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Running Head: EFFECTIVENESS OF CONFLICT MANAGEMENT TRAINING

**Assessing the Effectiveness of Conflict Management Training in a Health Sector Organisation: Evidence from Subjective and Objective Indicators\***

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### Abstract

The study assessed the effectiveness of an intervention for handling interpersonal conflicts at work. In contrast to the mainstream approach in the healthcare industry, which focuses on developing formal systems of conflict resolution, our intervention consisted of enhancing healthcare workers' conflict management skills through training. A pre- and post-test non-equivalent comparison group design was used (intervention group = 258 workers; comparison group = 243 workers). Participants perceived that the training was successful in reducing the number and intensity of conflicts with co-workers, patients and patients' relatives. Moreover, organisational indicators calculated on the basis of data obtained from Human Resources (HR) records show that the intervention was effective, insofar as the number of requests for third-party interventions to mediate conflicts at work, the number of patients' complaints, and the level of absenteeism all decreased for trained workers, whereas workers from the comparison group exhibited no corresponding changes over time. In light of these results, this paper discusses the design of conflict management measures which could help improve both employees' well-being and organisational productivity.

*Keywords:* workplace conflict, conflict management, dual-concern model, training evaluation, training effectiveness; absenteeism.

## Assessing the Effectiveness of Conflict Management Training in a Health Sector

### Organisation: Evidence from Subjective and Objective Indicators

Interpersonal conflicts are an inherent part of organisational life, inevitably arising at work when a worker perceives a divergence of interests and opinions or becomes annoyed with another's actions and practices (De Dreu & Gelfand, 2008). Hence, conflict management has become a matter of increasing interest in organizations where workers' well-being and performance depends to a great extent on their social interactions with co-workers and customers (e.g., Behfar, Peterson, Mannix, & Trochim, 2008; Dijkstra, Beersma, & Evers, 2011; Dijkstra, de Dreu, Evers, & van Dierendonck, 2009; Friedman, Tidd, Currall, & Tsai, 2000; Giebels & Janssen, 2005; Greer, Jehn, & Mannix, 2008; Leon-Perez, Medina, Arenas, & Munduate, 2014; Tekleab, Quigley, & Tesluk, 2009). This is the case of healthcare settings, where conflict plays an important role in critical dynamics for organizational functioning, like the episodes of violence in a workplace that must deliver a high-quality service (e.g., Beech & Leather, 2006; Janss, Rispen, Segers, & Jehn, 2012). For example, the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO, 2013), an independent non-profit organisation that accredits and certifies healthcare organisations in the United States, considers that the establishment of procedures for conflict management within healthcare organisations is a key performance indicator, providing assurance that conflict will not prevent quality care or impinge upon patient safety.

However, mainstream approaches in the healthcare industry have focused on developing formal systems of conflict resolution by incorporating mediation or third-party interventions to cover not only interpersonal conflicts at work (between patients and healthcare providers, or

between co-workers) but also conflicts derived from medical malpractice (JCAHO, 2013), ignoring the need for conflict management systems to focus on the prevention of destructive conflict by providing employees with effective conflict management skills (Brinkert, 2011; Greer, Saygi, Aaldering, & De Dreu, 2012; Janss et al., 2012; Saltman, O'Dea, & Kidd, 2006; Vivar, 2006). Moreover, research addressing the effectiveness of conflict management interventions is rather scarce, despite widespread recognition of the importance of conflict management skills as a crucial interpersonal competence (for recent notable exceptions, see Lu, Tjosvold, & Shi, 2010; Tjosvold, Chen, Huang, & Xu, 2014).

The main goal of this study, then, is to assess the effectiveness of conflict management skills training provided to workers from a healthcare organization, at the same time seeking to overcome certain limitations of previous interventions conducted in organizational settings (Shadish, Chacon-Moscoso, & Sanchez-Meca, 2005), such as: (a) lack of information about the theoretical rationale used to underpin and guide the implementation and evaluation of the intervention; (b) lack of (quasi-) experimental designs with baseline data and follow-up periods longer than six months, which complicates causal interpretation and evidence-based practice; and (c) lack of multiple information sources to assess the effectiveness of the intervention.

Drawing on the dual-concern model of conflict resolution (Pruitt & Rubin, 1986), we designed a non-equivalent comparison group (quasi-) experiment to impart training and evaluate its effectiveness (see Shadish & Cook, 2009). Meanwhile, the results of the study are supported by diverse data sources, such as participants' subjective perceptions of the effectiveness of the training and more objective data from organizational indicators reflecting workers' use of third-party conflict resolution procedures available at work, absenteeism and the number of patients' complaints (considered a proxy for job performance).

**The dual-concern model of conflict resolution**

The dual-concern model (Pruitt & Rubin, 1986) posits that the way an interpersonal conflict at work is managed depends on an individual's concern for his/her own needs, interests, values and beliefs (competitive or *win-lose* approaches) and for those of the other party (cooperative or *win-win* approaches). The combination of these two basic motives (self- and other- concern) predicts four conflict management approaches. These are collaboration (high concern for both parties), competition (high concern for own needs and interests and low concern for the other), accommodation (high concern for the other party's needs and interests and low concern for one's own), and avoidance (low concern for both parties).

According to this model, collaboration is a successful approach in managing conflict because it promotes effective communication and problem solving behaviours, allowing workers to recognize and integrate the other's needs and interests to reach mutually beneficial solutions beyond middle-ground settlement (*win-win* solutions). In contrast, competition and accommodation may be dysfunctional for individual and team functioning because each implies the "view that the solution of a conflict can only be imposed by one side on the other" (Deustch, 2006: p. 27), which leads either to the use of coercive tactics to force the other party to accept our point of view, or yielding to the other party's needs and interests (*win-lose* solution). Finally, inaction or conflict avoidance is not always an option (e.g., avoiding interaction with co-workers and users is difficult in service organizations) and rarely leads to conflict resolution (or conflict de-escalation processes in terminology employed by Janssen and Van de Vliert, 1996).

A number of researchers have provided empirical support for these postulates, showing that collaboration to reach integrative solutions benefits workers' satisfaction, performance and

psychological well-being (e.g., Behfar et al., 2008; Dijkstra et al., 2009, 2011; Friedman et al., 2000; Tekleab et al., 2009), or at least, “prevents workplace conflict from hurting too much” (De Dreu, 2008: p. 5) compared to other approaches, which may be considered destructive insofar as they can easily result in negative emotions and facilitate downward spirals in which the relationship between parties deteriorates, resulting in retaliation, punishment and mutual exasperation (i.e. conflict escalation, see Glasl, 1982; Pruitt, 2008). In a similar vein, research has shown that effective conflict management also involves managing potentially negative emotions arising from workplace conflict, thereby minimising the potential for escalation (Ayoko, Callan, & Hartel, 2008; Curseu, Boros, & Oerlemans, 2012; Yang & Mossholder, 2004).

