



# The effects of working in a bullying climate on psychological distress and job satisfaction: a multilevel analysis

Nicole M. Steele, Gerard J. Fogarty, Bryan Rodgers & Peter Butterworth

**To cite this article:** Nicole M. Steele, Gerard J. Fogarty, Bryan Rodgers & Peter Butterworth (2022) The effects of working in a bullying climate on psychological distress and job satisfaction: a multilevel analysis, *Australian Journal of Psychology*, 74:1, 2125341, DOI: [10.1080/00049530.2022.2125341](https://doi.org/10.1080/00049530.2022.2125341)

**To link to this article:** <https://doi.org/10.1080/00049530.2022.2125341>



© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 03 Oct 2022.



[Submit your article to this journal](#)



Article views: 456



[View related articles](#)



[View Crossmark data](#)

# The effects of working in a bullying climate on psychological distress and job satisfaction: a multilevel analysis

Nicole M. Steele<sup>a</sup>, Gerard J. Fogarty<sup>b</sup>, Bryan Rodgers<sup>a</sup> and Peter Butterworth<sup>c,d</sup>

<sup>a</sup>School of Demography, The Australian National University, Canberra, Australia; <sup>b</sup>School of Psychology and Well Being, University of Southern Queensland, Toowoomba, Australia; <sup>c</sup>Centre for Epidemiology and Population Health, The Australian National University, Canberra, Australia; <sup>d</sup>Melbourne Institute: Applied Economic and Social Research, University of Melbourne, Melbourne, Australia

## ABSTRACT

**Objective:** Workplace bullying has predominantly been conceptualised and investigated as an individual phenomenon. However, the effects of workplace bullying are not confined to the individual experiencing negative acts. This study analysed the associations of workplace bullying with psychological distress and job satisfaction at two levels of the organisation: the individual and the group.

**Method:** Data were obtained from an organisational climate questionnaire administered to 21 Australian Defence Force (ADF) units (N = 3,193). Multilevel modelling was used to examine the hypothesised relationships of workplace bullying with psychological distress and job satisfaction of ADF personnel at both the individual and group levels.

**Results:** The association between the individual-level experience of bullying and each individual-level outcome depended on the extent of workplace bullying at the group level. Those working in low-bullying climates had stronger associations between individual-level bullying and mental health and wellbeing. Even when not directly bullied, employees' levels of reported psychological distress were higher and levels of job satisfaction were lower in high-bullying climates compared to those working in low-bullying climates who had not directly experienced these behaviours.

**Conclusion:** Consistent and strong findings at the individual and group level provide convincing evidence that workplace bullying not only affects the mental health and wellbeing of those who personally experience these behaviours but also those who work within that climate.

## KEY POINTS

### What is already known about the topic:

- (1) Workplace bullying has detrimental effects on an individual's mental health and wellbeing.
- (2) Fewer studies have explored the impact of bullying on co-workers who were not the direct targets but who work within a high-bullying climate.
- (3) The effects of bullying on bystanders can also be harmful.

### What this topic adds:

- (1) There is a reliable relationship between workplace bullying and the experience of low job satisfaction and psychological distress.
- (2) Workplace bullying not only affects the mental health and wellbeing of those who personally experience these behaviours but also those who work within high-bullying climates.
- (3) Monitoring workplace climates will provide organisations with timely evidence of where interventions may be required.

## ARTICLE HISTORY

Received 8 February 2022  
Accepted 8 September 2022

## KEYWORDS

Bullying; military; mental health; job satisfaction

## Introduction

Workplace bullying is a topic that has attracted a lot of interest in the past two decades. Despite this, there have been very few studies on the effects of working in environments where bullying is present (León-Pérez et al., 2021), with research more often directed at the individual level (e.g., Branch et al., 2013; Ramsay et al.,

2011). Workplace bullying is multifaceted, influenced by individuals, workgroup, organisation, and society (Heames & Harvey, 2006). The relative lack of multilevel research has limited the ability of organisations to develop strategies to address workplace climates that enable or perpetuate bullying (Hutchinson et al., 2010). The current study contributes to a gap in the literature

by comparing the effects of bullying in workplaces that differed widely in terms of the amount of reported bullying. Specifically, we examined the individual- and group-level effects of workplace bullying on psychological distress and job satisfaction. We begin with a review of studies demonstrating the individual-level effects of workplace bullying.

Nielsen and Einarsen (2012) summarised 25 years of mostly individual-level research on workplace bullying and found that it was positively associated with anxiety ( $r=0.27$ ), depression ( $r=0.34$ ), and post-traumatic stress ( $r=0.37$ ); and negatively associated with job satisfaction ( $r=-0.22$ ) and organisational commitment ( $r=-0.19$ ). More recently, our research within an Australian military sample reported bullying to be a workplace stressor that correlated with psychological distress ( $r=0.39$ ), job satisfaction ( $r=-0.28$ ), and affective commitment ( $r=-0.22$ ) (Steele et al., 2020). Furthermore, for each of these three outcomes, bullying contributed additional variance after controlling for other job demands such as low job control and role overload, demonstrating the detrimental effects of this organisational stressor. A systematic review of longitudinal studies published since 2012 confirmed bullying as a predictor of depression, anxiety, burnout, and organisational outcomes such as absenteeism and turnover intention (Boudrias et al., 2020).

### A focus on bullying climate

What is missing from this picture, however, is an account of the impact of bullying on co-workers who were not the direct targets but who may have witnessed or heard about the bullying. Similarly, little is known about any differing effects of experiencing bullying in workplaces where there is a high, or low, occurrence of these negative behaviours. To explore these questions, we adopted a multilevel approach that considered both the microcosm surrounding the individual and the broader workplace environment that includes the target's co-workers, supervisors, and subordinates. The methodology we employed stems from the organisational climate paradigm where the term "organizational climate" refers to the shared perceptions of and the meaning attached to the policies, practices, and procedures employees experience in the workplace and the behaviours they observe getting rewarded (Schneider & Reichers, 1983). In the case of bullying, we can extend this definition to include undesirable workplace behaviours that can be perceived to be tolerated, and sometimes encouraged, by supervisors and co-workers.

