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A two-wave study on workplace bullying after organizational change: A moderated mediation analysis

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ABSTRACT

The role of organizational change in the process leading to the development of bullying has received only little attention so far. The present longitudinal study aimed at filling this gap by examining a moderated mediation model through Structural Equation Modelling where the mediating effect of psychological strain in the relationship between workload and workplace bullying is moderated by the experience of organizational change. Data were available for 141 university employees (65.2% females). The moderating role of organizational change was tested through the multi-group method by including in the analysis two groups of employees of the same organization: employees who directly experienced organizational change (e.g. change of job tasks and supervisor) and employees who were not involved in organizational change. Bootstrap test of the indirect effects provided evidence of a mediating effect of strain in the relationship between workload and workplace bullying in the group of employees who directly experienced the organizational change process. Implications and limitations of the obtained results are discussed, together with suggestions for future research.

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1. Introduction

Workplace bullying represents a severe form of harassment in organizations and it is considered an extreme type of social stressor at work (Zapf, 1999). Specifically, it can be defined as repeated behaviours that occur over a period of time which harass, offend, socially exclude and/or adversely affect the work of an employee (e.g., Einarsen et al., 2003; Moayed et al., 2006). Research has shown a relationship between exposure to workplace bullying and negative health effects, such as higher levels of psychological distress (e.g., Agervold and Mikkelsen, 2004), poorer general health (e.g. Høgh et al., 2011; Vignoli et al., 2015), and mental health problems (e.g. Nielsen and Einarsen, 2012). Moreover, research has reported evidence of a relationship between workplace bullying and increased absenteeism (Nielsen and Einarsen, 2012), decreased organizational commitment (Hoel and Cooper, 2000), and job satisfaction (e.g. Nielsen and Einarsen, 2012; Moayed et al., 2006). Factors predicting workplace bullying include, beside personality traits and demographic characteristics of victims and perpetrators (e.g. Nielsen and Knardahi, 2015; Salin, 2015), work

and organizational aspects, such as job stressors and poor environmental conditions (e.g., Agervold and Mikkelsen, 2004; Notealers et al., 2013).

Despite some steps towards a better comprehension of workplace bullying have been done, research on the development of the phenomenon still needs to advance (Balducci et al., 2011). In particular, research on the potential role of stressful and frequent organizational situations, such as workload and work intensity and organizational change, is scant. For example, although several authors referred to organizational change as one of the potentially most important causes of workplace bullying, only few empirical studies have explicitly focused on this relationship (e.g. Baillien and De Witte, 2009; Baron and Neuman, 1996; Skogstad et al., 2007).

The theoretical assumption from which the current study starts is the well-known 'work environment hypothesis' on the development of bullying (Einarsen, 2000; Leymann, 1996), according to which a poorly organized work environment may fuel the conditions (e.g., a conflicting work climate) that are implicated in the development of bullying. However, the mechanism linking a poor work environment to bullying has been rarely explored empirically. In the present study, we took as a crucial manifestation of a poor work environment the level of workload, which includes two prominent stressors of modern workplaces, namely work

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intensity and peace of work (see, e.g. Eurofound, 2012), and postulate that psychological strain is an important intervening mechanism in the relationship between higher workload and workplace bullying.

Thus, on the basis of the above considerations, we designed a prospective study testing a model in which psychological strain acted as a mediator in the relationship between workload and workplace bullying, with involvement in organizational change – a very frequent occurrence in modern organizations (Eurofound, 2015) – playing a crucial strengthening role in such a chain of relationships (see Fig. 1). In brief, the current study attempted to answer the following two questions: What is the mechanism through which workload elicits workplace bullying and does experiencing organizational change make a difference? The rationale for the tested model as well as for each of the hypotheses examined are explained in the following sections.