Drawing on the dual-concern model, our intervention aimed to enhance effective conflict management and resolution. To this end, our intervention sought to improve workers’ knowledge of conflict management to help them recognize and reframe conflict, but at the same time the training focused on the following key interpersonal skills: (a) emotional regulation to control possible negative emotions such as anxiety or anger arising from conflict at work (i.e., emotional regulation in order to prevent conflict escalation or “keeping people and problems separate”); (b) interpersonal communication and assertiveness to facilitate conflict resolution (e.g. informative and honest communication based on understanding and considering others’ opinions); and (c) problem solving to facilitate both recognition of the other party’s needs and interests, and the identification of mutually beneficial alternatives (i.e. collaboration or integrative conflict resolution seeking to meet the needs and interests of all people involved in a conflict instead of focusing on power positions).

Accordingly, the success of the training (improvement in workers' conflict management skills) in achieving effective conflict management and resolution is evaluated on the basis of its capacity to reduce the number and intensity of conflicts, as well as the number of requests for third-party interventions. Also, effective conflict management and resolution will be associated with positive outcomes for employees' health and well-being (i.e. lower levels of individual absenteeism) and their job performance (i.e. reduction in the number of complaints formulated by patients).

***Cooperative conflict management skills and effective conflict resolution.*** Conflicts can escalate to more destructive levels when workers are not capable of reducing the emotional intensity inherent in all conflicts (Ayoko et al., 2008; Curseu et al., 2012; Yang & Mossholder, 2004). In such situations, the parties affected usually turn to external agents for resolution (i.e. third-party intervention) because their negative emotions are too strong for them to communicate properly to reach an agreement (Pruitt, 2008). In contrast, our training provides employees with the necessary conflict management skills to control negative emotions and to recognise, anticipate and manage conflicts with both colleagues and patients by promoting cooperative approaches, which have been related to conflict de-escalation and effective conflict resolution (e.g., De Dreu, 2008; Deutsch, 2006; Janssen & Van de Vliert, 1996; Tjosvold et al., 2014; Pruitt, 2008). Hence, we may expect that the frequency and intensity of workplace conflicts will be reduced after training, and “employees will address the bulk of the conflicts they face on a day-today basis directly, without third-party intervention” (Bendersky, 2003: p. 646) as they “should be able to assess the situation and employ skills and processes that move the conflict dynamic towards a positive outcome for themselves and others involved” (Saltman et al., 2006: p. 12). In other words, we hypothesize that trained employees will have the necessary skills to



manage conflicts by themselves, without recourse to the existing third-party intervention or mediation service available in the organization participating in this study.

*Hypothesis 1:* Workers in the intervention group will perceive less conflicts and with lower intensity after the training.

*Hypothesis 2:* Workers in the intervention group will reduce their use of the third-party intervention service available in the organisation, whereas the use of this service will not change over time among the control group employees.

***Cooperative conflict management skills and employees' health and well-being.***

Workplace conflict may be considered a job-related stressor which produces stress symptoms like anxiety, psychosomatic complaints and diminished well-being (Giebels & Janssen, 2005; Spector & Bruk-Lee, 2008). Furthermore, Giebels and Janssen (2005) report that stress experiences from conflicts at work are associated with employee withdrawal behaviours such as absenteeism and turnover intentions. Indeed, interpersonal conflict, as an acute stressor, is considered a predictor of future absenteeism (Nixon, Mazzola, Bauer, Krueger, & Spector, 2011), because exposure to conflict over long periods can increase the release of cortisol and damage the immune system (cf., de Dreu, 2010). However, conflict management strategies seem to moderate the relationship between conflict and well-being. For example, Friedman et al. (2000) found that healthcare workers in the US who used an integrative conflict management style experienced less conflict and lower levels of stress than those who used a more dominating or conflict avoiding management style. Similarly, results from cross-sectional survey studies among healthcare workers in the Netherlands have demonstrated that passive responses to interpersonal conflicts (yielding and avoiding) amplify employees' strain, whereas workers using

integrative conflict management strategies experience less psychological stress in cases of workplace conflict (Dijkstra et al., 2009; 2011).

Hence, we may expect that trained participants who have acquired skills to manage conflict effectively will also experience lower levels of strain from workplace conflict than their non-trained colleagues. Consequently, there will be lower levels of absenteeism after the training in the intervention group than in the comparison group.

*Hypothesis 3:* The level of absenteeism will decrease following training for employees in the intervention group, whereas the level of absenteeism will not change over time among control group employees.

***Cooperative conflict management skills and job performance.*** Some intervention studies grounded in the theory of cooperation and competition (Deutsch, 1973; Johnson & Johnson, 1989) have shown that promoting cooperation is associated with performance. In particular, Lu et al. (2010) found, after conducting a 2-day workshop and 2-month follow-up training program in a Chinese high-technology company, that training for cooperative teamwork and constructive controversy improved perceived group potency, creativity and productivity. Results from a similar but more recent intervention conducted in a call centre, which provided objective data about performance (i.e., turnover rates, phones answered, customer complaints and quality examination scores), showed that training for cooperative teamwork reduces turnover and improves individual performance (Tjosvold et al., 2014).

In the healthcare sector, performance depends not only on relationships with colleagues but also on relationships with patients. Moreover, research has shown that conflicts between workers (e.g. physicians and nurses) can affect patients' perceptions about the quality of care they are receiving, which is an important performance indicator in health care organisations

(Kaplan et al., 2010). A recent survey on nurses and patients in the US and Europe revealed that patients' satisfaction with the quality of care was associated with perceived relationships between doctors and nurses (Aiken et al., 2012). Similarly, conflicts between patients and healthcare providers can also affect perceptions of the quality of care. For example, Alexander (2010) demonstrated that deficient communication and conflict management skills in healthcare was associated with patients' dissatisfaction with the quality of care received, which, in turn, often leads to officially registered patient complaints.

Therefore, we expect that enhancing essential interpersonal skills for conflict management (e.g. communication and assertive skills) among our participants will reduce the number of patients' complaints.

*Hypothesis 4:* The number of patients' complaints will decrease after training of the employees in the intervention group, whereas the number of patients' complaints will not change over time among the control group employees.