Organisational climate is typically measured by self-report questionnaires that provide insights into the culture of the organization to which the respondents belong (Guldenmund, 2000). The climate approach has helped to identify specific attitudes and practices that are associated with both desirable and undesirable behaviours and encouraged the development of policies and practices aimed at improving performance in those areas (Burke, 2017). The success of the climate approach led Schneider and colleagues to claim that "any and all organizational processes might usefully be studied and understood through a climate lens" (Schneider et al., 2013, p. 367). These authors also commented on two major trends in climate research, both of which are relevant to the current study. The first trend was a gradual shift from the individual to the group level of analysis. In fact, perhaps the major outcome of climate research has been the "acceptance of a level of theory and data other than the individual as relevant and important in organizational psychological research and practice" (Schneider et al., 2013, p. 369). The second trend was a shift from a broad to a narrow focus, with particular organisational outcomes and processes forming the subject of the studies. Rousseau (1988) referred to this narrowing as the study of 'facet-specific' climates. Safety climate (Zohar, 2010), innovation climate (Anderson & West, 1998), ethical climate (Branch et al., 2007) and diversity climate (Reinwald et al., 2019) are all examples of narrowing the focus of research to facet-specific climates. In the current study, the particular processes and outcomes of interest are covered by the label 'bullying climate' which, following recent trends in climate research, allowed us to explore both individual and group-level effects.

Multilevel studies of bullying show that it can have both individual- and group-level effects. In a prospective multilevel study of Japanese public sector employees, division-level workplace bullying was associated with increased individual-level psychological distress and intention to leave after adjustment for the individual experience of workplace bullying (Tsuno et al., 2018).

While recognising the importance of multilevel analyses to assess the impact of bullying, Tsuno et al. (2018) did not explore the interactions between individual- and group-level bullying. When analysing these interactions, Duffy et al. (2006) found that in workplaces with low rates of social undermining (a type of bullying behaviour), the effects were worse for individuals who were 'singled out' either by their supervisors or their co-workers. That is, being the sole target of bullying in the workplace was associated with more

harm to an individual's job satisfaction, commitment, and mental health.

Further assessment of the interaction between individual- and group-level bullying in hospitals showed that the association between the individual experience of bullying from colleagues and turnover intention was strongest for those working in low-bullying climates (Houshmand et al., 2012). Working in a low-bullying climate is therefore not an ideal situation for the few who are targeted because the experience of being singled-out strengthens the negative reactions to the bullying (Duffy et al., 2006; Houshmand et al., 2012). The implication is that managers should not be satisfied with a low-bullying climate because the few employees who are targets may suffer just as much as they would in a workplace with a higher bullying rate. Houshmand and colleagues found that employees working in these high-bullying climates, regardless of experiencing bullying, reported high turnover intentions (Houshmand et al., 2012). Together with the findings of Tsuno et al. (2018) this highlights the pervasive effect of bullying.

This study builds upon earlier multilevel research by exploring the interactions between individual- and group-level bullying – addressing limitations of Tsuno et al.'s (2018) research – with a broader range of bullying behaviours than just the social undermining explored by Duffy et al. (2006). We are also aware from our research into military bullying that these negative behaviours can come from sources other than colleagues and so expanded upon Houshmand et al.'s (2012) work to analyse bullying from any source (superiors, colleagues, and subordinates) on two outcomes of job satisfaction and mental health.

### Research context and hypotheses

Duffy et al. (2006) and Houshmand et al. (2012) posited that the damaging effects of workplace bullying were due to a perceived lack of fairness and social justice. We similarly drew on organizational justice theory (Greenberg, 1990), specifically interactional justice, to form our hypotheses. Interactional justice is the employees' belief that they are respected in organisational interactions, meaning individuals will judge their perceptions of fairness according to the quality of interpersonal relationships (Bies, 2001). When employees experience an injustice, such as the experience of workplace bullying, they make judgements about whether the authority for this injustice *would*, *could*, and *should* have behaved differently (Folger & Cropanzano, 2001).

We argue that in low-bullying climates, an individual who is the sole target would appraise that the perpetrator/s *could* and *should* act differently since they are observing this difference occurring across the workgroup. As a result, the feelings of injustice would cause a greater impact on wellbeing compared to targets who are surrounded by others who are also experiencing bullying. In these high-bullying climates, targets are unlikely to conclude that perpetrators *could* act differently. According to organizational justice theory, this appraisal would attenuate some of the negative reactions (Folger & Cropanzano, 2001).

To explore the associations of experiencing bullying with psychological distress and job satisfaction in high- and low-bullying climates, we adopted a multilevel approach that considered both the individual and the broader workplace that included the target's co-workers, supervisors, and subordinates. The workplaces were garrisons operating in a peace-time environment within the Australian Defence Force (ADF). The group level was defined as the unit to which the military member had been posted. Information collected within formed units allowed for modelling the relationships of workplace bullying with psychological distress and job satisfaction of ADF personnel at both the individual and group levels.

The individual-level studies leave little room for doubt that the experience of bullying is associated with negative outcomes and formed the rationale for our first hypothesis:

**Hypothesis 1.** Workplace bullying at the individual level is positively related to psychological distress and negatively related to job satisfaction.

Regarding the group-level effects, drawing on organizational justice theory an additional hypothesis was posited:

**Hypothesis 2.** The associations between individual-level workplace bullying and psychological distress/job satisfaction are moderated by bullying climate, such that the associations will be stronger in low-bullying climates.

### Materials and method

#### Participants and procedure

An anonymous organisational climate questionnaire was administered to units upon request by the Commanding Officer. All 21 ADF units who requested this questionnaire during 2011 and 2012 were

included in the final sample. These units were dispersed across Australia, with the majority comprising over 120 personnel. The questionnaire was administered to 17 units via face-to-face group administration and to 4 units via mail. The respective overall response rates were 56% and 54%. Participants included 2,960 military personnel (83.2% male). Most personnel had served with their current unit for over 17 months and were within their first 9 years of service (56.5%). Members of the Permanent Force (80.1%) and ranks from Private through to Warrant Officer (76.1%) formed the major part of the sample. The breakdown of gender, rank, and work status aligned with rates in the broader ADF at the time of the study (Department of Defence, 2012).

Ethics approval for the study was obtained from the Australian Defence Human Research Ethics Committee (Protocol 618\_11) and the Australian National University Human Research Ethics Committee (Protocol 350\_11).

### Scales and measures

#### Individual bullying.

Six workplace bullying items in the questionnaire assessed: a) physical violence or threats of physical violence; b) excessive criticism; c) deliberate exclusion from social gatherings; d) humiliating comments; e) damaging rumours/gossip; f) deliberate withholding of equipment, resources, or information. The six workplace bullying items selected for inclusion had been assessed in climate questionnaires within a similar large government organisation in Australia (Jury et al., 2009). These six items assessed the workplace bullying behaviours identified in the overarching Management and Reporting of Unacceptable Behaviour policy in the Australian Defence Organisation (Department of Defence, 2009). See Steele et al. (2020) for more information on this measure.

