



Fear of future violence at work and job burnout: A diary study on the role of psychological violence and job control

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ABSTRACT

Objective: Using a quantitative diary design, the purpose of this paper is to gain insight in the workplace violence phenomenon by examining whether within-person fluctuations in fear of future violence is linked to within-person levels of burnout. In addition, authors investigated whether this relationship was stronger for those low in job control. Finally, psychological violence was proposed as a cross-level moderator of the relation between fear of future violent events at work and burnout.

Methods: A diary study was conducted among 40 doctors on duty. Participants completed a general questionnaire and a diary booklet (one diary every 10-working days; $40 \times 5 = 200$ occasions).

Results: Multilevel analyses showed that fear of future violence was linked to emotional exhaustion and cynicism. Job control did not moderate the relationship between fear of future violence and cynicism but moderated the relationship between fear of future violence and emotional exhaustion. In addition, the experience of psychological violence did not moderate the relationships of fear of future violence with either emotional exhaustion or cynicism.

Conclusions: Our findings provided additional evidence that not only being the target of violent behaviors may take an emotional toll. When a worker experiences fear of future violent events at work, he/she tends to experience stronger levels of emotional exhaustion and cynicism. Job control plays a fundamental role, buffering the way that a person perceives workplace conditions and the choice of coping strategy.

1. Introduction

Every day the majority of workers starts their work day thinking the workplace is a safe and secure environment, not expecting to become potential targets of violence (Barling, 1996). In the last decades, workplace violence has emerged as a worldwide occupational hazard in both public and private sector with negative health, safety and legal consequences (Chappell & Martino, 2006). At both cultural and societal level, people are losing the ability to behave in a polite and respectful way at work (Andersson & Pearson, 1999). According to Leiter (2013), our society is passing through a broad civility crisis and workplaces are not safe from this crisis.

Results from the European Working Conditions Survey (EWCS 2010) showed that over 20% of the workforce in the health sector in the European Union (EU-27) had experienced some kind of adverse social behavior at work during the past 12 months, such as verbal abuse, unwanted sexual attention, threats and humiliating behavior, physical

violence, bullying and harassment, and sexual harassment (EU-OSHA, 2010). Particularly, the two waves of the EWCS (2005–2010) revealed that violent behaviors against health care staff—which are mainly perpetrated by patients and visitors—represent a serious and dangerous occupational hazard that has increased continuously in recent years (Beech & Leather, 2006; Camerino, Estryn-Behar, Conway, van Der, & Hasselhorn, 2008; Ferns, 2006; Gascón et al., 2009; Gascon et al., 2013; Hahn et al., 2008, 2012; Roche, Diers, Duffield, & Catling-Paul, 2010).

In the last decade, the significant impact of psychological violence has become more evident and relevant. According to Schat and Frone (2011), those behaviors occur more frequently than physical violence. Chappell and Martino (2006) suggested that it “can include diverse aggressive tactics, all of which have the potential to cause significant emotional injury among those victimized” (p. 17).

According to Mueller and Tschan (2011), empirical research on how client-initiated violence might lead to workers’ health impairments is still limited. Particularly, studies considering the impact of fear of

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violence on burnout are very scarce. The existing theory and research on workplace violence have examined this topic within the traditional work stress framework (Barling, 1996; Pratt & Barling, 1988). Specifically, Kelloway et al. (Barling, Rogers, & Kelloway, 2001; LeBlanc & Kelloway, 2002; Rogers & Kelloway, 1997; Schat & Kelloway, 2000), proposed in their model that moving the focus from actual experience of violence to fear of workplace violence may help scholars in understanding the link between workplace violence and its long-term negative psychological, physiological and occupational outcomes.

However, despite the importance of this phenomenon, the traditional workplace violence research has been almost exclusively developed by using cross-sectional design and at the between-person level of analysis (Nezlek, 2007; Wright & Cropanzano, 2000). Furthermore, limited attention has been paid to workplace violence short-term effects on employees' health and its possible moderators. For example, consistent with the demand-control model (JDC; Karasek, 1979, 1998), the ILO and WHO have added job control (such as autonomy) to the list of recommendations for violence prevention in the health sector.

In this sense, longitudinal diary studies showed that investigating within-person changes in job stressors is crucial for increasing our awareness of how and why employees' attitudes and behaviors change over time (Ohly, Sonnentag, Niessen, & Zapf, 2010), as well as how these changes are linked to workers' behavior. According to previous results from studies that used such methods, within-person fluctuations in fear of future violence may account for a significant percentage of variance in core indicators of employee reduced well-being such as burnout (Gross, Meier, & Semmer, 2013; Xanthopoulou & Bakker, 2013). In addition, considering short-term fluctuations may offer scholars the opportunity to better develop hypotheses regarding employee well-being. In fact, when the between-person approach was used, those hypotheses received little support (e.g., the happy-productive worker thesis) (Cropanzano & Wright, 2001).

The present study aims to: (1) make a theoretical contribution to the workplace violence literature by proposing that fear of future violence can explain within-person changes in exhaustion and cynicism; (2) investigate the relationship between fear of future violence at work and burnout, and (3) the buffering effect of job control and previous experience of psychological violence on healthcare workers (HCWs) burnout by adopting a longitudinal perspective.

2. Workplace violence

The European Commission defines workplace violence as "incidents where staff are explicitly or implicitly abused, threatened or assaulted in circumstances related to their work, including commuting to and from work involving an explicit or implicit challenge to their safety, well-being, and health" (Wynne, Clarkin, Cox, & Griffiths, 1997, p. 1). This definition has also been adopted by the International Labour Office (ILO), the International Council of Nurses, the WHO, and Public Services International. Recently, the ILO (2013) expanded this definition by including psychological, physical, and sexual acts of violence perpetrated by customers, co-workers, and supervisors, even if they occur outside the workplace. Furthermore, the ILO expanded this list by considering all those acts of violence perpetrated by strangers against workers. This broad definition comprises physical, verbal, and psychological violence, and sexual harassment, and encompasses any workplace behavior capable of causing injury, damaging goods, or making people at work fear for their safety (Acik et al., 2008). This definition has been adopted for the purpose of this study.

The relationship between violence perpetrator and victim in categorizing workplace violence has also been considered (Bowie, Fisher, & Cooper, 2005; Wassell, 2009). Specifically, we use the ILO's typology of perpetrators of workplace violence (Acik et al., 2008): "Violence perpetrated by customers includes all types of violence in which a customer, which is the recipient of goods or services for a monetary or other valuable consideration, is under the care of the victim" (p. 19).

There is international agreement about workplace situations in which violence occurs more frequently. These situations include: (a) occupations involving working alone or at night, (b) handling cash and valuables, (c) providing care, (d) having enforcement duties, (e) working with people in distress, (f) working in an environment increasingly open to violence, and (g) working with the public in human services (Chappell & Martino, 2006; ILO, 2013; Vaez, Josephson, Vingård, & Voss, 2013; Wiskow, Albrecht, & De Pietro, 2010).

Considering data available from the international literature, Hahn et al. (2012) calculated that between 9% and 24% of HCWs experienced verbal aggression and between 5% and 21% experienced physical assaults.

In the European Survey of Enterprises on New and Emerging Risks (ESENER), 50% of managers reported that having to deal with difficult customers, patients, pupils, etc. was one of the most commonly reported risks among 10 possible psychosocial risks (Milczarek & Irastorza, 2012).

3. Theoretical background

Kelloway et al. (Barling, Rogers, & Kelloway, 2001; LeBlanc & Kelloway, 2002; Rogers & Kelloway, 1997; Schat & Kelloway, 2000, 2003) have examined workplace violence within the traditional work stress framework (Barling, 1996; Pratt & Barling, 1988). Rogers and Kelloway (1997) in their original model considered the exposure to workplace violence as a stressor that may lead to negative outcomes such as negative mood, cognitive distraction, and fear that in turn predicts psychological and somatic health. From this perspective, objective workplace events are the "stressors", the individual's subjective experience of these events is the "psychological stress", and the individual's psychological and/or physiological response is the "strain". In this sense, exposure to workplace violence is the stressor that leads to direct negative outcomes (Pratt & Barling, 1988; Rogers & Kelloway, 1997) such as fear, that in turn predicts psychological, physical and behavioral outcomes (Barling, 1996). Using this framework, Kelloway et al. expanded the model, suggesting that fear of future violence is the immediate consequence of experiencing workplace violence with long-term negative consequences (both personal and organizational) (Barling, 1996).