To sum up, this study assesses the effectiveness of an intervention that focuses on improving workers' conflict management skills. Once equipped with these skills, the trainees should (a) achieve effective conflict resolutions at work, thereby preventing the escalation of conflict to more destructive or intractable levels (Greer et al., 2012; Janss et al., 2012; Saltman et al., 2006); (b) display a reduction in the psychological distress associated with workplace conflict (Dijkstra et al., 2009, 2011; Friedman et al., 2000; Giebels & Janssen, 2005); and (c) increase their performance at work (Tekleab et al., 2009; Tjosvold et al., 2014). The study makes several contributions to the conflict literature by translating the dual-concern model principles into practice, thereby linking training in essential conflict management skills to relevant

outcomes. Our results may also provide useful insights for the implementation of training interventions in the area of workplace conflict management.

## METHOD

### Procedure and Participants

After obtaining the consent of the CEO, we conducted the intervention within a specific department of the organisation. We applied a pre- and post-test non-equivalent comparison group design, in which participants are not randomized, although both the intervention and comparison groups are kept as similar as possible so that the treated group can be fairly contrasted with the comparison group. All of the workers received a letter signed by the principal researcher, the human resources manager and the CEO with information describing a conflict management training program that would be carried out as part of the organisation's workplace health and safety program. Participation in the training program was voluntarily. No specific selection criteria were applied to assign participants to the intervention group.

Two hundred and forty-eight employees voluntarily enrolled in the training. We also trained the department's line managers to gain their support and ensure their involvement with the intervention. Thus, the intervention group consisted of 258 employees (26.4% male and 73.6% female) with ages ranging from 19 to 67 years ( $M = 43.73$ ;  $SD = 12.24$ ), the vast majority of whom had more than five years' job tenure (92.2% vs. 5.4% between two and five years, and 2.3% less than two years). Most of the trained participants had a 3-year university degree (73.6% vs. 7.4% that had a school certificate and 19% a MD or Ph.D).

In the next phase, ten groups were formed, each containing approximately 25

participants. All groups were trained by the same expert trainer over four months. In total, participants received eight three-hour training sessions. First, participants were exposed to two ice-breaking sessions aimed at reframing conflict resolution at work from a cooperative-constructive perspective (sessions 1-2), in which they performed small-group activities to recreate conflict scenarios based on their experiences. The trainer then gave a theoretical exposition and moderated group discussions about different ways of handling the conflict situations brought up by the participants. Following Bandura's social learning theory (1977), participants were involved in a structured learning strategy to develop interpersonal skills. This consisted of providing clear and simple *instructions* regarding the focal skill to be learned, *modelling* example skills, performing *trials* to practice the learned skill, providing *feedback and reinforcement*, and *generalizing* the learned skills from the learning context to real-life situations (Gil & Leon-Rubio, 1998). In particular, participants were trained in (a) emotional regulation (sessions 3-4: see Yang & Mossholder, 2004); (b) interpersonal communication and assertiveness skills (sessions 5-6: see Janssen & van de Vliert, 1996); (c) and problem solving skills (sessions 7-8: see Ury, Brett, & Goldberg, 1988). In addition, a three-hour follow-up session was held two months later in which the trainer conducted group discussions to monitor difficulties in applying the skills learned to participants' work settings (session 9). At the follow-up session all employees signed a consent declaration for the researchers to use their personal registration number for research purposes according to the existing regulations and ethical codes applicable to research in Spain. The personal registration numbers were used to match data with the HR database over time (see measures below).

Finally, the researchers formed the comparison group after the training was completed to avoid interfering with the training program (see Figure 1). Employees were approached in their

rest area by a research assistant, who was instructed to recruit participants with characteristics similar to those in the intervention group (e.g. working in the same department, excluding employees in other job positions such as clerks and those who had received training) to ensure “a focal local comparison group” (Shadish & Cook, 2009: p. 619). Participants in the comparison group also signed the consent declaration for allowing us to use their HR department records. The comparison group contained 243 employees (39.5% male and 60.5% female) with ages ranging from 20 to 62 years ( $M = 43.44$ ;  $SD = 10.41$ ), the majority of whom also had more than five years’ job tenure (79% vs. 9.9% between two and five years, and 11.1% less than two years). Finally, participants in this group were fairly evenly distributed in terms of education: 29.2% reported having a school certificate, 37% a 3-year university degree, and 33.7% a MD or Ph.D.

*-Please insert Figure 1 here-*

## Measures

**Perceived effectiveness.** The perceived effectiveness of the intervention was measured in the follow-up session held two months after the training based on 6 items developed by the researchers according to the potential sources of conflict in healthcare settings (co-workers, patients and patients’ relatives) and both the frequency (number of conflicts) and the importance of conflicts (intensity: see Jehn, Greer, Levine, & Szulanski, 2008). Specifically, participants were asked whether they believed that the number and intensity of conflicts with their colleagues, patients and the patients’ relatives had increased, remained equal or decreased after the training (for the items, see Table 2,  $\alpha = .78$ ).

**Request for third-party intervention.** The HR department provided us with information about written requests from workers to solve a dispute through an informal mediation procedure

in place in the organisation. According to HR department records, this variable was coded as 1 (yes) or 0 (no) depending whether or not an individual (either in the intervention or the comparison group) had requested the service in the eight months previous to the training (pre-training: T1) and in the eight months after the training (post-training: T2). We may note here that T1 and T2 refer to identical months (May to December) of consecutive years (see Figure 1).

**Absenteeism.** This variable was measured at the individual level as a ratio of the number of hours' absence without justification compared to the number of working hours scheduled for a given employee (controlling then possible parental leaves or sick leaves). This ratio was calculated for both the intervention and the comparison groups at T1 (eight months before training) and T2 (eight months after training).

**Patients' complaints.** This measure is considered a proxy for job performance in healthcare settings (e.g., Aiken et al., 2012; Alexander, 2010; Kaplan et al., 2010). We considered only complaints about relational service but not about facilities or similar aspects of the organization) made with reference to specific employees (total number of complaints received over a given period of time). This measure was gathered for both the intervention and the comparison groups at the individual level considering the HR department's records for the eight months before the training (pre-training: T1) and the eight months after the training (post-training: T2).

### **Data analysis strategy**

We first obtained descriptive statistics for the main variables (mean, standard deviation, bivariate correlation, frequencies and response distribution). In particular, we looked at the distribution of the responses made by employees in the intervention group to items about the number and the intensity of conflicts after the intervention, because we were interested in

ascertaining trainees' perceptions about the effectiveness of the training received (perceived effectiveness). We then performed a chi-square goodness-of-fit test, which is an exact or one-sample nonparametric test for a multinomial distribution, to check the null hypothesis that the percentages of a multinomial distribution have equal values (Mehta & Patel, 1989-2012; see also, Argyrous, 2011; Hollander, Wolfe & Chicken, 2014) in order to establish whether the observed values (percentages) in each category (number of conflicts decreased, remained equal or increased after training) were statistically different from a theoretically expected distribution of observations into different categories (multinomial test or binomial test when there are only two categories). In our case, we assume that all categories are equally likely to occur ( $p_k = 1/k$ ). Therefore, hypothesis 1 will be supported if the percentage of participants in the intervention group reporting that the training reduced the number and intensity of conflicts is higher than and statistically different from the percentage of participants in the intervention group who perceived the training as ineffective (i.e. participants reporting that the number and intensity of conflicts increased after training).