2. The relationships between workload and workplace bullying

According to the Job Demand/Control Model, workload includes mental and physical job demands (Karasek et al., 1998) and high workload may be a manifestation of a poorly managed psychosocial work environment, which has been considered since the beginning of bullying research a crucial starting point for the development of bullying (e.g., Einarsen, 2000; Leymann, 1996). Empirical findings reported evidence of a robust relationship between higher workload on workplace bullying. For example, Agervold and Mikkelsen (2004), after removing bullied employees from the analyses (to reduce the potential bias in the perception of the work environment due to being a victim of bullying) found that departments with higher prevalence of bullying also reported higher levels of workload. Similarly, Notealers et al. (2013) found that high workload was associated with a higher probability of being a target of severe bullying, which was particularly true for those reporting very high levels of workload. Similar results were found also in a number of other studies (e.g. Baillien et al., 2011a,b; Tuckey et al., 2009).

The relationship between workload and bullying has been investigated also in the context of organizational change, a focus of the present study, which is often accompanied by increased workload. For example, Baillien and De Witte (2009) found that high level of workload was related to workplace bullying in a big sample of Belgian employees who were starting or in the middle of an organizational change process. More recently, Spagnoli and Balducci (2017) reported a strong relationship between high level of workload and workplace bullying after organizational change in a sample of Italian employees who had experienced organizational change during the recent economic and financial crisis. However, organizational change was not directly operationalized in the

tested model of the latter two studies, so it is not clear which role it played. Additionally, the cross-sectional nature of these two studies (i.e., Baillien and De Witte, 2009; Spagnoli and Balducci, 2017) and of most of those examining the relationship between workload and workplace bullying suggests the need for more research.

Thus one of the aims of the current study is to provide further evidence on the relationship between workload and workplace bullying in a work context affected by an important organizational change by using a longitudinal (i.e., two-wave) study design. Thus, the first hypothesis that we put forward is:

H1. A direct significant relationship exists between workload at time 1 (T1) and workplace bullying at time 2 (T2) in an organizational context affected by organizational change.

3. The mediating role of psychological strain in the relationship between workload and workplace bullying

Different scholars have insisted on the mediating role of psychological strain in the relationship between distressing working conditions and bullying. According to Leymann (1996), very poor working conditions may elicit strain reactions including feelings of frustration. Through a variety of phenomena that may accompany psychological strain such as the development of sinister cognition leading to attribution errors (see Neuman and Baron, 2003), violation of social norms or withdrawal behaviour (i.e., decreased performance) strained employees may blame each other, becoming each other's social stressors, and triggering a bullying situation for a single employee. Thus, according to Leymann (1996), and also others (e.g. Bowling and Beehr, 2006; Einarsen, 2000), psychological strain following poor working conditions may act as a catalyst of interpersonal conflicts, which in turn may develop into bullying if not properly managed. Thus, psychological strain affects both future victim and perpetrator(s), with the difference between the two being that the former ends up in an inferior position (Einarsen, 2000). A similar explanation has been proposed by Baillien et al. (2009), according to whom stressful working conditions may wear employees out, making them “easy targets” for aggressive colleagues or superiors, who may have been ‘aroused’ by the same negative working conditions. Following this line of reasoning, bullying may be considered a behavioural strain phenomenon. This means that work-related stress may not be only a consequence of bullying, as most research in this area has found (e.g. Vignoli et al., 2015), but also one of its antecedents. Interestingly, Nielsen et al. (2012) concluded that the relationship between psychological strain and workplace bullying indicates a vicious circle. Thus, we tested the following second hypothesis:

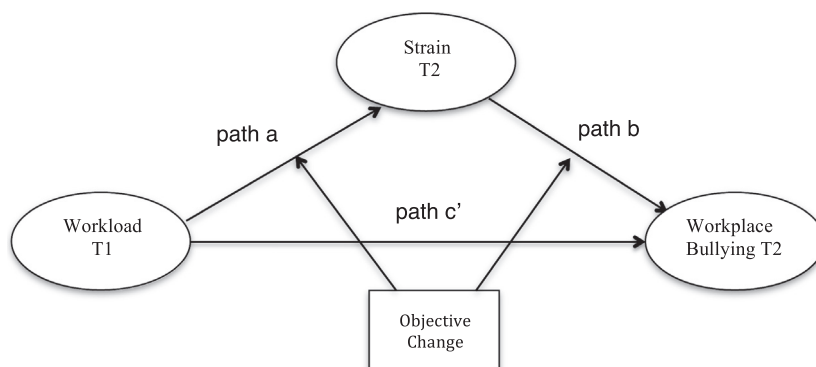


Fig. 1. The moderated mediation model hypothesized. (The tested model included also workplace bullying at T1 as a control variable. Thus the mediating effect of psychological strain in the relationship between workplace bullying at T1 and workplace bullying at T2 was also tested.)

H2. A mediating effect of psychological strain at T2 exists in the relationship between workload at T1 and workplace bullying at T2.

4. The moderating role of organizational change

Most of the research regarding organizational change emphasized organizational change triggering interpersonal conflict at work (e.g. Robinson and Griffiths, 2005; Vinokur et al., 1996), which could be a proximal antecedent of workplace bullying. However, results of previous studies, which were explicitly focused on the relationship between organizational change and workplace bullying, questioned the widespread assumption of organizational change as one of the most important trigger of bullying. In particular, both Skogstad et al. (2007) and Baillien and De Witte (2009) found that various types of organizational change were just modestly related to workplace bullying. In brief, these authors emphasized the fact that employees experience workplace bullying when personally confronted with negative outcomes of change. In other words, when change is not accompanied by notable negative outcomes for the individual, it will probably not elicit victimization. However, it has to be noted that previous studies on workplace bullying mainly focused on employees at the beginning or in the middle of an organizational change, instead of considering especially the consequences of ‘surviving’ the change process – i.e., problems such as anxiety, depression, guilt, etc. (e.g. Dolan et al., 2000; Kets de Vries and Balazs, 1997). Thus, the present study addresses such potential limitation and examines the role of organizational change in workplace bullying by focusing on a sample of public sector employees before the beginning and after the end of an important organizational change.

Organizational change may be costly in terms of employee health: a number of studies have found that change processes, such as restructuring, are associated with a loss of well-being and a degradation of mental health (Bamberger et al., 2012; Kivimäki et al., 2000), most probably because a large proportion of change initiatives are unsuccessful (Beer and Nohria, 2000). Thus, organizational change may accentuate the psychological strain of employees predating the change initiative, giving a significant impulse to those conditions and processes leading to interpersonal conflict and bullying. In other words, the role of organizational change postulated in the present study is that of a moderator. To test this idea two groups of employees of the same organization were differentiated: those who directly experienced different forms of organizational change (e.g., change in work role, supervisor, etc. – see below) and those who were not directly affected by organizational change. We specifically postulated a moderated mediation model whereby the relationship between T1 workload and T2 bullying via T2 psychological strain is conditioned by the organizational change experienced by the participant between T1 and T2.

Accordingly, our third hypotheses is the following:

H3. Organizational change moderates the postulated mediating effect of T2 psychological strain in the T1 workload–T2 workplace bullying relationship, such that the mediating effect of T2 psychological strain exists only for those employees directly experiencing the organizational change process.

5. Method

5.1. Participants

Participants were 141 administrative academic employees from a University in Italy. They were 34.8% men and 65.2% women and their age was ≤ 30 years old (7%), between 31 and 50 years old

(81.6%), and ≥ 51 (11.3%). Most of them had a permanent job (90.1%), whereas few of them did not specify their job contract (9.9%). Tenure was < 5 years for 2.8%; between 5 and 10 years old for 22.7%; between 11 and 20 years for 44.7%; > 20 years for 28.4%.

