (47), and Włodarczyk and colleagues (88).

Our findings show the importance of the relationships between SRs and their co-workers, and fill the gap observed in the literature (64). Previous studies analyzed in depth the problems that SRs may face only in their relationships with employers. Little was known about the relationships between co-workers. Intervening in the latter, if perceived as critical, could improve performance both directly and through work engagement. Therefore, it is important to foster positive relationships between SRs and co-workers, because it simplifies the role of representation. At the same time, SRs often complain about the lack of these relationships, especially in terms of perceived support (33).

In order to contrast burnout, both work engage-

ment and restriction of possible ethical conflicts are important. Frequently, SRs perceive the latter in terms of conflict of interest (32, 40). Therefore, the SR should be adequately supported to prevent poor work engagement from leading to occupational distress, in the form of burnout.

Furthermore, the results provide useful information about the importance of increasing certain aspects relating to SRs' training. In particular, these outcomes highlight the fact that adequate training increases performance, both directly and through work engagement, confirming previous evidence (59, 60). Additionally, appropriate training is also important in order not to aggravate co-workers' workload, which could reduce the willingness to participate in training activities. Moreover, adequate training, combined with overall recognition of the role, creates the ideal background for SRs to play their role (26).

Regarding practical implications, we should take into account the need for training focusing more on relational skills, such as listening, communication, and information, in line with Article 37 of Legislative Decree 81/2008 in order to facilitate the SR's centrality and authority, toward employees and employer alike. Therefore, it may be appropriate to provide training and awareness courses, aimed to increase personal and job resources able to promote SRs' engagement and prevent the potential negative outcomes of high levels of conflicts.

The combined actions of the technical-professional and relational interventions aim to enhance the perception of the SR's role. They also contribute to limiting the potential conflicts between SRs and represented employees who are not always aware of their representatives' tasks, functions, and responsibilities.

Knowledge quickly becoming obsolete due to swift changes in the labour market, increasing organizational flexibility, and need for periodic and specific training require an integration between the current educational system and the goal of fostering self and lifelong learning. At the same time, greater resources should be provided to carry out these activities. Such resources could include the promotion of peer debates to explore best practice and reflections about the SR's role which, if accurately un-

derstood and adequately undertaken, can not only create healthy workplaces, but also stimulate innovation, efficient use of resources, and quality employment. An effective training program is much more than mere education on health and safety issues: it involves an empowerment on these topics, based on workers' participation (32, 38, 67). Therefore, among factors influencing SRs' performance, the adequacy of training activities is of primary importance (27, 64). Training-intervention initiatives are also vital in fostering transformative learning (13, 53), and allow to move from a mere observer's perspective to a culture of responsibility and safety. The establishment of Communities of Practice (CoP) is also useful to this end. CoP are spaces for sharing reflections, suggestions, and experiences with colleagues. In addition, CoP satisfy the need to compare the challenges pertaining to the SR's role and to improve job outcomes (34).

The findings are to be read in light of the multifaceted issues on health and safety in the workplace. These topics require multidisciplinary competencies during both risk assessment and prevention measures management, in a Corporate Social Responsibility perspective (CSR; 7). In this view, the SR should be involved in a tangible and productive collaboration with other health and safety actors, in order to carry out the role effectively. Another key issue is adopting organizational models oriented to CSR not only in large companies, but also in small and medium enterprises (the majority of the sample examined). This could be achieved by using the support offered by advisory and counseling services, devised by positive organizations (14, 15).

CONCLUSIONS

The present work allows to highlight the importance of promoting action aimed to solve possible critical issues, such as conflict with co-workers, ethical conflict, and training satisfaction.

A working environment that fosters organizational well-being is a setting that goes beyond the traditional vision and fosters productivity and safety. The new perspective promotes a philosophy by which only safeguarding product quality, raw material, processes, workers' and environmental safety

can guarantee competitive long-lasting edges in an increasingly globalized market. Therefore, it is important to encourage actions aimed to develop a safety-positive culture in the workplace, from which SRs will benefit.