Respondents were asked to rate the frequency of experiencing each behaviour over the past 6 months on a five-point Likert scale (1 = *Never*; 2 = *Rarely (e.g., once or twice)*; 3 = *Sometimes (e.g., once a month)*; 4 = *Often (e.g., 4–5 times a month)*; 5 = *Very Often (e.g., 2–3 times a week)*). Scores on these six items were summed to yield an Individual Bullying score ranging from 6 to 30 with higher scores indicating more frequent experience of workplace bullying. Principal components analysis revealed the presence of one main component with an eigenvalue exceeding 1, explaining 60.1% of the variance. The Cronbach's alpha coefficient for the six items was .85.

#### Bullying climate.

Several studies have applied a multilevel approach to demonstrate the importance of individual- and group-level factors for mental health, motivation, and job satisfaction (see de Jonge et al., 1999; Elovainio et al., 2000; Finne et al., 2016; Montgomery et al., 2015; Premeau et al., 2014) by aggregating individual responses to surveys to the group level so that variations between workgroups could be tested through multilevel modelling. That is, exploration of individual- and group-level factors were conducted statistically rather than assessing variables that were specifically individual and organisational (Premeau et al., 2014). A similar multilevel approach was applied in this current study. To create a group-level measure of bullying, the proportion of respondents experiencing at least one bullying behaviour at least monthly was calculated for each unit. This proportion was divided by 10 and centred for ease of interpretation of the interaction. Centering was achieved by subtracting the mean of unit means from this proportion. The final value for a unit was assigned to all respondents within that unit. A high value indicated that bullying was more common in that unit.

#### Psychological distress.

Psychological distress was measured by the Kessler 10 (K10; Kessler et al., 2002), which is a 10-item self-report measure of non-specific psychological distress. Personnel respond to a series of ten questions by indicating on a five-point Likert scale (1 = *none of the time*, 2 = *a little of the time*, 3 = *some of the time*, 4 = *most of the time*, 5 = *all of the time*) how they have been feeling over the past four weeks. The Cronbach's alpha coefficient for the K10 was .90. Scores were added to yield a K10 total score, with a high score indicating high levels of psychological distress.

#### Job satisfaction.

The questionnaire included three items measuring overall job satisfaction (with a Cronbach's alpha coefficient of .90). They were: "I am satisfied with my current job"; "I like doing the things I do at work"; and "I am satisfied with the kind of work I do in my current job". Respondents were asked to rate their level of agreement with each statement on a five-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Higher mean scores indicated higher job satisfaction.

#### Covariates.

In addition to these primary variables, individual-level covariates were included to control for age (years), rank (other ranks/officer), and gender (male/female).

### Statistical analyses

Stata Statistical Software release 14 was used for multi-level modelling of group-level (climate), individual-level, and the interactional effects of bullying. Each dependent variable was first assessed to determine that there was adequate variability at the group level to pursue multilevel modelling. Likelihood ratio tests (LR Tests) compared a single-level regression model for the mean of each dependent variable with no explanatory variables ( $\text{Outcome}_i = \beta_0 + \varepsilon_i$ ) with the simplest form of a multilevel model, which allowed for group differences in the mean of each dependent variable (Model 1) (see Steele, 2018, for a comprehensive description of these results).

The following models were tested:

- Model 1 was the intercept-only model that determined adequate variability between units (level 2 variance) and between individuals within a unit (level 1 variance).
- Model 2 was a random intercept model with a fixed slope that added a fixed individual-level factor of workplace bullying, thus testing the first hypothesis.
- Model 3 was a random intercept model with a fixed slope that added three fixed individual-level factors of age, gender, and rank, thus testing the first hypothesis with these variables statistically controlled.
- Model 4 was a random intercept model with a fixed slope and fixed level 1 and level 2 factors that added the group-level factor of workplace bullying.
- Model 5 was a random intercept model with a fixed slope and fixed level 1 and level 2 factors and added the interaction between the individual- and group-level bullying factors, thus testing the second hypothesis.

The equation for the final Model 5 was:

$$\begin{aligned} \text{Outcome}_{ij} = & \beta_0 + \mu_{0j} + \beta_1 \text{IndividualBullying}_{ij} + \beta_2 \text{Age}_{ij} \\ & + \beta_3 \text{Gender}_{ij} + \beta_4 \text{Rank}_{ij} \\ & + \beta_5 \text{BullyingClimate}_j \\ & + \beta_6 \text{BullyingClimate} \\ & \times \text{IndividualBullying}_{ij} + \varepsilon_{ij} \end{aligned}$$

Adjacent models in this sequence were compared by calculating and testing the difference of the likelihood ratio test statistics between the two models. If the difference between these two statistics was not significant then there was no significant change in the between-unit variation in the outcome measure after

accounting for the variables in the first model. If the difference was significant, the model that led to a significant reduction in the chi-square statistic was deemed the model with better overall fit (Beauchamp et al., 2005). The degree to which the estimated level 2 variance decreased after entering additional variables indicated how well the model explained the between-unit variance. Predictors were entered as fixed effects in all models. Fixed effects assume that each factor is related to the dependent variable in the same way across units. To assess if there was a difference between individual-level bullying and each outcome across units, a model with random slopes and random intercepts was compared to Model 2. For each dependent variable there was no significant difference between Model 2 and this random-effects model. Therefore, only fixed-effect models are reported.

### Results

#### A first look at the data

Before commencing the model testing, the data were checked to ascertain whether there was variability between ADF units in the proportion of employees experiencing workplace bullying (Figure 1).