According to Rogers and Kelloway (1997), fear of future violence is one of the first subjective (cognitive and emotional) reactions to workplace violence, both direct and indirect (Cox & Leather, 1994). Lazarus and Folkman (1984) stated that fear is the manifestation of a specific stress appraisal. Specifically, fear could be considered as a stress emotion because of its deep link to harmful and threatening condition (Lazarus, 1999a, 1999b). Hall and Spector (1991) stated that although employees may not actually experience workplace violence, just perceiving a threat of violence is sufficient for them to exhibit many of the typical negative consequences of direct violence, such as anxiety, illness symptoms, and negative occupational outcomes. Mueller and Tschann (2011) asserted that when victims of workplace violence fear the recurrence of violence, the likelihood of being vulnerable to its negative outcomes is high.

In this sense, moving the focus from the actual experience of workplace violence to fear of future violence may help scholars in understanding the link between workplace violence and its negative psychological, occupational, and physiological outcomes (Rogers & Kelloway, 1997).

3.1. Within-person relationships

Considering the health care context, the interactions with patients, such as confrontation with suffering/demanding patients, may paradoxically expose HCWs to a serious and dangerous occupational hazard such as violent behaviors against the same professionals who deliver the care (Gates et al., 2011). According to Grandey, Kern, and Frone

(2007), “helping customers or clients can have a dark side” (p. 63). Grandey, Dickter, and Sin (2004) sustained that ‘the customer is *not* always right’ and the opposite is at the root of being a target of aggression (Allan & Gilbert, 2002; Hochschild, 1983).

In this sense, the workplace environment may become a source of stress if workers believe it may be a risk for their well-being, and feel that they do not have enough resources to cope with that threat (Mueller & Tschan, 2011). It is a process-oriented approach (Lazarus, 2001), where the stress is the result of the transaction and reflects “the changing person-environment relationship” (Lazarus, 1990, p. 4). In the transactional stress model (Lazarus & Folkman, 1984), the “cognitive appraisal processes intervene between the initial perception and subsequent experience of a potentially stressful situation” (Tomaka, Blascovich, Kelsey, & Leitten, 1993, p. 248). Thus, cognitive appraisal is a key element of the emotional response (Ellsworth & Smith, 1988).

Consistent with the transactional model, if HCWs appraise their workplace as threatening, they will experience threat emotions, which in turn are linked to high negative activation (e.g., fear and anxiety), thus reducing well-being (Lazarus & Folkman, 1984). Enduring threats, such as fear of future violence, can result in a cumulative effect on HCWs over time, capable of overcoming worker’s capacity to cope with the situation (Lazarus, 1999a, 1999b; Lazarus & Folkman, 1984).

Grandey et al. (2004) maintained that social exchange processes with customers may be associated with reduced employee well-being, such as high levels of job burnout. In studying the aggressive component of this relationship, Ben-Zur and Yagil (2005) found that the chronic stress associated with customers’ aggressive behaviors resulted in worker burnout. Winstanley and Whittington (2002) showed that in the healthcare setting, customer violent behaviors were linked to emotional exhaustion and cynicism in hospital staff. Furthermore, other studies showed that customer-related social stressors were positively linked to emotional exhaustion and cynicism among service providers (Dormann & Zapf, 2004; Grandey et al., 2004).

Hanson, Perrin, Moss, Laharnar, and Glass (2015) found that fear of future workplace violence was associated with worse health outcomes, mainly higher burnout. However, despite the recognized effect of fear of violence on a wide range of negative psychological outcomes (Harris & Leather, 2011), evidence regarding its effects upon burnout is still limited.

According to Maslach (1982), the experience of burnout is deeply rooted in the “social interactions between helpers and their recipients” (p. 3). The personal relationships with patients, clients, and their relatives may be demanding as a consequence of empathy and emotional involvement. In this sense, job burnout is considered as a consequence of an employee’s inability to adequately manage those relationships.

The burnout syndrome consists of emotional exhaustion, cynicism, and perceived professional inefficacy (Maslach & Jackson, 1981; Maslach, Schaufeli, & Leiter, 2001). According to Leiter and Maslach (2005), “emotional exhaustion is related to workers’ experience of stress reducing workers’ initiative while progressively limiting their capacity for demanding work” (p. 50). Cynicism refers to detachment from work partially in reaction to exhaustion and partially in reaction to mismatches with the work environment (Maslach, Jackson, & Leiter, 1996). Finally, the third component, perceived professional inefficacy, refers to the loss of confidence in one’s work (Maslach et al., 2001).

Emotional exhaustion, defined as “feelings of being emotionally overextended and depleted of one’s emotional resources” (Maslach, 1993, pp. 20–21), may be considered as a personal strain response engendered by workplace stressors, such as fear workplace violence (Lee & Ashforth, 1996; Wright, & Cropanzano, 1998). In this sense, as a consequence of fear of being a victim of workplace violence, individuals react activating appraisals of harm and developing negative emotions (Grandey et al., 2004; LeBlanc & Kelloway, 2002; Schat & Kelloway, 2000), such as emotional exhaustion. Furthermore, in reaction to higher fear of workplace violence, HCWs may develop cynicism distancing themselves physically and/or psychologically from their

patients or clients (Taris et al., 2005).

Furthermore, the setting where staff interacts with clients defines the context for employees’ experience. Rose and Cleary (2007) argued that fear reactions may represent a complex process of (workplace) adaptation. In this sense, fear may be considered as an emotional response activated by an appraisal of the environment perceived as harmful for wellbeing (Lazarus & Folkman, 1984). The experience of violence confirms the setting as having a potential for further violence. If violence has occurred once, it can occur again; if violence has never occurred in this place, employees have less reason to expect future violence. Within the setting, specific cues may be more or less suggestive of potential violence. We argued that this appraisal is situational-specific situation. For example, the patients with which an employee one week may convey a greater potential for violence than do the patients with whom the employee works another week. In this sense, fear may fluctuate within the same person from one week to another (i.e., within-person variation).

The workplace violence-burnout relationship has received (limited) empirical support in studies that followed a between-person perspective. Nevertheless, there is evidence to date regarding longitudinal/lagged effects of fear of future violence on burnout.

Taken together, we proposed the following:

Hypothesis 1a. within-person fluctuations in fear of future violence will be positively related to emotional exhaustion.

Hypothesis 1b. within-person fluctuations in fear of future violence will be positively related to cynicism.

3.2. Job control

According to the Karasek’s framework of stress, job control has (direct, indirect and moderating) effects on the relationship between job demands and employee’s wellbeing. Karasek and Theorell (1990) defined job control as degrees of freedom at work that provides workers decision latitude in how and when to perform job tasks. It has been recognized as a central job resource that helps employees to deal with workday demands (Lazarus & Folkman, 1984). In this sense, job control may be an important factor in preventing/reducing the effect of workplace violence. Previous studies have shown that perception of job control plays a pivotal role in employees’ health.

Based on the findings of the Karasek’s job demands-job control model (Karasek, 1979), Schat and Kelloway (2000) showed that perceived control, such as workers’ capacity to impact events at work, predicted fear of future violence as well as emotional well-being. Job control allows workers to have responsibility for their decisions and broad decision latitude about how to manage work-related issues (Schat & Kelloway, 2000). As described by Leiter and Maslach (2004), job control is fundamental in influencing workload and burnout. In this sense, high job control gives workers the opportunity to shape their working environment, thus reducing their workload.

The perception of job control can affect the way in which a person perceives workplace conditions and events such as the risk of exposure to violence (Spector, 2002). Thus, when individuals perceive a loss of control of workplace events, they may feel that they have lost the ability to control some aspects of their job, such as a safe and secure workplace (Barling, 1996). In general, perceived low control is linked to the interpretation of the environment as stressful, with negative emotional responses, and high strain. In contrast, if an individual perceives to have control over the work situation, it can help in keeping the stressor within acceptable limits and the emotional responses to it will not be so extreme.

Hence, we propose the following hypotheses aimed at examining the main effect of job control on burnout:

Hypothesis 2a. Job control will be negatively associated with emotional exhaustion.

Hypothesis 2b. Job control will be negatively associated with cynicism.

