

THE RELATIONSHIP BETWEEN JOB-INDUCED POST-TRAUMATIC STRESS AND WORK-BASED SOCIAL SUPPORT

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ABSTRACT

Research on the role of social support in occupational samples has suggested that work-based social support [WBSS] may have a significant buffering and main effect on occupational stress. Using occupational stress research as a model, the present research explored the relationship between WBSS and job-induced post-traumatic stress [PTS] in a sample of cash-in-transit security guards that had experienced a high incidence of armed robberies in the line of duty. Results indicate that WBSS has a significant relationship with PTS. Factors associated with elevated PTS levels are discussed and comparisons are made with guards who had not experienced traumatic incidents.

OPSOMMING

Navorsing omtrent die rol van sosiale ondersteuning in werkersteekproewe dui daarop dat werkgebaseerde sosiale ondersteuning (WGSO) 'n betekenisvolle bufferings- en hoofeffek op beroepstres het. Die huidige navorsing het die verhouding tussen WGSO en werkgeïnduseerde posttraumatis stes (PTS) in 'n steekproef kontant-in-transito sekuriteitswagte, wat 'n hoë insidensie gewapende roof in die uitvoer van hul dagtaak beleef het, ondersoek. Die bevindinge dui aan dat daar 'n betekenisvolle verhouding tussen WGSO en PTS bestaan. Faktore wat met PTS geassosieer word, word bespreek en vergelykings word getref met sekuriteitswagte wat geen traumatiese belewenis gehad het nie.

Social support has frequently been cited in psychological literature as having a potentially valuable role in reducing stress in the workplace and increasing well-being (Cohen & Wills, 1985; Lim, 1996; Terry, Nielsen & Perchard, 1993). Typically social support is defined as support "accessible to an individual through social ties to other individuals, groups, and the larger community" (Lin, Ensel, Simeone, & Kuo, 1979, p. 109). Although relatively little work has been done on the specific benefits of work-based social support [WBSS] for workers experiencing post-traumatic stress, a large body of research exists on the role of social support for workers experiencing occupational stress. Occupational stress literature suggests that social support may have two important effects in the workplace. Firstly, social support is seen to have a main effect on well-being, regardless of the level of stress (Terry, Nielsen & Perchard, 1993) and a deficient level of support is suggested to accentuate stress and strain in an individual (Kaufmann & Beehr, 1989). Secondly, social support is suggested to interact with stress such that it buffers or moderates the relationship between stress and strain (Cohen & Wills, 1985). Support for the main effect of social support has been fairly consistent (Lim, 1996), yet support for the buffering or moderating effect has not been conclusive (Ganster, Fusilier & Mayes, 1986; Kaufmann & Beehr, 1989).

Previous research attempts indicate that WBSS from co-workers and supervisors is more important in occupational stress reduction than non-work based support from family and friends (Kaufmann & Beehr, 1989; Lim, 1996). In addition, there is considerable support for the notion that supervisory support is significantly more important than co-worker support (Ganster et al., 1993). Social support is seen to consist of two types of support, namely emotional support [ES] and tangible support [TS], of which emotional support has been suggested to be the most influential (House, 1981). However, a more recent study by Kaufmann and Beehr (1989) on occupational stress in police officers did not support this proposition, where they found that there was less individual strain amongst officers who perceived greater levels of tangible support.

WBSS is seen to aid individuals in coping with occupational

stress by providing companionship and emotional support; by creating a supportive and conducive work environment; by helping the employee to re-evaluate his work situation, to make it more manageable and less threatening; as well as through providing actual tangible and emotional supports (Lim, 1996). Stress literature has also indicated that social support operates so as to moderate the stress-strain relationship by developing feelings of belonging and solidarity and by increasing positive affect (Lim, 1996).