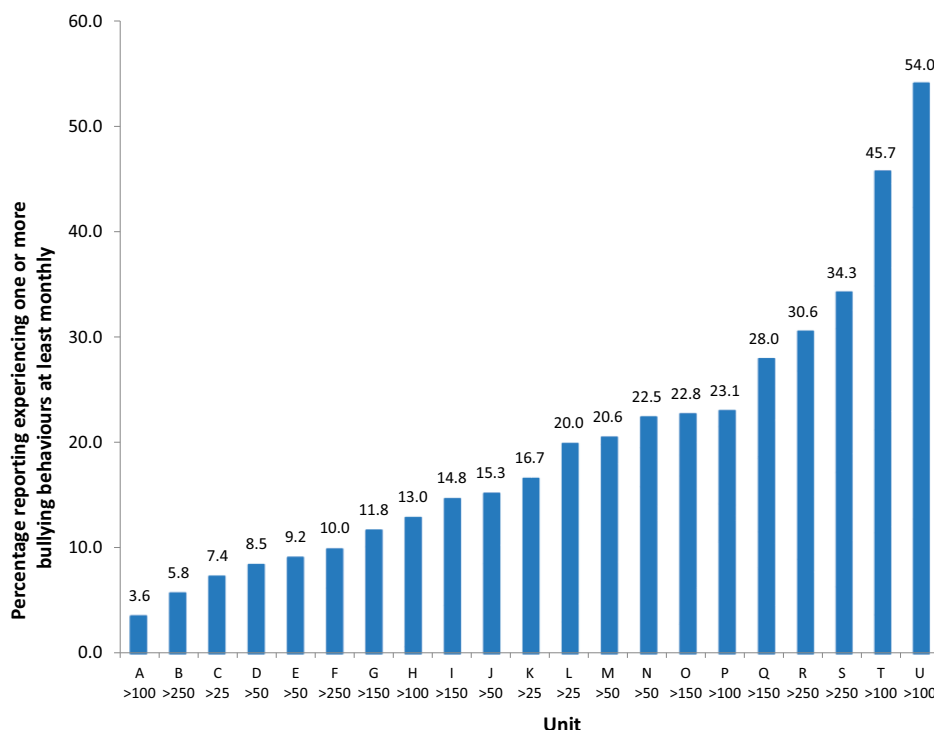
We can see from Figure 1 that the percentage of unit members experiencing bullying ranged from 3.6% in one unit to 54% in another. The figure describes wide variation in the bullying climate measure with units on the left side having a low-bullying climate and the units on the right having a high-bullying climate. There was no relationship between the proportion of the unit experiencing bullying and the unit's size.

#### Individual- and group-level effects for psychological distress

Variability at the group (unit) level was assessed to determine if multilevel analyses should be conducted. There was evidence of adequate variability at the group level for psychological distress, with 4.68% of the variance in psychological distress attributed to differences between units (see Table 1).

To test for the significance of these unit effects, a likelihood ratio test was conducted that compared the null single-level model with the null multilevel (intercept-only) model. Table 2 reports the results of this test. There was a significant improvement to the model fit when the random unit effects were added, providing justification for employing a multilevel model to explore group-level effects.

Table 3 shows the results for each model with psychological distress as the outcome. Hypothesis 1



**Figure 1.** Percentages in each of 21 ADF units who experienced workplace bullying (with number of personnel in each unit).

**Table 1.** Residual Variance Components, Intraclass Correlation Coefficient and Within Group Agreement for Psychological Distress.

Psychological distress <sup>a</sup>	
Variance between individuals $\sigma^2 (\epsilon_i)$	36.39 (.95)
Variance between units $\sigma^2 (\mu_{0j})$	1.79 (.64)
Intraclass Correlation Coefficient (ICC)	.047
Within group agreement ( $r_{wg}$ )	.93

<sup>a</sup>N = 2,939.

**Table 2.** Likelihood ratio test statistics for psychological distress.

	Log likelihood value of unconditional model (with only the DV)	Log likelihood value of multilevel model (with random intercept added)	Likelihood ratio test statistic
Psychological Distress	-9529.22	-9472.43	113.59**

\*  $p < .05$ . \*\*  $p < .01$ .

predicted that workplace bullying at the individual level would be positively related to individual psychological distress. The significant coefficient for Individual Bullying in Model 2 ( $\beta = .69, p < .01$ ) supports this hypothesis. The addition of the remaining individual-level predictors of age, gender, and rank (Model 3) improved model fit but did not attenuate the relationship between the individual experience of bullying and psychological distress. Hypothesis 2 predicted that the

association between individual-level workplace bullying and psychological distress would be moderated by bullying climate, such that the association would be stronger in low-bullying climates. The interaction between the individual- and group-level measures of workplace bullying was significant ( $\beta = -.11, p < .01$ ) in Model 5 and the inclusion of this interaction improved model fit (LR Test = 19.94,  $p < .01$ ). This finding demonstrates that the effect of the individual-level measure of workplace bullying was dependent on the climate of bullying within the unit.

To display the interaction between individual- and group-level effects of bullying, psychological distress was regressed on individual bullying scores for a unit with a high-bullying climate (54% experiencing bullying) and for a unit with a low-bullying climate (3.6% experiencing bullying). The resulting regression equations were used to plot the interaction (Figure 2). The individual-level scores along the baseline start at 6 because that was the lowest possible score on this scale and they finish at 18 because that was the highest score achieved in the unit with the low-bullying climate. Similarly, the psychological distress scores ranged from the lowest possible score on this scale (10) to the highest score achieved by this same unit (31). We can see from the positive slope of both lines that psychological

**Table 3.** Multilevel model parameter estimates for individual- and group-level predictors of psychological distress (21 Units, N = 2,807) and job satisfaction (21 Units, N = 2,815).

Predictor	Psychological Distress					Job Satisfaction				
	Model 1 estimate (SE)	Model 2 estimate (SE)	Model 3 estimate (SE)	Model 4 estimate (SE)	Model 5 estimate (SE)	Model 1 estimate (SE)	Model 2 estimate (SE)	Model 3 estimate (SE)	Model 4 estimate (SE)	Model 5 estimate (SE)
Intercept	15.11 (.32)**	15.14 (.25)**	15.66 (.62)**	15.60 (.63)**	15.86 (.63)**	3.50 (.06)**	3.50 (.05)**	3.14 (.10)**	3.16 (.10)**	3.14 (.10)**
Level 1 fixed effects										
Individual Bullying		.69 (.03)**	.68 (.03)**	.68 (.03)**	.78 (.04)**		-.07 (.01)**	-.06 (.01)**	-.06 (.01)**	-.07 (.01)**
Age			-.24 (.09)**	-.23 (.09)**	-.24 (.09)**			.05 (.01)**	.05 (.01)**	.05 (.01)**
Rank			-.05 (.30)	-.03 (.30)	-.03 (.30)			.11 (.05)*	.10 (.05)*	.10 (.05)*
Gender			.31 (.32)	.32 (.32)	.27 (.32)			.05 (.05)	.04 (.05)	.04 (.05)
Level 2 fixed effects										
Bullying Climate				.10 (.18)	.14 (.18)				-.06 (.04)	-.06 (.03)
Cross level effect										
Bullying Climate x Individual Bullying					-.11 (.02)**					.01 (.00)*
Random effects										
Variance (intercept)	1.75 (.64)	.76 (.32)	.76 (.33)	.74 (.32)	.72 (.32)	.06 (.02)	.04 (.01)	.04 (.01)	.03 (.01)	.03 (.01)
Variance (residual)	36.30 (.97)	31.41 (.84)	31.31 (.84)	31.31 (.84)	31.10 (.83)	.83 (.02)	.78 (.02)	.78 (.02)	.78 (.02)	.78 (.02)

Model 1: Intercept only.