We also inferred the intervention's effectiveness from the difference between the intervention group and the comparison group in the before and after organisational indicators (hypotheses 2 to 4). To this end, we conducted a covariance analysis (ANCOVA) with the post-training measures as outcomes and using the baseline (pre-training) measures and socio-demographic variables as covariates. The intervention condition (intervention vs. comparison group) figured as the design factor in the ANCOVA, a statistical technique used to establish that post-test differences (dependent variables) truly result from the intervention and are not merely the effect of pre-test differences between the groups (covariates). Given the initial differences between the intervention and the comparison group for some variables like the number of



requests for third-party conflict resolutions, ANCOVA is more suitable for the analysis of our data than variance analysis (ANOVA) of gain scores, because ANOVA only compares changes in the scores of both groups with regard to differences between post-test and pre-test values (for a discussion, see Dimitrov & Rumrill, 2003). Our hypotheses will be supported if participants in the intervention group significantly reduce their requests for third-party intervention, absenteeism and number of patients' complaints after training compared to participants in the comparison group.

## RESULTS

Table 1 presents descriptive statistics of the main study variables. There are some correlations between socio-demographic variables and both perceived effectiveness and organizational indicators, indicating a need to control for socio-demographics in subsequent analyses. In contrast, perceived effectiveness did not show significant correlations with the organizational indicators. As expected, organizational indicators are stable over time ( $r = .62, .80$  and  $.08$  for third-party intervention, absenteeism, and patients' complaints, respectively). At T1 there is an association between absenteeism and third-party intervention ( $r = .11$ ), whereas at T2 there is an association between absenteeism and patients' complaints ( $r = .20$ ). Furthermore, there is room for cross-lagged effects between absenteeism at T1 and both third-party intervention ( $r = .16$ ) and patients' complaints ( $r = -.10$ ) at T2, as well as between third-party intervention at T1 and patients' complaints at T2 ( $r = -.11$ ).

*-Please insert Table 1 here-*

Regarding perceived effectiveness, the percentage of participants who perceived that the number and intensity of conflicts decreased after the training (ranging from 64.3% to 89.9%) was much higher than the percentage of those who reported either no effects (remained equal = 6.6% to 35.7%) or a negative effect of the training (increased = 0% to 3.5%). These differences were statistically significant according to a chi-square test (see Table 2), suggesting that participants perceived that the training was effective in reducing the number and intensity of workplace conflicts (H1).

*-Please insert Table 2 here-*

We also assessed organizational indicators queried from the HR database for both the intervention and comparison groups in order to obtain a more objective evaluation of the effectiveness of the training. We first calculated the percentage of employees in the intervention and the comparison groups who requested third-party intervention to solve workplace conflicts. At T1, 28.7% of the employees in the intervention group and 8.6% in the comparison group requested the service, compared to 17.1% of the employees in the intervention group and 8.6% in the comparison group at T2 (see Table 3). According to HR department records, meanwhile, employees in the intervention group spent an average of 3.81% of their working hours out of the workplace without justification at T1 and 0.76% at T2, whereas employees in the comparison group were absent for an average of 3.78% of their working hours at T1 and 3.21% at T2. Similarly, 185 employees (71.7%) in the intervention group received at least one complaint from their patients at T1 ( $M = 1.54$  complaints;  $SD = 1.22$ ) and 125 employees (48.4%) at T2 ( $M = 0.48$  complaints;  $SD = 0.50$ ). In the comparison group, 175 employees (72%) and 181 employees (76.5%) received at least one complaint at T1 ( $M = 1.47$  complaints;  $SD = 1.22$ ) and T2 ( $M = 1.59$  complaints;  $SD = 1.23$ ), respectively.

*-Please insert Table 3 here-*

We then conducted a Levene test for equality of variances in the baseline measures (requests for third-party intervention, patients' complaints and individual absenteeism) between the intervention and the comparison group because they were not equal in size. The Levene test indicated unequal variances ( $F = 173.44, p < .001$ ) for requests for third-party intervention, as participants in the intervention group scored higher than those in the comparison group. In contrast, equal variances may be assumed in the case of individual absenteeism ( $F = .71, p = .40$ ) and patients' complaints ( $F = .19, p = .66$ ).

Finally, ANCOVA analyses indicate that the predicted main effect of the intervention was significant for requests for third-party intervention [ $F(1,492) = 3.95, p < .05, \eta p^2 = .01$ ], individual absenteeism [ $F(1,492) = 299.48, p < .001, \eta p^2 = .38$ ] and patients' complaints [ $F(1,492) = 121.23, p < .001, \eta p^2 = .20$ ] after controlling for job category, age, gender, employment tenure and pre-test measures. Thus, the intervention significantly decreased requests for third-party intervention, individual absenteeism and patients' complaints, supporting hypotheses 2 to 4.

## DISCUSSION

Whilst there are multiple guidelines for implementing conflict resolution systems in healthcare organisations, little research has been done to explore the impact of conflict management training on organizational outcomes even though conflict management has been recognized as a pivotal competence that workers should develop to do their jobs effectively (e.g., Brinkert, 2011; Greer et al., 2012; Janss et al., 2012; Saltman et al., 2006; Vivar, 2006). In this context, the study seeks to evaluate the effectiveness of a theory-driven conflict management skills training intervention implemented in a healthcare organization. Based upon the dual-

concern model of conflict resolution (Pruitt & Rubin, 1986), we developed an intervention which consisted of nine three-hour training sessions following a structured learning strategy (see Gil & Leon-Rubio, 1988) in order to enhance the fundamental conflict management skills (emotion regulation, interpersonal communication and problem solving skills) involved in cooperative and integrative conflict resolution.

The study also addresses certain shortcomings in previous examinations of workplace conflict interventions, such as the excessively short follow-up periods and the lack of organisational indicators to evaluate intervention effectiveness. In this light, we performed a (quasi-) experiment with a pre- and post-test non-equivalent comparison group design to assess the effectiveness of the training imparted (Shadish & Cook, 2009).

Participants reported that the intensity and frequency of conflicts with co-workers and patients had diminished, supporting the effectiveness of the training in promoting conflict management skills for integrative conflict resolution. However, this subjective measure could be considered a *reaction criterion* which explains little, if anything, about the utility of the program to the organization (*results criteria*) (Arthur, Bennett, Edens, & Bell, 2003: p. 235).