While further clarity on the relationship between occupational stress and WBSS may yet develop through additional research, it is proposed that the existing literature and findings on the effects of WBSS on occupational stress are sufficiently well established to be used as a model for exploring the relationship between Post-traumatic Stress [PTS] and WBSS, as was attempted in the present research. Modelling the relationship between occupational stress and WBSS, it was extended that workers experiencing job-induced PTS would benefit from WBSS in the following ways: Firstly, pre-trauma social support may potentially increase resistance to PTS, and secondly, post-trauma social support would help individuals cope with the effects of the trauma.

PTS is differentiated in the current text from Post-traumatic Stress Disorder [PTSD] in that a person who experiences a trauma may experience the symptoms associated with PTSD at a subclinical level and may, therefore, not qualify for an actual PTSD diagnosis. In order that PTSD be clinically diagnosed, according to the DSM IV (American Psychological Association [APA], 1994), the symptoms must be experienced for longer than one month and would typically only be effectively diagnosed through a clinical interview. In addition, it is difficult to assess the existence of the actual disorder through cross-sectional quantitative research, as opposed to long-term qualitative research. Regardless of whether one can actually diagnose PTSD, when these symptoms are experienced after a traumatic event, even for a short period of time, they may still impact on the workplace and worker. Hence, the experience of PTSD related symptoms after a trauma is referred to in this article as PTS.

Although a basic understanding of the symptoms of PTSD is well covered in many psychological texts, it is necessary to

briefly review some of these symptoms in terms of their occurrence within the context of work. The symptoms and diagnostic criteria of PTSD are defined by the DSM IV (APA, 1994) and characterises PTSD as having intrusive avoidance and arousal symptoms. For workers, such as policemen and security guards who experience traumatic events in the line of duty, the authors propose that the three groupings of PTSD symptoms may have a number of unique implications in the workplace:

- Intrusive symptoms involve re-experiencing the traumatic event in the form of dreams, flashbacks, recollections or intense distress when exposed to an internal or external cue reminding the individual of the event. Intrusive symptoms may play a destructive role in the workplace where the employee becomes overwhelmed by the re-experiencing of the traumatic event, and through the constant exposure to trauma-related stimuli and recurrent dangers, may result in the intensification of the frequency and strength of re-experiencing. Moreover, the re-experiencing of negative emotions connected to the workplace, whether through dreams, flashbacks or recollections, may possibly result in an aversion to the work situation.
- Arousal symptoms may include difficulty concentrating, irritability, difficulty sleeping, hypervigilance and an exaggerated startle reaction (APA, 1994), all of which are likely to affect an employee's ability to perform their duties both at the inter-personal and task-focused levels.
- Finally, avoidance symptoms may include attempts by the employee to avoid anything connected to the traumatic event, such as co-workers, duties, places, or situations. It may also result in a decreased interest in previously enjoyed activities, such as work, as well as through limiting a staff member's ability to experience certain emotions, and, hence, possibly weakening affective attachments between staff (APA, 1994). Avoidance symptoms are somewhat of a contradiction for security workers in the work-place, as in order to avoid the event they must avoid work. This may lead to absenteeism, resignation or result in workers forcing themselves to work and possibly becoming stressed, irritable and decreasing their level of functioning within the workplace.

Although this discussion around the manifestation of PTS in the workplace is far from complete, it will suffice to say that PTS undoubtedly has serious implications for the well-being and functioning of organisations and their employees.

The potential for social support to modify individuals' reactions to traumatic events is often acknowledged in trauma literature as being an important factor, but empirical research into its role has not been extensive. Gersons and Carlier (1992), in their discussion of the history of the PTSD, note that social support has a key role to play in overcoming PTS. Social support has also been suggested to be a modifying environmental factor which may alter the sensitivity of individuals to traumatic stressors and account for variance in individuals' reactions to crisis and disaster (Breslau & Davis, 1987; Stratton, 1986). Therefore, while the role of social support has been theoretically acknowledged in descriptive works, it has not been extensively studied at an empirical level.