5.2. Procedure

A two-wave study with a time lag of 3 years was conducted. In November 2011 (T1) 428 employees responded to an online questionnaire (response rate 68.9%) in the context of a psychosocial risk assessment. The second data collection, again through an online questionnaire, took place in October 2014 (T2) with a participation of 441 employees (response rate 57.7%). Data of the two waves were matched through anonymous personal codes. Matching was possible for 145 employees. After managing the missing values by eliminating the cases where they appeared, a final sample of 141 employees was available (33% of the T1 sample). Between T1 and T2 an important organizational change intervention involving directly 81 (57.7%) of the 141 participants took place. The change was a consequence of the implementation of a law (i.e., Legislative Decree 240/2010) promulgated by the central government in Italy aiming at reforming university organizations. Specifically, the main aim of the reform was to increase the overall effectiveness of universities and improve the quality of their different outputs at the scientific, teaching and administrative levels. Affected employees experienced changes in one or more of the following aspects: role, supervisor, work group, and place of work. No layoffs were carried out, which are a relatively rare form of organizational change in the public sector in Italy as well as in most European countries (see Eurofound, 2015). All respondents were informed of the anonymity and confidentiality of the survey.

5.3. Measures

5.3.1. Workload

Three of the eight items from the Italian version of the Health and Safety Executive Stress Indicator Tool (Rondinone et al., 2012; Toderi et al., 2013;) were used to measure workload. Item used were the following: “I have unachievable deadlines”, “I have to overlook some tasks because I have too much to do”, “I have to do my job very quickly”. Respondents were asked to answer to a scale where 1 = never and 5 = always.

5.3.2. Workplace bullying

Two items from the Italian version of the Health and Safety Executive Stress Indicator Tool (Rondinone et al., 2012; Toderi et al., 2013) were used to measure workplace bullying. The items were: “I am subject to personal harassment in the form of unkind words or behaviour”; “I am subject to bullying at work”. These two items assess aspects of two different operational definitions of bullying: the behavioural definition – where specific types of negative acts are investigated (e.g. unkind words or behaviour) –, and the self-labelling definition – where perception of being exposed to workplace bullying is considered (see Nielsen et al., 2011). Respondents were asked to answer on a scale where 1 = never and 5 = always.

5.3.3. Psychological strain

Three of the twelve items from the General Health Questionnaire (Goldberg and Balckwell, 1970) were used to measure psychological strain. The items used were the following: “During the last two weeks did you feel unhappy or depress?”, “During the last two weeks did you feel you have lost your self-confidence?”, “During the last two weeks were you able to willingly perform your daily activities?”. Respondents were asked to answer on a scale where 1 = no

and 4 = much more than usual for the first two items, and 1 = more than usual to 4 = much less than usual, for the third item.

5.3.4. Objective change

Four dichotomous (i.e. yes vs. no) items measured the possible changes that could have occurred during the re-organization process, each of them asking the participants if they were involved in a particular type of organizational change intervention during the last three years. Specifically, the items investigated were: supervisor change, role change, workplace change, and group change. At the item level, 29.1% of employees experienced a change of role (i.e., main tasks), 36.2% of their supervisor, 34% of the main place of work, and 27.7% of work group. The scores of the four items were used in order to compute a unique dichotomous variable where 1 = no change experienced and 2 = at least one change experienced. This variable was used to split the overall group of participants in two groups in order to test the moderation hypotheses (i.e., Hypothesis 3): employees who directly experienced organizational change and employees who did not.

For all the scales used, except for objective change, the scores were obtained by averaging the component items.