Consequently, we contrasted participants' appraisals with relevant organizational outcomes retrieved from the HR database to improve the robustness of our results. Despite the small effect size or difference in requests for third-party interventions to mediate conflicts at work between the intervention and comparison groups ( $\eta_p^2 = .01$ ; for interpreting effect sizes, see Vacha-Haase & Thompson, 2004), the results obtained reveal that the number of such requests did in fact decrease in the intervention group, whereas there was no change over time in the comparison group. Furthermore, absenteeism in the intervention group diminished after training and was significantly lower than in the comparison group ( $\eta_p^2 = .38$ ). The partial eta squared statistic

suggests that the difference in absenteeism between the intervention and comparison groups after the training was very large. Finally, the number of patients' complaints after training not only fell in the intervention group, but was also significantly lower than in the comparison group, for which there was no change. In this case there is a modest to large effect size ( $\eta_p^2 = .20$ ) between the intervention and comparison groups.

As expected, then, we may conclude that the training designed to provide workers with essential skills for conflict management (emotional regulation skills to help them manage emotions stemming from conflicts; interpersonal communication skills to facilitate mutual understanding; and problem solving skills to reach mutually beneficial solutions) is an effective intervention not only in terms of lowering the costs inherent in conflict resolution and withdrawal behaviours (mediation systems and absenteeism: Dijkstra et al., 2009; 2011; Giebels & Janssen, 2005; Pruitt, 2008) but also to improve employee performance by reducing the number of patients' complaints (Alexander, 2010; Tjosvold et al., 2014).

Aside from the positive effects of the training on key performance-related organizational outcomes, the main contribution of this study to the existing literature on conflict management is that it shows how the dual-concern model (Pruitt & Rubin, 1986) can be translated into effective training programs in the healthcare sector by disentangling integrative conflict resolution into essential conflict management skills. As Deutsch (2006) argued, conflict management training must emphasize the practice of skills, and not just the acquisition of knowledge, if it is to be effective. We provided employees with skills to handle the bulk of the workplace conflicts they face on a daily basis instead of focusing on individual conflict management strategies as trait-like qualities. Moreover, considering the correlations that we found in this study (see Table 1), it seems clear that future studies should test for a possible positive spillover effect (in contrast to

the conflict escalation models described: Glasl, 1982; Janssen & van de Vliert, 1996; Pruitt, 2008) in which improved conflict management skills in service organisations can lead workers to experience more positive social interactions at work (with both co-workers and users), given that the number of patients' complaints was reduced and participants reported that the number and intensity of conflicts with co-workers was reduced after training. In turn, these positive experiences may reinforce positive cognitive judgments about the kinds of individual capabilities (e.g. self-efficacy beliefs) and cognitive abilities (e.g. emotional intelligence) that are crucial for effective performance in a wide range of specific social competences, including conflict management and resolution (e.g., Schlaerth, Ensari, & Christian, 2013; Leon-Perez, Medina, & Munduate, 2011). This may in turn increase job motivation and engagement as well as reducing stress levels, so that the intervention may be seen as a tool to provide workers with resources to cope with job demands and feel more supported by the organisation. Last, higher motivation and lower stress may be associated with better job performance (in terms of quality of service and lower absenteeism in the case of the healthcare sector).

### **Limitations and further research**

Notwithstanding its implications for the advancement of our understanding of conflict management at work, the study also has some methodological limitations inherent in (quasi-) experimental designs. For example, we opted to use a (quasi-) experimental design and voluntary participation in the training to interfere as little as possible with the normal life of the organisation. However, it is possible that the employees who agreed to participate in the study were those with worse conflict management skills or were experiencing problems with particularly difficult patients. This potential bias could explain why employees in the

intervention group had a higher number of requests for third-party intervention to address workplace conflicts before training (baseline measure from the HR records) than their colleagues in the comparison group. Moreover, we cannot guarantee that participants in the comparison group remained unaware of the training given to participants in the intervention group, which might have influenced their psychological and behavioural responses (Grant & Wall, 2009). Thus, although randomly allocating participants to experimental conditions may produce an artificial social situation, randomisation instead of voluntary assignment to the intervention group might have strengthened the findings of our study.

In the matter of effectiveness criteria, both subjective and objective measures support the effectiveness of the training in this study. However, the extent to which the different components of the training are directly responsible for positive outcomes cannot be determined. It is implicitly assumed that the improvement in the participants' conflict management skills was primarily responsible for this outcome. Unfortunately, however, we did not have pre- and post-measures of the employees' conflict management skills to establish the fact. To circumvent this limitation, future studies should consider measuring conflict management styles before and after the training in both the intervention and the comparison group to assess whether participants use more integrative and cooperative conflict management strategies following training (e.g., De Dreu, Evers, Beersma, Kluwer, & Nauta, 2001). In this regard, it may be valuable to use trained observers to rate trainees in training conditions and give an overall assessment for each trainee on the relevant training elements.

Finally, although our study used organizational indicators and not merely self-report measures to assess intervention effectiveness, other data sources may have the potential to further improve the training assessment. For example, Arthur et al. (2003) assert that trainees'

reactions to training are not connected to organizational results (in our case, perceived effectiveness did not, in fact, show significant correlations with organizational indicators). Beyond results criteria, however, stakeholders' (managers', workers' and trainers') perceptions of the implementation process and their attitudes and appraisals of the intervention (mental models involved in behaviour modification) may add valuable supplementary information for the elucidation of the factors involved in the intervention's success (or lack thereof), which may in turn help ensure that similar effects will be achieved when the intervention is transferred to other organizations (e.g., Nielsen & Randall, 2013; Nielsen, Randall, & Albertsen, 2007).

### **Practical implications**

We would advise HR managers and practitioners first to examine which work methods and environmental conditions contribute to conflict emergence in their organizations before translating the current intervention to their context. Indeed, HR managers and practitioners should begin by considering whether it may be necessary to develop a positive conflict management culture (since our target organization already had procedures for dealing with conflicts through third-party mediation). In such case, other interventions to facilitate conflict management and resolution, such as conflict coaching or formal conflict resolution systems, may be more apt (e.g., Bendersky, 2003; Brinket, 2011; Vivar, 2006).

Conflict management interventions need to be tailored to fit the organizational context in which conflict proliferates. For example, Tjosvold and colleagues, drawing on the cooperation-competition theory (Deutsch, 1973; Johnson & Johnson, 1989), have conducted effective interventions for developing cooperative relationships and promoting the ability among team members to see conflict as an opportunity to discuss diverse views open-mindedly (constructive



controversy, see also Tjosvold, 2008; Tjosvold & Su, 2007), which can foster creative solutions and reinforce relationships (Lu et al., 2010; Tjosvold et al., 2014). In contrast to cooperative conflict resolution in teams, we focused on individual integrative conflict resolution.

