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Stress and coping strategies among firefighters and recruits

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RUNNING HEAD: STRESS AND COPING STRATEGIES AMONG FIREFIGHTERS

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Abstract

This study compared psychological distress and coping strategies for three different permanent firefighter groups in South-East Queensland, Australia: recruits ($n=42$), on-shift firefighters ($n=51$), and firefighters who had recently attended one of 13 fatal incidents ($n=52$). Older firefighters reported more general distress but no increase in post-traumatic stress symptoms. Coping strategies tended to be associated with higher distress and post-traumatic stress, but once this general tendency was taken into account, seeking instrumental support was associated with lower post-traumatic stress symptoms. Results support previous findings that cumulative exposure and events outside work contribute to distress in firefighters.

Stress and coping strategies among firefighters and recruits

Emergency service workers such as firefighters may experience elevated risk of developing post-traumatic stress symptoms due to incidents at work (Corneil, Beaton, Murphy, Johnson, & Pike, 1999; [McFarlane & Bryant, 2007](#)). It is intuitively appealing to think that increased experience in emergency work would help protect against post-traumatic stress. For example, a protective role of experience was supported by findings from over 28,000 workers and volunteers who had completed at least one rescue and recovery shift at the World Trade Centre site between September 11, 2001 and June 2002 (Perrin et al., 2007). Post-traumatic stress disorder (PTSD) prevalence was highest among volunteers who were not affiliated with specific organisations, and therefore on average may be presumed to have the least amount of relevant training and experience. In addition, there was differential risk of PTSD from specific exposures depending on occupation, with increased PTSD risk associated with out-of-role tasks such as firefighting for police or construction for firefighters (Perrin et al., 2007). These findings suggested that emergency workers showed increased resilience to PTSD if engaged in tasks in which they were previously experienced.

Conversely, a number of studies have now identified increased age or experience as risk factors for *higher* post-traumatic stress among firefighters (Chang et al., 2003; Corneil et al., 1999; [Dean, Gow, & Shakespeare-Finch, 2003](#); [Moran & Britton, 1994](#); Regehr, Hill, Knott, & Sault, 2003; [Wagner, Heinrichs, & Ehler, 1998](#)). This relationship has been found in connection to specific events such as firefighters performing rescue work after an earthquake (Chang et al., 2003) as well as symptom prevalence associated with accumulated years of service for both career firefighters ([Corneil et al., 1999](#); [Dean et al., 2003](#); Regehr et al., 2003; [Wagner et al., 1998](#)) and volunteers ([Dean et al., 2003](#); [Moran & Britton, 1994](#)).

Other patterns have included a lack of relationship between years of service and post-traumatic stress in 220 urban firefighters with a mean of 12 years of service (Beaton, Murphy,

Johnson, Pike, & Corneil, 1999) and a quadratic relationship with highest stress in the middle group (Moran, 1998). In the latter study, professional firefighters with 12.5-25 years of experience had higher work and personal stress than firefighters with either less or more experience than this (Moran, 1998). A quadratic relationship might help explain why increased experience sometimes appears to predict increased post-traumatic stress and sometimes decreased risk.

Prospective studies in recruit firefighters have identified that significant post-traumatic stress can develop with early work experiences. In a study that tested recruits at baseline and within their first 12 months as a firefighter, the new firefighters tested 2-28 days after a traumatic event ($n=35$) showed elevated Impact of Events Scale (IES) scores compared with their colleagues who had not yet experienced one of the defined events (Guthrie & Bryant, 2005). Although there were no cases of Acute Stress Disorder or PTSD identified at initial retest, after 4 years of service 12% met PTSD criteria ([Bryant & Guthrie, 2007](#)). Another study in 47 probationary male firefighters found 16.3% met PTSD criteria after 2 years as a firefighter, compared with 0% PTSD prevalence after completing initial training ([Heinrichs et al., 2005](#)). These prospective studies allowed identification of pre-exposure risk factors for post-traumatic stress, such as increased arousal (Guthrie & Bryant, 2005), negative self-appraisals ([Bryant & Guthrie, 2007](#)), high hostility ([Heinrichs et al., 2005](#)) and low self-efficacy ([Heinrichs et al., 2005](#)).