5.4. Data analysis

Structural Equation Modelling (SEM) was used to test the proposed hypotheses. This approach provides a direct test of the significance of the indirect effects for testing mediation hypotheses (MacKinnon et al., 2002). The moderating effect was examined through the SEM multi-group approach by including two groups: employees who experienced organizational change and employees who didn't experience organizational change. Moreover, the bootstrapping procedure was used to provide a more robust test of the mediation hypothesis. This method involves repeatedly drawing samples from the original sample in order to create an empirical approximation of the sampling distribution of the indirect effect under study. This is useful when the assumptions of large sample size and multivariate normality of the data may not hold (MacKinnon et al., 2004). In particular, the bias-corrected bootstrap method was used because it corrects for skew in the population; this method was preferred in the current study because some of the variables showed moderate level of skewness. Practically, mediation is tested by determining whether or not the confidence interval of the indirect effect contains zero (Preacher and Hayes, 2008). The fit indices considered in the analyses were the following: the Comparative Fit Index (CFI), the Goodness of Fit Index (GFI), and the Root Mean Square Error of Approximation (RMSEA). CFI assesses the extent to which the tested model is superior to an alternative model in reproducing the observed covariance matrix (Bentler, 1990; McDonald and Marsh, 1990). The CFI index varies from 0 to 1 and a cut-off criterion of CFI > 0.90 is needed in order to ensure that mis-specified models are not accepted (Hooper et al., 2008). The RMSEA introduces a correction for lack of parsimony since, all other things being equal, more complex models are penalized. A cut-off value close to 0.06 (Hu and Bentler,

1999) or an upper limit of 0.08 (Steiger, 2007) seems to be the general consensus among the researchers. GFI is less or equal to 1. A value of 1 indicated a perfect fit and a cut-off of 0.90 is often used for acceptability of the tested model. AMOS 20 was used for SEM, and SPSS 20 was used for preliminary descriptive analyses.

6. Results

We conducted a preliminary attrition analysis on the data of wave 1, to check for whether attrition was related to the two T1 variables included in the tested model (i.e. workplace bullying T1 and workload T1). *T*-test revealed that the 141 participants included in the following analyses did not report significantly different level of bullying than the other participants ($M = 1.61$, $SD = 0.76$ vs. 1.61 , $SD = 0.80$, respectively). Similarly, participants included in the following analyses didn't report significantly different levels of workload than the others ($M = 2.86$, $SD = 0.68$ vs. 2.91 , $SD = 0.72$, respectively). In brief, we didn't find results compatible with an attrition bias in the focused variables.

Table 1 shows the results of the descriptive and bivariate correlational analyses. Except for the relationship between workplace bullying at T1 and psychological strain at T2, all the correlations were statistically significant. Cronbach's Alpha for workload and psychological strain indicated good reliability of the measures, and the correlations between the two items used for measuring workplace bullying at T1 e T2 were strong and highly significant.

Afterwards, the first step of the analysis of mediation were carried out in order to test if a significant direct effect existed between workload at T1 and workplace bullying at T2 in the overall sample and, more specifically, in the two objective change conditions (Yes/No). In this analysis, the T1 level of workplace bullying (i.e. workplace bullying at T1) was controlled for. Results are presented in Table 2. Findings showed that the direct effect between workload at T1 and workplace bullying at T2 (path $c = 0.29$, $p = 0.25$) was not significant in the overall sample. Overall this model showed a sufficiently adequate fit ($X^2 = 24.205$ ($df = 12$); $GFI = 0.958$; $CFI = 0.944$; $RMSEA = 0.085$). Thus, findings did not support H1. When this model was tested separately for the two groups of employees in the two objective change conditions (Yes/No), the relationship between workload at T1 and workplace bullying at T2 was significant solely in the case of the group of employees who directly experienced the organizational change process (path $c = 0.56$, $p = 0.01$).

The significance of a direct path has commonly been considered a pre-condition for testing mediation effects (Baron and Kenny, 1986). That is, if a significant direct effect of the predictor on the dependent variable exists, then it makes sense to test a possible mediation effect. However, some authors have recently questioned this precondition and claimed for abandoning the emphasis on the significance of the direct effect when testing mediation (see Rucker et al., 2011). Thus, following the latest advancements in mediation analysis, although some of the direct paths were not significant, we continued to analyse our predicting model. Thus, the mediating effect of psychological strain at T2 in the relationship between

Table 1
Means, standards deviations, inter-correlation and reliability (on the diagonal) of the study variables.