Consequently, we chose the dual-concern model because it presents a clear typology of conflict management approaches in which the determinants of conflict behaviour depend on the motivation for both one and the other interests in conflict situations. Furthermore, this model is easier to extrapolate to the healthcare context in which workers need to maintain a high level of concern for the interests of the other party in conflict situations if they are to do their jobs effectively, given the demands inherent in providing high quality care to patients and task interdependence between co-workers in the sector (Brinkert, 2011; Greer et al., 2012, Janss et al., 2012; Vivar, 2006).

Our findings are in line with Bendersky's (2003) position that organisations which promote and provide conflict management skills to their workers, and particularly to line managers, may experience more positive outcomes than those investing only in the development of formal conflict management systems. Our results support the idea that investing in theory-driven training to improve workers' conflict management skills is associated with benefits like a reduction in employee absenteeism, which "has been estimated to cost businesses as much as 15 per cent of payroll" (cf., Berry, Lelchook, & Clark, 2012: p. 26). However, it is not only absenteeism that is costly, —third party intervention is too. Our study also showed that an intervention which enriches the employees in the first place, instead of third parties, may also reduce costs because the number of requests for third party intervention may decrease accordingly. These findings are particularly important considering the scarce resources available in many organisations due to the current economic crisis. In this light, future studies should look

at the return on investment provided by conflict management training (see Phillips, 2003) and compare this with other conflict management interventions (e.g. alternative dispute resolution systems). In doing so, they should include other relevant outcomes in healthcare settings such as patients' satisfaction with the services provided by employees (e.g., satisfaction surveys) and organisational productivity indicators (e.g. ratio of occupied beds, number of patients attended to).

Finally, the idea of including training in conflict management skills as part of organisations' health and safety programs is compelling, as such skills may prevent conflict escalation and the associated negative consequences, such as workplace violence (e.g., Ayoko et al., 2008; Glasl, 1982; Leon-Perez, Arenas, & Butts, 2012; Pruitt, 2008).

## **Conclusion**

In light of our results, we may conclude that the intervention was effective and provided answers and solutions to current demands and challenges of a healthcare organization embedded in a particular context. Moreover, this study contributes to the current conflict literature by translating the principles of the dual-concern model (Pruitt & Rubin, 1986) into practice, suggesting that there is a set of basic conflict management skills which workers need to learn if they are to manage conflict in an integrative way. These would include (a) emotional regulation skills to manage potential negative emotions arising from workplace conflict and minimise the potential for escalation; (b) interpersonal communication skills to facilitate understanding others' opinions and interests; and (c) problem solving skills to facilitate recognition of the other party's needs and interests and help in reaching mutually beneficial solutions. The present study provides useful insights for researchers and practitioners in relation to the implementation of

interventions to effectively address workplace conflict, at the same time suggesting that conflict management training can make a real difference without a great deal of investment in employee time, given that investment in this type of intervention may not only have a crucial impact on employees' well-being and performance but also on the productivity of the organisation as a whole.

## REFERENCES

- Aiken, L. H., Sermeus, W., van den Heede, K., Sloane, D. M., Busse, R., McKee, M., ... Kutney-Lee, A. (2012). Patient safety, satisfaction, and quality of hospital care: Cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. *British Medical Journal*, doi: 10.1136/bmj.e1717
- Alexander, A. A. (2010). Complaints, grievances, and claims against physicians: Does tort reform make a difference? *Journal of Healthcare Risk Management*, 30, 32-42. doi: 10.1002/jhrm.20042
- Argyrous, G. (2011). *Statistics for research: with a guide to SPSS* (3rd ed.). London: SAGE.
- Arthur, W. J., Bennett, W. J., Edens, P., & Bell, S. T. (2003). Effectiveness of training in organizations: A meta-analysis of design and evaluation features. *Journal of Applied Psychology*, 88, 234-245. doi: 10.1037/0021-9010.88.2.234
- Ayoko, O. B., Callan, V. J., & Hartel, C. E. J. (2008). The influence of team emotional intelligence climate on conflict and team members' reactions to conflict. *Small Group Research*, 39, 121-149. doi: 10.1177/1046496407304921.
- Bandura, A. (1977). *Social Learning Theory*. New York: General Learning Press
- 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, 27-43. doi:10.1016/j.avb.2005.05.004.
- Behfar, K. J., Peterson, R. S., Mannix, E. A., & Trochim, W. M. K. (2008). The critical role of conflict resolution in teams: A close look at the links between conflict type, conflict management strategies, and team outcomes. *Journal of Applied Psychology*, 93, 170-188. doi: 10.1037/0021-9010.93.1.170.
- Bendersky, C. (2003). Organizational dispute resolution systems: A complementarities model. *Academy of Management Review*, 28, 643-656. doi: 10.5465/AMR.2003.10899444.
- Berry, C. M., Lelchook, A. M., & Clark, M. A. (2012). A meta-analysis of the interrelationships between employee lateness, absenteeism, and turnover: Implications for models of withdrawal behavior. *Journal of Organizational Behavior*, 33, 678-699. doi: 10.1002/job.778

