

Exposure to workplace bullying and post-traumatic stress disorder symptomology: the role of protective psychological resources

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Aim To examine the relationship between nurses' exposure to workplace bullying and Post-Traumatic Stress Disorder symptomology and the protective role of psychological capital (PsyCap).

Background Workplace bullying has serious organisational and health effects in nursing. Few studies have examined the relation of workplace bullying to serious mental health outcomes, such as Post-Traumatic Stress Disorder. Even fewer have examined the effect of intrapersonal strengths on the health impact of workplace bullying.

Method A survey of 1205 hospital nurses was conducted to test the hypothesized model. Nurses completed standardized measures of bullying, Post-Traumatic Stress Disorder and PsyCap.

Result A moderated regression analysis revealed that more frequent exposure to workplace bullying was significantly related to Post-Traumatic Stress Disorder symptomology regardless of the PsyCap level. That is, PsyCap did not moderate the bullying/PTSD relationship in either group. Bullying exposure and PsyCap were significant independent predictors of Post-Traumatic Stress Disorder symptoms in both groups. Efficacy, a subdimension of PsyCap, moderated the bullying/Post-Traumatic Stress Disorder relationship only among experienced nurses.

Conclusion Workplace bullying appears to be predictive of Post-Traumatic Stress Disorder symptomology, a serious mental health outcome.

Implications for nursing management Workplace bullying is a serious threat to nurses' health and calls for programmes that eliminate bullying and encourage greater levels of positive resources among nurses.

Keywords: new graduate nurses, post-traumatic stress disorder (PTSD), psychological capital (PsyCap), workplace bullying

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Introduction

Workplace bullying is a worldwide issue that appears to be on the rise and is known to have negative work and health effects (Høgh *et al.* 2005, Johnson & Rea

2009, Munch-Hansen *et al.* 2009, Hoel *et al.* 2010, Salin & Hoel 2010). McCarthy and Mayhew (2004) estimate the international costs of bullying-related outcomes to be between \$17 and \$36 billion annually. Bullying has been linked to mental health problems,

burnout, job dissatisfaction and negative patient outcomes such as medication errors and lower quality of patient care (Rosenstein & O'Daniel 2005, Hansen *et al.* 2006, Hoel *et al.* 2010, Razzaghian & Shah 2011). Bullying-related stress, poor health and possible turnover threaten both organisational productivity and the sustainability of a stable, healthy workforce (Patten 2005). Unfortunately, managers are often unsure about how to address bullying, which may perpetuate the problem, leading to the loss of valuable human resources (Salin 2003, Hutchinson *et al.* 2006a,b, Razzaghian & Shah 2011).

Recent research has documented the prevalence of workplace bullying in the general nursing population (Hutchinson *et al.* 2006a,b, Lewis 2006, Vessey *et al.* 2009) as well as among new graduate nurses linking these negative experiences to burnout and job dissatisfaction (Laschinger *et al.* 2010, 2012). In light of research connecting exposure to bullying with serious negative health and organisational effects, these results are disturbing. Research is needed to identify the protective factors that may reduce the negative effects of bullying. Numerous previous studies have shown that organisational structures (e.g. empowerment and leadership) protect employees from these negative workplace behaviours (Greco *et al.* 2006, Hutchinson *et al.* 2008, Laschinger *et al.* 2009, Smith *et al.* 2010). However, little is known about the role of intrapersonal resources, such as psychological capital (PsyCap), and how it may combine with organisational resources to protect employees from negative work experiences. Psychological capital is a positive psychological state of mind which influences how individuals respond to their environments, and may contribute to decreased stress (Luthans *et al.* 2007a,b, Avey *et al.* 2009). Thus, PsyCap may be an additional resource that can be developed to enhance organisational strategies to mitigate the effects of bullying. To our knowledge, the protective effect of PsyCap against bullying has not been investigated in the nursing population.

Workplace bullying has also been associated with serious mental health problems, such as post-traumatic stress disorder, in the general occupational literature (Einarsen & Hellesoy 1998); however, we could find no studies investigating this relationship in nursing. Given existing research documenting the detrimental health effects of nurses' exposure to workplace bullying, the purpose of this study was to examine the link between nurses' experiences of bullying and Post-Traumatic Stress Disorder (PTSD) symptomology, and the protective effect of intrapersonal resource factors (PsyCap) in both newly graduated and experienced nurses.