It is evident in Figley's (1988) and Stamm's (1997) reviews of PTSD literature, that the majority of research on job-induced traumatic stress has focused upon emergency service personnel, rescue workers and health-care professionals. Very few studies have ventured into other domains where job-induced traumatic stress may play a role; such as with samples of security guards, bank workers or retailers who may develop PTSD through their exposure to criminal violence in their workplace. The key difference between these two groups is that the latter are the actual victims exposed to the trauma, whereas the former aim to intervene in a traumatic situation where they are often not the victims and may only experience the trauma vicariously. In an attempt to address the gap in empirical studies in this area, the present researchers attempted to explore the relationship between perceived WBSS and job-induced PTS

in a South African sample of security guards, who have recently faced a wave of armed robberies aimed at bank and cash-in-transit security vans. As a secondary aim, a basic survey was undertaken to identify trauma-related characteristics, such as the inclusion of death or injury, or demographic characteristics that may influence the abovementioned relationship, the severity of PTS or the perceived availability of WBSS in the present sample. Particular interest was paid to the characteristics of the traumatic incident such as the inclusion of death or injury (Lindy, Green & Grace, 1987) and the experience of multiple traumas (Gersons, 1989; Bryant & Harvey, 1996), as these are factors that have been associated with increased PTS symptom severity.

METHOD

Sample

An anonymous self-report questionnaire was administered to a voluntary sample of cash-in-transit security guards. The security vans that these guards protect have become prime targets of criminals in recent years in South Africa and, as a result, the majority of the attained sample had experienced an armed robbery. Therefore, these individuals were an ideal sample in which to observe the association between PTS and WBSS. The questionnaires were distributed to nine branches of a particular security organisation. These branches were situated in and around four of South Africa's major cities. A total of 540 questionnaires were distributed through the company's internal mail, of which 142 (26.3% response rate) completed, usable questionnaires were returned. While the response rate is somewhat less than ideal, difficulties with the guards' relatively unpredictable shift schedules, the distribution of offices throughout South Africa, as well as the unreliable nature of the company's internal mail system, prevented the questionnaires from reaching some staff members. Thus the response rate was likely to be closer to a third.

The resulting sample was entirely male with an average tenure within the security organisation of 3.82 years. In terms of race, 89% (126) of the sample was white and 11% (16) were black. The majority (62%) of the respondents were between the ages of 25 and 40 years, with 25% being below the age of 25 years, and 23% being older than 40 years. The mean education level of the sample was 10.8 years (SD= 1.06) with a range of 7 to 12 years. In terms of marital status, 57% (81) were married, 33% (47) were single, and 10% (14) were divorced or widowed. Of the total sample, 69.7% (99) of the respondents had experienced a traumatic event while working at the present organisation. The majority (92%) reported that their worst traumatic experience at work was an armed robbery, whilst the remainder noted that their worst experience was a motor vehicle accident on duty. The guards' experiences of trauma varied, 20% (29) indicated that their experience included a death, while 56% (55) indicated that their traumatic experiences included an injury. A majority of 60.1% (60) had experienced more than one traumatic event.

Measures

A brief questionnaire was administered together with measures of PTS and WBSS which enquired as to the guards' experiences of trauma and their individual biographical information. A cover letter stressed the voluntary and confidential nature of the research.

The Revised Impact of Event Scale [RIES] (Esprey, 1996), based on Horowitz, Wilner and Alvarez's (1979) Impact of Event Scale [IES], was used to test PTS symptom severity levels. The RIES uses the intrusion and avoidance subscales of the IES, but adds a subscale measuring arousal symptoms which is in accordance with the DSM-IV's diagnostic criteria (APA, 1994). The participant's response to the 21-item scale is recorded on a 4-option scale identical to that in the original IES, allowing respondents to rate the frequency at which they experience particular symptoms. This response scale's anchors are: not at all, rarely, sometimes, and often. Esprey's (1996) ori-

ginal validation of the RIES attained a Cronbach alpha of 0.87, as a measure of internal consistency. The present research yielded a Cronbach alpha of 0.89. The RIES was used to measure PTS symptom severity as a continuous score, as it was not a part of the study to determine the number of respondents with an actual PTSD diagnosis. Only guards who had experienced a traumatic event at work ($n=99$) were instructed to complete the RIES scale, which allowed comparisons with guards who had not had traumatic experiences at work ($n=43$) on their perceptions of WBSS.