- Brinkert, R. (2011). Conflict coaching training for nurse managers: A case study of a two-hospital health system. *Journal of Nursing Management*, 19, 80-91. doi: 10.1111/j.1365-2834.2010.01133.x.
- Curseu, P. L., Boros, S., & Oerlemans, L. A. G. (2012). Task and relationship conflict in short-term and long-term groups: The critical role of emotion regulation. *International Journal of Conflict Management*, 23, 97-107. doi: 10.1108/10444061211199331
- de Dreu, C. K. W. (2008). The virtue and vice of workplace conflict: food for (pessimistic) thought. *Journal of Organizational Behavior*, 29, 5-18. doi: 10.1002/job.474.
- de Dreu, C. K. W. (2010). Social conflict: The emergence and consequences of struggle and negotiation. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of Social Psychology* (5th ed., Vol. 2, pp. 983-1023). New York: Wiley & Sons.
- de Dreu, C. K. W., Evers, A., Beersma, B., Kluwer, E. S., & Nauta, A. (2001). A theory-based measure of conflict management strategies in the workplace. *Journal of Organizational Behavior*, 22, 645-688. doi: 10.1002/job.107.
- de Dreu, C. K. W., & Gelfand, M. J. (2008). Conflict in the workplace: Sources, functions, and dynamics across multiple levels of analysis. In C. K. W. De Dreu & M. J. Gelfand (Eds.), *The Psychology of Conflict and Conflict Management in Organizations* (pp. 3-54). New York: Lawrence Erlbaum Associates.
- Deutsch, M. (1973). *The resolution of conflict: Constructive and destructive processes*. New Haven, CT: Yale University Press.
- Deutsch, M. (2006). Cooperation and competition. In M. Deutsch, P. T. Coleman, & E. Marcus (Eds.), *The handbook of conflict resolution: Theory and practice* (2nd ed., pp. 23-42). San Francisco, CA: Jossey-Bass.
- Dijkstra, M. T. M., Beersma, B., & Evers, A. (2011). Reducing conflict-related employee strain: The benefits of an internal locus of control and a problem-solving conflict management strategy. *Work and Stress*, 25, 167-184. doi: 10.1080/02678373.2011.593344.
- Dijkstra, M. T. M., de Dreu, C. K. W., Evers, A., & van Dierendonck, D. (2009). Passive responses to interpersonal conflict at work amplify employee strain. *European Journal of Work and Organizational Psychology*, 18, 405-423. doi: 10.1080/13594320802510880.
- Dimitrov, D. M., & Rumrill, P. D. (2003). Pretest-posttest designs and measurement of change. *Work*, 20, 159-165.
- Friedman, R. A., Tidd, S. T., Currall, S. C., & Tsai, J. C. (2000). What goes around comes around: The impact of personal conflict styles on work conflict and stress. *International Journal of Conflict Management*, 11, 32-55. doi: 10.1108/eb022834.
- Giebels, E., & Janssen, O. (2005). Conflict stress and reduced well-being at work: The buffering effect of third-party help. *European Journal of Work and Organizational Psychology*, 14, 137-155. doi: 10.1080/13594320444000236.
- Gil, F., & Leon-Rubio, J. M. (1998). *Habilidades sociales: teoría, investigación e intervención* [Social skills: Theory, research, and intervention]. Madrid, Spain: Síntesis.

- Glasl, F. (1982). The process of conflict escalation and roles of third parties, In G. B. J. Bomers & R. Peterson (Eds.), *Conflict management and industrial relations* (pp. 119-140). Boston: Kluwer-Nijhoff.
- Grant, A. M., & Wall, T. D. (2009). The neglected science and art of quasi-experimentation: Why-to, when-to, and how-to advice for organizational researchers. *Organizational Research Methods*, 12, 653-686. doi: 10.1177/1094428108320737
- Greer, L. L., Jehn, K., & Mannix, E. A. (2008). Conflict transformation: A longitudinal investigation of the relationship between different types of intragroup conflict and the moderating role of conflict resolution. *Small Group Research*, 39, 278-302. doi: 10.1177/1046496408317793.
- Greer, L.L., Saygi, O., Aaldering, H., & de Dreu, C.K.W. (2012). Conflict in medical teams: opportunity or danger? *Medical Education*, 46, 935-942. doi:10.1111/j.1365-2923.2012.04321.x.
- Hollander, M., Wolfe, D. A., & Chicken, E. (2014). *Nonparametric statistical methods* (3rd ed.). Hoboken, New Jersey: John Wiley & Sons.
- Janss, R., Rispens, S., Segers, M., & Jehn, K.A. (2012). What is happening under the surface? Power, conflict and the performance of medical teams. *Medical Education*, 46, 838-849. doi:10.1111/j.1365-2923.2012.04322.x.
- Janssen, O., & van de Vliert, E. (1996). Concern for the other's goals: Key to (de)escalation of conflict. *International Journal of Conflict Management*, 7, 99-120. doi: 10.1108/eb022777
- Jehn, K. A., Greer, L., Levine, S., & Szulanski, G. (2008). The effects of conflict types, dimensions, and emergent states on group outcomes. *Group Decision and Negotiation*, 17, 465-495. doi:10.1007/s10726-008-9107-0
- Johnson, D. W., & Johnson, R. T. (1989). *Cooperation and competition: Theory and research*. Edina, MN: Interaction.
- Joint Commission on Accreditation for Healthcare Organizations – JCAHO (2013). *Comprehensive Accreditation Manual for Hospitals*. Oakbrook Terrace, IL: Joint Commission Resources.
- Kaplan, H. C., Brady, P. W., Dritz, M. C., Hooper, D. K., Linam, W. M., Froehle, C. M., & Margolis, P. (2010). The influence of context on quality improvement success in health care: A systematic review of the literature. *Milbank Quarterly*, 88, 500-559. doi: 10.1111/j.1468-0009.2010.00611.x.
- Leon-Perez, J.M., Arenas, A. & Butts, T. (2012). Effectiveness of a conflict management intervention to prevent workplace bullying. In N. Tehrani (Ed.), *Workplace bullying: symptoms and solutions* (pp. 230-243). London: Routledge Press.
- Leon-Perez, J. M., Medina, F. J., & Munduate, L. (2011). Effects of self-efficacy on objective and subjective outcomes in transactions and disputes. *International Journal of Conflict Management*, 22, 170-189. doi:10.1108/10444061111126693

- Leon-Perez, J. M., Medina, F. J., Arenas, A., & Munduate, L. (2014). The relationship between interpersonal conflict and workplace bullying. *Journal of Managerial Psychology*, in press.
- Lu, J. F., Tjosvold, D. & Shi, K. (2010). Team training in china: Testing and applying the theory of cooperation and competition. *Journal of Applied Social Psychology*, 40, 101–134.
- Mehta, C.R. & Patel, N.R. (1989-2012). *IBM SPSS exact tests*. Cambridge, MA: SPSS Inc.
- Nielsen. K., & Randall, R. (2013). Opening the black box: Presenting a model for evaluating organizational-level interventions. *European Journal of Work and Organizational Psychology*, 22, 601-615. doi:10.1080/1359432X.2012.690556.
- Nielsen, K., Randall, R., & Albertsen, K. (2007). Participants' appraisals of process issues and the effects of stress management interventions. *Journal of Organizational Behavior*, 28, 793-810. doi: 10.1002/job.450.
- Nixon, A. E., Mazzola, J. J., Bauer, J., Krueger, J. R., & Spector, P. E. (2011). Can work make you sick? A meta-analysis of the relationships between job stressors and physical symptoms. *Work & Stress*, 25, 1-22. doi: 10.1080/02678373.2011.569175.
- Phillips, J. J. (2003). *Return on investment in training and performance improvement programs*. Burlington, MA: Butterworth-Heinemann
- Pruitt, D. G. (2008). Conflict escalation in organizations. In C. K. W. De Dreu & M. J. Gelfand (Eds.), *The Psychology of Conflict and Conflict Management in Organizations* (pp. 245-266). New York: Lawrence Erlbaum Associates.
- Pruitt, D. G., & Rubin, J. Z. (1986). *Social conflict: escalation, stalemate, and settlement*. New York: Random House.
- Saltman, D. C., O'Dea, N. A., & Kidd, M. R. (2006). Conflict management: A primer for doctors in training. *Postgraduate Medicine Journal*, 82, 9-12. doi: 10.1136/pgmj.2005.034306.
- Schlaerth, A., Ensari, N., & Christian, J. (2013). A meta-analytical review of the relationship between emotional intelligence and leaders' constructive conflict management. *Group Processes & Intergroup Relations*, 16, 126–136. doi:10.1177/1368430212439907
- Shadish, W. R., Chacon-Moscoso, S., & Sanchez-Meca, J. (2005). Evidence-based decision making: Enhancing systematic reviews of program evaluation results in Europe. *Evaluation*, 11, 95-109. doi: 10.1177/1356389005053196.
- Shadish, W. R., & Cook, T. D. (2009). The renaissance of field experimentation in evaluating interventions. *Annual Review of Psychology*, 60, 607-629. doi: 10.1146/annurev.psych.60.110707.163544.
- Spector, P. E., & Bruk-Lee V. (2008). Conflict, health, and well-being. In C. K. W. De Dreu, & M. J. Gelfand (Eds.). *The psychology of conflict and conflict management in organizations* (pp. 267-288). San Francisco: Jossey-Bass.
- Tekleab, A. G., Quigley, N. R., & Tesluk, P. E. (2009). A longitudinal study of team conflict, conflict management, cohesion, and team effectiveness. *Group & Organization Management*, 34, 170-205. doi: 10.1177/1059601108331218.