Besides the main effects, the JDC model (Karasek, 1979) also postulated the buffering effect of job control against stressful events. Specifically, the JDC model hypothesized that the job control buffers the effect of demands on workers' wellbeing so that high stressors create strain only when job control is low. For example, Heponiemi, Kouvonen, Virtanen, Vänskä, and Elovainio (2014), showed that job control may be considered as an important resource factor that may act as a buffer against the negative effects of work-related violence. In their study, the authors showed that job control reduced the effect of workplace violence on turnover intentions. To date, there has been little research examining the buffering effect of job control on the relationship between fear of future violence and burnout. In fact, Schat and Kelloway (2000) in their study did not find evidence for the moderating effect of job control on the relationship between fear of future violence and health-related outcomes. Identifying moderators of the well-being process is crucial for current workplace violence research. Previous findings from between-person studies on the buffering role of job control on the relationship between job demands and employees' wellbeing were inconclusive (Taris, 2006b).

In this study, we hypothesized that:

Hypothesis 3a. job control moderates the within-person positive relationship between fear of future violence and emotional exhaustion such that the relationship is stronger for those low in job control.

Hypothesis 3b. job control moderates the within-person positive relationship between fear of future violence and cynicism such that the relationship is stronger for those low in job control.

3.3. Between-person effects

We also considered whether between person differences might impact the strength of the hypothesized within-person relationships. In their study, Chappell and Martino (2006) showed that both physical and psychological violence have adverse effects on the psychological well-being of workers. In general, being the target of workplace, physical, and/or psychological aggression, can also take an emotional toll (Neuman & Baron, 1998) which eventually depletes personal resources (Brotheridge & Grandey 2002; Hochschild, 1983) and reduces psychological wellbeing (Schat & Kelloway, 2003). Rogers and Kelloway (1997) proposed that exposure to workplace violence is a stressor that predicts the development of fear reactions leading to negative health outcomes in victims of psychological violence.

Specifically, the workplace violence literature showed that HCWs exposed to patient aggressions have reported fear, feelings of vulnerability or inadequacy, diminished confidence or enthusiasm for treating patients, lower job satisfaction and higher psychological stress (Chappell & Martino, 2006; Estryn-Behar et al., 2008).

In this study, we hypothesized that:

Hypothesis 4a. previous experience of psychological aggression will be positively associated with emotional exhaustion.

Hypothesis 4b. previous experience of psychological aggression will be positively associated with cynicism.

Besides the main effect, an additional implication is that being a victim of psychological aggression at work may moderate (buffer effect) the effect of fear of future violence on burnout. In this sense, we hypothesized that effects of fear of future violence on exhaustion and cynicism would depend on the individuals' previous experience of workplace violence, such that these relationships should be strongest for those with more frequent experience of previous psychological aggression.

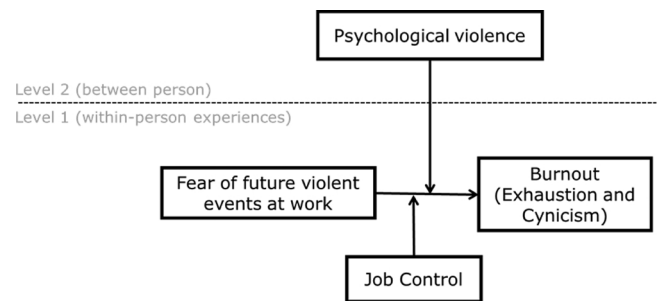


Fig. 1. Conceptual model.

Hypothesis 5a. previous experience of psychological aggression moderates the within-person positive relationship between fear of future violence and emotional exhaustion such that the relationship is stronger for those with more frequent experience of psychological aggression.

Hypothesis 5b. previous experience of psychological aggression moderates the within-person positive relationship between fear of future violence and cynicism such that the relationship is stronger for those with more frequent experience of psychological aggression.

The conceptual model is presented in Fig. 1.

4. Methods

4.1. Participants and procedure

The potential participants for this research were recruited through personal contacts of the authors. We approached doctors on duty in the south of Italy, describing the aim of the study. We introduced our study as research on "Violence and well-being in healthcare".

In Italy, the doctor on duty ("guardia medica") is a Continuous Assistance Service for first aid service cases when the General Practitioner is not available. This is a free of charge service available on Saturdays, Sundays and during the night (from 8 pm to 8 am) every day and for emergencies. By calling the telephone number of this service the doctor on duty gives patients advice and make in-office or in-home (if needed) examination. After examination and first treatment, the doctor on duty can prescribe medicines, issue medical certificates and suggest hospital admission. Usually, doctor on duty work alone in a medical office and it is very rare they work in team.

All participants received written information about the aims of the research and gave their verbal informed consent. Participation was voluntary, there was no adverse consequence of declining or withdrawing from participation, and confidentiality was protected since responses were kept anonymous. Participants received no incentive for their involvement. Participants received a questionnaire and after two weeks a package including a diary booklet and instructions on how to complete the diary. The participants were also asked to fill in a personal code on the questionnaire and the diary booklet allowing us to match their responses to each questionnaire. Completed questionnaires were sent back to the research team in an anonymous closed envelope.

Due to the nature of our hypotheses, we used a diary study research design (Bolger, Davis, & Rafaeli, 2003; Ohly et al., 2010). Data were collected by a general survey and by diary surveys. Participants filled in five surveys diaries, one diary every 10-working days. Of the 40 doctors on duty approached, all agreed to participate in the diary study. High response rates occurred because of several rounds of follow-up reminders (by email and cellphone).

Participants were 75.0% (n = 30) female. The mean age ranged between 30 and 39 years old (40%) and a mean tenure in their current profession of more than 4 years (50%).

4.2. Measures

4.2.1. Questionnaire data

We assessed socio-demographic information as well as psychological violence through a general questionnaire that had to be completed once, before the diary surveys. We included age, work experience, number of physical aggression incidents in the last 12 months and working in team as person-level control variables.

4.2.1.1. Psychological aggression. A three-item scale adapted from Rogers and Kelloway (1997) and Greenberg and Barling (1999) asked participants to indicate the frequency of experience with aggression at work during the past 12 months (e.g., being yelled at or shouted). Questions were answered on a 7-point Likert-scale (0 = never, 6 = 15 or more times). Items were averaged to form one index reflecting direct exposure to psychological workplace aggression. Cronbach's alpha for this scale was 0.90.

4.2.2. Diary data

The diary survey assessed participants' fluctuations of fear of future violent events at work, job control and burnout every 10 working-days. The items were contextualized and adjusted so that every diary referred to the preceding 10-working days.

4.2.2.1. Fear of future violent events at work. A five-item scale adapted from Rogers and Kelloway (1997) and Schat and Kelloway (2000) was used to assess participants' fear of experiencing future violence at work [e.g.: "Considering the last 10 working days, I was afraid of being physically assaulted by a patient (for example hit, kicked, grabbed, shoved, or pushed)"]. Response options ranged from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's alphas for this scale across the 5 occasions range between 0.90 and 0.92.

4.2.2.2. Job control. A two-item scale adapted from the Areas of Worklife job control subscale (Leiter & Maslach, 2000, 2004) was used (e.g.: "During the last 10 working days, I had control over how I do my work"). Respondents indicate their degree of agreement with these statements on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The inter-item correlations for this scale across the 5 occasions range between 0.44 and 0.62.

4.2.2.3. Burnout. The emotional exhaustion (3 items) and cynicism (3 items) subscales of the Maslach Burnout Inventory-General Survey (Maslach et al., 1996; Schaufeli, Leiter, Maslach, & Jackson, 1996) were used. Participants used a seven-point Likert scale, ranging from 0 (never) to 6 (every day), to rate the extent to which they experience exhaustion in the last 10 working days (e.g., "I felt emotionally drained from my work") and cynicism at work (e.g., "I have become less enthusiastic about my work"). The Cronbach's alphas for the emotional exhaustion across the 5 occasions range between 0.88 and 0.94; and for the cynicism range between 0.84 and 0.91.

Multilevel Factor Analysis was conducted to evaluate the factor structure of the MBI at both the between- and within-person levels. A maximum likelihood estimation procedure was used. The following indices were used: (a) the Comparative Fit Index (CFI; Bentler, 1990), with values > 0.90 indicating a model is plausible; (b) the Standardized Root Mean Square Residual (SRMR; Hu & Bentler, 1999), with values < 0.08 indicating that a model is plausible, and the (c) Root Mean Square Error of Approximation (RMSEA; Steiger, 1990), with values < 0.08 indicating that a model is plausible.