This research has some limitations. The first one reflects the specific limitations of self-report measures and cross-sectional studies, for example the common method variance and the impossibility of determining the direction of the relationships, respectively. However, regarding the latter, even though different explanations are possible, strong reasons support our results. Another limitation derives from the size of the companies examined that has prevented us from studying the figure of the territorial SR. Future research could extend the analysis not only to this role, but also to different contexts, such as healthcare and educational settings.

NO POTENTIAL CONFLICT OF INTEREST RELEVANT TO THIS ARTICLE WAS REPORTED BY THE AUTHORS

REFERENCES

1. Ahmed U, Isa N, Majid AHA, et al: Towards understanding work engagement: can HR really buffer HR? Test of a moderated model. *Int J Econ Res* 2017; 14: 85-102
2. Akkermans J, Brenninkmeijer V, Schaufeli WB, Blonk RWB: It's all about career skills: effectiveness of a career development intervention for young employees. *Hum Resour Manage* 2014; 54: 533-551. doi:10.1002/hrm.21633
3. Ales E: L'articolo 9 statuto dei lavoratori alla luce della legislazione più recente in materia di salute e sicurezza: partecipazione o controllo? *Riv It Dir Lav* 2011; 1: 57-71
4. Alessandri G, Consiglio C, Luthans F, Borgogni L: Testing a dynamic model of the impact of psychological capital on work engagement and job performance. *Career Dev Int* 2018; 23: 33-47. doi:10.1108/CDI-11-2016-0210
5. Baka L: Does job burnout mediate negative effects of job demands on mental and physical health in a group of teachers? Testing the energetic process of job demands-resources model. *Int J Occup Med Environ Health* 2015; 28: 335-346. <http://dx.doi.org/10.13075/ijomh.1896.00246>
6. Bakker AB, Demerouti E: The job demands-resources model: state of the art. *J Manage Psychol* 2007; 22: 309-328. doi:10.1108/02683940710733115
7. Bartolucci GB, Santantonio P, Casciani M, Dagazzini I: Ruolo e integrazione delle figure tecniche della prevenzione nella gestione aziendale. *G Ital Med Lav Erg* 2010; 32: 408-411