Model 2: Introduced individual-level workplace bullying as a fixed effect.

Model 3: Introduced individual-level factors of age, gender, and rank as fixed effects.

Model 4: Introduced group-level experiencing workplace bullying as a fixed effect.

Model 5: Introduced the interaction of group-level and individual-level experiencing workplace bullying.

distress scores increased as individual bullying scores increased, reflecting the individual-level association between bullying and psychological distress. The different slopes of the two lines indicate that the relationship between an individual experiencing workplace bullying and the level of psychological distress was stronger when there was a low-bullying climate, reflecting the interaction between the individual- and group-level effects and showing support for Hypothesis 2.

### Individual- and group-level effects for job satisfaction

Variability of job satisfaction at the group (unit) level was assessed to determine if multilevel analyses should be conducted. There was evidence of adequate variability, with 6.79% of the variance in job satisfaction attributed to differences between units (see Table 4).

To test for the significance of these unit effects, a likelihood ratio test was conducted that compared the null single-level model with the null multilevel model. Table 5 reports the results of this test. There was a significant improvement to the model fit when the random unit effects were added, providing justification for employing a multilevel model to explore group-level effects.

Table 3 shows the results for each model with job satisfaction as the outcome.

Hypothesis 1 predicted that workplace bullying at the individual level would be negatively related to individual job satisfaction. The significant coefficient for Individual Bullying in Model 2 ( $\beta = -.07, p < .01$ ) supports this hypothesis. The addition of the remaining individual-level predictors of age, gender, and rank (Model 3) significantly improved model fit but, as was the case for psychological distress, did not attenuate the relationship between the individual experience of bullying and job satisfaction.

Hypothesis 2 predicted that the associations between individual-level workplace bullying and job satisfaction would be moderated by bullying climate, such that the association would be stronger in low-bullying climates. Model 5 shows a significant coefficient for the interaction between the individual- and group-level measures of workplace bullying ( $\beta = .01, p < .05$ ) and the inclusion of this interaction improved model fit (LR Test = 7.51,  $p < .05$ ).

To display the interaction between individual- and group-level effects of bullying, job satisfaction was regressed on individual bullying scores for a unit with a high-bullying climate and for a unit with a low-bullying



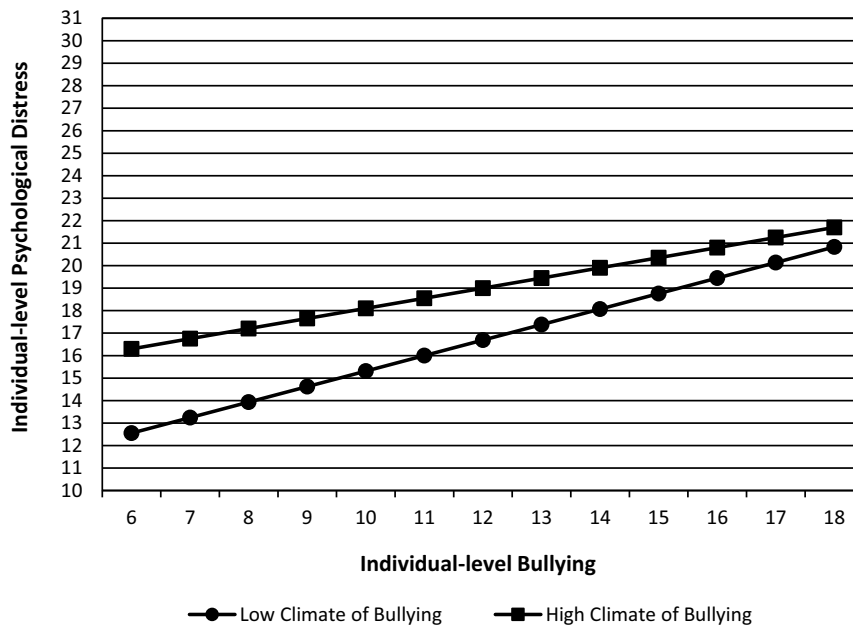


Figure 2. Individual experience of workplace bullying by psychological distress by bullying climate.

Table 4. Residual variance components, intraclass correlation coefficient and within group agreement for job satisfaction.

Job Satisfaction <sup>a</sup>	
Variance between individuals $\sigma^2(\epsilon_i)$	0.83 (.02)
Variance between units $\sigma^2(\mu_{0j})$	0.06 (.02)
Intraclass Correlation Coefficient (ICC)	.068
Within group agreement ( $r_{wg}$ )	.72

<sup>a</sup>N = 2,947.

Table 5. Likelihood ratio test statistics for job satisfaction.

	Log likelihood value of unconditional model (with only the DV)	Log likelihood value of multilevel model (with random intercept added)	Likelihood ratio test statistic
Job Satisfaction	-4033.66	3930.68	205.96**

\*  $p < .05$ . \*\*  $p < .01$ .

climate. The resulting regression equations were used to plot the interaction (Figure 3) showing that the relationship between an individual experiencing workplace bullying and individual-level job satisfaction was stronger in a low-bullying climate than in a high-bullying climate, demonstrating support for Hypothesis 2.

### Discussion

This study explored workplace bullying as a multilevel phenomenon to better understand the associations of experiencing bullying with psychological distress and job satisfaction in high- and low-bullying climates. The study also looked at the indirect impact of working in units with different bullying climates. The results

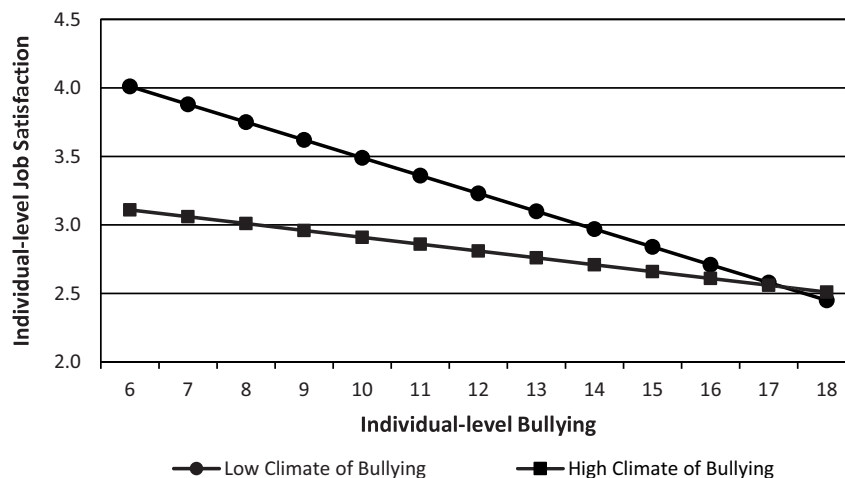


Figure 3. Individual experience of workplace bullying by job satisfaction by bullying climate. Bullying through the lenses of SET-based concepts Bullying and organizational justice

indicate that being the target of workplace bullying is associated with higher levels of psychological distress and lower levels of job satisfaction, thus supporting Hypothesis 1. Furthermore, we found support for the proposition that the negative consequences of workplace bullying can extend beyond those targeted.