- Tjosvold, D. (2008). The conflict-positive organization: It depends upon us. *Journal of Organizational Behavior*, 29, 19-28. doi:10.1002/job.473.
- Tjosvold, D. & Su, F. S. (2007). Managing anger and annoyance in organizations in China: The role of constructive controversy. *Group & Organization Management*, 32, 260-289. doi: 10.1177/1059601106287106
- Tjosvold, D., Chen, N. Y., Huang, X., & Xu, D. (2014). Developing cooperative teams to support individual performance and well-being in a call center in china. *Group Decision and Negotiation*, 23, 325-348. doi: 10.1007/s10726-012-9314-6
- Ury, W., Brett, J. M., & Goldberg, S. B. (1989). *Getting disputes resolved: Designing systems to cut the costs of conflict*. San Francisco: Jossey-Bass.
- Vacha-Haase, T., & Thompson, B. (2004). How to estimate and interpret various effect sizes. *Journal of Counseling Psychology*, 51, 473-481. doi: 10.1037/0022-0167.51.4.473
- Vivar, C. G. (2006). Putting conflict management into practice: A nursing case study. *Journal of Nursing Management*, 14, 201-206. doi: 10.1111/j.1365-2934.2006.00554.x.
- Yang, J., & Mossholder, K. W. (2004). Decoupling task and relationship conflict: the role of intragroup emotional processing. *Journal of Organizational Behavior*, 25, 589-605. doi: 10.1002/job.258

## TABLES

Table 1

*Descriptive statistics of the main variables of the study (n = 501).*

Variables	<i>M</i>	<i>SD</i>	Age	Sex	Tenure	Educ.	Eff.	T1M	T2M	T1A	T2A	T1C
Age	43.59	11.38	-									
Sex	.33	.47	.10 <sup>*</sup>	-								
Tenure	2.79	.54	.54 <sup>**</sup>	.01	-							
Education	2.08	.66	-.01	.15 <sup>**</sup>	-.15 <sup>**</sup>	-						
Effectiveness	2.76	.31	-.05	-.04	.15 <sup>**</sup>	-.17 <sup>**</sup>	-					
T1Mediation	.19	.39	-.07	-.04	.08 <sup>+</sup>	.03	-.02	-				
T2Mediation	.13	.33	-.06	-.05	.05	.05	-.07	.80 <sup>**</sup>	-			
T1Absenteeism	3.80	2.28	-.05	-.02	.03	.05	.04	.11 <sup>*</sup>	.16 <sup>**</sup>	-		
T2Absenteeism	1.95	2.21	-.08 <sup>+</sup>	.04	-.11 <sup>*</sup>	-.02	.01	-.05	.05	.62 <sup>**</sup>	-	
T1Complaints	1.51	1.22	.01	.04	.05	.01	-.04	.01	.02	.05	.03	-
T2Complaints	1.02	1.08	-.01	.08 <sup>+</sup>	-.06	-.01	-.01	-.11 <sup>*</sup>	-.06	-.10 <sup>*</sup>	.20 <sup>**</sup>	.08 <sup>+</sup>

*Note:* Sex is dummy coded: 0 = female, 1 = male; Educ. = Education; Eff. = Perceived

effectiveness; T1M = Request for third-party intervention at T1; T2M = Request for third-party intervention at T2; T1A = Absenteeism at T1; T2A = Absenteeism at T2; T1C = Patients' complaints at T1; T2C = Patients' complaints at T2; <sup>+</sup>*p* = .06; <sup>\*</sup>*p* < .05; <sup>\*\*</sup>*p* < .01.



Table 2

*Participants' appraisals about the effectiveness of the training.*

	<i>Sources of conflict</i>	Decreased (effective)	Remained equal	(Even) Increased	<i>df</i>	<i>x</i> <sup>2</sup>
<i>Number of conflicts with...</i>	<i>colleagues</i>	64.3%	35.7%	0%	1	21.22*
	<i>patients</i>	70.1%	26.4%	3.5%	2	177.65*
	<i>relatives</i>	84.1%	14.3%	1.6%	2	305.65*
<i>Intensity of conflicts with...</i>	<i>colleagues</i>	84.9%	15.1%	0%	1	125.58*
	<i>patients</i>	71.3%	28.7%	0%	1	46.90*
	<i>relatives</i>	89.9%	6.6%	3.5%	2	372.16*

*Note:* <sup>a</sup>“Non-effective” is the sum of both participants’ that reported “remained equal” and “increased”; \**p* < .001

Table 3

*Comparison of the organizational indicators in the intervention (n = 258) and the comparison group (n = 243).*

Variables	Intervention		Comparison		ANCOVA	
	Before training <i>M (SD)</i>	After training <i>M (SD)</i>	Before training <i>M (SD)</i>	After training <i>M (SD)</i>	<i>F</i>	$\eta p^2$
Requests for third-party intervention <sup>1</sup>	.29	.17	.09	.09	3.95*	.01
Absenteeism	3.81 (2.32)	.76 (1.34)	3.78 (2.23)	3.21 (2.25)	299.48***	.38
Complaints	1.54 (1.22)	.48 (0.51)	1.47 (1.21)	1.58 (1.23)	121.23***	.20

Note: <sup>1</sup>Refers to percentages in the subsample; \*\*\*  $p < .001$ ; \*\*  $p < .01$ ; \*  $p < .05$ .