8. Batthy MA, Alshagawi M, Juhari AS: Mediating the role of work engagement between personal resources (self-efficacy, the big five model) and nurses' job performance. *Int J Hum R Healthc* 2018; 11: 176-191. doi:10.1108/IJHRH-10-2017-0056
9. Bridgeman PJ, Bridgeman MB, Barone J: Burnout syndrome among healthcare professionals. 2018; 75: 147-152. doi:10.2146/ajhp170460
10. Brunetto Y, Xerri M, Farr-Wharton B, et al: Nurse safety outcomes: old problem, new solution – the differentiating roles of nurses' psychological capital and managerial support. *J Adv Nurs* 2016; 72: 2794-2805. doi:10.1111/jan.13036
11. Brunetto Y, Xerri M, Shriberg A, et al: The impact of workplace relationships on engagement, well-being, commitment and turnover for nurses in Australia and the USA. *J Adv Nurs* 2013; 69: 2786-2799. doi:10.1111/jan.12165
12. BS OHSAS 18001: Occupational health and safety management system – BSI, 2007
13. Christie M, Carey M, Robertson A, Grainger P: Putting transformative learning theory into practice. *Aust J Adult Learn* 2015; 55: 9-30
14. De Carlo NA: Quadro di riferimento e modalità d'azione in tema di stress lavoro-correlato. In De Carlo NA, Falco A, Capozza D (eds): *Stress, benessere organizzativo e performance*. Milano: FrancoAngeli, 2013: 58-79
15. De Carlo NA, Dal Corso L, Falco A, et al: "To be, rather than to seem": the impact of supervisor's and personal responsibility on work engagement, job performance, and job satisfaction in a positive healthcare organization. *TPM* 2016; 23(4): 561-580. doi:10.4473/TPM23.4.9
16. De Carlo NA, Dal Corso L, Girardi D, et al: *Ruolo dei rappresentanti dei lavoratori per la sicurezza: compiti, funzioni e responsabilità. Tre indagini empiriche*. Venezia: Regione del Veneto, 2017
17. De Carlo NA, Falco A, Capozza D: *Test di valutazione dello stress lavoro-correlato nella prospettiva del benessere organizzativo, Q₄-BO*. Milano: FrancoAngeli, 2008-2011
18. De Carlo NA, Falco A, Pierro A, et al: Regulatory mode orientations and well-being in an organizational setting: the differential mediating roles of workaholism and work engagement. *J Appl Soc Psychol* 2014; 44: 725-738. doi:10.1111/jasp.12263
19. De Wit FRC: *The paradox of intragroup conflict*. Leiden: Leiden University Depository, 2013
20. DeJoy DM, Schaffer BS, Wilson MG, et al: Creating safer workplaces: assessing the determinants and role of safety climate. *J Safety Res* 2004; 35: 81-90. doi:10.1016/j.jsr.2003.09.018
21. Demerouti E, Bakker AB, Nachreiner F, Schaufeli WB: The job demands-resources model of burnout. *J Appl Psychol* 2001; 86: 499-512. doi:10.1037//0021-9010.86.3.499
22. Deng L, Yang M, Marcoulides KM: Structural equation modelling with many variables: a systematic review of issues and developments. *Front Psychol* 2018; 9: 1-14. doi:10.3389/fpsyg.2018.00580
23. Ellinger AD: Supportive supervisors and managerial coaching: exploring their intersections. *J Occup Organ Psych* 2013; 86(3): 310-316. doi:10.1111/joop.12021
24. European Agency for Safety and Health at Work (2016a). *Second European Survey of Enterprises on New and Emerging Risks (ESENER-2)*. Available online at: file:///C:/Users/User_LDC/Downloads/esener-ii-first-findings.pdf (Last accessed 04-03-2018)
25. European Agency for Safety and Health at Work (2016b). *Worker participation in the management of occupational safety and health: qualitative evidence from ESENER 2*. Available online at: https://osha.europa.eu/it/tools-and-publications/publications/country-report-greece-worker-participation-management (Last accessed 03-09-2018)
26. European Agency for Safety and Health at Work (2012a). *Understanding workplace management of safety and health, psychosocial risks and worker participation through ESENER. A summary of four secondary analysis reports*. Available online at: https://osha.europa.eu/en/tools-and-publications/publications/reports/esener-summary (Last accessed 04-03-2018)
27. European Agency for Safety and Health at Work (2012b). *Worker representation and consultation on health and safety. An analysis of the findings of the European survey of Enterprises on new and emerging risks*. Available online at: https://osha.europa.eu/en/tools-and-publications/publications/reports/esener_workers-involvement (Last accessed 03-09-2018)
28. Falco A, Girardi D, Kravina L, et al: The mediating role of psychophysic strain in the relationship between workaholism, job performance, and sickness absence: A longitudinal study. *J Occup Environ Med* 2013; 55: 1255-1261. doi: 10.1097/JOM.0000000000000007
29. Fantini L, Giuliani A: *Consultazione e partecipazione dei lavoratori*. In Fantini L, Giuliani A (eds): *Salute e sicurezza nei luoghi di lavoro. Le norme, l'interpretazione e la prassi*. Milano: Giuffrè Editore, 2015: 391-405
30. Ferrante F: Great Expectations: The Unintended Consequences of Educational Choices. *Soc Indic Res* 2017; 131:745-767. doi:10.1007/s11205-016-1268-7
31. Ganster DC, Schaubroeck J: Work stress and employee health. *J Manage* 1991; 17: 235-271. doi:10.1177/014920639101700202
32. García AM, López-Jacob MJ, Dudzinski I, et al: Factors