	M	SD	1	2	3	4
1. Workplace Bullying T1 ^a	1.61	0.76	0.60 ^{**}			
2. Workplace Bullying T2 ^a	1.60	0.76	0.34 [*]	0.55 ^{**}		
3. Psychological Strain T2	2.01	0.73	0.14	0.35 [*]	0.79	
4. Workload T1	2.86	0.68	0.30 [*]	0.27 [*]	0.34 [*]	0.71

^a Items inter-correlation are reported on the diagonal for this measure.

^{*} $p < 0.001$.

^{**} Two items inter-correlation $p < 0.001$.

Table 2
Results of the mediation and moderated mediation effects.

		Path a		Path b		Path c		Path c'		Indirect effect		BC 95% CI	
		β	p	β	p	β	p	β	p	β	p	Lower	Upper
Overall	Workplace Bullying T1	0.14	0.40	0.32	0.01	0.54	0.01	0.43	0.03	0.04	0.24	-0.022	0.167
	Workload T1	0.57	0.01	0.32	0.01	0.29	0.25	0.13	0.45	0.18	0.01	0.052	0.432
Change Yes	Workplace Bullying T1	0.32	0.23	0.32	0.02	0.38	0.11	0.22	0.50	0.10	0.12	-0.005	0.353
	Workload T1	0.64	0.03	0.32	0.02	0.56	0.01	0.35	0.12	0.20	0.03	0.032	0.675
Change No	Workplace Bullying T1	0.01	0.99	0.23	0.21	0.74	0.01	0.75	0.01	0.01	0.80	-0.092	0.099
	Workload T1	0.40	0.21	0.23	0.21	0.38	0.18	-0.46	0.19	0.09	0.19	-0.010	0.818

Note: Path a = direct effect of Workload T1 and Workplace bullying T1 on Psychological Strain T2; path b = direct effect of Psychological Strain T2 on Workplace Bullying at T2; path c = direct effect of Workload T1 and Workplace bullying T1 on Workplace bullying T2 before the mediating variable is introduced in the analyses; path c' = direct effect of Workload T1 and Workplace bullying T1 on Workplace bullying T2 after the mediating variable is introduced in the model.

workload at T1 and workplace bullying at T2 was tested in the overall sample (see Fig. 1), including workplace bullying at T1 as a control variable. Results showed an excellent fit of the tested model ($X^2 = 37.932$ (df = 30); GFI = 0.955; CFI = 0.979; RMSEA = 0.043). Findings presented in Table 2 reported a complete mediating effect of psychological strain in the relationship between workload at T1 and workplace bullying at T2 (Indirect Effect = 0.18, LowerCI = 0.052, UpperCI = 0.432, $p = 0.01$). Thus, findings supported H2.

Subsequently, the mediating model was tested using the multi-group approach to examine the moderating mediation effect that was predicted by H3. Evidence of a complete mediation effect was supported only for the group of employees who directly experienced organizational change (Indirect Effect = 0.20, LowerCI = 0.032, UpperCI = 0.675, $p = 0.03$). This finding indicated that when organizational change occurs, the initial level of workload impacts on the follow up level of workplace bullying through psychological strain. On the contrary, in the group of employees who did not experience the organizational change, the unique significant effect is the direct effect of workplace bullying at T1 on workplace bullying at T2 (path c' = 0.75, $p = -0.01$). In sum, results supported the moderated mediation hypothesis (H3).