Review of the literature

Bullying

Workplace bullying has been described as 'a situation where someone is subjected to social isolation or exclusion, his or her work and efforts are devalued, he or she is threatened, derogatory comments about him or her are said behind his or her back, or other negative behaviour aimed to torment, wear down, or frustrate occur' (Kivimaki *et al.* 2000, p. 656). In response to evidence that workplace bullying is reaching epidemic levels, the World Health Organization (WHO 2006) declared this phenomenon to be a serious public health threat.

Lewis (2006) estimated that approximately 80% of UK nurses experienced bullying at some point in their career, with the majority of these acts being perpetrated by co-workers, a finding corroborated by Farrell *et al.* (2006) in Australian hospital settings. In North America, Vessey *et al.* (2009) found that over 70% of nurses in their study of nurses in the US reported being bullied and Laschinger *et al.* (2010) found that 33% of Canadian new graduate nurses had experienced workplace bullying in hospital work settings. Hutchinson *et al.* (2006a,b) found similar results in a study of Australian nurses. In contrast, a Turkish study found that 86% of nurses experienced bullying within the last 12 months, primarily from managers (Yildirim & Yildirim 2007).

Fairly equal victimisation rates exist in terms of gender (Einarsen & Skogstad 1996, Jóhannsdóttir & Ólafsson 2004), however, females tend to report bullying less than males (Jóhannsdóttir & Ólafsson 2004). Differences also exist in terms of the source of bullying behaviours, whereby females are bullied more by co-workers and males are bullied by equally both co-workers and supervisors (Vartia & Hyyti 2002). In addition, females are more likely to be emotionally disturbed by bullying than males (Bond *et al.* 2001, Ortega *et al.* 2012).

Workplace bullying has been linked to numerous negative organisational and health effects, such as high turnover and greater physical and mental health problems (Berthelsen *et al.* 2011, Vie *et al.* 2011). Similar effects have been observed in nursing settings. Previous studies showed that bullied nurses were more likely to have lower job satisfaction and higher intentions to leave their job, clinical levels of anxiety and depression, and more sick days than non-bullied nurses (Quine 2001, Beecroft *et al.* 2008, Johnson & Rea 2009, Laschinger *et al.* 2010). Vessey *et al.* (2009) found similar effects of bullying in a large survey of US nurses. Nurses in that study reported that

they seldom took action against the perpetrator because of fear of retaliation and coped with the situation by discussing the experience with friends and family. Finally, a large qualitative study in the US concluded that a culture of silence among nurses has resulted in underreporting of workplace bullying incidents, and that unwillingness by administrators to act to address bullying has perpetuated the problem (Gaffney *et al.* 2012). Nurses in this study felt that their attempts to deal with bullying through management were futile. This situation is likely to result in what Andersson and Pearson (1999) refer to as an 'incivility spiral' (p.452) whereby uncivil behaviour is normalised and therefore not addressed.

In the new graduate nurse population, McKenna *et al.* (2003) found that nurses exposed to bullying reported a loss in self-confidence, lower self-esteem and greater anxiety as well as negative physical health symptoms. Furthermore, bullied nurses had higher rates of illness-related absenteeism and increased thoughts of leaving the profession than their non-bullied colleagues. A more recent study of Canadian new graduate nurses revealed that exposure to workplace bullying was significantly related to higher levels of burnout and poor mental and physical health (Laschinger *et al.* 2010, Laschinger & Grau 2012).

Post-traumatic stress disorder

PTSD is a serious anxiety disorder that is associated with persistent exposure to stressful conditions (Kerasiotis & Motta 2004). PTSD is characterised by a triad of symptomology: (i) hyper-arousal (anxiety and insomnia); (ii) re-experiencing stressful events through nightmares and flashbacks; and (iii) avoidance and denial (Kerasiotis & Motta 2004). Researchers have argued that victims of bullying who exhibit symptoms such as memory problems, nervousness, social isolation, avoidance and hostility may in fact be suffering from PTSD (Leymann 1992, Bjorkqvist *et al.* 1994, Einarsen & Hellesoy 1998). Although PTSD is most often associated with overt trauma such as verbal and physical abuse, human service workers have been shown to experience PTSD symptomology (Figley 1995). Studies examining bullying and PTSD have found that, on average, 86% of victims reported signs of PTSD (Leymann 1992, Mikkelsen & Einarsen 2002). Tehrani (2004) found that PTSD levels were significantly higher among care providers who were bullied than those who were not, a finding corroborated by Stadnyk (2012) in a study of psychiatric nurses.