- associated with the activities of safety representatives in Spanish workplaces. *J Epidemiol Commun H* 2007; 61: 784-790. doi:10.1136/jech.2006.053504
33. García AM, Rodrigo F, Dudzinski I, Jacob MJL: Análisis de las tareas y percepciones de los delegados y delegadas de prevención en España. Valencia: Instituto Sindical de Trabajo, Ambiente y Salud, 2004
 34. Gilardi L, Marino M, Fubini L, et al: The community of practice as a place of prevention: The value of collective knowledge in occupational safety. *Med Lav* 2017; 108: 222-227. doi:10.23749/mdl.v108i3.6239
 35. Gordon HJ, Demerouti E, Le Blanc PM, et al: Individual job redesign: job crafting interventions in health-care. *J Vocat Behav* 2018; 104: 98-114. doi:10.1016/j.jvb.2017.07.002
 36. Gupta M, Shukla K: An empirical clarification on the assessment of engagement at work. *Adv Develop Hum Resour* 2018; 20(1):44-57. doi:10.1177/1523422317741692
 37. Hakanen JJ, Peeters MCW, Schufeli WB: Different types of employee well-being across time and their relationships with job crafting. *J Occup Health Psych* forthcoming. doi:10.1037/ocp0000081
 38. Harris LA, Olse KB, Walker RJ: Role typology for health and safety representatives. *Empl Relat* 2012; 34: 481-500. doi:10.1108/01425451211248532
 39. Hooper D, Coughlan J, Mullen M: Structural equation modelling: guidelines for determining model fit. *Electron J Bus Res Methods* 2008; 6: 53-60
 40. Hovden J, Lie T, Karlsen JE, Alteren B: The safety representative under pressure. A study of occupational health and safety management in the Norwegian oil and gas industry. *Safety Sci* 2008; 46: 493-509. doi:10.1016/j.ssci.2007.06.018
 41. Huhtala M, Kaptein M, Feldt T: How perceived changes in the ethical culture of organizations influence the well-being of managers: a two-year longitudinal study. *Eur J Work Organ Psy* 2015; 25: 1-18
 42. Huo ML, Boxall P: Lean production and the well-being of the frontline manager: the job demands-resources model as a diagnostic tool in Chinese manufacturing. *Asia Pac J Hum Resou* 2017; 55: 280-297. doi:10.1111/1744-7941.12152
 43. INAIL, Istituto Nazionale per l'Assicurazione contro gli Infortuni sul Lavoro (2014). Indagine nazionale sulla salute e sicurezza sul lavoro. Rappresentanti dei Lavoratori per la Sicurezza - Insula. Available online at: https://www.inail.it/cs/internet/docs/progetto_insula_report_rls-pdf.pdf (Last accessed 03-09-2018)
 44. INAIL, Istituto Nazionale per l'Assicurazione contro gli Infortuni sul Lavoro (2017). IMPACT-RLS: Indagine sui modelli partecipativi aziendali e territoriali per la salute e la sicurezza sul lavoro: Il ruolo dei rappresentanti dei lavoratori per la sicurezza e le interazioni con gli attori della prevenzione. Available online at: <https://www.inail.it/cs/internet/docs/alg-pubbl-impact-rls.pdf> (Last accessed 03-09-2018)
 45. Irikannu U: Addressing human performance in the workplace through a multidisciplinary approach. Proceeding of the Society of Petroleum Engineers - SPE International Conference and Exhibition on Health, Safety, Security, Environment, and Social Responsibility; 2018 Apr 16-18; Abu Dhabi, United Arab Emirates. Texas: Society of Petroleum Engineers; 2018
 46. Jöreskog, KG, Sörbom D: LISREL 8.80 for Windows. Lincolnwood (IL): Scientific Software International, 2006
 47. Kammeyer-Mueller JD, Simon LS, Rich BL: The psychic cost of doing wrong: ethical conflict, divestiture socialization, and emotional exhaustion. *J Manage* 2012; 38: 784-808. doi:10.1177/0149206310381133
 48. Karasek RA: Job demands, job decision latitude and mental strain: Implications for job redesign. *Admin Sci Quart* 1979; 24: 285-308
 49. Konstantinou AK, Bonotis K, Sokratous M, et al: Burn-out evaluation and potential predictors in a Greek cohort of mental health nurses. *Arch Psychiat Nurs* forthcoming. <https://doi.org/10.1016/j.apnu.2018.01.002>
 50. Lai M: Il diritto della sicurezza sul lavoro tra conferme e sviluppi. Torino: G. Giappichelli Editore, 2017
 51. Lanz JJ, Bruk-Lee V: Resilience as a moderator of the indirect effects of conflicts and workload on job outcomes among nurses. *J Adv Nurs* 2017; 73(12): 2973-2986. doi:10.1111/jan.13383
 52. Laschinger HKS, Leiter MP, Day A, Gilin-Oore D, MacKinnon SP: Building empowering work environments that foster civility and organizational trust. *Nurs Res* 2012; 61(5): 316-325. doi:10.1097/NNR.0b013e318265a58d
 53. Lundgren H, Poell RF: On critical reflection: A review of Mezirow's theory and its operationalization. *Hum Resour Dev Rev* 2016; 15(1): 3-28. doi:10.1177/1534484315622735
 54. MacKinnon DP: Introduction to statistical mediation analysis. New York, NY: Lawrence Erlbaum Associates, 2008
 55. MacKinnon DP, Cheong J, Pirlott AG: Statistical mediation analysis. In Cooper H, Camic PM, Long DL, Panter AT, Rindskopf D, Sher KJ (eds.): *APA handbook of research methods in psychology*, Vol. 2. Research designs: Quantitative, qualitative, neuropsychological, and biological. Washington (DC): American Psychological Association, 2012: 313-331 <http://dx.doi.org/10.1037/13620-018>
 56. MacKinnon DP, Fritz MS, Williams J, Lockwood CM:

- Distribution of the product confidence limits for the indirect effect: Program PRODCLIN. *Behavior Research Methods* 2007; 39: 384-395
57. Maslach C, Leiter MP: Early predictors of job burnout and engagement. *J Appl Psychol* 2008; 93: 498-512. doi:10.1037/0021-9010.93.3.498
 58. Matthews RA., Wayne JH, Ford MT: A work-family conflict/subjective well-being process model: A test of competing theories of longitudinal effects. *J Appl Psychol* 2014; 99: 1173-1187. <http://dx.doi.org/10.1037/a0036674>
 59. Merriman G, Cowley S: Are health and safety representatives more effective at representing their designated work group having completed a Certificate IV course in OHS? *J Health Saf Res Pract* 2009; 1(1): 13-18
 60. Milgate N, Innes E, O'Loughlin K: Examining the effectiveness of health and safety committees and representatives: a review. *Work* 2002; 19(3): 281-290
 61. Minbaeva D, Santangelo GD: Boundary spanners and intra-MNC knowledge sharing: the roles of controlled motivation and immediate organizational context. *Glob Strateg J* 2018; 8: 220-241. doi:10.1002/gsj.1171
 62. Mueller RO: Basic principles of structural equation modeling: An introduction to LISREL and EQS. New York: Springer, 1996
 63. O'Neill TA, McLarnon MJW, Hoffart GC, et al: The structure and function of team conflict state profiles. *J Manage* 2018; 44: 811-836. doi:10.1177/0149206315581662
 64. Ollé-Espluga L, Menéndez-Fuster M, Muntaner C, et al: Safety representatives' views on their interaction with workers in a context of unequal power relations: an exploratory qualitative study in Barcelona (Spain). *Am J Ind Med* 2014; 57: 338-350. doi:10.1002/ajim.22220
 65. Ollé-Espluga L, Vergara-Duarte M, Belvis F, et al: What is the impact on occupational health and safety when workers know they have safety representatives? *Safety Sci* 2015; 74: 55-58. doi:10.1016/j.ssci.2014.11.022
 66. Ossicini A, Bindi L, Casale MC: The indispensable role of the workers' representative in preventative safety activity. *G Ital Med Lav Erg* 2003; 25: 124-126
 67. Rasmussen HB, Hasle P, Andersen PT: Safety representatives' roles and dilemmas in the Danish oil and gas industry. *Pol Pract Health Saf* 2014; 12: 17-34
 68. Ritter KJ, Matthews RA, Ford MT, Henderson AA: Understanding role stressors and job satisfaction over time using adaptation theory. *J Appl Psychol* 2016; 101: 1655-1669. <http://dx.doi.org/10.1037/apl0000152>
 69. Schaufeli WB, Bakker AB: Job demands and job resources and their relationships with burnout and engagement: a multi-sample study. *J Organ Behav* 2004; 25: 293-315. doi:10.1002/job.248
 70. Schaufeli WB, Bakker AB, Salanova M: The measurement of work engagement with a short questionnaire. A cross-national study. *Educ Psychol Meas* 2006; 66: 701-716. doi:10.1177/0013164405282471
 71. Schaufeli WB, Salanova M: Work engagement: on how to better catch a slippery concept. *Eur J Work Organ Psychol* 2011; 20: 39-46. doi:10.1080/1359432X.2010.515981
 72. Schaufeli WB, Taris TW: A critical review of the job demands-resources model: implications for improving work and health. In Bauer GF, Hämming O (eds.): *Bridging occupational, organizational and public health. A transdisciplinary approach*. Dordrecht: Springer, 2014
 73. Schaufeli WB, Taris TW, van Rhenen W: Workaholism, burnout, and work engagement: three of a kind or three different kinds of employee well-being? *Appl Psychol-Int Rev* 2008; 57: 173-203. doi:10.1111/j.1464-0597.2007.00285.x
 74. Schermelleh-Engel K, Moosbrugger H, Müller H: Evaluating the fit of structural equation models: tests of significance and descriptive goodness-of-fit measures. *Methods Psychol Res Online* 2003; 8: 23-74
 75. Sciortino P: La partecipazione "equilibrata" dei lavoratori nella costruzione del sistema di sicurezza sul lavoro. *Il Rappresentante per la sicurezza e gli Organismi Paritetici. Lav Prev oggi* 2004; 1: 194-217
 76. Shetty SH, Assem Y, Khedekar RG, Asha S: Indian orthopaedic surgeons are less burned out than their Western colleagues. *J Arthrosc Jt Surg* 2017; 4: 1-7. <http://dx.doi.org/10.1016/j.jajs.2017.03.005>
 77. Shin Y, Hur WM, Choi WH: Co-worker support as a double-edged sword: a moderated mediation model of job crafting, work engagement, and job performance. *Int J Hum Resour Man* forthcoming. doi:10.1080/09585192.2017.1407352
 78. Siegrist J: Adverse health effects of high-effort/low-reward conditions at work. *J Occup Health Psych* 1996; 1: 27-43
 79. Singh J, Goolsby JR, Rhoads GK: Behavioral and psychological consequences of boundary spanning burnout for customer service representatives. *J Marketing Res* 1994; 31: 558-569
 80. Sokovic M, Pavletic D, Kern Pipan K: Quality Improvement Methodologies – PDCA Cycle, RADAR Matrix, DMAIC and DFSS. *J Achiev Mater Eng* 2010; 43: 476-483
 81. Soprani A: RLS: ruolo, funzioni e azione nel Sistema di organizzazione aziendale della prevenzione. *Igiene Sic Lav* 2018; 1: 30-36
 82. Song JH, Chai DS, Kim J, Bae SH: Job performance in the learning organization: the mediating impacts of self-efficacy and work engagement. *Perform Improv Q* 2018; 30: 249-271. doi:10.1002/piq.21251