The Multilevel Confirmatory Factor Analysis showed a two within-level factors and one between-level factor. A two-factors model yielded acceptable fit: $\chi^2 = 41.05$; $df = 17$; p -value < 0.001; CFI = 0.95, and the SRMR between = 0.045 and SRMR within = 0.052; the RMSEA = 0.084 suggested that the model fits well. As the within-person level is the theoretical level of interest in our data, we found

strong support for the two-factor model.

Finally, we also considered the number of working hours spent per 10-working days, number of patients per 10-working days as diary-level control variables.

4.3. Analytical strategy

This diary study includes five repeated measurements (Level 1; $N = 200$ occasions) nested within persons (Level 2; $N = 40$ participants). The current data are two-level hierarchical structure, in which days were nested within individuals. We analyzed our data with a multilevel random coefficient

model using hierarchical linear modeling (HLM Version 6; Raudenbush & Bryk, 2002). We used the restricted maximum-likelihood procedure in HLM for estimating the fixed and random parameters. Level 1 variables were within individuals across the 10 working-days (fear of future violent events at work, job control, emotional exhaustion, and cynicism), whereas level 2 variables were between individuals (psychological aggression). Following Nezlek (2001), Raudenbush and Bryk (2002) and Ohly et al. (2010) recommendations, Level 1 variables were centered around the mean of each individual, whereas Level 2 variables were centered around the grand mean.

We used robust estimates because they were suggested to better make population-based inferences by overcoming the effect of sampling and our sample size met the minimum number of 30 proposed by Nezlek (2011).

5. Results

5.1. Preliminary analyses

We ran null models to examine the between-persons and within-person variance components of the variables. In the null model, no predictors (besides the intercept) are entered at level 1 or level 2. Null models provide an estimate of the reliability of the estimates of the level 1 intercepts and intraclass correlation (ICC) for a variable. Specifically, to calculate the ICC, the level 1 variance (σ^2) and person-level variance (τ_{00}) is substituted into the following equation: $ICC = \tau_{00}/(\tau_{00} + \sigma^2)$. A large ICC indicates that observations within subjects are not independent and that a multilevel approach is appropriate. Between-person variation accounted for 83% of the variance in fear of future violent events at work, 66% of the variance in job control, 70% of the variance in emotional exhaustion, and 74% of the variance in cynicism. In all cases, significant amounts of variance are left to be explained by within-person fluctuations thus justifying the multilevel approach.

Means, standard deviations, and correlations for all the study variables are presented in Table 1. All significant relationships between the variables were in the expected direction.

The incidence of violence was 7.5% for physical violence in the last 12 months and 55% for psychological violence in the last 12 months. Specifically, 12.5% of the participants experienced psychological violence at work once in the last year, 42.5% of the participants experienced two or more events. 28% worked between 31 and 40 h per 10 days, 23% worked between 20 and 30 h. Considering the number of visited patients in the last 10 days, 39% visited less than 30 patients and 23% visited a number of patients between 30 and 50.

5.2. Tests of the hypotheses

According to the Hypothesis 1a, fear of future violent events at work would be related to emotional exhaustion at the intra-individual level (Table 2). In testing our hypothesis, we started with a null model that included the intercept as the only predictor. After, in Model 1, we added the control variables (i.e., number of patients for 10 working days, and working hours per 10 working days) at level 1 and Level 2 (working in a team and number of physical assault in the last 12 months) in HLM. In

Table 1
Means, standard deviations and correlations within each level of analysis.

	M	SD	1	2	3	4	5	6	7
1. Working hours (per 10 working days)	2.36	1.23	–	0.17	–0.23	–0.12	0.04	0.01	0.05
2. Number of patients (per 10 working days)	1.90	1.18	0.69**	–	0.01	0.12	0.03	0.07	0.27
3. Fear of future workplace violence	2.56	1.18	0.10	0.02	–	–0.06	0.44**	0.46**	0.12
4. Job Control	3.25	1.10	–0.03	–0.02	–0.07	–	–0.25	–0.36*	–0.05
5. Emotional Exhaustion	2.48	1.58	0.17*	0.17*	0.42**	–0.22**	–	0.87**	0.34*
6. Cynicism	2.47	1.69	0.10	0.10	0.45**	–0.31**	0.84**	–	0.35*
7. Psychological violence in the last 12 months ^a	0.78	1.06	0.23**	0.30**	0.13	0.01	0.32**	0.33**	–

Note. All variables are within-person (Level 1) variables except the between-person variable of psychological violence (Level 2); correlations below the diagonal represent within-person correlations (n = 200). Correlations above the diagonal represent between-person correlations (n = 40). To calculate between-person correlations, we averaged within-person scores across diaries

Model 2, we added fear of future violent events at work at level 1 in HLM. Results showed that fear of future violent events at work was significantly and positively related to emotional exhaustion ($\gamma = 0.55, p < 0.01$) supporting the Hypothesis 1a.

Hypothesis 1b postulated that fear of future violent events at work would be related to cynicism at the intra-individual level (Table 3). In testing our hypothesis, we started with a null model that included the intercept as the only predictor. After, in Model 1, we added the control variables (i.e., number of patients for 10 working days, and working hours per 10 working days) at level 1 and Level 2 (working in a team and number of physical assault in the last 12 months) in HLM. In Model 2, we added fear of future violent events at work at level 1 in HLM. Results showed that fear of future violent events at work was significantly and positively related to cynicism ($\gamma = 0.48, p < 0.001$) supporting the Hypothesis 1b.

Hypothesis 2a stated that job control will be negatively associated with emotional exhaustion. As shown in Table 4 (Model 3), results showed that job control was not significantly associated with emotional exhaustion ($\gamma = -0.11, ns$). Thus, Hypothesis 2a was not supported.

Finally, Hypothesis 2b stated that job control will be negatively associated with cynicism. As shown in Table 5 (Model 3), results showed that job control was not significantly related to cynicism ($\gamma = 0.08, ns$). Thus, Hypothesis 2b was not supported.

5.3. Test of moderation hypotheses

Hypothesis 3a stated that job control would buffer the effect of fear of future violent events at work on emotional exhaustion at the intra-individual level. In testing this effect, we computed a product term (fear of future violent events at work*job control) used as a level 1 predictor.

Results (see Table 4, Model 4) supported the moderation effect of job control on the relationship between fear of future violent events at

work and emotional exhaustion ($\gamma = -0.26, p < 0.01$).

Simple slope tests results showed that the relationship between fear of future violent events at work and emotional exhaustion was stronger when job control was low ($\gamma = 1.76, p < 0.01$) than when job control was high ($\gamma = 1.20, p < 0.01$). Thus, Hypothesis 3a was supported.

Hypothesis 3b stated that job control would buffer the effect of fear of future violent events at work on cynicism at the intra-individual level. In testing this effect, we computed a product term (fear of future violent events at work*job control) used as a level 1 predictor.

Results (see Table 5, Model 4) showed that job control did not moderate the relationship between fear of future violent events at work and cynicism ($\gamma = 0.08, ns$). Thus, Hypothesis 3b was not supported.

5.4. Cross-level effects of psychological aggression

Hypothesis 4a proposed that previous experience of psychological aggression will be positively associated with emotional exhaustion. As shown in Table 6 (Model 1), results showed that psychological aggression was positively related to emotional exhaustion ($\gamma = 0.42, p < 0.05$). Thus, Hypothesis 4a was supported.

Hypothesis 4b proposed that previous experience of psychological aggression will be positively associated with cynicism. As shown in Table 6 (Model 3), results showed that psychological aggression was positively related to cynicism ($\gamma = 0.63, p < 0.001$). Thus, Hypothesis 4b was supported.

Hypothesis 5a proposed that previous psychological violence moderates the relationship between fear of future violent events at work and emotional exhaustion. Results (see Table 6, Model 2) revealed that the moderation effect was not significant ($\gamma = 0.08, ns$). Therefore, Hypothesis 4a was not supported.

Hypothesis 5b proposed that previous psychological violence moderates the relationship between fear of future violent events at work and

Table 2
Multilevel estimates for Emotional Exhaustion.