Perceived social support, in the present study, is seen to be available from two sources, namely work-based support (supervisors and co-workers) and non-work based support (family, friends, etc.). Although Caplan, Cobb, French, Van Harrison and Pinneau's (1975) social support scale measures perceived support from both of these sources, it was decided that only WBSS would be measured as WBSS has been demonstrated to be more effective in reducing occupational stress (Kaufmann & Beehr, 1989; Lim, 1996). Moreover, the authors were interested in the value of this specific type of support as a work-based intervention. The scale of Caplan et al. (1975) measures the perceived availability of both tangible and emotional support on a 5 point-scale with anchors ranging from 'not at all' to 'very much'. An example of an item includes: "How easy is it to talk with each of the following people?" Research participants respond to the four items both in terms of their supervisor and co-workers. Previous studies with this scale have achieved internal reliability alphas of between 0.80 to 0.95 (Terry, Nielsen & Perchard, 1993; Lim, 1996). The present study achieved an acceptable Cronbach alpha of 0.76.

RESULTS

Product-moment correlations were used in calculating the strength, direction and significance of the relationship between PTS symptom severity (subscales and total) and perceived WBSS (subscales and total) for those individuals who reported a traumatic experience. These results, as well as the means and standard deviations, are presented below in Table 1. Looking at these results it is evident that a moderate but highly significant relationship exists between PTS and perceived WBSS from supervisors, for the present sample. A moderately weak but significant relationship was found between PTS and perceived emotional support from co-workers. The correlation between the PTS total and perceived WBSS total was also of moderate strength and was highly significant. All of these relationships were negative.

Table 1
Product-moment correlations between PTS and perceived work-based social support

Variable	1	2	3	4	5	6	7	8	9	10	11
1. PTS Avoidance											
2. PTS Arousal	.59***										
3. PTS Intrusion	.64***	.80***									
4. PTS Total	.84***	.89***	.92***								
5. Supervisor TS	-.17	=	-.31**	-.28**							
6. Supervisor ES	-.21*	-.28**	-.30**	-.29**	.71***						
7. Supervisor: Total	-.21*	=	=	-.31**	.92***	.93***					
8. Co-worker TS	-.19	-.22*	-.16	-.18	.26**	.21*	.25*				
9. Co-worker ES	-.32**	-.13	-.19	-.22*	.09	.22*	.17	.59***			
10. Co-worker: Total	-.29**	-.19	-.20	-.23*	.19	.24*	.23*	.87***	.91***		
11. Total work Support	-.31**	=	=	=	.76***	.80***	.85***	.65***	.62***	.71***	
N ¹	95	98	97	92	99	99	99	99	99	99	99
Mean	16.66	16.03	17.73	50.37	3.19	3.42	6.62	3.12	3.67	6.79	13.40
Standard Deviation	8.32	7.34	9.35	22.08	1.68	1.86	3.27	1.25	1.54	2.49	4.55

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

¹ As a result of missing data N varies.

Further analyses of these results were concluded using Fisher's z transformations to identify differences in the strengths of the relationships between: (a) the different types of support; (b) the different PTS symptom types; and (c) between different demographic groupings. No differences were found in the strengths of the relationships between the different types of support or between the different symptom types. Additional analyses did, however, demonstrate that certain individual groupings tended to have a significantly stronger relationship between their PTS and WBSS scores. Guards who had experienced multiple traumas were found to have a significantly stronger ($Z \pm 1.96$; $p < .05$) relationship between PTS and WBSS ($r(57) = -0.49$; $p < .001$) than those who had experienced only a single traumatic experience at work ($r(35) = -0.03$; $p > .05$). Single men were also found to have a significantly stronger ($Z \pm 1.96$; $p < .05$) relationship ($r(25) = -.64$; $p < .001$) between PTS and WBSS than married men ($r(54) = -.23$; $p > .05$).