7. Discussion

The current longitudinal study provided evidence for a better understanding of the mechanism through which organizational factors, such as exposure to higher workload, could lead to workplace bullying, shedding light also on conditions (i.e., organizational change) that may alter such a relationship. The relationship between workload and workplace bullying is well recognized in the literature (e.g. Baillien and De Witte, 2009; Balducci et al., 2011; Spagnoli and Balducci, 2017). However, to our knowledge, the specific mechanism through which workload affects workplace bullying has not been the object of many studies so far. High levels of workload could lead to high levels of psychological strain (e.g., see Häusser et al., 2010), which, according to different scholars, may be a critical condition for the development of bullying. Leymann (1996) first postulated that psychological strain and frustration deriving from a poor work environment increase the probability of interpersonal conflict occurrence, which may then escalate into bullying episodes. Although interpersonal conflict does not necessarily coincide with bullying, it is indeed true that bullying is an escalated form of interpersonal conflict (see Zapf and Gross, 2001). As explained in the introduction, different paths may lead particularly strained employees to become the target of bullying. For example, strained employees may withdraw and reduce their performance, which particularly in a competitive work environment may be seen as a violation of an important group norm – a well known antecedent of scapegoating and bullying (see the seminal work by Coch and French, 1948). Alternatively,

strained employees may develop sinister cognitions that may lead them to become aggressive towards others and be bullied as a consequence (Neuman and Baron, 2003). The current study supported empirically the mediating role (complete mediation) of psychological strain in the relationship between workload and workplace bullying, although the specific mechanisms leading from strain to bullying were not investigated. Importantly, and in line with our third hypothesis, we found that the mediating role of psychological strain in the relationship between workload and bullying was not constant across the two groups of employees differentiated according to involvement in the organizational change process. The mediating role of psychological strain was significant only for employees who experienced organizational change between the two surveys, while it was not significant for the others, meaning that the strength of the indirect 'effect' depended on the experience of organizational change. Such results suggest that different work environmental factors such as high workload and the occurrence of organizational change, may interact together in creating those conditions that facilitate the development of bullying via psychological strain.

Previous research has rarely investigated the potential joint effect of different work environmental conditions in the development of bullying, with most research being focused on the attenuating role of job control in relationship with high job demands (Baillien et al., 2011a,b; Tuckey et al., 2009). However, it is highly likely that other organizational factors are also relevant in the bullying escalation process. Thus, what may have happened in the targeted organization is that organizational change, occurred between the two surveys, accentuated the psychological strain reported by employees and its consequences, including the experience of bullying.

In sum, the current study contributes to the literature in this field by shedding some light on the mechanism linking workload to workplace bullying. Evidence reporting a complete mediating effect of psychological strain was found for employees who directly experienced organizational change. According and extending previous studies (e.g. Baillien and De Witte, 2009) organizational change eliciting increased levels of psychological strain may aggravate further the poor initial organizational conditions, such as exposure to high workload, contributing to the escalation of workplace bullying.

8. Methodological issues and limitations

The current study has a few noteworthy limitations. First, all the information were gathered by questionnaires, raising the potential problems of common method variance bias. According to Podsakoff et al. (2003), common method variance problems could be reduced in different ways, such as by guaranteeing anonymity of the survey and by instructing participants that there are

no right or wrong answers in the questionnaire items. We followed both of these suggestions.

Second, this is a two-wave study with a three-year time lag. Some authors claimed that the time lag could be a key element in discovering relationships between stressors and strain phenomena (De Lange et al., 2004). In brief, if the adopted time lag does not match the underlying causal mechanism, the estimation of the true relationship between the variables of interest may be biased. In particular, previous research in this area chose different time lags: six months (Baillien et al., 2011a,b), one year (Baillien et al., 2011a,b; Balducci et al., 2012), and two years (Hauge et al., 2011). In the present study a time lag of three years was used, so a longer time lag than in previous research. However, such a time lag is related to the time necessary to implement all the components of the organizational change process. Specifically, the change was initiated at the beginning of 2012 (i.e. some months after the T1 survey) and was finalized one year later. Since the available models of bullying (see Einarsen, 2000; Leymann, 1996) suggest that bullying may require several months and even years to develop, then conducting the T2 survey at the end of 2014 seems reasonable to capture an advanced stage of the postulated causal process, especially if the process was indeed aggravated by the intervening organizational change. It could also be possible, however, that a number of bullying situations had time to deescalate before the T2 survey, meaning that the emerged relationships could be an underestimation of the actual ones.

