

1-1-2012

Moderators of workplace aggression: The influences of social support and training

Valerie Brown

Min Ing Loh
Edith Cowan University

Nigel Marsh

Follow this and additional works at: <https://ro.ecu.edu.au/ecuworks2012>



Part of the [Social and Behavioral Sciences Commons](#)

[10.1017/orp.2012.4](https://ro.ecu.edu.au/ecuworks2012/310)

This article has been published in a revised form as: Brown, V., Loh, M., & Marsh, N. (2012). Moderators of workplace aggression: The influences of social support and training. *Australian and New Zealand Journal of Organisational Psychology*, 5(1), 32-42. . This version is free to view and download for private research and study only. Not for re-distribution, re-sale or use in derivative works. © Journal of Organisational Psychology. Available [here](#)

This Journal Article is posted at Research Online.
<https://ro.ecu.edu.au/ecuworks2012/310>

The Australian and New Zealand Journal of Organisational Psychology

<http://journals.cambridge.org/ORP>

Additional services for *The Australian and New Zealand Journal of Organisational Psychology*:

Email alerts: [Click here](#)

Subscriptions: [Click here](#)

Commercial reprints: [Click here](#)

Terms of use : [Click here](#)



Moderators of Workplace Aggression: The Influences of Social Support and Training

Valerie M. Brown, Jennifer (M.I.) Loh and Nigel V. Marsh

The Australian and New Zealand Journal of Organisational Psychology / Volume 5 / December 2012, pp 32 - 42

DOI: 10.1017/orp.2012.4, Published online: 01 August 2012

Link to this article: http://journals.cambridge.org/abstract_S1835760112000045

How to cite this article:

Valerie M. Brown, Jennifer (M.I.) Loh and Nigel V. Marsh (2012). Moderators of Workplace Aggression: The Influences of Social Support and Training. The Australian and New Zealand Journal of Organisational Psychology, 5, pp 32-42
doi:10.1017/orp.2012.4

Request Permissions : [Click here](#)

Moderators of Workplace Aggression: The Influences of Social Support and Training

Valerie M. Brown,¹ Jennifer (M.I.) Loh,² and Nigel V. Marsh³

¹ Department of Psychology, The University of Melbourne, Australia

² School of Psychology and Social Science, Edith Cowan University, Australia

³ Department of Psychology, Sunway University, Petaling Jaya, Selangor, Malaysia

Reception and administrative employees may be particularly vulnerable to patient aggression in mental health services. This study examined whether satisfaction with social support and primary aggression training moderated the effects of perceived aggression on psychological distress and somatic symptoms in a sample of 101 employees. The biophysical model of threat and challenge, the stressor-stress-strain model, and the stress-buffering hypothesis served as theoretical frameworks. Results showed perceived aggression correlated positively with psychological distress, but not with somatic symptoms. Significant interactions were found for social support (buffering effect) and training (interaction effect) for somatic symptoms, but not for psychological distress. It is suggested that, for somatic symptoms, the moderation effects of social support and training on perceived aggression involve similar mechanisms (increased knowledge, self-esteem, perceived control, coping capacity). These findings provide support for the benefits of staff training and the incorporation of knowledge-based components in training programs.

■ **Keywords:** mental health services, workplace aggression, stressor-stress-strain model, stress-buffering hypothesis, social support, staff training

Workplace aggression occurs in many occupational sectors but psychiatric settings present heightened risks for staff (Fry, O’Riordan, Turner, & Mills, 2002; Lawoko, Soares, & Nolan, 2004; Perrone, 1999). The high prevalence of aggression towards staff in these settings is often blamed on causes intrinsic to patients’ mental health conditions, such as schizophrenia (Fry et al., 2002; Oster & Bernbaum, 2001) and the comorbidity of mental illness with drugs and alcohol (Di Martino, 2003). Situational factors, such as underfunded and inadequately functioning organisations or overcrowded psychiatric wards, are also frequently cited as major reasons for these assaults (Finnema, Dassen, & Halfens, 1994; Lawoko et al., 2004).

Studies reporting the frequency of assaults and impact on mental health services (MHS) staff have tended to concentrate on clinicians (Lawoko et al., 2004; Perrone, 1999), and reception/administrative (R/A) employees are seldom surveyed. Yet, their position increases their vulnerability to aggression. As first point of contact and place of interaction between clients and staff, reception areas are where most violent incidents occur (Richter, 2006).

Despite this exposure, administrative employees are often ill-equipped to respond to aggression. They usually lack clinical training and knowledge in psychopathology, they are frequently excluded from team meetings, have limited clinical information on past and current patients and need to rely on experience to cope with incidents (Naish et al., 2002). Typically, training in handling aggressive patients (primary training) is catered for and offered to clinicians and there is a noticeable gap in providing administrative staff with an adequate level of training. For example, a survey of aggressive incidents conducted by Fry et al. (2002) in community mental health services (CMHS) found that administrative staff were the lowest trained personnel, with only 20% having received safety training versus 61% of nursing staff. In addition, many of these R/A roles are occupied by females, and it may be the case

ADDRESS FOR CORRESPONDENCE: Valerie M. Brown, Department of Psychology, Psychological Sciences, 12th Floor, Redmond Barry Building, The University of Melbourne VIC 3010, Australia. Email: v.brown2@pgrad.unimelb.edu.au

that being female put some of them at greater risk where physical strength is a factor. These specific characteristics make mental health R/A staff especially vulnerable in an environment where patients' aggressive behaviour is common.

Prevalence studies in psychiatric units show that out of all types of aggression, verbal aggression is most frequently reported, with approximately 90% of staff stating it occurs often or frequently (Jonker, Goossens, Steenhuis, & Oud, 2008; Nijman, Bowers, Oud, & Jansen, 2005). Passive-aggressive behaviour, a type of indirect aggression marked by seemingly agreeable but obstructionist behaviour, is also frequently mentioned, often second to verbal aggression (Jonker et al., 2005; Maguire & Ryan, 2007). Reports of physical violence vary across the literature. Soares, Lawoko and Nolan (2000) found 85% of the psychiatrists and psychiatric nurses they surveyed ($N = 1,051$) reported exposure to violent acts over their whole career, but others found that aggression in psychiatric ward was mostly limited to verbal aggression (Björkly, 1999). Nevertheless, Wildgoose, Briscoe and Lloyd (2003) found that psychiatric nurses who were exposed to frequent violent patient behaviour tend to have a lower level of general health.