There were significant interactions between the climate of workplace bullying and the individual experience of bullying on both outcomes. The associations between the individual-level experience of bullying and individual-level outcomes were dependent upon the extent of workplace bullying at the group level.

When working in low-bullying climates there were stronger associations between experiencing bullying and each outcome than found in high-bullying climates, supporting Hypothesis 2. These results are consistent with a 'singled out' hypothesis reported when experiencing social undermining (Duffy et al., 2006) and findings by Houshmand et al. (2012) that being the sole target of bullying is associated with more harm because the target knows and observes the perpetrator/s acting differently to all others at work and appraises the situation as unjust. It is also more difficult to attribute the cause of bullying to external factors such as workplace culture when an employee is the sole target (Bowling & Beehr, 2006). Houshmand et al. (2012) reported this attribution had an effect on turnover intention. Our study showed that internally attributing the causes of bullying may create further psychological distress and poor job satisfaction for the target.

For those individuals who were not direct targets of workplace bullying, but who worked in high-bullying climates, reported job satisfaction levels were lower and psychological distress levels were higher than for those individuals not bullied and who worked in low-bullying climates. Analysing the cross-level effects allowed us to build upon the findings from Tsuno et al.'s (2018) study of Japanese employees to show that the ambient impact of these negative acts, made more prominent by their prevalence within the workgroup, raises psychological distress levels and reduces job satisfaction of those employees within these environments. Workplaces where bullying is prevalent may tolerate these behaviours, and they may be accepted as the norm. Bystanders could fear being targeted, or fear making the situation worse by not having the skills or efficacy to act (Ng et al., 2020), and therefore fail to intervene to stop the behaviours that are so pervasive. This explanation is supported by research demonstrating the negative effects of witnessing bullying behaviours (Chatziioannidis et al., 2018), especially if

bystanders do not intervene (Nielsen et al., 2021). This explanation emphasises the importance of bystander training as an intervention.

In high-bullying climates the associations between workplace bullying and each outcome were not as strong for those employees surrounded by others who were also being targeted. Our finding suggests that in these climates employees are already suffering poorer mental health and wellbeing and so perhaps knowing others are also being targeted 'softens the blow' to an extent. Applying a justice lens, recognising that the perpetrator/s treat others in the same way attenuates the impact. In addition, there may also be some relief that when there are many targets, the cause of bullying can easily be attributed to external factors (Bowling & Beehr, 2006).

### *Implications of these findings*

The findings provide evidence to support the notion that the costs of workplace bullying can extend to those who are not the direct target. When working in high-bullying climates, even those not targeted report more negative attitudes and behaviours. These reactions may then lead to greater turnover and productivity loss, and present a compelling reason for management to act beyond the target-perpetrator dyad and address the broader bullying climate.

Addressing the workplace climate of bullying through group-level interventions may also be more effective and less victim-blaming than focusing on individual-level interventions (Saam, 2010). Group-level interventions should include awareness and training sessions to equip bystanders and targets with the capability to address low-level interpersonal conflict before it escalates to workplace bullying. Clear messages and modelling of appropriate behaviour from the senior leadership of the organisation is essential to change the workplace climate. Climate can change very quickly with new leadership (Ledlow & Coppola, 2014) and leading from the top sends a message that behaviours will not be tolerated and will be dealt with quickly.

Ongoing monitoring of workgroup climate can provide an early indication of bullying. High-bullying climates have been associated with poor leadership, low role clarity, and a large number of workplace stressors (Salin & Hoel, 2020). As noted by Tsuno et al. (2018), a high-bullying climate is therefore a potential marker of a broader range of poor workplace climate factors. Regular short surveys or organisational metrics from HR information systems – such as increased turnover, poor productivity, high unscheduled absence rates, or increased attendance at mental health providers –

which are associated with the occurrence of workplace bullying could inform the quick deployment of interventions before any escalation.

### Limitations and future research

The first three limitations concern the internal validity of the study, the major one being that the study was cross-sectional and did not use an experimental design, so causality has not been demonstrated. A second limitation is that the relatively small number of units ( $N = 21$ ) within this study restricted the power of the multilevel analyses. Small numbers at this level can lead to bias within the Level 2 standard error estimates (Maas & Hox, 2005; McNeish, 2017), making it difficult to interpret the models. A third methodological consideration is that the study was conducted at the individual level with data then aggregated to the unit level of analysis. In their review of organisational climate literature, Schneider et al. (2013) recommended using items that are set at the unit level of analysis to which individual perception data will be aggregated. In the present study, to satisfy this recommendation the items would have asked about the prevalence of bullying in the unit rather than asking whether the individual had personally experienced bullying. It is possible that a stronger group-level effect would have emerged had the survey included items directed at assessing unit-level experiences.

A fourth possible limitation concerns the external validity of the study, which is that because the study was conducted in a military setting, the findings may not generalise to other sections of the population. However, in previous studies of garrison environments, the stressors – including interpersonal conflict – have been found to be similar to those found in civilian work environments (Adler et al., 2003; Campbell & Nobel, 2009). Although not included in this study, civilians ( $N = 215$ ) were part of the original sample. An (unreported) analysis of the data for the military and the civilian groups found no differences in their psychological distress or individual bullying scores. These findings indicate that the garrison environment provided a suitable context for the study of the consequences of bullying at an individual and a group level and that the findings are likely to apply to other sections of the population.

Future multilevel research on workplace bullying can extend the range of work environments to determine whether the organisational structure affects individual- and group-level relationships. In a military context, these structures change as one moves from routine garrison life to the more dynamic, team-oriented structures that apply during operational deployments. Hybrid working as a result of the COVID-19 pandemic has also become more prominent

in organisations (Lund et al., 2020). It would be interesting to see if group-level effects for behaviours such as bullying vary across these situations.