Research on the prevalence and impact of PTSD among nurses is limited. Mealer *et al.* (2009) found that 22% of critical care nurses in a large academic healthcare centre had symptoms of PTSD which were related to significantly higher levels of burnout and feelings of work ineffectiveness. We could find no studies of PTSD prevalence among new graduate nurses. However, it seems reasonable to expect that given their young age and lack of experience, they may not yet have developed protective intrapersonal resources making them particularly susceptible to this symptomology when faced with persistent bullying.

Psychological capital

Psychological capital (PsyCap) (Luthans *et al.* 2007a) is conceptualised as a positive psychological state of development characterised by: hope, optimism, resilience and confidence or self-efficacy. PsyCap is state-like and amenable to change, unlike dispositional traits. This malleability makes the notion of PsyCap particularly compelling in that managers can provide opportunities to enhance this intrapersonal resource in the workplace using approaches developed by Luthans *et al.* (2007a,b).

Luthans *et al.* (2007a) describe four dimensions of PsyCap. 'Hope' refers to the self-motivation to get to where one wants to be and to create realistic paths to achieve those goals, even when faced with hardship (Luthans & Youssef 2004). 'Optimism' is the belief that negative situations result from external, momentary and situational sources, whereas positive situations are the result of internal, lasting causes (Luthans & Youssef 2004). Optimistic people will credit themselves with positive life events, elevating self-esteem and separating themselves from the negativity of unfavourable situations, providing some protection from depression, self-blame and despair (Luthans & Youssef 2004). 'Resilience' refers to the ability to recover from 'adversity, uncertainty, failure or overwhelming changes' (Luthans & Youssef 2004, p. 154). Resilient people have the flexibility to move through set-backs, and are able to perform at higher levels once they have moved through the challenges (Luthans & Youssef 2004). Resiliency allows for the acceptance of reality, development of strong beliefs, the perception of life as meaningful and the development of flexibility for adaptation to significant change (Luthans & Youssef 2004). 'Self-efficacy' refers to a person's self-confidence in his or her ability to act and perform tasks. Self-efficacy beliefs determine not only whether or not behaviour will be initiated, but

the amount of effort expended and how long the behaviour will persist in the face of obstacles and aversive experiences. These beliefs influence both performance and persistence in career-related domains and impact not only on how negative events are interpreted, but also on how the individual copes with these threats (Bandura 1977). PsyCap self-efficacy involves five behaviours: high goal setting, openness to challenging tasks, high self-motivation, application of the necessary effort for goal accomplishment and perseverance through adversity (Luthans *et al.* 2007b). According to Luthans *et al.* (2007a) each component of PsyCap strengthens each other. For example, possessing greater self-efficacy may also increase one's resiliency and vice versa, implying that these components are inter-dependent and have a synergist effect (Avey *et al.* 2009). Thus, as a whole, PsyCap is considered a stronger predictor of job outcomes than its individual components (Luthans *et al.* 2007b).

PsyCap has been found to be a protective factor against workplace stressors. Avey *et al.* (2009) showed that PsyCap partially mediated the effect of job stress on turnover intentions. Specifically, employees with higher PsyCap experienced lower stress and were less likely to leave their jobs. In a review of literature on personal resilience in nurses, Jackson *et al.* (2007) found that this component of PsyCap was essential in equipping nurses with the ability to deal with negative workplace experiences. Jackson *et al.* (2007) also found that optimism served as a buffer against the negative effects of work and job demands and also reduced emotional exhaustion. An interesting finding in Razzaghian and Shah (2011) study was that PsyCap moderated the impact of stress on employees' tendency to respond with uncivil behaviours. That is, high PsyCap employees were less likely to retaliate in kind. In a sample of factory workers, Matthiesen and Einarsen (2004) found that self-efficacy acted as a moderator of bullying and subsequent health complaints. In nursing, important linkages have been found between PsyCap, burnout and job retention suggesting that PsyCap may mitigate the effects of negative work experiences on nurses' commitment to their work (Luthans & Jensen 2005, Laschinger *et al.* 2012).