Although the majority of published studies focus on psychiatric ward settings, Fry et al. (2002) surveyed three metropolitan CMHS staff, including nurses, psychologists, occupational therapists, social workers, medical officers and receptionists, and found 96% reported some kind of patient aggression at some time during the course of their work. As anticipated, the most common form of aggressive behaviour was verbal, either face-to-face (89%) or on the telephone (81%). Physical aggression also featured prominently in the staff's responses (24% reported physical assault without injury, 7% with injury). Twenty-five per cent reported life threat by patients and half stated they did not feel safe at work. In Fry et al.'s study, an overall experience of aggression score was calculated, and as expected, the critical acute team was found to have the highest score. The second highest score was recorded among administrative and clerical staff, who also reported high level of life threats (36%).

Understanding the Consequences of Workplace Aggression

A common theoretical framework for understanding the effects of workplace aggression is a model process that includes: (a) an objective, aversive environmental stimulus, (b) the individual's subjective response characterised by arousal and displeasure, and (c) the adverse consequence(s) relating to this response (Francis & Kelloway, 2005). Referred to as the *stressor-stress-strain model*, this model proposes a direct causal relationship between patients' aggression and negative outcomes and has been widely used in occupational stress research. This model

allows researchers to incorporate a range of organisational, situational, and individual difference variables that can be tested as mediators or moderators, making it particularly useful when studying aggression (Schat & Kelloway, 2005). Previous research has demonstrated the impact of aggression on employees' psychological and physical wellbeing (Budd, Arvey, & Lawless, 1996; Di Martino, Hoel, & Cooper, 2003; Hogh & Viitasara, 2005; Schat & Kelloway, 2005).

There is accumulated evidence that all cases of workplace aggression, even minor ones, generate stress, which in turn creates or increases employees' psychological distress (Di Martino, 2003; Perrone, 1999; Wykes & Whittington, 1998). This was demonstrated in a study by Rogers and Kelloway (1997), who found that direct and vicarious (indirect) aggression, mediated by fear of future violence, predicted impaired psychological health in a sample of banking front-line staff ($N = 194$). Using a large sample of public service workers ($N \approx 5,000$), Driscoll, Worthington and Hurrell (1995) further demonstrated that employees who had been assaulted were 55% more likely to develop depression than those who had not been assaulted, and 82% were more likely to develop anxiety. Moreover, Fry et al. (2002) found associations between aggressive incidents and pervasive symptoms of psychological distress, including nightmares, fear of being attacked again and heightened preoccupation with safety. In extreme cases, severe and repeated incidents may impel individuals to experience post-traumatic stress disorder or even commit suicide (Mayhew & Chappell, 2007; Wykes & Whittington, 1998).

Consistent with the stressor-stress-strain framework, it has been found that aggression increases workers' levels of stress, which in turn intensifies somatic symptoms (Guimont et al., 2006; Kouvonen et al., 2007; Strazdins, D'Souza, Lim, Broom, & Rodgers, 2004). Moreover, stressful working conditions may not only predict poor functional status, but may also accelerate physical decline over time by altering sleep patterns or increasing dangerous behaviour such as smoking and sedentary lifestyles (Cheng, Kawachi, Coakley, Schwartz, & Colditz, 2000). Specific research in workplace aggression has identified a number of negative somatic symptoms that are directly related to aggression-induced stress, including sleep disturbances, gastrointestinal complaints and headaches (Parent-Thirion, Fernández Macías, Hurley, & Vermeylen, 2007; Rogers & Kelloway, 1997; Schat & Kelloway, 2000).

Possible Moderators of the Stressor-Strain Relationship

From an occupational health perspective, it is most relevant to demonstrate the effects of moderating variables that can prevent or reduce the negative impact of aggression. Social support (SS) and primary training may

moderate such impact in the population of interest of this study.

There is generally good support for the moderating model of SS. This was highlighted in a literature review of 68 studies conducted by Viswesvaran, Sanchez, and Fisher (1999), which showed weak but significant moderating effects in virtually all research with at least 100 participants. These findings are consistent with the stress-buffering hypothesis (Cassel, 1976; Cobb, 1976), which states that informal social resources will protect individuals from the harmful effects of stressful events. However, it appears that whereas the degree of integration within a social network relates directly to personal outcomes (main effects), moderating effects assess how well interpersonal resources match the needs elicited by the stressful events (Cohen & Wills, 1985). Indeed, rather than actual support, *perceived* availability seems to be the key to the efficacy of SS (Sarason, Sarason, Shearin, & Pierce, 1987; Cohen & Pressman, 2004). In other words, appraisal or one's perception as to whether something is stressful may be an especially important determining factor for the moderating model of SS. For instance, Cohen and Wills (1985) noted that studies measuring the structure of SS did not yield buffering effects, while they found overwhelming support for buffering effects when interpersonal resources matched the needs elicited by stressful events, implying that *perceived* satisfaction with support is paramount to the buffering effect.

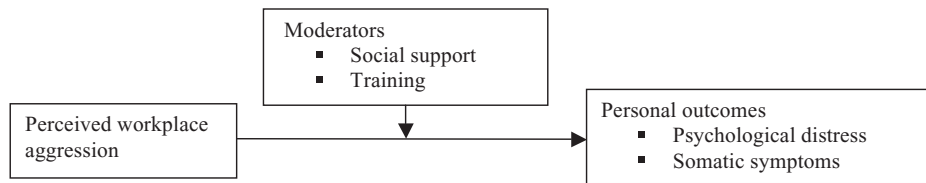
To date, there has been limited research focusing on workplace aggression and the moderating role of SS. In a pioneer study, Driscoll et al. (1995) surveyed a large sample of state workers ($N \approx 5,000$) representing over 150 occupations. They found that assaulted workers with low work-related SS displayed higher levels of depression compared with workers with high levels of support. Similar results were highlighted by Schat and Kelloway (2003), who examined the buffering effects of instrumental and informational organisational support using five health and work-related dependent measures in a sample of 225 health care employees. The study predictors included physical, psychological and vicariously experienced aggression. Substantial moderation effects (2–6% of criterion variance) were found between instrumental support and emotional wellbeing, somatic health and affect, as well as informational support and emotional wellbeing, with the former showing the strongest and most consistent effects. Finally, van Emmerik, Euwema and Bakker (2007) sampled 2,782 constabulary officers and also found buffering effects between work stressors (unsafe climate) and strain (decreased job investment) at an aggregate level, highlighting the importance of reciprocal support being delivered within a team.