ANOVAs and t -tests were performed for descriptive purposes to identify whether any trauma-related characteristics, such as the experience of multiple traumas, were associated with differences in PTS symptom severity levels. In addition, a t -test was used to compare guards who had and had not experienced a traumatic event on the perceived availability of WBSS so as to identify whether the experience of a traumatic event was associated with any differences in workers' perceptions of WBSS. Guards who had not experienced a traumatic event perceived the availability of co-worker support to be significantly higher than guards who had experienced such an event ($t = -2.52$; $p < 0.05$). Tables 2 and 3 outline the results pertaining to the inclusion of the following characteristics in the guards' traumatic experiences: the experience or witnessing of an injury (see Table 2); or the experience of multiple traumas (see Table 3). In aid of brevity, only significant results are presented for these analyses.

Table 2
Comparison between guards who did and did not experience or witness an injury as a part of their traumatic experience

Variable	Injury (I) or No Injury (NI)	N ¹	Mean	t Value
PTS Intrusion	I	54	20.00	2.77**
	NI	43	14.88	
PTS Total	I	49	55.47	2.43*
	NI	43	44.56	

* $p < 0.05$ ** $p < 0.01$

¹ As a result of missing data the N of each group compared varies.

Table 3
Comparison between guards who did and did not experience multiple traumatic events

Variable	Multiple (M) or No Multiple (NM)	N ¹	Mean	t Value
PTS Arousal	M	59	17.56	2.61*
	NM	39	13.72	
PTS Total	M	57	54.14	2.13*
	NM	35	44.23	
Supervisor Total Social Support	M	60	5.93	-2.65**
	NM	39	7.67	
Total Work-based Social Support	M	60	12.52	-2.47*
	NM	39	14.77	

* $p \leq 0.05$

¹ As a result of missing data the N of each compared group varies.

The relationships and differences present in these results are discussed in terms of their implications for PTS management and organisational management in high-risk industries such as banking, security and policing.

DISCUSSION

As hypothesised, a relationship has been demonstrated between PTS and WBSS for the present sample. It is evident that a moderate, negative and highly significant relationship exists

between PTS (total) and WBSS (total). Further analyses of these relationships found that there were no significant differences in the relationships between the WBSS total and each of the PTS subscales, indicating that the PTS total and subscales are associated with WBSS in a similar way. From Table 1 it is evident that supervisory support seems to have a slightly stronger and more significant relationship with PTS than co-worker support, inferring confirmation of the importance of supervisory support which has been demonstrated in occupational stress studies (Ganster et al., 1993). However, a Fisher's z transformation did not find any significant differences in the relationships between PTS and co-worker and supervisory support. Future studies will enable some confirmation on this issue.

Again, a slight trend emerged in that the relationship between PTS avoidance and co-worker support was slightly stronger than that between PTS avoidance and supervisor support. The relationship between PTS arousal and intrusion and supervisory support was also seemingly stronger and more significant than the relationship between PTS arousal and intrusion and co-worker support. Although neither of these two trends was found to be significant using Fisher's z transformations, it is suggested that these trends may be worthy of further consideration.