	Null			Model 1			Model 2		
	Est	SE	t	Est	SE	t	Est	SE	t
Intercept	2,48	0,22	11,40***	2,47	0,22	11,44***	2,47	0,22	11,44***
Level 1									
number of patients per 10 working days				0,16	0,11	1,41	0,19	0,10	1,86
working hours per 10 working days				0,12	0,11	1,09	–0,02	0,09	–0,23
Fear of future workplace violence (FFWV)							0,55	0,20	2,8***
Level 2									
working in team				–0,25	0,49	–0,51	–0,26	0,50	–0,53
number of physical assault in the last 12 months				–0,35	0,74	–0,47	–0,35	0,78	–0,45
Level 1 Intercept Variance	0,76			0,50			0,43		
Level 2 Intercept Variance	1,78			2,08			2,59		

Note. N = 40 employees and N = 200 observations.
*** p < 0.001.

Table 3
Multilevel estimates for Cynicism.

	Null			Model 1			Model 2		
	Est	SE	t	Est	SE	t	Est	SE	t
Intercept	2,48	,24	10,42***	2,48	0,24	10,52***	2,48	0,24	10,52***
Level 1									
number of patients per 10 working days				0,14	0,10	1,35	0,11	0,10	1,04
working hours per 10 working days				0,15	0,12	1,33	0,10	0,09	1,09
Fear of future workplace violence (FFWV)							0,48	0,16	2,94***
Level 2									
working in team				-0,35	0,53	-0,65	-0,34	0,53	-0,64
number of physical assault in the last 12 months				-0,77	0,73	-1,06	-0,77	0,75	-1,04
Level 1 Intercept Variance	0,75			0,68			0,51		
Level 2 Intercept Variance	2,17			2,56			2,29		

Note. N = 40 employees and N = 200 observations.

*** p < 0.001.

Table 4
Multilevel estimates for emotional exhaustion.

Variable	Model 3			Model 4		
	Est	SE	t	Est	SE	t
Intercept	2,47	0,22	11,45***	2,47	0,22	11,44***
Level 1						
number of patients per 10 working days	0,21	0,12	1,72	0,20	0,10	1,88
working hours per 10 working days	0,09	0,11	0,81	-0,04	0,09	-0,46
Fear of future workplace violence (FFWV)				1,35	0,32	4,17***
Job Control (JC)	-0,11	0,13	-0,84	0,55	0,21	2,62*
JC × FFWV				-0,26	0,09	-2,95**
Level 2						
working in team	-0,26	0,50	-0,51	-0,30	0,47	-0,63
number of physical assault in the last 12 months	-0,36	0,75	-0,48	-0,24	0,84	-0,29
Level 1 Intercept Variance	0,61			0,41		
Level 2 Intercept Variance	1,90			1,93		

Note. N = 40 employees and N = 200 observations.

*** p < 0.001.

** p < 0.01.

* p < 0.05.

cynicism. Results (see Table 6, Model 4) revealed that the moderation effect was not significant ($\gamma = -0.05, ns$). Therefore, Hypothesis 4b was not supported (Table 6).

6. Discussion

HCWs and social service employees are particularly vulnerable to workplace violence (LeBlanc & Kelloway, 2002). The main purpose of this study was to examine fluctuations in fear of future violent events at work, emotional exhaustion, and cynicism and to assess whether job control and psychological violence moderate respectively the within and the between-person relationship of fear of future violent events at work with burnout.

At the between-person level, our results were consistent previous findings that fear of future violence represents an important antecedent of employee's reduced well-being such as burnout (Rogers & Kelloway, 1997). In addition, we found that job control moderated the within-person relationship between fear of future violence and emotional exhaustion such that the relationship was stronger for those low in job control. However, we did not find support for the moderation effect for the relationship of fear of future violence with cynicism. Indeed, at the

Table 5
Multilevel estimates for cynicism.

Variable	Model 3			Model 4		
	Est	SE	t	Est	SE	t
Intercept	2,47	0,24	10,15***	2,47	0,24	10,52***
Level 1						
number of patients per 10 working days	0,12	0,1	1,2	0,08	0,10	0,80
working hours per 10 working days	0,14	0,12	1,2	0,08	0,09	0,99
Fear of future workplace violence (FFWV)				0,19	0,26	0,76
Job Control (JC)	-0,16	0,17	-0,96	-0,41	0,26	-1,54
JC × FFWV				0,08	0,07	1,07
Level 2						
working in team	-0,39	0,54	-0,74	-0,34	0,50	-0,68
number of physical assault in the last 12 months	-0,67	0,75	-0,89	-0,63	0,91	-0,70
Level 1 Intercept Variance	0,52			0,33		
Level 2 Intercept Variance	2,29			2,32		

Note. N = 40 employees and N = 200 observations.

*** p < 0.001.

within-person level, we found that psychological violence was significantly associated with emotional exhaustion and cynicism. Concerning the cross-sectional moderation effect, psychological violence did not moderate the relationships between of fear of future violence and with either both emotional exhaustion and cynicism.

In what follows, we discuss the most important theoretical contributions of our study.

6.1. Theoretical implications

The existing theory of, and research into, workplace violence has been almost exclusively cross-sectional and at the between-person level of analysis. Using a diary methodology, the current study is one of the first to adopt a time perspective in order to examine the extent to which within-person fluctuations in fear of future violent events at work is linked to burnout and whether within-person job control and between-person differences in psychological aggression moderate these relationships.

Considering the prevalence rate of violence in our sample, it is not possible to compare it with other studies because it is the first time that research has considered other health care professionals not working in psychiatry and emergency departments.

The findings from the current study extend our understanding of the

Table 6
Cross-level effects of psychological aggression.

	Emotional Exhaustion						Cynicism					
	Model 1			Model 2			Model 3			Model 4		
	Est	SE	t	Est	SE	t	Est	SE	t	Est	SE	t
Intercept	2,48	0,20	12,16***	2,48	0,22	11,18***	2,48	0,22	11,32***	2,48	0,22	11,32***
Level 1												
number of patients per 10 working days	0,23	0,12	1,84 [†]	0,21	0,10	2,08 [†]	0,14	0,10	1,35	0,11	0,10	1,12
working hours per 10 working days	0,10	0,11	0,86	-0,02	0,09	-0,17	0,15	0,12	1,33	0,07	0,09	0,74
Fear of future workplace violence (FFWV)				0,58	0,21	2,80***				0,65	0,19	3,42***
Level 2												
number of physical assault in the last 12 months	-0,03	0,11	-0,23	-0,58	0,72	-0,80	-0,12	0,11	-1,11	-0,98	0,60	-1,63
working in team	-0,15	0,47	-0,32	-0,32	0,46	-0,70	-0,01	0,53	-0,01	-0,45	0,48	-0,94
psychological violence (PV)	0,42	0,18	2,34 [†]	0,39	0,13	2,90***	0,63	0,21	3,00**	0,44	0,17	2,16 [†]
cross-level moderation (PV × FFWV)				0,08	0,10	0,85				-0,05	0,08	-0,60
Level 1 Intercept Variance	0,67			0,50			0,68			0,50		
Level 2 Intercept Variance	1,71			1,72			1,99			2,03		

Note. N = 40 employees and N = 200 observations.

*** p < 0.001.

** p < 0.01.

* p < 0.05.

effects of experiencing workplace aggression on the target's short-term burnout by providing additional evidence that not only being the target of violent behaviors may take an emotional toll (Neuman & Baron, 1998). Although our study does not allow us to make conclusions about causality, consistent with our predictions, when doctors on duty experienced fear of future violent events at work, they showed stronger emotional exhaustion and cynicism (Bargellini et al., 2000; Milczarek, 2010). These results are in line with the traditional cross-sectional literature where workplace violence is linked to increased emotional exhaustion and cynicism (Leiter, 1991; Maslach & Leiter, 1997; Rogers & Kelloway, 1997; Winstanley & Hales, 2014; Winstanley & Whittington, 2002). Mainly, considering a longitudinal perspective, our results showed that fluctuations in fear of violence depleted worker's emotional resources that are associated with higher emotional exhaustion (Lee & Ashforth, 1996; Wright, & Cropanzano, 1998). Furthermore, increases in cynicism were associated with fluctuations in fear of violence. In this sense, fluctuations in fear of violence among HCWs are associated to behaviourally distancing from patients, both psychologically and behaviorally.

Findings from this study corroborated previous between-subject research on the strain outcomes of workplace violence, suggesting that fear of future violent events at work is a major stressor that may result in health impairments (Mueller & Tschan, 2011; Rogers & Kelloway, 1997). Particularly, knowing about the association of fear of violence with burnout from a time perspective is important because it confirms that fluctuations in fear directly reduced worker's well-being.