A further question of interest for understanding risk and protective factors is firefighters' use of coping strategies. The use of avoidance and numbing strategies has been associated with higher distress or post-traumatic stress symptoms in firefighters both cross-sectionally ([Brown, Mulhern, & Joseph, 2002](#); [Chang et al., 2003](#)) and longitudinally ([Beaton et al., 1999](#)). In contrast, lower distress has been associated with increased use of strategies such as task-focused coping ([Brown et al., 2002](#)), emotion-focused coping (Brown et al.,

2002), and positive reappraisal (Chang et al., 2003). In a study of over 700 professional firefighters, both older and younger firefighters reported more positive than negative responses after stressful tasks, but positive reactions were reduced in firefighters who used suppression coping (Moran & Colless, 1995).

A coping strategy that appears to be favoured by firefighters is seeking support from others. Some authors have noted that social support may be sought for either instrumental reasons (such as advice and practical assistance) or for emotional reasons (such as moral support and understanding), and that both purposes frequently occur together ([Carver, Scheier, & Weintraub, 1989](#)). A study in the United Kingdom found that firefighters favoured partner and work support and purposively chose between potential sources of support (Haslam & Mallon, 2003). Canadian firefighters who perceived lower social support had higher depression and trauma scores and it was noted that experienced firefighters reported lower social support than recruit firefighters (Regehr et al., 2003).

To further understand the roles of experience and coping strategies in firefighter stress, a study was conducted that compared stress and coping in recruits, on-shift and after trauma firefighters. To our knowledge this research appears to be the first to include these three groups in the same cross sectional design. For this study, the after trauma group comprised firefighters who provided data approximately seven days after a standardized type of event. The trigger event was any work involving a fatality. Under current policy of the fire and rescue service involved in the study, on the day of a fatality or as soon as possible afterwards, all personnel involved are contacted by a trained peer support officer. Therefore, the type of event and timeframe were more standardized than in previous studies in which participants chose their own event that was subjectively traumatic ([Brown et al., 2002](#); [Moran & Britton, 1994](#); [Moran & Colless, 1995](#); [Regehr, Hill, & Glancy, 2000](#); [Wagner et al., 1998](#))

or had occurred over a longer and/or variable time lag before data collection (Chang et al., 2003; [Smith et al., 2005](#)).

There has been research which has been conducted longitudinally with recruits (Bryant & Guthrie, 2005; Guthrie & Bryant, 2005; [Heinrichs et al., 2005](#)). However, this does not capture the on-shift perspective which can include up to 30 years or more of firefighting experience. Therefore the current research was designed to explore group differences in post traumatic stress levels and coping strategies, including the possibility of explaining further how post traumatic stress and coping strategies develop over a firefighter's career. It was hypothesized that groups would differ on coping strategies, psychological distress, and post traumatic stress levels, with the after trauma group expected to report the highest level of psychological distress and post traumatic stress symptoms. Potential risk and protective effects of age, length of service, rank, prior emergency experience, education, and coping strategies were also examined.

Method

Participants

Participants were 145 male firefighters in South-East Queensland, Australia, aged 22-61 years. They were either undergoing initial training (recruits; $n = 42$), working a standard shift (on-shift; $n = 51$; 1-38 years of service), or had attended a recent fatal incident (after trauma; $n = 52$; 1-35 years of service). Fatal incidents involved 11 motor vehicle crashes, one truck rollover, and one train/pedestrian collision. The shifts were selected at random from among the 15 fire stations within the region. All personnel from the same shift were invited to participate, as any firefighting work (including exposure to traumatic events) involves the whole shift of personnel from that station. Data were collected between October 2006 and March 2007. As only 2% of firefighters in the region are female and sex differences have been found in both coping and post-traumatic stress ([Gavranidou & Rosner, 2003](#)), only male

firefighters were included in the present study. Further demographic information is shown in Table 1.