The current study

Very few studies have examined the relationship between bullying and negative mental health outcomes such as PTSD, and none to our knowledge

have investigated the protective effect of psychological strengths in relation to these factors. The present study sought to examine the moderating effects of positive psychological capacities (i.e. PsyCap) on the relationship between workplace bullying and PTSD symptomology in both new graduate and experienced nurses. We reasoned that PsyCap will serve as a protective intrapersonal resource that equips individuals with the ability to buffer the negative effects of workplace bullying thereby preventing the onset of serious mental health outcomes, such as PTSD.

Methods

Design

A non-experimental survey design was used to test our hypothesis. A modified version of the Total Design Method (Dillman 2000) was used to increase survey response rates. Survey packages were mailed to nurses' homes. Packages included a letter explaining the study, a questionnaire, a stamped addressed return envelope and a five dollar coffee voucher as a token of appreciation for their time. Four weeks after the initial mailing, a reminder letter was sent to all non-responders. This was followed by a replacement questionnaire four weeks later. Data for this analysis were collected from January 2012 to March 2012. The Research Ethics Board at the University of Western Ontario granted approval to conduct the study.

Sample

A random sample of registered nurses in Ontario was obtained from the College of Nurses of Ontario registry list. The total sample included 1140 nurses. Only nurses working in acute care settings were eligible for inclusion in the present study and therefore the final sample consisted of 631 (52.4%) experienced nurses and 244 (20.2%) newly graduated nurses (within the first 2 years of practice). The remaining 265 (27.4%) nurses indicated that they worked in non-acute care settings and were therefore excluded from the analyses. The sample demographics for both new graduate nurses and experienced nurses in Ontario hospitals are presented in Table 1. In both groups participants were predominantly female. On average, new graduate nurses were 27 years of age and experienced nurses were 46 years of age. Most worked full-time (61% and 69%, for new and experienced nurses respectively) primarily in medical-surgical units (56% and 45%), and worked between 20 and 39 hours per week (66% and 58%).

Table 1
Demographic variables

	New Graduate Nurses		Experienced Nurses	
	Mean	SD	Mean	SD
Age	27.02	7.04	45.83	10.64
	N	%	N	%
Gender				
Female	214	87.7	589	93.5
Male	30	12.3	41	6.5
Employment Status				
Full-Time	150	61.1	431	68.5
Part-Time	81	33.0	141	22.4
Casual	12	5.9	57	9.1
Unit Specialty				
Medical-Surgical	137	56.2	281	44.5
Critical Care	55	22.5	173	27.4
Maternal-Child	32	13.1	111	17.6
Mental Health	20	8.2	66	10.5
Hours per week				
<20 h	6	2.5	49	7.8
20–39 h	161	66.3	359	57.5
More than 39 h	76	31.2	217	34.7

Measurements

All measures used in the present study were standardised assessment tools shown to have acceptable psychometric properties. For the present study, Cronbach's alpha reliabilities were within acceptable ranges for all scales (range 0.67–0.96). Higher scores on each of the tools reflect a higher perception or experience of the construct. All subscales were calculated by summing and averaging items. All total scales were calculated by summing and averaging the subscale scores.

Exposure to bullying behaviours was measured using a revised version of the Negative Acts Questionnaire-Revised (Einarsen & Hoel 2001) which measured two related factors: person-related bullying (eight items) and work-related bullying (three items). A total of 11 items were rated on a 5-point Likert scale ranging from 1 (never) to 5 (daily). This tool has previously demonstrated acceptable internal consistency (Cronbach's $\alpha = 0.77$ – 0.92) and predictive validity in a sample of newly graduated nurses (Laschinger *et al.* 2010). Confirmatory factor analysis supported a three factor structure and construct validity has been demonstrated (Einarsen & Hoel 2001).

PsyCap was measured using the Psychological Capital Questionnaire (Luthans *et al.* 2007b) which was designed to measure the four dimensions of this construct. Each dimension was measured by 6 items rated

on a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree) for a total of 24 items. This tool has previously demonstrated acceptable internal consistency (Cronbach's $\alpha = 0.66$ – 0.89) and discriminant validity.