Moreover, based on the traditional Karasek's stress framework, our study sheds light on the buffering role of job control in the workplace violence-burnout relationship. Considering the within-person moderating effect, job control moderated the relationship between fear of future violent events at work and emotional exhaustion. Specifically, our results showed that fluctuations in fear of future violent events at work related to higher emotional exhaustion mainly for those low in job control. This replicates previous research at the between-person level. In this sense, our finding confirmed the important role of job resources, such as job control, in reducing the effect of stressors on emotional exhaustion.

Kelloway, Barling, and Hurrell (2006) suggested that perceived control has the potential to reduce the impact of stressors on emotions. In this sense, job control may activate the "secondary appraisal," making available resources to manage the appraisal of harm, threat, or challenge (Lazarus, 2001). Lazarus and Folkman (1984) suggested that

responses to stressors are deeply linked to both the way persons appraise stressors and the resources they feel they have to deal with those stressors.

It confirms the pivotal role of job control in violence prevention in the health sector as recommended by the ILO and WHO. In this sense job control gives workers the resources for making work arrangements, to avoid unpleasant tasks, and to take breaks to adjust emotional responses. Interestingly, contrary to our expectations, job control did not moderate the relationship between fear of future violent events at work and cynicism. According to Taris (2006a), previous findings on the buffering role of job control on the relationship between job demands and employees' wellbeing were inconclusive. This null finding is in line with the LeBlanc and Kelloway's (2002) study. The theoretical implications of these results suggest that more research is needed in order to fully understand how job control acts as a stress buffering factor in workplace violence studies. Particularly, we encourage future research to examine the moderating role of job control in the workplace violence-burnout relationship by adopting a longitudinal perspective.

Regarding the cross-level effect of psychological violence, findings from this study were partially in line with our predictions. Specifically, psychological violence is directly positively related to emotional exhaustion and cynicism. In this sense, workers with a previous experience of psychological violence are more likely to be exhausted and cynical. Those results are in line with previous studies showing that being the target of psychological violence at work have adverse effects on workers well-being (Chappell & Martino, 2006; Neuman & Baron, 1998; Schat & Kelloway, 2003). Further, our results confirmed that previous experience of psychological violence may represent a stressor that is associated to negative health outcomes in victims (Rogers & Kelloway, 1997).

When we explored the moderation effect of previous experience of psychological violence on the relationship between fear of future violence at work and burnout, we did not find significant booster effects. However, according to the transactional model of stress (Lazarus & Folkman, 1984), primary appraisal of previous experiences of workplace violence occurred may activate a stress reaction if the environment is evaluated as harmful, threatening, or challenging. In this sense, doctors on duty with a limited exposition to workplace violence may find it as harmful. At the same time, doctors on duty with higher exposition to workplace aggression may develop a challenge evaluation or activate a secondary appraisal and then develop emotional exhaustion and cynicism. Of course, it is a speculative view and we encourage

future research to investigate previous psychological violence as a possible moderator.

6.2. Implications for practice

Workplace violence is a recognized risk in health-care and organizations should pay more attention to it. Being a doctor on duty is an occupation that is highly exposed to the risk of violence. In fact, it involves many of the situations highlighted in the literature (Chappell & Martino, 2006; Vaez et al., 2013; Wiskow et al., 2010), such as providing care to people in distress, sometimes alone, and at night. Our findings indicate that fear of being assaulted by a patient is directly linked to employees' burnout. Thus, healthcare managers need to develop strategies to help employees to reduce the risk of these dysfunctional stressors (Heponiemi et al., 2014). In preventing and implementing effective strategies to reduce negative effects of workplace violence, organizations should focus on identifying organizational and individual resources such as job control and job support (Aquino & Thau, 2009; Barling, Dupré, & Kelloway, 2009).

According to the sector's point of view, health-care managers may implement different strategies to tackle workplace violence encountered by physicians, such as using metal detectors, security cameras, and security personnel (Heponiemi et al., 2014). Furthermore, Hoag-Apel (1998) suggested that organizations should consider designating a risk assessment team and implement staff training about body language, communication skills (e.g., the tone of voice in patients), and emotional control (e.g., not taking anger personally).

The moderating effect of job control indicates that employees with a greater sense of agency or control in their work were less likely to translate anxiety about future violence into emotional exhaustion. In the first instance, this process reduces the amount of distress experience by high control employees. In the second instance, less exhaustion implies that these employees have more energy with which to contend with workplace demands. The pattern is consistent with an argument of making substantial improvements in workplaces to empower employees as a strategy for countering burnout. Interventions that are limited to improving employee resilience run the risk of neglecting meaningful change in workplace policies and practices that have implications for employees' sense of control at work (Maslach & Leiter, 2017).

In general, health care managers should consider the "broken windows" theory (Wilson & Kelling, 1982) in developing violence prevention actions, planning clear and rapid reaction to all events of violence, comprising those felt as innocuous. In this sense, workplace environment must adopt a "no violence policy" and pursuing a zero tolerance for any kind of violence, from physical assaults to insults or humiliation (Hesketh et al., 2003). Given the occurrence of workplace violence negatively impacts health care staff wellbeing, it is critical organizations acknowledge the fact that fear of violence can have deleterious consequences. According to Mueller and Tschan (2011), "it is not only about avoiding incidents and injuries, but also about reducing fear and its detrimental effect on employees" (p. 226). Although healthcare organizations are not able to reduce all patients' violence, it is fundamental they involve employees actively in a shared risk-management approach, training and communicating measures to prevent violence.

6.3. Limitations and suggestions for future research

Despite interesting results, this study has some limitations. First, the self-report measures nature of this study, our results may be inflated due to the action of common method variance (CMV). However, according to Podsakoff, MacKenzie, and Podsakoff (2012), collecting repeated measures data on a time basis, reduce the likelihood of CMV. Additionally, our cross-level moderator (psychological violence) was measured at a different time point from predictor and outcome variables. We tried to reduce threats of CMV by considering control

variables (number of working hours spent per 10-working days, number of patients per 10-working days as diary-level control variables). Moreover, interaction effect should be interpreted with caution. According to Dawson (2014), probing moderation effects in HLM may be more complicated. Furthermore, in HLM there is no control on both measurement error and sampling error. Future studies should replicate this study considering to perform latent interaction models.

Second, participants reported retrospectively on their experience of future violence at work, perception of job control, emotional exhaustion, and cynicism considering the previous 10 working days. Due to the nature of the profession involved, it was not possible to gather data during a shift because doctors could not interrupt their service in order to fill out the diary. Thus, we encourage future research to employ daily-diary designs and Event-Based design, considering to inspect the incidence of daily episodes of violence instead of reporting them retrospectively. In this manner, measuring the daily fluctuations of fear of future violence at work, job control, and burnout will offer a more detailed representation of the effect of time on the workplace violence-burnout relationship.

Third, there is a limitation related to our sample of employees (doctors on duty); because many of them worked irregular hours per week, it was not possible to use a daily diary. Future studies should also examine different samples of workers to establish external validity of the present findings.

6.4. Conclusion

In conclusion, in this study, we provided empirical evidence that fluctuations in fear of future workplace violence relate to doctors on duty's emotional exhaustion and cynicism and that job control may help to reduce the association between fear of future violence at work and emotional exhaustion.

This study advances knowledge on the within-person variations in workplace violence and burnout process among healthcare workers. We hope to encourage further research on workplace aggression by adopting a time perspective and investigating the buffering role of job control and individual differences.

Conflicts of interest statement

The authors declare that there are no conflicts of interest.

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References

- Acik, Y., Deveci, S. E., Gunes, G., Gulbayrak, C., Dabak, S., Saka, G., ... Erguder, T. (2008). Experience of workplace violence during medical speciality training in Turkey. *Occupational Medicine*, 58(5), 361–366.
- Allan, S., & Gilbert, P. (2002). Anger and anger expression in relation to perceptions of social rank, entrapment and depressive symptoms. *Personality and Individual Differences*, 32, 551–565.
- Andersson, L. M., & Pearson, C. M. (1999). Tit for tat? The spiraling effect of incivility in the workplace. *Academy of Management Review*, 24, 452–471.
- Aquino, K., & Thau, S. (2009). Workplace victimization: Aggression from the target's perspective. *Annual Review of Psychology*, 60, 717–741.
- Bargellini, A., Barbieri, A., Rovesti, S., Vivioli, R., Roncaglia, R., & Borella, P. (2000). Relation between immune variables and burnout in a sample of physicians. *Occupational and Environmental Medicine*, 57, 453–457.
- Barling, J., Rogers, A. G., & Kelloway, E. K. (2001). Behind closed doors: In-home workers' experience of sexual harassment and workplace violence. *Journal of Occupational Health Psychology*, 6(3), 255–269.
- Barling, J., Dupré, K. E., & Kelloway, E. K. (2009). Predicting workplace aggression and violence. *Annual Review of Psychology*, 60, 671–692.
- Barling, J. (1996). The prediction, experience, and consequences of workplace violence. In G. R. VandenBos, & E. Q. Bulatao (Eds.). *Violence on the job: Identifying risks and developing solutions* (pp. 29–49). Washington, DC: American Psychological Association.