There are other ways employees can be supported beside social support, one of which is by being provided with primary training in managing aggressive behaviour.

Certainly, the rise in patient aggression has led to increase of such programs (Zarola & Leather, 2006). Training that seeks to reduce or eliminate aggression can be a considerable organisational investment and in return for this investment, organisations may expect incidents to decrease with the upskilling of their staff. Studies, however, have demonstrated otherwise. Richter, Needham, and Kunz (2006) systematically reviewed 39 published studies on the effects of aggression management training (mostly in psychiatric settings and institutions for the disabled), but could not demonstrate a decrease in aggression rate. Similar results have been highlighted since this review (Bowers et al., 2006; Hills, 2008).

If training does not directly decrease the rate of aggressive incidents, it is legitimate to question its efficacy. In reality, it appears the added value of providing training is attained through the process of bolstering employees' self-assurance rather than reducing aggression per se. For instance, Richter et al. (2006) systematically reviewed 39 published evaluation on aggression training and found that trained staff reported increased confidence in dealing with aggression compared with their untrained colleagues. This confidence, the authors explained, was enhanced by knowledge and subjective feelings of security. Increased knowledge in handling high-risk situations following training was also a key finding in a study by Arnetz and Arnetz (2000), conducted at 47 healthcare workplaces. Ostrom and Mierol (2008) also showed increased assertiveness and improved ability to cope with aggressiveness after training was provided to 27 healthcare workers.

The biophysical model of threat and challenge (Blascovich & Mendes, 2000; Blascovich & Tomaka, 1996; Tomaka, Blascovich, Kelsey, & Leitten, 1993; Tomaka, Blascovich, Kibler, & Ernst, 1997) provides important theoretical insights for the above findings. According to this model, different motivational states are associated with distinct patterns of cardiovascular (CV) and hormonal responses (Blascovich & Mendes, 2000; Blascovich & Tomaka, 1996). When individuals appraise tasks and/or events as challenging and feel they have the necessary resources (e.g., skill, social support) to deal with these demands, their body responds with increased sympathetic adrenomedullary (SAM) activation, improved cardiac performance, distended blood vessels, and thus maintaining or reducing blood pressure (Tomaka et al., 1993). In contrast, when individuals feel threatened, they experienced increased pituitary-adrenocortical (PAC) activation, reduced cardiac performance, increased blood pressure and increased feeling of stress (Tomaka et al., 1993). In other words, individuals who have participated in aggression training may feel they can better manage aggression and thus appraise aggression as a challenge rather than threat. Consequently, individuals' performance may improve. This model supports the assumption that training might offer strain-buffering

**FIGURE 1**

Proposed moderating model.

attributes that are of considerable value for the wellbeing of staff.

The Present Study

In view of the heightened rate of patient aggression in the mental health sector, this study aims to test the stress-buffering hypothesis in a particularly vulnerable group of employees of CMHS, the R/A staff. It further seeks to test if the stressor-strain relationship could be moderated by aggression training. The study will test a new moderating model as described in Figure 1. First, this implies testing the theoretical framework of the stressor-stress-strain model by evidencing a positive relationship between aggression (stressors) and personal outcomes (strain). The study also hypothesises that participants' satisfaction with interpersonal resources protects them from the stressful impact of aggression thus decreasing the possible pathogenic effects of such event. Finally, it predicts that psychological distress and somatic symptoms will improve as a result of increased primary training because training increases knowledge, feelings of security and the perception of control associated with lowered stress.

Method

Participants

To be eligible to take part, participants had to be 18 years or over, and employed in a R/A role by a New South Wales CMHS. Staff from community health services, where the mental health R/A function was co-shared with other services were also eligible. Out of the 80 NSW services identified, 67 sites elected to participate, yielding a total of 244 potential participants.

In accordance with convention and existing similar research, a medium effect size $f^2 = .15$ was selected along with an alpha level of .05 and a power level of .80. With four predictors (two controlled variables, one independent variable and one moderator) the power analysis recommended a minimum of 85 participants (Faul, Erdfelder, Lang, & Buchner, 2007). Of the 244 questionnaires sent, a total of 101 were returned, indicating a 41% percent response rate. In line with administrative/reception positions being held by women and industry expectations, more females ($n = 96$) responded than males ($n = 5$) in our survey. Participants ranged in age between 21 and 66 years (Mean = 47.22, $SD = 10.12$) and on average had 10.03 years of work experi-

ence ($SD = 7.64$). Most were full-time employees (61%), although many also worked part-time (37%), and only one participant was employed casually. The breakdown metropolitan/rural area was 65/35% respectively (based on a 43% response rate). Most CMHS included adult, children and aged care services.

Measures

Perceive aggression. Perceived aggression was measured with the Perceptions of the Prevalence of Aggression Scale (POPAS), a scale developed for use by psychiatric ward employees. The 18-item questionnaire assesses the perceived experiences of staff on 16 categories of aggression by identifying the frequency of patients' aggressive events during the past year (Oud, 2001). Item 16 of the original questionnaire relating to experienced Sexual Assault/Rape was removed as it was considered unsuitable for this research. A question example is 'To what extent have you been confronted with humiliating aggressive behaviour during the last year in the course of your work?' Respondents indicated how true each statement was for them using a 5-point Likert scale from 1 (*Never*) to 5 (*Frequently*) and wrote the estimated number of times this occurred in the past year. The last two items relate to sick leave. This research found an internal consistency of Cronbach alpha .83.

Psychological distress. Three dimensions of psychological distress (depression, anxiety and stress) were measured by the Depression-Anxiety-Stress Scale (DASS-21), a shortened version of the DASS-42, developed for clinical and non-clinical populations by Lovibond and Lovibond (1995). Participants were requested to indicate how much statements such as 'I felt I had nothing to look forward to' applied to them over the past month. Each subscale (Depression, Anxiety and Stress) contains seven items. Responses are anchored on a 4-point Likert scale, ranging from 0 (*Did not apply to me at all*) to 3 (*Applied to me very much, or most of the time*). The total scale internal consistency was Cronbach alpha .95 in this research.

Somatic symptoms. Somatic symptoms were assessed with the Physical Health Questionnaire (PHQ), a self-report scale of somatic symptoms found appropriate in other workplace aggression studies (Rogers & Kelloway, 1997; Schat & Kelloway, 2000, 2003). The PHQ has 14 items pertaining to four subscales: Headaches, Gastrointestinal problems, Sleep disturbance and Respiratory

infections. Participants were asked how they had been feeling physically during the past month. Responses were rated on a 7-point scale, ranging from 1 (*Not at all*) to 7 (*All the time*) with higher mean scores reflecting better somatic health. Cronbach's alpha for this study was .83.