The finding that single guards had a comparatively stronger relationship between PTS and WBSS suggests that guards who do not have marital and family (non-work) support may rely on work-based sources of support. Previous research has found evidence of a buffering and main effect on stress by marital support (Cohen & Wills, 1985). Although one cannot infer that WBSS has a buffering or main effect on PTS in the present study, the notion that single men compensate for the lack of marital (non-work) support by relying on WBSS is plausible. The strong relationship found may suggest the value of maximising WBSS in order to minimise PTS symptom severity. Similarly, the significantly stronger relationship between PTS and WBSS for guards who had experienced multiple traumas also indicates that high WBSS may be associated with lower PTS, again implying the potential value of WBSS in the workplace. The authors suggest that the peer support programmes, and sensitivity and care-giving training may be useful methods of maximising the availability and effectiveness of WBSS in traumatising work environments. However, it must also be considered that the abovementioned relationships may be understood in terms of the likelihood that high PTS may be associated with lower perceptions of WBSS for particular groups.

An interesting finding emerged in this study in terms of the comparison of guards who had and had not experienced a trauma. Guards who had experienced a trauma perceived the availability of co-worker support to be significantly lower than guards who had not experienced a traumatic event. This suggests that after a traumatic experience, guards may distance themselves emotionally from their co-workers, which would be consistent with their PTS symptoms (APA, 1994). However, this finding may also be the result of guards having higher WBSS expectations post-trauma and through experience realising that the amount of support available is insufficient. Flannery (1990) adds that social networks become disrupted after traumatic experiences, which may result in lowered perceptions of the availability of support. The finding that guards who had experienced multiple traumas had lower perceptions of supervisory and total WBSS, as well as the strong negative relationship found for this group between PTS and WBSS, reiterates that high PTS symptom levels are associated with lowered perceptions of WBSS. Again, it is equally likely that these individuals are emotionally distancing themselves from work colleagues as their PTS levels increase. A study by Wethington and Kessler (1986, p. 78) presents evidence that "perceived support is, in general, more important than received support in predicting adjustment to stressful life events." This may be demonstrated in the present sample by the negative relationship between PTS and WBSS where higher perceived support was associated with lower PTS symptom severity.

The significantly higher level of PTS found for guards who had experienced multiple traumas supports the suggestions of Gersons (1989, p. 256) that multiple traumas may result in "post-traumatic decline" and burnout. Similarly, the indication that guards who had experienced or witnessed an injury had higher levels of PTS than those who had not experienced or witnessed an injury, stresses the role of the grotesqueness or level of violence in elevating traumatic stress responses. Surprisingly, the inclusion of a death in a guards' experiences did not emerge as a major influential factor. It is proposed that organisations involved in high-risk security or police work should be particularly sensitive to the role of these factors when attempting to assist their employees to cope with job-related traumatic experiences.

CONCLUSION

Readers are encouraged to keep two factors in mind when contemplating the results of this study. Firstly, this study was cross-sectional and exploratory in nature and its findings are, therefore, minor indications of what may actually be occurring within a fuller picture. Secondly, this research was carried out with a specific sample of individuals who work in constant exposure to crime and violence and whose duty it is to act as a barrier between that violence and society. Hence, the generalisation of the findings of this research to non-occupational samples of subjects who are not employed within the broader security or policing industries may be problematic without further investigation. This study has raised a number of interesting points. Seemingly, there may be some parallels in the relationship between PTS and WBSS and between occupational stress and WBSS. The role of WBSS in assisting traumatised workers is suggested by its negative relationship with PTS, and may be worthy of further examination. However, without the ability to ascertain causality, it is equally plausible that high PTS may be affecting workers' perceptions of the availability of WBSS. This is suggested by the finding that the guards who had experienced trauma, and especially the guards who had experienced multiple traumas, tended to have lower perceptions of the availability of WBSS. Finally, the role of factors such as multiple traumas and injury within individuals' traumatic experiences is highlighted as being associated with elevated PTS symptom severity. These results attest to the potential merit of research on the buffering and moderating effect WBSS may have on job-induced PTS. Undoubtedly there is a need for further work in the area of job-induced PTS in high-risk occupational samples. While the relationship between PTS and WBSS has been emphasised in the present research, other possible correlates of PTS suggested by occupational stress literature, such as Antonovsky's (1987) Sense of Coherence construct and personality hardiness, also warrant due consideration.

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