PTSD symptomology was measured using the primary care PTSD screen (PC-PTSD) (Prins *et al.* 2004). A total of four items were rated using dichotomous Yes or No response options. This questionnaire has been shown to have an optimally efficient cutoff score of 3 [$k(0.5) = 0.61$], with a sensitivity rate of 0.78, a specificity rate of 0.87, a positive predictive value of 0.65 and a negative predictive value of 0.92.

Statistical analysis

Data analysis was performed using the Statistical Package for the Social Sciences (version 20.0; SPSS Inc., Chicago, IL, USA). Independent *t*-tests were used to compare differences between experienced nurses and nurses in their first two years of practice. Using Moderated Multiple Regression (MMR) analysis, the effects of psychological capital on the relationship between workplace bullying and PTSD symptomology were examined in both groups of nurses.

Results

Descriptive characteristics

Mean, standard deviations and reliability estimates for the study variables are presented in Table 2 A,B. The two groups of nurses in this study were remarkably similar with respect to the major study variables. Both groups reported low levels of workplace bullying and PTSD symptomology and relatively high levels of psychological capital. Experienced nurses reported significantly higher overall psychological capital ($t_{851} = -5.54$, $P < 0.000$, $M = 4.55$) as well as efficacy and resiliency ($t_{851} = -7.57$, $P < 0.000$, $M = 4.38$ and $t_{851} = -6.45$, $P < 0.000$, $M = 4.72$, respectively) than the new graduate nurses. No significant differences were found between the two nurse groups for exposure to bullying and PTSD symptomology.

Age and gender were examined in regards to the major study variables. Age was weakly but significantly related to overall PsyCap ($r = 0.23$, $P = <0.05$), such that older nurses tended to have higher overall levels of PsyCap. There was no significant relationship between bullying exposure by gender in either nurse group.

Table 2Means, standard deviations, correlations and Cronbach's α -coefficients for study variables

Scale/Subscale	Mean	SD	α	1	2	3	4	5	6	7
(A) New Graduate Nurses ($n = 244$)										
Negative Acts Questionnaire-Revised (NAQ-R) (Einarsen & Hoel 2001)	0.55	0.71	0.94	–						
Psychological Capital Questionnaire (PsyCap) (Luthans <i>et al.</i> 2007a,b)	4.55	0.60	0.91	–0.32	–					
PsyCap: Efficacy	4.38	0.88	0.85	–0.14	0.77	–				
PsyCap: Hope	4.64	0.70	0.84	–0.38	0.85	0.51	–			
PsyCap: Resiliency	4.72	0.64	0.72	–0.18	0.76	0.45	0.51	–		
PsyCap: Optimism	4.44	0.74	0.78	–0.32	0.78	0.36	0.66	0.48	–	
Post-Traumatic Stress Disorder (PTSD) (Prins <i>et al.</i> 2004)	0.22	0.34	0.83	0.55	–0.39	–0.24	–0.41	–0.19	–0.39	–
(B) Experienced Nurses ($n = 631$)										
Negative Acts Questionnaire-Revised (NAQ-R) (Einarsen & Hoel 2001)	0.55	0.68	0.92	–						
Psychological Capital Questionnaire (PsyCap) (Luthans <i>et al.</i> 2007a,b)	4.30	0.32	0.90	–0.29	–					
PsyCap: Efficacy	3.88	0.80	0.82	–0.13	0.81	–				
PsyCap: Hope	4.57	0.68	0.84	–0.34	0.85	0.58	–			
PsyCap: Resiliency	4.41	0.62	0.67	–0.18	0.74	0.44	0.52	–		
PsyCap: Optimism	4.34	0.66	0.74	–0.31	0.82	0.49	0.66	0.52	–	
Post-Traumatic Stress Disorder (PTSD) (Prins <i>et al.</i> 2004)	0.24	0.32	0.75	0.60	–0.37	–0.24	–0.35	–0.23	–0.36	–

SD, Standard deviation, α refers to Cronbach's alpha coefficient value.

*All correlations were significant at the 0.05 level

Correlation analyses

The magnitude and direction of the correlations among major study variables were similar for the two nursing groups (see Table 2 A,B). Overall, workplace bullying was significantly related to both psychological capital ($r = -0.32$ and $r = -0.29$, for new and experienced nurses, respectively) and PTSD symptomology ($r = 0.55$ and $r = 0.60$, for new and experienced nurses, respectively).