Social support. Social support was measured using the short version of the Social Support Questionnaire (SSQ-6; Sarason et al., 1987), a six-item questionnaire in which respondents are asked to write down the initials of up to nine people who provide them with support. Respondents then score this support along a 6-point Likert scale anchored from 1 (*Very dissatisfied*) to 6 (*Very satisfied*). For this study, support related to work environment and could be provided by coworkers (CO), supervisors (SUP) or extra-organisational friends and family (EO). This research yielded a Cronbach alpha .96 for internal consistency.

Training. Training was operationalised by asking respondents on a categorical scale (*yes, no*) if they had received training in handling difficult/aggressive clients and formal clinical training in mental health. If participants answered *yes*, they were asked to indicate the name of the training and the length of time since training was provided. For a *no* answer, participants were asked if they thought they would benefit from receiving such training.

Procedure

This research received ethical approvals from both the University of New England Human Research Ethics Committee (HREC) and the University of Wollongong and South Eastern Sydney and Illawarra Area Health Service and Medical HREC. In addition, authorisations to proceed were sought and obtained from each Research Governance of the eight New South Wales health areas.

During a phone call to each service's administration manager, the number of potential participants was identified and packages were sent to the called employees for distribution. Each package contained the questionnaire, an information sheet, a request for summary of research and a reply-paid envelop. A follow-up phone call was made to the administration managers two weeks later as a reminder to send the questionnaires back.

Data Analyses

Hierarchical moderated multiple regression analyses were used to test the hypotheses that SS and training had a moderating effect on psychological distress and somatic symptoms. The analyses enabled examination of the increase of R^2 when the cross-product of aggression and SS/or training was added to the regression equation. Four models were tested, one for each moderator (SS satisfaction and training) and each criterion variable (psychological distress and somatic symptoms).

Results

Descriptive Findings

Verbal aggression was the most commonly perceived form of aggression, with 91% of respondents stating they experienced it at least occasionally during the past year. Thirty-three per cent of participants reported being a victim of verbal aggression often or frequently. Passive-aggressive aggression was the second most experienced form of aggressive behaviour (66% of all respondents). Although a more uncommon occurrence, patients self-harm was reported by many, at least occasionally: mild (6%) and severe (27%) self-violence, attempted (17%) and successful (32%) suicide. As R/A employees do not have direct clinical contact with patients, patients' self-harm would be understood to be vicariously experienced through file notes, correspondence or verbal reports from other staff.

Sixty-seven per cent of participants stated having received training in handling aggressive patients. Average time since receiving this training was 2.5 years, varying from 1 month to 10 years. Of those who had not received training, 70% believed they would benefit from such. Only seven participants had any formal training in psychopathology.

Correlation Analyses: Testing the Stress-Stressor-Strain Model

Descriptive statistics and intercorrelations for all study variables are presented in Table 1. It shows that as perceived aggression increased, psychological distress increases; perceived aggression however did not correlate with somatic symptoms.

Moderation Analyses: The Effect of Social Support and Training

No serious outliers were found and missing data was treated with mean substitution method. Prior to the analyses, all continuous independent variables were centred (training was categorical and therefore not centred) to avoid multicollinearity (tolerance values found to be well above .10). There was no problem with order dependence in the data set ($1.8 < \text{all values} < 2.2$). The distributions of scores were checked prior to the analyses. The distribution for somatic symptoms was normal; however, perceived aggression, SS and psychological distress scales showed leptokurtic (flat) distributions. Furthermore, whereas SS satisfaction scores tended to be disproportionately high (negative skewness), the POPAS and the DASS scores were clustered to the left of the axis (positive skewness) indicating lower levels of perceived aggression and psychological distress respectively. Non-linearity and heteroscedasticity were also found in the relationships between the predictor and criterion variables. Attempts to normalise the distributions by alternatively using square root and logarithm 10 transformations were

TABLE 1

Means, Standard Deviations and Pearson Product-Moment Correlations between Perceived Aggression, Moderators (SS and Training) and Personal Outcomes

| | Mean | SD | Perceived aggression | SS satisfaction | Training ^a | Psychological distress | Somatic symptoms |
|------------------------|-------|-------|----------------------|-----------------|-----------------------|------------------------|------------------|
| Perceived aggression | 1.49 | 0.39 | — | .06 | .14 | .20* | .14 |
| SS satisfaction | 5.38 | 0.82 | | — | -.02 | -.20* | -.19* |
| Training ^a | — | — | | | — | -.10 | -.19* |
| Psychological distress | 22.58 | 20.69 | | | | — | .51** |
| Somatic symptoms | 2.95 | 0.83 | | | | | — |

Note: $n = 101$.^a Training received in handling difficult patients — Dichotomous variable — Point-biserial correlation analysis performed (Yes = 67.3%, No = 32.7%).* $p < .05$, one-tailed, ** $p < .01$, one-tailed.**TABLE 2**

Predicting Psychological Distress and Somatic Symptoms from Perceived Aggression, SS Satisfaction and Perceived Aggression by Social Support Satisfaction

| Predictors | B | 95% CI for B | | r | sr ² |
|---|--------|--------------|-------|-------|-----------------|
| | | LB | UB | | |
| Model 1 — Psychological Distress ^a | | | | | |
| Perceived aggression | 10.51* | 0.32 | 20.70 | .20* | .04 |
| SS satisfaction | −5.80* | −10.71 | −0.90 | −.20* | .05 |
| Perceived aggression × SS satisfaction | −6.25 | −22.03 | 9.53 | .03 | .01 |
| Model 2 — Somatic Symptoms ^b | | | | | |
| Perceived aggression | 0.31 | −0.11 | 0.73 | .14 | .02 |
| SS satisfaction | −0.19 | −0.40 | 0.01 | −.19* | .03 |
| Perceived aggression × SS satisfaction | −0.83* | −1.46 | −0.19 | −.14 | .06 |

Note: ^a Model 1: Step 2: $R = .37^{**}$, $R^2 = .13$, Adj $R^2 = .10$, Step 3: $R = .37^{**}$, $R^2 = .14$, Adj $R^2 = .10$.^b Model 2: Step 2: $R = .28$, $R^2 = .08$, Adj $R^2 = .04$, Step 3: $R = .37^{**}$, $R^2 = .14$, Adj $R^2 = .09$.* $p < .05$, ** $p < .01$.

unsuccessful as significant loss of data occurred due to the restraint ranges of scores.