- Beech, B., & Leather, P. (2006). Workplace violence in the health care sector: A review of staff training and integration of training evaluation models. *Aggression and Violent Behavior, 11*(1), 27–43.
- Ben-Zur, H., & Yagil, D. (2005). The relationship between empowerment, aggressive behaviours of customers, coping, and burnout. *European Journal of Work and Organizational Psychology, 14*(1), 81–99.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*, 238–246.
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54*, 579–616.
- Bowie, V., Fisher, B. S., & Cooper, C. L. (2005). *Workplace violence: Issues, trends, strategies* (1st ed.). Devon: Willan Publishing.
- Brotheridge, C. M., & Grandey, A. A. (2002). Emotional labor and burnout: Comparing two perspectives of people work. *Journal of Vocational Behavior, 60*(1), 17–39.
- Camerino, D., Estryn-Behar, M., Conway, P. M., van Der, B. I. J. M., & Hasselhorn, H. M. (2008). Work-related factors and violence among nursing staff in the European NEXt study: A longitudinal cohort study. *International Journal of Nursing Studies, 45*(1), 35–50.
- Chappell, D., & Martino, V. D. (2006). *Violence at work*. Geneva: International Labour Office.
- Cox, T., & Leather, P. (1994). The prevention of violence at work: Application of a cognitive behavioral theory. In C. L. Cooper, & I. T. Robertson (Eds.), *International review of industrial and organizational psychology* (pp. 213–245). Chichester, England: Wiley.
- Cropanzano, R., & Wright, T. A. (2001). When a happy worker is really a productive worker: A review and further refinement of the happy-productive worker thesis. *Consulting Psychology Journal: Practice and Research, 53*, 182–199.
- Dawson, J. F. (2014). Moderation in management research: What, why, when, and how. *Journal of Business and Psychology, 29*(1), 1–19.
- Dormann, C., & Zapf, D. (2004). Customer-related social stressors and burnout. *Journal of Occupational Health Psychology, 9*(1), 61–82.
- EU-OSHA (2010). *European Survey of Enterprises on New and Emerging Risks (ESENER) – Managing safety and health at work*. Luxembourg: Publications Office of the European Union.
- Ellsworth, P. C., & Smith, C. A. (1988). From appraisal to emotion: Differences among unpleasant feelings. *Motivation and Emotion, 12*(3), 271–302.
- Estryn-Behar, M., van der Heijden, B., Camerino, D., Fry, C., Le Nezet, O., Conway, P. M., & Hasselhorn, H. M. (2008). Violence risks in nursing: Results from the European 'NEXt' study. *Occupational Medicine, 58*, 107–114.
- Ferns, T. (2006). Violence, aggression and physical assault in healthcare settings. *Nursing Standard, 21*(13), 42.
- Gascón, S., Martínez-Jarreta, B., González-Andrade, J. F., Santed, M.Á., Casalod, Y., & Rueda, M.Á. (2009). Aggression towards health care workers in Spain: A multi-facility study to evaluate the distribution of growing violence among professionals, health facilities and departments. *International Journal of Occupational and Environmental Health, 15*(1), 29–35.
- Gascon, S., Leiter, M. P., Andrés, E., Santed, M. A., Pereira, J. P., Cunha, M. J., ... Martínez-Jarreta, B. (2013). The role of aggressions suffered by healthcare workers as predictors of burnout. *Journal of Clinical Nursing, 22*, 3120–3129.
- Gates, D., Gillespie, G., Kowalenko, T., Succop, P., Sanker, M., & Farra, S. (2011). Occupational and demographic factors associated with violence in the emergency department. *Advanced Emergency Nursing Journal, 33*(4), 303–313.
- Grandey, A. A., Dickter, D. N., & Sin, H. P. (2004). The customer is not always right: Customer aggression and emotion regulation of service employees. *Journal of Organizational Behavior, 25*(3), 397–418.
- Grandey, A. A., Kern, J. H., & Frone, M. R. (2007). Verbal abuse from outsiders versus insiders: Comparing frequency, impact on emotional exhaustion, and the role of emotional labor. *Journal of Occupational Health Psychology, 12*(1), 63–79.
- Greenberg, L., & Barling, J. (1999). Predicting employee aggression against coworkers, subordinates and supervisors: The roles of person behaviors and perceived workplace factors. *Journal of Organizational Behavior, 20*(6), 897–913.
- Gross, S., Meier, L. L., & Semmer, N. K. (2013). Latent growth modeling applied to diary data: The trajectory of vigor across a working week as an illustrative example. In A. B. Bakker, & K. Daniels (Eds.), *A day in the life of a happy worker* (pp. 114–131). Hove, Sussex: Psychology Press.
- Hahn, S., Zeller, A., Needham, I., Kok, G., Dassen, T., & Halfens, R. J. (2008). Patient and visitor violence in general hospitals: A systematic review of the literature. *Aggression and Violent Behavior, 13*(6), 431–441.
- Hahn, S., Hantikainen, V., Needham, I., Kok, G., Dassen, T., & Halfens, R. J. (2012). Patient and visitor violence in the general hospital, occurrence, staff interventions and consequences: A cross-sectional survey. *Journal of Advanced Nursing, 68*(12), 2685–2699.
- Hall, J. K., & Spector, P. E. (1991). Relationships of work stress measures for employees with the same job. *Work & Stress, 5*, 29–35.
- Hanson, G. C., Perrin, N. A., Moss, H., Laharnar, N., & Glass, N. (2015). Workplace violence against homecare workers and its relationship with workers health outcomes: A cross-sectional study. *BMC Public Health, 15*(1), 11.
- Harris, B., & Leather, P. (2011). Levels and consequences of exposure to service user violence: Evidence from a sample of UK social care staff. *British Journal of Social Work, 42*(5), 851–869.
- Heponiemi, T., Kouvonen, A., Virtanen, M., Vänskä, J., & Elovainio, M. (2014). The prospective effects of workplace violence on physicians' job satisfaction and turnover intentions: The buffering effect of job control. *BMC Health Services Research, 14*, 19.
- Hesketh, K. L., Duncan, S. M., Estabrooks, C. A., Reimer, M. A., Giovannetti, P., Hyndman, K., & Acorn, S. (2003). Workplace violence in Alberta and British Columbia hospitals. *Health Policy, 63*(3), 311–321.
- Hoag-Apel, C. M. (1998). Violence in the emergency department. *Nursing Management, 29*(7), 60–63.
- Hochschild, A. R. (1983). *The managed heart*. Berkeley, CA: University of California Press.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55.
- International Labour Office (2013). *Work related violence and its integration into existing surveys. Nineteenth international conference of labour statisticians*.
- Karasek, R., & Theorell, T. (1990). *Healthy work: Stress, productivity, and the reconstruction of working life*. New York: Basic Books.
- Karasek, R. A., Jr (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly, 285*–308.
- Karasek, R. (1998). Demand/control model: A social, emotional, and physiological approach to stress risk and active behaviour development. *Encyclopedia of Occupational Health and Safety, 2*, 34–36.
- Kelloway, E. K., Barling, J., & Hurrell, J. J. (Eds.). (2006). *Handbook of workplace violence*. Thousand Oaks, CA, US: Sage Publications, Inc.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Lazarus, R. S. (1990). Theory based stress measurement. *Psychological Inquiry, 1*, 3–12.
- Lazarus, R. S. (1999a). *Stress and emotion: A new synthesis*. London: Free Association.
- Lazarus, R. S. (1999b). The cognition–emotion debate: A bit of history. In T. Dalgleish, & M. J. Power (Eds.), *Handbook of cognition and emotion*. Chichester, UK: Wiley.
- Lazarus, R. S. (2001). Relational meaning and discrete emotions. In K. Scherer, A. Schorr, & T. Johnstone (Eds.), *Appraisal processes in emotion: Theory, methods, research* (pp. 37–67). New York: Oxford University Press.
- LeBlanc, M. M., & Kelloway, E. K. (2002). Predictors and outcomes of workplace violence and aggression. *Journal of Applied Psychology, 87*(3), 444–453.
- Lee, R. T., & Ashforth, B. E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout. *Journal of Applied Psychology, 81*, 123–133.
- Leiter, M. P. (1991). Coping patterns as predictors of burnout: The function of control and escapist coping patterns. *Journal of Organizational Behavior, 12*(2), 123–144.
- Leiter, M. P., & Maslach, C. (2000). *Preventing burnout and building engagement: A complete program for organizational renewal*. San Francisco, CA: Jossey-Bass.
- Leiter, M. P., & Maslach, C. (2004). Areas of worklife: A structured approach to organizational predictors of job burnout. In P. Perrewé, & D. C. Ganster (Eds.), *Research in occupational stress and well being. Vol. 3. Emotional and physiological processes and positive intervention strategies* (pp. 91–134). Oxford, UK: JAI Press/Elsevier.
- Leiter, M. P., & Maslach, C. (2005). A mediation model of job burnout. In A. S. G. Antoniou, & C. L. Cooper (Eds.), *Research companion to organizational health psychology* (pp. 544–564). Cheltenham, UK: Edward Elgar.
- Leiter, M. P. (2013). *Analyzing and theorizing the dynamics of the workplace incivility crisis*. Amsterdam: Springer.
- Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Occupational Behavior, 2*, 99–113.
- Maslach, C., & Leiter, M. P. (2017). *Burnout is not only a personal problem, it's a workplace problem*. Quartz at Work. October 20, 2017 <https://work.qz.com/1106869/burnout-is-not-only-a-personal-problem-its-a-workplace-problem/>.
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach burnout inventory. Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52*, 397–422.
- Maslach, C. (1982). *Burnout: The cost of caring*. Englewood Cliffs, NJ: Prentice-Hall.
- Maslach, C. (1993). Burnout: A multidimensional perspective. In W. B. Schaufeli, C. Maslach, & T. Marek (Eds.), *Professional burnout: Recent developments in theory and research* (pp. 19–32). Washington, DC: Taylor & Francis.
- Milczarek, M., & Irastorza, X. (2012). *Drivers and barriers for psychosocial risk management: An analysis of the findings of the European Survey of Enterprises on New and Emerging Risks (ESENER)*. Luxembourg: Publications Office of the European Union.
- Milczarek, M. (2010). *Workplace violence and harassment: A European picture*. Luxembourg: European Agency for Safety and Health at Work (EU-OSHA).
- Mueller, S., & Tschan, F. (2011). Consequences of client-initiated workplace violence: The role of fear and perceived prevention. *Journal of Occupational Health Psychology, 16*(2), 217.
- Neuman, J. H., & Baron, R. A. (1998). Workplace violence and workplace aggression: Evidence concerning specific forms, potential causes, and preferred targets. *Journal of Management, 24*(3), 391–419.
- Nezlek, J. B. (2001). Multilevel random coefficient analyses of event-and interval-contingent data in social and personality psychology research. *Personality and Social Psychology Bulletin, 27*(7), 771–785.
- Nezlek, J. B. (2007). A multilevel framework for understanding relationships among traits, states, situations and behaviours. *European Journal of Personality, 21*(6), 789–810.
- Nezlek, J. B. (2011). Multilevel modeling for social and personality psychology. In J. B. Nezlek (Ed.), *The SAGE library in social and personality psychology methods*. London: Sage Publications.
- Ohly, S., Sonntag, S., Niessen, C., & Zapf, D. (2010). Diary studies in organizational research. *Journal of Personnel Psychology, 2*, 79–93.
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*, 539–569.
- Pratt, L. I., & Barling, J. (1988). Differentiating between daily events, acute and chronic stressors: A framework and its implications. *Occupational Stress: Issues and Developments in Research, 14*–53.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Newbury Park, CA: Sage.
- Roche, M., Diers, D., Duffield, C., & Catling-Paull, C. (2010). Violence toward nurses, the work environment, and patient outcomes. *Journal of Nursing Scholarship, 42*(1),