The moderating effect of psychological capital in the bullying/PTSD relationship

We tested the primary study hypothesis that is, that psychological capital, an intrapersonal strength, would buffer the effect of workplace bullying on PTSD symptomology using Moderated Multiple Regression (MMR) analyses for each group. To reduce multi-collinearity and improve interpretation of the results, the mean centring technique was conducted prior to the MMR analysis. According to procedures outlined by Cohen *et al.* (2003), the predictor and moderator variables were centred by subtracting the mean from each score and interaction terms were then created by multiplying each combination of predictor and moderator. A median split was then used so as to convert these variables into categorical variables to plot the interaction effects.

The results of the MMR analyses did not support the primary hypothesis. In both groups bullying and PsyCap explained a significant amount of variance in PTSD symptomology ($R^2 = 0.36$ and $R^2 = 0.40$, for new graduates and experienced nurses, respectively). However, the interaction term was not significant in either group. Both bullying ($B = 0.51$ and $B = 0.52$, $P < 0.05$, for new graduate and experienced nurses, respectively) and PsyCap ($B = -0.25$ and $B = -0.20$, $P < 0.05$, for new graduate and experienced nurses, respectively) were significant independent predictors of PTSD symptomology. That is, more frequent exposure to bullying was associated with higher levels of PTSD and higher levels of PsyCap were associated with lower levels of PTSD (See Table 3).

PsyCap subdimensions analyses

Further MMR analyses were explored to examine the buffering effects of the four PsyCap dimensions on the bullying/PTSD relationship (see Table 4). For experienced nurses, the interaction between efficacy and bullying was significant ($B = -0.06$, $\Delta R^2 = 0.004$, $F_{3, 613} = 128.41$, $P < 0.001$). Although higher levels of bullying were associated with higher levels of PTSD symptoms, this relationship was stronger for individuals with lower levels of psychological efficacy (see Fig. 1). This was not the case with new graduate nurses. None of the other PsyCap subdimensions significantly moder-

Table 3

Moderated Multiple Regression (MMR) analyses with bullying and psychological capital predicting Post-Traumatic Stress Disorder (PTSD) symptomology in new grad nurses and experienced nurses

Predictor	Nurse group			
	New grad nurses		Experienced nurses	
	ΔR^2	B	ΔR^2	B
Model 1	0.36		0.40	
PsyCap		-0.24**		-0.21**
Bullying		0.48**		0.54**
Model 2	0.002		0.002	
PsyCap		-0.25**		-0.20**
Bullying		0.51**		0.52**
PsyCap × Bullying		0.06		-0.05
Total F^2	0.36		0.40	
N	234		616	

** $P < 0.001$, two-tailed.

Table 4

Moderated Multiple Regression (MMR) analyses for Psychological Capital(PsyCap) subdimensions

Subdimension	Nurse group	
	New grad nurses	Experienced nurses
Efficacy $R^2 = 0.33$		
Efficacy	-0.17**	-0.15**
Bullying	0.57**	0.58**
Efficacy × Bullying	0.06	-0.06*
Resiliency $R^2 = 0.32$		
Resiliency	-0.11*	-0.13**
Bullying	0.55**	0.57**
Resiliency × Bullying	0.04	-0.05
Hope $R^2 = 0.35$		
Hope	-0.25**	-0.17**
Bullying	0.50**	0.54**
Hope × Bullying	0.08	-0.01
Optimism $R^2 = 0.35$		
Optimism	-0.24**	-0.20**
Bullying	0.49**	0.53**
Optimism × Bullying	0.03	-0.02
N	234	616

* $P < 0.05$, two-tailed.

** $P < 0.001$, two-tailed.

ated the bullying/PTSD relationship in either group. There were significant main effects for both bullying and all PsyCap dimensions in both nurse groups. Overall, bullying was a stronger predictor of PTSD than any of the PsyCap subdimensions; however, higher levels of all four PsyCap subdimensions significantly predicted lower levels of PTSD in both groups (see Table 4).