After controlling for age and years of experience in Step 1, independent and moderator variables were computed to yield main effects in Step 2, while Step 3 consisted of the interaction term. Steps 2 and 3 are presented in Tables 2 and 3. Table 2 shows significant main effects for perceived aggression and SS on psychological distress, but not on somatic symptoms. No main effects were found in models 5 and 6 (Table 3, training models). Tables 2 and 3 show only two significant interaction effects. Entry of the interaction term (perceived aggression \times SS) contributed additional variance in predicting somatic symptoms, $\Delta R^2 = .06$, $F(1, 95) = 6.70$, $p < .05$, over and above the effects of the main and control variables. Entry of the interaction term (perceived aggression \times training) also contributed additional variance in predicting somatic symptoms, $\Delta R^2 = .09$, $F(1, 95) = 10.11$, $p < .01$, over and above the effects of the main and control variables. Interactions effects were of medium size (Cohen, 1988), respectively $R^2 = .14$ and $R^2 = .17$. None

of the interaction terms contributed additional variance in predicting psychological distress: perceived aggression \times SS, $\Delta R^2 = .01$, $F(1, 95) = 0.62$, $p > .05$, perceived aggression \times training, $\Delta R^2 = .01$, $F(1, 95) = 0.66$, $p > .05$.

Unstandardised beta weights from the regression equations were used to plot the simple slopes for the two significant interactions (Figures 2 and 3). Figure 2 presents the simple slopes for SS (satisfaction). It shows that the effects of perceived aggression on somatic symptoms were stronger when satisfaction with SS was low, $t(97) = 6.92$, $p < .001$, as compared to when it was high. There was no evidence of decline in somatic symptoms with high SS when staff reported increased perceived aggression, $t(97) = -0.81$, $p > .05$. Figure 3 presents the simple slopes for training and shows the relationship between perceived aggression and somatic symptoms was weaker for staff who had received training, $t(97) = -13.86$, $p < .001$, than for those who had not, $t(97) = -3.66$, $p < .001$. There was less change in this relationship when staff did not receive training.

TABLE 3

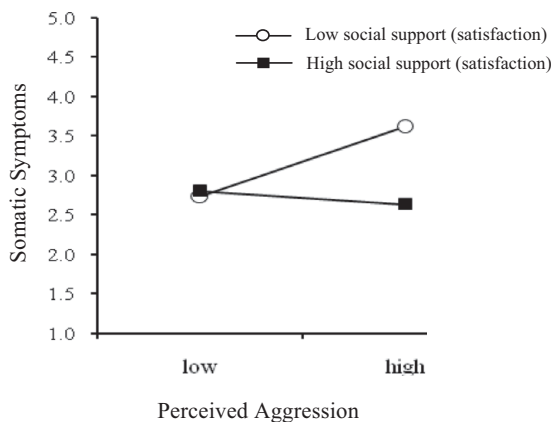
Predicting Psychological Distress and Somatic Symptoms from Perceived Aggression, Training in Handling Aggressive Clients, and Perceived Aggression by Training in Handling Aggressive Clients

| Predictors | B | 95% CI for B | | r | sr ² |
|---------------------------------|---|--------------|-------|-------|-----------------|
| | | LB | UB | | |
| | Model 3 — Psychological Distress ^a | | | | |
| Perceived aggression | 10.35 | −0.22 | 20.92 | .20* | .04 |
| Training | 3.35 | −5.56 | 12.27 | .01 | .01 |
| Perceived aggression × training | 9.64 | −13.93 | 33.21 | .22* | .01 |
| | Model 4 — Somatic Symptoms ^b | | | | |
| Perceived aggression | 0.35 | −0.08 | 0.78 | .14 | .03 |
| Training | 0.34 | −0.02 | 0.70 | .19* | .03 |
| Perceived aggression × training | 1.46** | 0.55 | 2.37 | .32** | .09 |

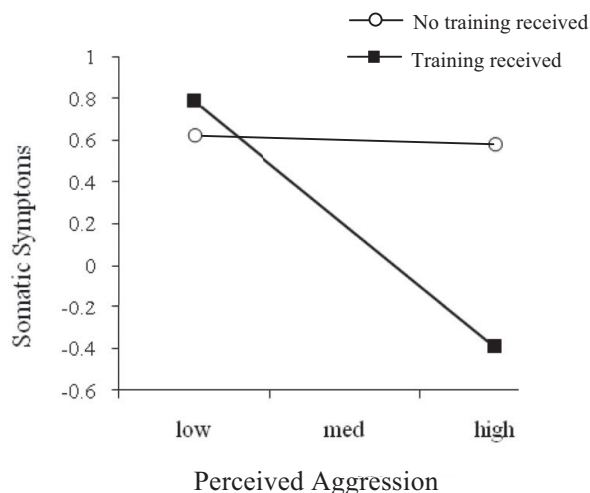
Note: ^a Model 3. Step 2: $R = .30$, $R^2 = .09$, Adj $R^2 = .05$, Step 3: $R = .31$, $R^2 = .10$, Adj $R^2 = .05$.

^b Model 4. Step 2: $R = .28$, $R^2 = .08$, Adj $R^2 = .04$, Step 3: $R = .41^{**}$, $R^2 = .17$, Adj $R^2 = .12$.

* $p < .05$, ** $p < .01$.

**FIGURE 2**

Standardised simple slopes describing the interaction between perceived aggression and social support predicting somatic symptoms.

**FIGURE 3**

Standardised simple slopes describing the interaction between perceived aggression and training predicting somatic symptoms.

Discussion

The present study aimed at testing if SS and training would moderate the effects of patient aggression on R/A employees' psychological distress and somatic symptoms. First, in line with the stressor-stress-strain model, it was found that perceived aggression was significantly and positively associated with psychological distress, albeit weakly. Perceived aggression did not significantly correlate with somatic symptoms. In this study, the level of perceived verbal aggression, reported to occur often or frequently by a third of the respondents, was on par with previous studies that used the same measure (POPAS; Jonker et al., 2008; Nijman et al., 2005). However, more severe, direct forms of aggression (e.g., mild or severe violence) were perceived to occur rarely, implying that participants may have experienced relatively low levels of stress level in aggression. Nonetheless, the positive association between perceived aggression and psychological distress suggests that frequency of aggression, not just salience, significantly impacts on the psychological well-being of workers.