### Conclusion

The consistent, significant findings at the individual and group level, after adjusting for potentially confounding variables, strengthen claims that there is a reliable relationship between workplace bullying and the experience of low job satisfaction and psychological distress. Workplace bullying not only affects the mental health and wellbeing of those who personally experience these behaviours but also those who are indirectly exposed through working in a high-bullying climate, thereby reducing workforce capability. Monitoring workplace climates will provide organisations with timely evidence of where interventions may be required.

### Disclosure statement

The authors declare the following which may be considered as potential competing interests:

Dr Nicole Steele worked as a psychologist in the Australian Department of Defence (DoD) during the time of data collection and analysis for the manuscript. The development of the manuscript was not funded by the DoD and the opinions expressed in the manuscript are those of the authors and do not necessarily reflect those of the DoD or any extant policy.

### ORCID

Nicole M. Steele  <http://orcid.org/0000-0003-1472-4870>

### Data availability statement

The data that support the findings of this study are not publicly available due to containing information that could compromise the privacy of research participants. Restrictions apply to the availability of these data, which were used under approval from the Australian Department of Defence for this study.

### References

- Adler, A. B., McGurk, D., Stetz, M. C., & Bliese, P. (2003). *Military occupational stressors in garrison, training, and deployed environments*. NIOSH/APA Symposium.
- Anderson, N. R., & West, M. A. (1998). Measuring climate for work group innovation: Development and validation of the team climate inventory: Summary. *Journal of Organizational Behavior*, 19(3), 235–258. <https://doi.org/10.1002/SIC11099-137919980519:3<235:AID-JOB837>3.0.CO;2-C>
- Beauchamp, M. R., Bray, S. R., Fielding, A., & Eys, M. A. (2005). A multilevel investigation of the relationship between role ambiguity and role efficacy in sport. *Psychology of Sport*

- and Exercise, 6(3), 289–302. <https://doi.org/10.1016/j.psychsport.2004.03.002>
- Bies, R. J. (2001). International (in)justice: The sacred and the profane. In J. Greenberg and R. Cropanzano (Eds.), *Advances in organization justice* (pp. 89–118). Stanford University Press.
- Boudrias, V., Trépanier, S., & Salin, D. (2020). A systematic review of research on the longitudinal consequences of workplace bullying and the mechanisms involved. *Aggression and Violent Behavior, 56*. <https://doi.org/10.1016/j.avb.2020.101508>
- Bowling, N. A., & Beehr, T. A. (2006, September). Workplace harassment from the victim's perspective: A theoretical model and meta-analysis. *The Journal of Applied Psychology, 91*(5), 998–1012. <https://doi.org/10.1037/0021-9010.91.5.998>
- Branch, S., Ramsay, S., & Barker, M. (2007). Managers in the firing line: Contributing factors to workplace bullying by staff - an interview study. *Journal of Management and Organization, 13*(3), 264–281. <https://doi.org/10.5172/jmo.2007.13.3.264>
- Branch, S., Ramsay, S., & Barker, M. (2013). Workplace bullying, mobbing and general harassment: A review. *International Journal of Management Reviews, 15*(3), 280–299. <https://doi.org/10.1111/j.1468-2370.2012.00339.x>
- Burke, W. W. (2017). *Organization change: Theory and practice* (5th ed.). SAGE publications.
- Campbell, D., & Nobel, O. B. Y. (2009). Occupational stressors in military service: A review and framework. *Military Psychology, 21*(S2), 47–67. <https://doi.org/10.1080/0895600903249149>
- Chatziioannidis, I., Bascialla, F. G., Chatzivalsama, P., Vouzas, F., & Mitsiakos, G. (2018). Prevalence, causes and mental health impact of workplace bullying in the neonatal intensive care unit environment. *BMJ Open, 8*(2). <https://doi.org/10.1136/bmjopen-2017-018766>
- de Jonge, J., van Breukelen, G. J. P., Landeweerd, J. A., & Nijhuis, F. J. N. (1999). Comparing group and individual level assessments of job characteristics in testing the job demand-control model: A multilevel approach. *Human Relations, 52*(1), 95–122. <https://doi.org/10.1177/001872679905200106>
- Department of Defence. (2009). *Defence instructions (general) personnel 35-3: Management and reporting of unacceptable behaviour*. Commonwealth of Australia. <https://www.defglis.com.au/resources/UnacceptableBehaviour.pdf>
- Department of Defence. (2012). *Defence annual report 2011-2012*. Commonwealth of Australia. <https://www.defence.gov.au/AnnualReports/11-12/>
- Duffy, M. K., Ganster, D. C., Shaw, J. D., Johnson, J. L., & Pagon, M. (2006). The social context of undermining behavior at work. *Organizational Behavior and Human Decision Processes, 101*(1), 105–126. <https://doi.org/10.1016/j.obhdp.2006.04.005>
- Elovainio, M., Kivimäki, M., Steen, N., & Kalliomäki Levanto, T. (2000). Organizational and individual factors affecting mental health and job satisfaction: A multilevel analysis of job control and personality. *Journal of Occupational Health Psychology, 5*(2), 269–277. <https://doi.org/10.1037/1076-8998.5.2.269>
- Finne, L. B., Christensen, J. O., & Knardahl, S. (2016). Psychological and social work factors as predictors of mental distress and positive affect: A prospective, multilevel study. *PLoS One, 11*(3), e0152220. <https://doi.org/10.1371/journal.pone.0152220>
- Folger, R., & Cropanzano, R. (2001). Fairness theory: Justice as accountability. In J. Greenberg and R. Cropanzano (Eds.), *Advances in organizational justice* (pp. 1–55). Stanford University Press.
- Greenberg, J. (1990). Organizational justice: Yesterday, today, and tomorrow. *Journal of Management, 16*(2), 399–432. <https://doi.org/10.1177/014920639001600208>
- Guldenmund, F. W. (2000). The nature of safety culture: A review of theory and research. *Safety Science, 34*(1), 215–257. [https://doi.org/10.1016/S0925-7535\(00\)00014-X](https://doi.org/10.1016/S0925-7535(00)00014-X)
- Heames, J., & Harvey, M. (2006). Workplace bullying: A cross-level assessment. *Management Decision, 44*(9), 1214–1230. <https://doi.org/10.1108/00251740610707695>
- Houshmand, M., O'Reilly, J., Robinson, S., & Wolff, A. (2012). Escaping bullying: The simultaneous impact of individual and unit-level bullying on turnover intentions. *Human Relations, 65*(7), 901–918. <https://doi.org/10.1177/0018726712445100>
- Hutchinson, M., Wilkes, L., Jackson, D., & Vickers, M. H. (2010). Integrating individual, work group and organizational factors: Testing a multidimensional model of bullying in the nursing workplace. *Journal of Nursing Management, 18*(2), 173–181. <https://doi.org/10.1111/j.1365-2834.2009.01035.x>
- Jury, C., Machin, A. M., Phillips, J., Goh, H. E., Olsen, S. P., & Patrick, J. (2009). Developing and implementing an action-oriented staff survey: Queensland health and the 'better workplaces' initiative. *Australian Health Review, 33*(3), 365–370.
- Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S. L. T., Walters, E. E., & Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine, 32*(6), 959–976. <https://doi.org/10.1017/s0033291702006074>
- Ledlow, G. R., & Coppola, M. N. (2014). *Leadership for health professionals: Theory, skills and applications* (2nd ed.). Jones and Bartlett Learning.
- León-Pérez, J. M., Ruiz-Zorrilla, P., Notelaers, G., Baillien, E., Escartín, J., & Antino, M. (2021). Workplace bullying and harassment as group dynamic processes: A multilevel approach. In P. D'Cruz; E. Noronha; G. Notelaers, and C. Rayner (Eds.), *Concepts, approaches and methods. Handbooks of workplace bullying, emotional abuse and harassment* (pp. 425–447). Springer. [https://doi.org/10.1007/978-981-13-0134-6\\_13](https://doi.org/10.1007/978-981-13-0134-6_13)
- Lund, S., Madgavkar, A., Manyika, J., & Smit, S. (2020). *What's next for remote work: An analysis of 2,000 tasks, 800 jobs, and nine countries*. <https://www.mckinsey.com/featured-insights/future-of-work/whats-next-for-remote-work-an-analysis-of-2000-tasks-800-jobs-and-nine-countries>
- Maas, J. M., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology, 1*(3), 86–92. <https://doi.org/10.1027/1614-1881.1.3.86>
- McNeish, D. (2017). Multilevel mediation with small samples: A cautionary note on the multilevel structural equation modeling framework. *Structural Equation Modeling: A Multidisciplinary Journal, 24*(4), 609–625. <https://doi.org/10.1080/10705511.2017.1280797>
- Montgomery, A., Spănu, F., Băban, A., & Panagopoulou, E. (2015, September 01). Job demands, burnout, and