Post hoc mediation analysis

To further examine the protective effect of Psycap against bullying, we conducted a post hoc analysis to

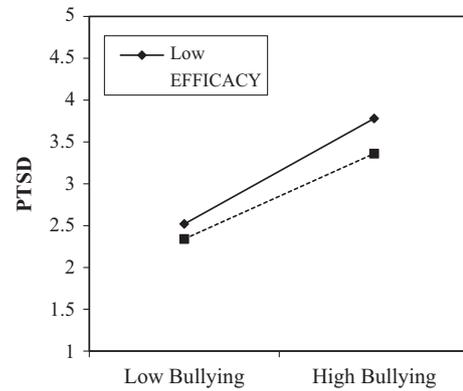


Figure 1

The moderating impact of Efficacy on bullying/Post Traumatic Stress Disorder (PTSD) relationship for experienced nurses (N = 631). Significant at the 0.05 level.

examine the extent to which PsyCap mediated the relationship between bullying and PTSD symptomology. Mediation is another approach to investigating the protective effect of an intervening variable on an outcome. According to Baron and Kenny’s (1986) approach to mediation, in step 1, bullying was a significant predictor of PTSD symptomology in both groups ($B = 0.55$ and $B = 0.60$, for new and experienced nurses, respectively). In step 2, bullying significantly predicted PsyCap in both groups ($B = -0.32$ and $B = -0.29$, for new and experienced nurses, respectively). In step 3, the bullying/PTSD path was lower (but still significant) than in step 1 ($B = 0.48$ and $B = 0.54$, for new and experienced nurses, respectively), suggesting partial mediation. Sobel tests confirmed that the indirect effect of bullying on PTSD symptomology through PsyCap was significant in both nurse groups ($z = 3.77$, $P < 0.05$ and $z = 6.53$, $P < 0.05$, for new and experienced nurses, respectively).

Discussion

The purpose of this study was to examine the role of positive intrapersonal strength factors (Psycap) in protecting nurses from the severe negative health effects of workplace bullying. The results did not support the hypothesized buffering effect of psychological capital on nurses’ experiences of PTSD symptoms after exposure to workplace bullying. Greater exposure to workplace bullying was significantly related to higher levels of PTSD symptomology for both groups, regardless of their levels of psychological capital. However, although overall psychological capital did not buffer the negative effects of workplace bullying among

nurses in this study, the mediation analyses showed that PsyCap served as a mechanism through which bullying exposure resulted in PTSD symptoms. In the presence of higher levels of PsyCap, the effect of bullying on PTSD was somewhat diminished. This finding is similar to that of Avey *et al.* (2009). This suggests that PsyCap may play some protective role against bullying. The mediation effect was similar for both new graduate and experienced nurses, suggesting that strategies to build PsyCap to strengthen intrapersonal resources for coping with negative work experiences is important for all nurses.

Interestingly, the pattern of relationships among these variables was similar across groups. That is, bullying exposure rates and the impact of bullying and PsyCap on mental health (PTSD) were similar for both new graduate nurses and experienced nurses. While both workplace bullying and psychological capital were significant predictors of PTSD, bullying exposure had a stronger effect. These findings are consistent with research linking bullying to negative mental health outcomes such as anxiety and depression (Einarsen *et al.* 1998, Quine 2001, Hansen *et al.* 2006, Hoel *et al.* 2010) and more recently in the general management literature, to PTSD (Nielsen & Einarsen 2012). In addition, the link between PsyCap and lower PTSD in both new and experienced nurses is similar to previous research (Jackson *et al.* 2007). This suggests that PsyCap plays a protective role against bullying in both groups. This indicates a need for continued research to develop and test interventions targeting bullying in both new graduate and experienced nurse populations.

Finally, although previous research has found that overall PsyCap was a better predictor of workplace attitudes and behaviours than were the individual components (e.g. efficacy) (Luthans *et al.* 2007a,b), our findings suggest that examining the effects of individual dimensions of PsyCap has value. In partial support of the hypothesized buffering effect of PsyCap, efficacy emerged as the most telling aspect of psychological capital for experienced nurses, in that the impact of bullying on PTSD was stronger for nurses with lower levels of efficacy. This is consistent with Bandura's theory of self-efficacy (1977), which highlights the role of self-efficacy in enabling individuals to cope with challenging situations. Nielsen and Einarsen (2012) suggest that individuals who possess greater efficacy may be better able to distinguish between what is expected and what is happening and, more importantly, see this discrepancy as manageable. As such, they are better able to cope with the stressor, and in

turn experience a reduction in the subsequent damaging cognitive reactivation that occurs as a result of repeated exposure to bullying. This reduction may protect these individuals from experiencing long-term mental health issues. The stronger buffering effect among experienced nurses may suggest that they have greater confidence in their ability as a nurse which may counteract the negative effects of bullying. In contrast, newly graduated nurses may not have integrated their jobs into their sense of self to the same degree, and therefore do not rely as heavily on this as a protective strength when encountering workplace stressors.