Insert Table 1 about here

Materials

Participants completed self-report demographic items as well as several standardized questionnaires. Psychological distress was measured with the General Health Questionnaire 12 item scale (GHQ-12; [Goldberg & Williams, 1988](#)), which has been recommended for screening and interviewing trauma victims ([Raphael, Lundin, & McFarlane, 1989](#)).

Cronbach's α for the current research was 0.86, consistent with a mean from previous research of 0.85 ([Goldberg & Williams, 1988](#)). Because data on thresholds for the GHQ have most often used GHQ scoring of 0-0-1-1, GHQ scoring with a 1/2 threshold was used for binary classification, consistent with data from a large representative Australian adult sample (Korten & Henderson, 2000) and a separate study with Australian male military personnel ([McKenzie et al., 2004](#)). Because Likert scoring provides a better spread of scores when the GHQ-12 is analysed as a continuous variable (Goldberg et al., 1997), Likert scoring of 0-1-2-3 was used for all other GHQ-12 analyses.

Coping strategies were measured using the Brief COPE ([Carver, 1997](#)). Of the 14 subscales, comprising 2 items for each subscale, 11 had Cronbach's alpha ranging between .73-.96. Behavioural disengagement did not form a reliable subscale (Cronbach's alpha = .36) and was not analysed further. Self-blame (.62) and self distraction (.63) had the lowest Cronbach's alpha scores of subscales retained for analysis but, given that there were only 2 items per scale, this was considered to indicate adequate reliability for further analysis.

The Impact of Events Scale – Revised (IES-R) was used to measure participant post traumatic stress symptoms (hyperarousal, intrusion and avoidance; [Weiss, 2004](#)). The total score was used for analysis, and had Cronbach's alpha of 0.94. The after trauma group

instructions were to rate the degree of distress or bother from each symptom over the past seven days with respect to the fatal incident. Instructions for recruit and on-shift participants requested that they respond regarding symptoms over the past seven days with respect to “any stress in your life”. Scores of 33 or above were considered to indicate above-threshold levels of post-traumatic stress symptoms ([Creamer, Bell, & Failla, 2003](#)).

Procedure

Before data collection, approval was obtained from the fire and rescue service, firefighter’s union, and university human research ethics committee. Recruits participated during their initial training, the on-shift group participated during work hours, and the after trauma group was contacted on the day of the fatal incident and invited to participate in approximately one week. Contact on the day of the incident was conducted in conjunction with the first author’s role as a fire and rescue service peer support coordinator. Collection of data one week after the incident was consistent with the 7-day timeframe for IES-R.

Results

Preliminary Analyses

Initial comparisons (see Table 1) showed that recruits, as expected, were significantly younger than on-shift and after trauma groups, $F(2, 142) = 46.94, p < .001$. Unexpectedly, on average the after trauma group was older and more experienced than the on-shift group; this difference of approximately 4 years was significant for both age and length of service ($p < .05$). Recruits were more likely than the two experienced groups to have a higher level of education, $\chi^2(4) = 14.55, p < .01$, and to have previous paid or voluntary experience in an emergency occupation before joining the fire service, $\chi^2(2) = 26.88, p < .001$. On-shift and after trauma groups did not differ significantly from each other in education, previous emergency experience, or rank.

Distress, post-traumatic stress symptoms, and all of the coping scales except acceptance were positively skewed. There were also several univariate outliers, and one of these cases was also a multivariate outlier. Transformations were therefore used so that the data met the assumptions for parametric analyses (Tabachnick & Fidell, 1989). Square root transformations were used for active coping, emotional support, positive reframing, and planning. Logarithmic transformations were used for distress, post-traumatic stress symptoms, instrumental support, venting, and humour. The inverse was used for self distraction and self blame, which reversed the direction of correlations involving these variables. Substance use, religious coping, and denial remained strongly skewed even after transformations and were not analysed further. There were no outliers among transformed data. Descriptive statistics are presented for the original scales for ease of interpretation, but values for ANOVAs, correlations, and regressions come from transformed data. The pattern of results was similar for both transformed and untransformed data, except that several correlations were significant with transformed but not untransformed data.