- engagement among nurses: A multi-level analysis of ORCAB data investigating the moderating effect of teamwork. *Burnout Research*, 2(2), 71–79. <https://doi.org/10.1016/j.burn.2015.06.001>
- Ng, K., Niven, K., & Hoel, H. (2020). 'I could help, but ...': A dynamic sensemaking model of workplace bullying bystanders. *Human Relations*, 73(12), 1718–1746. <https://doi.org/10.1177/0018726719884617>
- Nielsen, M. B., & Einarsen, S. (2012). Outcomes of exposure to workplace bullying: A meta-analytic review. *Work & Stress*, 26(4), 309–332. <https://doi.org/10.1080/02678373.2012.734709>
- Nielsen, M. B., Rosander, M., Blomberg, S., & Einarsen, S. (2021). Killing two birds with one stone: How intervening when witnessing bullying at the workplace may help both target and the acting observer. *International Archives of Occupational and Environmental Health*, 94(2), 261–273. <https://doi.org/10.1007/s00420-020-01575-w>
- Presseau, J., Johnston, M., Johnston, D. W., Elovainio, M., Hrisos, S., Steen, N., Stamp, E., Francis, J. J., Grimshaw, J. M., Hawthorne, G., Hunter, M., & Eccles, M. P. (2014). Environmental and individual correlates of distress: Testing Karasek's Demand-Control model in 99 primary care clinical environments. *British Journal of Health Psychology*, 19(2), 292–310. <https://doi.org/10.1111/bjhp.12073>
- Ramsay, S., Troth, A., & Branch, S. (2011). Work-place bullying: A group processes framework. *Journal of Occupational and Organizational Psychology*, 84(4), 799–816. <https://doi.org/10.1348/2044-8325.002000>
- Reinwald, M., Huettermann, H., & Bruch, H. (2019). Beyond the mean: Understanding firm-level consequences of variability in diversity climate perceptions. *Journal of Organizational Behavior*, 40(4), 472–491. <https://doi.org/10.1002/job.2344>
- Rousseau, D. M. (Ed.). (1988). *The construction of climate in organizational research*. John Wiley & Sons.
- Saam, N. J. (2010). Interventions in workplace bullying: A multilevel approach. *European Journal of Work and Organizational Psychology*, 19(1), 51–75. <https://doi.org/10.1080/13594320802651403>
- Salin, D., & Hoel, H. (2020). Organizational risk factors of workplace bullying. In S. Einarsen; H. Hoel; D. Zapf, and C. L. Cooper (Eds.), *Bullying and harassment in the workplace: Theory, research and practice* (3rd ed., pp. 305–330). Taylor & Francis.
- Schneider, B., Ehrhart, M., & Macey, W. (2013). Organizational climate and culture. *Annual Review of Psychology*, 64(1), 361–368. <https://doi.org/10.1146/annurev-psych-113011-143809>
- Schneider, B., & Reichers, A. E. (1983). On the etiology of climates. *Personnel Psychology*, 36(1), 19–39. <https://doi.org/10.1111/j.1744-6570.1983.tb00500.x>
- Steele, N. M. (2018). *The relationships of experiencing workplace bullying with the mental health, affective commitment, and job satisfaction of Australian defence force personnel*. Australian National University. <https://openresearch-repository.anu.edu.au/handle/1885/154268>
- Steele, N. M., Rodgers, B., & Fogarty, G. J. (2020). The relationships of experiencing workplace bullying with mental health, affective commitment, and job satisfaction: Application of the job demands control model. *International Journal of Environmental Research and Public Health*, 17(6), 14. <https://doi.org/10.3390/ijerph17062151>
- Tsuno, K., Kawachi, I., Kawakami, N., & Miyashita, K. (2018). Workplace bullying and psychological distress: A longitudinal multilevel analysis among Japanese employees. *Journal of Occupational and Environmental Medicine*, 60(12), 1067–1072. <https://doi.org/10.1097/jom.0000000000001433>
- Zohar, D. (2010). Thirty years of safety climate research: Reflections and future directions. *Accident Analysis and Prevention*, 42(5), 1517–1522. <https://doi.org/10.1016/j.aap.2009.12.019>