- 13–22.
- Rogers, K. A., & Kelloway, E. K. (1997). Violence at work: Personal and organizational outcomes. *Journal of Occupational Health Psychology, 2*(1), 63–71.
- Rose, J. L., & Cleary, A. (2007). Care staff perceptions of challenging behaviour and fear of assault. *Journal of Intellectual and Developmental Disability, 32*(2), 153–161.
- Schat, A. C., & Frone, M. R. (2011). Exposure to psychological aggression at work and job performance: The mediating role of job attitudes and personal health. *Work & Stress, 25*(1), 23–40.
- Schat, A. C., & Kelloway, E. K. (2000). Effects of perceived control on the outcomes of workplace aggression and violence. *Journal of Occupational Health Psychology, 5*(3), 386–402.
- Schat, A. C., & Kelloway, E. K. (2003). Reducing the adverse consequences of workplace aggression and violence: The buffering effects of organizational support. *Journal of Occupational Health Psychology, 8*(2), 110–122.
- Schaufeli, W. B., Leiter, M. P., Maslach, C., & Jackson, S. E. (1996). The MBI-general survey. In C. Maslach, S. E. Jackson, & M. P. Leiter (Eds.), *Maslach burnout inventory manual* (pp. 19–26). (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Spector, P. E. (2002). Employee control and occupational stress. *Current Directions in Psychological Science, 11*(4), 133–136.
- Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research, 25*, 173–180.
- Taris, T. W., Le Blanc, P. M., Schaufeli, W. B., & Schreurs, P. J. G. (2005). Are there causal relationships between the dimensions of the Maslach burnout inventory? A review and two longitudinal tests. *Work and Stress, 19*(3), 238–255.
- Taris, T. (2006a). Is there a relationship between burnout and objective performance? A critical review of 16 studies. *Work and Stress, 20*, 316–334.
- Taris, T. (2006b). Bricks without clay: On urban myths in occupational health psychology. *Work & Stress, 20*, 99–104.
- Tomaka, J., Blascovich, J., Kelsey, R. M., & Leitten, C. L. (1993). Subjective, physiological, and behavioral effects of threat and challenge appraisal. *Journal of Personality and Social Psychology, 65*(2), 248–260.
- Vaez, M., Josephson, M., Vingård, E., & Voss, M. (2013). Work-related violence and its association with self-rated general health among public sector employees in Sweden. *Work, 49*, 163–171.
- Wassell, J. T. (2009). Workplace violence intervention effectiveness: A systematic literature review. *Safety Science, 47*(8), 1049–1055.
- Wilson, J. Q., & Kelling, G. L. (1982). The police and neighborhood safety: Broken windows. *The Atlantic Monthly, 127*, 29–38.
- Winstanley, S., & Hales, L. (2014). A preliminary study of burnout in residential social workers experiencing workplace aggression: Might it be cyclical? *British Journal of Social Work, 45*(1), 24–33.
- Winstanley, S., & Whittington, R. (2002). Anxiety, burnout and coping styles in general hospital staff exposed to workplace aggression: A cyclical model of burnout and vulnerability to aggression. *Work & Stress, 16*(4), 302–315.
- Wiskow, C., Albrecht, T., & De Pietro, C. (2010). *How to create an attractive and supportive working environment for health professionals*. World Health Organization.
- Wright, T. A., & Cropanzano, R. (1998). Emotional exhaustion as a predictor of job performance and voluntary turnover. *Journal of Applied Psychology, 83*(3), 486–493.
- Wright, T. A., & Cropanzano, R. (2000). Psychological well-being and job satisfaction as predictors of job performance. *Journal of Occupational Health Psychology, 5*(1), 84–94.
- Wynne, R., Clarkin, N., Cox, T., & Griffiths, A. (1997). *Guidance on the prevention of violence at work*. Luxembourg: European Commission, DG-V.
- Xanthopoulou, D., & Bakker, A. B. (2013). State work engagement: The significance of within-person fluctuations. In A. B. Bakker, & K. Daniels (Eds.), *A day in the life of a happy worker* (pp. 25–40). Hove, Sussex: Psychology Press.