83. Sulea C, Virga D, Maricutoiu LP, Schaufeli W, Dumitru C, Sava FA: Work engagement as mediator between job characteristics and positive and negative extra-role behaviors. *Career Dev Int* 2012; 17: 188-207. doi:10.1108/13620431211241054
84. Tanskanen J, Mäkelä L, Viitala R: Linking managerial coaching and leader-member exchange on work engagement and performance. *J Happiness Stud* forthcoming. doi:10.1007/s10902-018-9996-9
85. Trades Union Congress (2016). Focus on health and safety. Available online at: <https://www.tuc.org.uk/sites/default/files/focusonhealthsafetyreport.pdf> (Last accessed 03-09-2018)
86. UNI (2001). Linee guida per un sistema di gestione della salute e sicurezza sul lavoro (SGSL). Available online at: <http://iectorino.com/sgsl.pdf> (Last accessed 03-09-2018)
87. Westphal M, Bingisser MB, Feng T, et al: Protective benefits of mindfulness in emergency room personnel. *J Affect Disorders* 2015; 175: 79-85. <http://dx.doi.org/10.1016/j.jad.2014.12.038>
88. Włodarczyk D, Lazarewicz M: Frequency and burden with ethical conflicts and burnout in nurses. *Nurs Ethics* 2011; 18: 847-861. doi:10.1177/0969733011408053