Third, we adopted only the target perspective of workplace bullying, whereas also the perpetrators perspective would be necessary in order to capture a multi-perspective approach. Identifying and questioning perpetrators would be crucial to gain a more direct understanding of why certain individuals in organizations engage in bullying behaviour, rather than relying on the indirect perspective provided by victims. It could be that the same distressing working conditions leading to becoming a target of bullying can also explain the mechanism leading to becoming a perpetrator, for example via frustration and arousal (see e.g. Spector and Fox, 2005). Although it might be very difficult to collect meaningful data from perpetrators, as they will difficultly admit their harassing behaviours due to social desirability reasons (Rayner et al., 2002; Zapf et al., 2003), the recommendation for future research is to include both the target and perpetrator perspectives. Fourth, to our knowledge the adopted two-item measure of bullying, derived from the Stress Indicator Tool (Rondinone et al., 2012), has never been used in previous research in this area, which means that the emerged results should be interpreted with caution also in relation to this point. However, we note that the mean level of exposure to bullying in the present study was similar to that found in previous research (see, e.g., Balducci et al., 2012). Furthermore, had we dichotomised the adopted measure and considered exposed to bullying only those reporting frequent experience of the phenomenon, a prevalence of bullying of around 5% would have emerged, which is very close to the prevalence of harassment and intimidation emerged in a recent representative survey of the Italian population (ISTAT, 2014). Thus we tend to consider the adopted measure of bullying valid and reliable. In addition, the measure has also some strengths, namely it combines the self-labelling approach in the estimation of exposure to bullying, with aspects of the behavioural approach (see Einarsen et al., 2009). The former approach has been implemented by using single item measures that tap the subjective experience of 'being a victim' of bullying, whilst the latter by investigating a variety of negative acts without referring to "bullying", thus giving a measure uncontaminated from the emotional activation generated by the word "bullying". Thus, we believe that the adopted measure is an interesting compromise between the two approaches, particularly indicated when researchers need a very short measure but want to integrate in it also behavioural, more objective aspects of bullying.

Fifth, the low prevalence of bullying obtained in the current study, coupled with the small sample size, may have impacted on the obtained results, for example by determining a low power in the analyses conducted.

Sixth, this is a two-wave longitudinal study where both the mediating and the outcome variables were measured at T2. Although this study design is very suitable for analysing the relationship between the predictor and the mediator and the predictor and the outcome (Selig and Preacher, 2009), its use may limit the interpretation of the relationship between the mediator and the outcome. A three-wave study would be the proper research design to investigate the postulated mediating model.

Finally, the objective organizational change measure adopted in the current study was a composite index calculated by using four different variables including distinctive organizational change interventions. Although this measure regarded factual information, it was collected by means of a self-reported questionnaire. Thus, results should be interpreted with some caution. Moreover, in order to maintain the parsimony of the tested model we did not consider each of the single types of change implemented. However, this could be an interesting avenue for future research in order to examine possible differences in the relationships between the variables considered in the current study in the context of various types of organizational change.

9. Practical implication

At a broader level, monitoring psychological, physical and environment factors within the workplace may provide a basis for predicting when and where workplace bullying is likely to occur. This may allow managers to introduce specific organizational interventions in order to prevent the development of bullying. Specifically, during organizational change it is important to treat people as important assets, maintaining moral and trust (Pfeffer, 1998) for contrasting the possible increase of psychological strain. Open and honest communication on the part of management is an important remedy to reduce survivors' negative reactions to real and imagined events (Dolan et al., 2000). Moreover, the current study underlined the crucial role played once again by high workload. Thus, it is important that managers avoid for employees high levels of workload by carefully designing the reengineering process.

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