Furthermore, an explanation for the inconclusive result for somatic symptoms may be found in the nature of the stressor and its impact on stress. Although a thorough analysis of this is outside the scope of this study, it may be that stress hormones need to be sufficiently elevated in the victims of aggression to trigger measurable somatic symptoms. Greenberg, Carr, and Summers (2002) asserted that different stressors can activate a diversity of physiological and behavioural responses, and proposed that although many stressors trigger dramatic neural and endocrine responses, more modest responses can be evoked by milder stimuli. Indeed, the relationship between aggression and health may not be as straightforward as first thought, as was illustrated by Schat and Kelloway (2003), who found that only psychological aggression significantly related to

somatic health, but physical and vicarious aggression did not.

Further analyses were conducted to test if individually SS and training would moderate the effects of perceived aggression on psychological distress and on somatic symptoms. Results show that neither SS nor training buffered against the negative impact of patient aggression on psychological distress, but they both moderated the effects of aggression on somatic symptoms (Models 2 and 4). In these two models, the interaction term for each moderator contributed an additional variance of 6% (satisfaction with SS) and 9% (training) over and above the effects of the main and control variables. Considering that in behavioural science interaction effects in the order of 4% are typically found (Cohen, Cohen, West & Aiken, 2003), those were substantial variances.

The simple slopes highlighted two patterns of effects for the significant interactions, implying that satisfaction with SS and training moderated the effects of aggression in two different ways. In Model 2 (satisfaction with SS and somatic symptoms), there was a clear buffering effect: As the impact of support increased in value, the impact of aggression decreased. In their review of prior research, Cohen and Wills (1985) found evidence of buffering effects relating to the perception that others provided necessary support in response to stressful events. Indeed this study's findings show that the staff's feeling of being well supported constitutes a protective factor mitigating the effects of patients' aggressive behaviour, at least for those effects impacting on staff's physical health. Interestingly, when SS was high, somatic symptoms remained at the same level whether perceived aggression was low or high, as indicated by the nonsignificance of the simple slope. A plausible explanation proposed by Pennebaker's (1982) 'Competition of Attention Cues' suggests that awareness of internal stimuli is a function of the ratio of internal to external cues. In other words, individuals who feel threatened tend to focus their attention on external threat. Hence, their awareness of their somatic symptoms diminishes and they will report fewer or milder somatic symptoms. This may account for the insignificant findings for somatic symptoms reported in our study.

In Model 4 (training and somatic symptoms), rather than a buffering effect, there was a significant interference effect. The importance of high perceived aggression was heightened by receiving training, and the importance of receiving training was heightened when staff perceived aggression as being high. When aggression was high, the impact on somatic symptoms of receiving training or not was greater than when aggression was low. For this reason, these findings have particular significance for work settings or professions that experience high prevalence of client aggression. The large contribution of training in reducing the impact of aggression, as indicated by the variance size, makes it all the more important to consider

the role of training in moderating the effects of aggression.

An unexpected finding in this study is that interaction effects were found for somatic symptoms, but not for psychological distress. Evidently, in the case of SS, the relationship between stressors, support and strain is complex, and interaction effects depend upon factors such as the source and kind of support, strain and stressors (Cohen & Wills, 1985). An explanation for this phenomenon may be attributed to the self-perception theory. According to this theory, individuals develop their attitudes or feelings from watching themselves behave in various situations (Bem, 1967, 1972). Therefore, if individuals have been the target of aggression, they may infer that they feel distress. Thus, the association between aggression and distress could be more pronounced, at least in some participants.

Another plausible explanation to the insignificant finding for psychological distress is proposed via the *matching* or *specificity hypothesis*. It posits that for a specific strain to be reduced, the right source of support must be used with the right kind of stressor (Viswesvaran et al., 1999). Support for this also comes from a study on the causes and consequences of stress by Greenberg et al. (2002), in which the authors highlight the role of specific coping in mitigating responses to stress:

The clinical view of the stress response was that it was largely nonspecific, but it has become clear that many stressors evoke specific combinations of physiological and behavioral responses depending in part on their respective potentials for effective coping in a given context. (p. 509)

Certainly, other factors such as personality traits, cognitive ability and social competence may offer a rival explanation for SS effects (Cohen & Wills, 1985). It is possible that all of the above may apply to the moderating mechanisms of training as well. However, in the absence of theoretical models on how specific sources match specific stressors and strain and how personal variables confound moderating effects, any attempt to clarify why moderating effects were only found for somatic symptoms would simply be speculative.

Overall, the findings from this study add support for the biophysical model of threat and challenge, and stress-buffering hypothesis in workplace aggression research. It especially provides further evidence that SS is an important source of stress mitigation for staff in a vulnerable position. Indeed the prevalence rate of aggression towards R/A employees of community mental health is worth noting. Although acts of direct physical aggression were seldom reported, a similar pattern of prevalence of aggression (i.e., verbal and passive-aggressive) to other mental health staff was identified. Interestingly, respondents in this study also identified high rates of patient violence against self (either mild or severe). Maybe they felt patients' self-harm behaviour was confronting to them even

though it was a vicarious experience. This is not surprising considering previous research found secondary victims often experience fear of future aggression or violence from witnessing or hearing about it (Schat & Kelloway, 2003).

The findings about training are of particular interest. The percentage (67%) of employees who had received training in handling difficult patients was encouraging compared to previous published rates (e.g., 20%; Fry et al., 2002), suggesting that health and safety laws and/or increased organisational concern for staff's wellbeing may have significantly benefited this group of employees. Still, a third of the participants did not have any primary form of aggression training, and considering that 93% had no former education in mental health, many lacked the formal knowledge that can be drawn on when facing a crisis situation.

Perhaps the most significant contribution of this study is in highlighting that aggression training has a moderating effect on the stressor-strain relationship. It is proposed that the moderating effects of training and SS may act in similar ways. Whereas SS strengthens the perception that others are available to provide necessary resources (Cohen & Wills, 1985), training makes resources available in order to increase individuals' knowledge on how to handle difficult situations (Oud, 2006). Furthermore, SS enhances individuals' sense of control, provides them with confidence in their ability and gives them the courage to act (Mirowsky & Ross, 2003). Training also imparts the sense of control needed to predict, understand and influence negative events (Schat & Kelloway, 2000). Finally, in the same way that SS may boost individuals' self-esteem by providing feedback that they have taken the right course of action, training allows individuals to check and match their existing knowledge against course contents, which may also impart a sense of increased self-esteem. It is therefore not surprising, as explained Cohen and Wills (1985) that 'studies using support instruments that tap the broadly useful esteem and informational support functions have been consistently successful in showing evidence of a buffering process' (p. 348).