Given the negative personal and organisational effects of PTSD, such as anxiety and depression, illness-related absenteeism, insomnia, lost productivity, and job instability (Bjorkquist *et al.* 1994, Davidson *et al.* 1991, Høgh *et al.* 2005), every effort should be made to prevent this devastating mental health outcome. Our results suggest that strengthening nurses' intrapersonal resources is important to complement structural organisational preventive strategies against bullying.

Limitations of the study

The cross-sectional nature of this study limits the ability to make claims of causal effects. A longitudinal study would allow for a stronger test of the relationships. The current study utilised a four-item PTSD screening measure with acceptable psychometric properties (Prins *et al.* 2004), but inclusion of a more definitive measure of PTSD symptomology may be useful in replicating and corroborating the current findings. One of the main strengths of this study was that the design allowed for testing of hypotheses across two distinct groups – newly graduate and experienced nurses.

Implications of nursing management

Given that there is little research examining the associations between bullying in the workplace, positive psychological resources and mental health outcomes, this study contributes to a relatively underdeveloped area of nursing research. The results of this study support the idea that possessing certain protective personal resources helps to mitigate the damaging effects of workplace bullying. In fact, Hutchinson and Hurley (2012) suggest that PsyCap in combination with another personal resource, emotional intelligence (EI), buffer the effects of bullying behaviour. Individuals with high PsyCap tend to focus on the positive aspects of their surroundings and view problems as solvable (Luthans *et al.* 2007a,b). These personal strengths

may enable these nurses to respond proactively when confronted with bullying behaviour. Our results suggest that systematic efforts to build PsyCap in nursing work settings would be valuable. Given that PsyCap is considered to be state-like in nature, leaders should ensure that opportunities to develop this personal strength through proper training programmes are in place (Luthans *et al.* 2008).

Past research supports the idea that positive personal resource factors can be promoted and fostered (Saks 1994, Fredrickson 2001, Luthans *et al.* 2006). For example, Luthans *et al.* (2006) suggest implementing human resource development strategies that increase psychological assets while decreasing risk factors. Fredrickson (2001) highlights the importance of building positive emotions, by reminding employees to think positively and encouraging employees to find meaning in negative events. Saks (1994) asserts that new employees should be provided with guided mastery experiences, performance feedback and effective co-workers as models.

While it is important to identify which factors buffer the negative effects of workplace bullying, the ultimate goal is to reduce the occurrence of these stressors, therefore improving organisational culture within the nursing profession. It is therefore important for research to identify ways in which the perpetuation of bullying behaviour in the workplace can be reduced or eliminated. Leadership plays an important role in reducing the prevalence of workplace bullying by ensuring that standards of acceptable behaviour are communicated and enforced (Leymann 1990, Lewis & Orford 2005, Hutchinson *et al.* 2008, Laschinger *et al.* 2012). When leaders fail to act on violations of these standards, bullying may become normalized, perpetuating the problem (Hutchinson *et al.* 2008). Thus, to ensure that nurses are equipped to handle workplace stressors, leaders must take into consideration both job-related and intrapersonal strength variables factors in their efforts to create safe and supportive nursing work environments.

Conclusions

Our findings add to our understanding about the nature of the relationship between workplace bullying and PTSD, a serious mental health outcome, and the extent to which PsyCap, an interpersonal strength, protects nurses from the negative effects of bullying. PsyCap appears to play a protective role against workplace bullying. The results may inform the development of programmes designed to both discourage

workplace bullying and foster positive personal strength factors that enable nurses to better cope with workplace bullying when it does occur. Exposure to bullying threatens both experienced and new graduates' workplace health and wellbeing, possibly contributing to their leaving the profession (Patten 2005). Given the worldwide nursing shortage, every effort should be made to ensure that both experienced nurses and newcomers to the profession practice in supportive, bully-free environments that support their optimal engagement in the nursing workforce.

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Ethical approval

Full ethical approval was obtained from the University of Western Ontario research ethics board.

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