Considering these findings about training, it is essential that aggression training programs offered to R/A staff incorporate components that would enhance knowledge and therefore perception of control. To this effect, this study recommends that upper management and training consultants include mental health literacy as a module in all training programs (for example Mental Health First Aid; Kitchener & Jorm, 2004). As patient violence is not confined to mental health services, this information should also be incorporated for training aimed at R/A staff in general health services. Furthermore, CMHS's intake workers should routinely inform R/A employees of clients' acute presentation, when this can be foreseen. Again, this should be extended to other health service staff, when they undertake the administrative function for CMHS.

Acknowledgments

The authors thank Nico E. Oud for kindly allowing the use of the Perceptions of the Prevalence of Aggression Scale (POPAS) in this research. They also thank the New South Wales community mental health administrative and reception employees who have voluntarily participated in this research, thus making it possible.

References

- Arnetz, J.E., & Arnetz, B.B. (2000). Implementation and evaluation of a practical intervention program for dealing with violence towards health care workers. *Journal of Advanced Nursing*, 31, 668–680.
- Bem, D.J. (1967). Self-perception: An alternative interpretation of cognitive dissonance phenomena. *Psychological Review*, 74, 183–200.
- Bem, D.J. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 6, pp. 1–62). New York: Academic Press.
- Bjorkly, S. (1999). A ten-year prospective study of aggression in a special secure unit for dangerous patients. *Scandinavian Journal of Psychology*, 40, 57–63.
- Blascovich, J., & Mendes, W.B. (2000). Challenge and threat appraisals: The role of affective cues. In J. Forgas (Ed.), *Feeling and thinking: The role of affect in social cognition* (pp. 59–82). Paris: Cambridge University Press.
- Blascovich, J., & Tomaka, J. (1996). The biopsychosocial model of arousal regulation. *Advances in Experimental Social Psychology*, 28, 1–51.
- Bowers, L., Nijman, H., Allan, T., Simpson, A., Warren, J., & Turner, L. (2006). Prevention and management of aggression training and violent incidents on UK acute psychiatric wards. *Psychiatric Services*, 57, 1022–1026.
- Budd, J.W., Arvey, R.D., & Lawless, P. (1996). Correlates and consequences of workplace violence. *Journal of Occupational Health Psychology*, 1, 197–210.
- Cassel, J.C. (1976). The contribution of the social environment to host resistance. *American Journal of Epidemiology*, 104, 107–123.
- Cheng, Y., Kawachi, I., Coakley, E.H., Schwartz, J., & Colditz, G. (2000). Association between psychosocial work characteristics and health functioning in American women: Prospective study. *British Medical Journal*, 320, 1432–1436.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38, 300–314.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Cohen, J., Cohen, P., West, S.G., & Aiken, L.S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Cohen, S., & Pressman, S. (2004). Stress-buffering hypothesis. In N.B. Anderson (Ed.), *Encyclopedia of health and behavior* (pp. 780–782). Thousand Oaks, CA: Sage Publications.
- Cohen, S., & Wills, T.A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98, 310–357.
- Di Martino, V. (2003). *Relationship of work stress and workplace violence in the health sector*. Joint Programme on Workplace Violence in the Health Sector — International Labour Office (ILO), International Council of

- Nurses (ICN), World Health Organisation (WHO), Public Services International (PSI). Retrieved from http://www.icn.ch/SewWorkplace/WPV_HS_StressViolence%20.pdf
- Di Martino, V., Hoel, H., & Cooper, C.L. (2003). *Preventing violence and harassment in the workplace*. Dublin: European Foundation for the Improvement of Living and Working Conditions. Retrieved from <http://www.eurofound.europa.eu/publications/htmlfiles/ef02109.htm>
- Driscoll, R.J., Worthington, K.A., & Hurrell, J.J. (1995). Workplace assault: An emerging job stressor. *Consulting Psychology Journal: Practice and Research*, 47, 205–211.
- Faul, F., Erdfelder, E., Lang, A.G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavioral Research Methods*, 39, 175–191.
- Finnema, E.J., Dassen, T., & Halfens, R. (1994). Aggression in psychiatry: A qualitative study focusing on the characterization and perception of patient aggression by nurses working on psychiatric wards. *Journal of Advanced Nursing*, 19, 1088–1095.
- Francis, L., & Kelloway, E.K. (2005). Industrial relations. In J. Barling, E.K. Kelloway, & M. Frone (Eds.), *Handbook of work stress* (pp. 325–352). Thousand Oaks, CA: Sage Publications.
- Fry, A.J., O'Riordan, D., Turner, M., & Mills, K.L. (2002). Survey of aggressive incidents experienced by community mental health staff. *International Journal of Mental Health Nursing*, 11, 112–120.
- Greenberg, N., Carr, J.A., & Summers, C.H. (2002). Causes and consequences of stress. *Integrative and Comparative Biology*, 42, 508–516.
- Guimont, C., Brisson, C., Dagenais, G.R., Milot, A., Vezina, M., Masse, B., ... Blanchette, C. (2006). Effects of job strain on blood pressure: A prospective study of male and female white-collar workers. *American Journal of Public Health*, 96, 1436–1443.
- Hills, D. (2008). Relationships between aggression management training, perceived self-efficacy and rural general hospital nurses' experiences of patient aggression. *Contemporary Nurse*, 31, 20–31.
- Hogh, A., & Viitasara, E. (2005). A systematic review of longitudinal studies of nonfatal workplace violence. *European Journal of Work and Organizational Psychology*, 14, 291–313.
- Jonker, E.J., Goossens, P.J., Steenhuis, I.H., & Oud, N.E. (2008). Patient aggression in clinical psychiatry: Perceptions of mental health nurses. *Journal of Psychiatric and Mental Health Nursing*, 15, 492–499.
- Kitchener, B.A., & Jorm, A.F. (2004). Mental health first aid training in a workplace setting: A randomized controlled trial. *BMC Psychiatry*, 4, 1–8.
- Kouvonen, A., Kivimäki, M., Vaananen, A., Heponiemi, T., Elovainio, M., Ala-Mursula, L., ... Vahtera, J. (2007). Job strain and adverse health behaviors: The Finnish Public Sector Study. *Journal of Occupational & Environmental Medicine*, 49, 68–74.
- Lawoko, S., Soares, J.J., & Nolan, P. (2004). Violence towards psychiatric staff: A comparison of gender, job and environmental characteristics in England and Sweden. *Work & Stress*, 18, 39–55.
- Lovibond, S.H., & Lovibond, P.F. (1995). *Manual for the Depression Anxiety Stress scales* (2nd ed.). Sydney, Australia: Psychology Foundation.
- Maguire, J., & Ryan, D. (2007). Aggression and violence in mental health services: Categorizing the experiences of Irish nurses. *Journal of Psychiatric and Mental Health Nursing*, 14, 120–127.
- Mayhew, C., & Chappell, D. (2007). Workplace violence: An overview of patterns of risk and the emotional/stress consequences on targets. *International Journal of Law and Psychiatry*, 30, 327–339.
- Mirowsky, J., & Ross, C.E. (2003). *Social causes of psychological distress* (2nd ed.). New York: Aldine De Gruyter.
- Naish, J., Carter, Y.H., Gray, R.W., Stevens, T., Tissier, J.M., & Gantley, M.M. (2002). Brief encounters of aggression and violence in primary care: A team approach to coping strategies. *Family Practice*, 19, 504–510.
- Nijman, H., Bowers, L., Oud, N.E., & Jansen, G.J. (2005). Psychiatric nurses' experiences with inpatient aggression. *Aggressive Behavior*, 31, 217–227.
- Ostrom, J.K., & Mierol, H. (2008). An evaluation of an aggression management training program to cope with workplace violence in the healthcare sector. *Research in Nursing & Health*, 31, 320–328.
- Oster, A., & Bernbaum, S.P. (2001). Determinants of violence in the psychiatric emergency service. *Canadian Medical Association Journal*, 164, 32–33.
- Oud, N.E. (2001, June). *Testing the perceptions of Prevalence of Aggression Scale*. Paper presented at the 2nd European Congress on Violence in Clinical Psychiatry, Stockholm.
- Oud, N.E. (2006). Aggression management training programs: Contents, implementation, and organization. In R. Richter & D. Whittington (Eds.), *Violence in mental health settings: Causes, consequences, management* (pp. 193–210). New York: Springer.
- Parent-Thirion, A., Fernández Macías, E., Hurley, J., & Vermeylen, G. (2007). *Fourth European Working Conditions Survey*. Luxembourg: Office for Official Publications of the European Communities: Europe Foundation for the Improvement of Living and Working Conditions. Retrieved from <http://www.eurofound.europa.eu/publications/htmlfiles/ef0698.htm>
- Pennebaker, J.W. (1982). *The psychology of physical symptoms*. New York: Springer. 1982
- Perrone, S. (1999). *Violence in the workplace* (Australian Institute of Criminology — Research and Public Policy Series, No 22). Retrieved from <http://www.aic.gov.au/en/publications/current%20series/rpp/21-40/rpp22.aspx>.
- Richter, D. (2006). Nonphysical conflict management and deescalation. In R. Richter & D. Whittington (Eds.), *Violence in mental health settings: Causes, consequences, management* (pp. 125–144). New York: Springer.
- Richter, D., Needham, I., & Kunz, S. (2006). The effects of aggression management training for mental health care and disability care staff: A systematic review. In D. Richter & R. Whittington (Eds.), *Violence in mental health settings: Causes, consequence, management* (pp. 211–227). New York: Springer.
- Rogers, K.A., & Kelloway, E.K. (1997). Violence at work: Personal and organizational outcomes. *Journal of Occupational Health Psychology*, 2, 63–71.
- Sarason, I.G., Sarason, B.R., Shearin, E.N., & Pierce, G.R. (1987). A brief measure of social support: Practical and theoretical implications. *Journal of Social and Personal Relationships*, 4, 497–510.

- Schat, A.C., & Kelloway, E.K. (2000). Effects of perceived control on the outcomes of workplace aggression and violence. *Journal of Occupational Health Psychology*, 5, 386–402.
- Schat, A.C., & Kelloway, E.K. (2003). Reducing the adverse consequences of workplace aggression and violence: The buffering effects of organizational support. *Journal of Occupational Health Psychology*, 8, 110–122.
- Schat, A.C., & Kelloway, E. (2005). Workplace aggression. In J. Barling, E.K. Kelloway & M.R. Frone (Eds.), *Handbook of work stress* (pp. 189–218). Thousand Oaks, CA: Sage Publications.
- Soares, J.J., Lawoko, S., & Nolan, P. (2000). The nature, extent and determinants of violence against psychiatric personnel. *Work & Stress*, 4, 105–120.
- Strazdins, L., D'Souza, R.M., Lim, L.L., Broom, D.H., & Rodgers, B. (2004). Job strain, job insecurity, and health: Rethinking the relationship. *Journal of Occupational Health Psychology*, 9, 296–305.
- Tomaka, J., Blascovich, J., Kelsey, R.M., & Leitten, C.L. (1993). Subjective, physiological, and behavioral effects of threat and challenge appraisal. *Journal of Personality and Social Psychology*, 65, 616–624.
- Tomaka, J., Blascovich, J., Kibler, J., & Ernst, J. (1997). Cognitive and physiological antecedents of threat and challenge appraisal. *Journal of Personality and Social Psychology*, 73, 63–72.
- van Emmerik, I.H., Euwema, M.C., & Bakker, A.B. (2007). Threats of workplace violence and the buffering effect of social support. *Group and Organization Management*, 32, 152–175.
- Viswesvaran, C., Sanchez, J., & Fisher, J. (1999). The role of social support in the process of work stress: A meta-analysis. *Journal of Vocational Behavior*, 54, 314–334.
- Wildgoose, J., Briscoe, M., & Lloyd, K. (2003). Psychological and emotional problems in staff following assaults by patients. *Psychiatric Bulletin*, 27, 295–297.
- Wykes, T., & Whittington, R. (1998). Prevalence and predictors of early traumatic stress reactions in assaulted psychiatric nurses. *Journal of Forensic Psychiatry*, 9, 643–658.
- Zarola, A., & Leather, P. (2006). *Violence and aggression management training for trainers and managers: A national evaluation of the training provision in healthcare settings*. Nottingham, United Kingdom: University of Nottingham.