Group Comparisons for Coping Strategies, Psychological Distress and Post Traumatic Stress Symptoms

Table 2 shows the proportion of participants in each group who were categorised as demonstrating elevated distress on the GHQ-12 using the GHQ standard scoring method of 0-0-1-1 and a cutoff of 1/2 (Korten & Henderson, 2000; McKenzie et al., 2004) and the proportions who reported above-threshold post-traumatic stress symptoms using a cutoff of 33 on the IES-R (Creamer et al., 2003). Groups did not differ significantly in the proportion of participants who reported above-threshold symptoms on the GHQ-12, $\chi^2(2) = 0.52$, ns, or the IES-R, $\chi^2(2) = 0.51$, ns. Most firefighters who were above-threshold on the IES-R also reported elevated distress on the GHQ-12: this was true for 7/7 after trauma participants with

elevated IES-R scores, 5/5 on-shift participants, and 4/6 recruits. The remaining 2 recruits who had elevated IES-R scores were below threshold on the GHQ-12.

Insert Table 2 about here

The groups were compared using one way ANOVAs for distress, post-traumatic stress, and coping strategies (see Table 2). Groups did not differ significantly on either distress or post-traumatic stress. Coping strategies are presented in descending order of the overall mean. There was no difference among groups in frequency of use of the most frequently reported coping strategy, acceptance, nor for humour or venting. There were group differences for other coping strategies; for each of these recruits reported significantly higher use of the coping strategy than the after trauma group and means for the on-shift group were intermediate between the other two groups.

Predictors of Psychological Distress and Post-Traumatic Stress Symptoms

In order to examine potential predictors of distress and post-traumatic stress, bivariate correlations (as shown in Table 3) were first examined with 3 sets of predictors: demographic variables, grouping variables, and coping strategies. A separate hierarchical multiple regression was then conducted for each of the two criterion variables (distress and post-traumatic stress), using only predictors that correlated significantly with the specific criterion variable. Demographic variables that correlated with higher distress were higher age, years of service, and rank. Demographic variables did not correlate significantly with post-traumatic stress. A grouping variable of recruits versus others showed that being past the recruit stage correlated with higher GHQ distress. Grouping variables did not correlate significantly with post-traumatic stress and were therefore not used in regression with this dependent variable. Higher use of all coping strategies correlated with higher distress and post-traumatic stress.

Insert Table 3 about here

At Step 1 of the hierarchical multiple regression with distress (GHQ) as the criterion variable, the three demographic variables accounted for 7% of the variance, $R^2_{adj} = .07$, $F(3, 139) = 4.66$, $p < .01$. There was a significant independent contribution to distress by age ($\beta = .32$, $p < .05$; 4% of variance), but not by years of service ($\beta = -.11$, ns) or rank ($\beta = .10$, ns). At Step 2, there was no additional predictive value from including the grouping variable for recruits versus others, $R^2_{change} = .00$, $F_{change}(1, 138) = 0.26$, ns. At Step 3, the 10 coping strategies added significantly to the prediction of distress, $R^2_{change} = .35$, $F_{change}(10, 128) = 8.07$, $p < .001$. With all predictors in the equation, 38% of the variance in distress was accounted for. In the full regression equation, there were significant independent contributions from age ($\beta = .25$, $p < .05$; 2% of variance), and the inverse of self-blame ($\beta = -.28$, $p < .05$; 4%). Older age and more use of self blame were associated with higher distress on the GHQ.

Standard multiple regression showed that coping strategies accounted for 47% of the variance in post-traumatic stress symptoms, $R^2_{adj} = .47$, $F(10, 134) = 13.95$, $p < .001$. Significant independent contributions came from instrumental support ($\beta = -.42$, $p < .001$; 6% of variance), emotional support ($\beta = .30$, $p < .01$; 4%), the inverse of self-distraction ($\beta = -.27$, $p < .01$; 5%), acceptance ($\beta = .27$, $p < .01$; 4%), and venting ($\beta = .26$, $p < .01$; 4%). Lower instrumental support, higher use of emotional support, higher self-distraction, higher acceptance and higher venting were associated with higher post-traumatic stress symptoms. The direction of the relationship for instrumental support was reversed from bivariate correlations; emotional support was partially acting as a suppressor variable but even with emotional support omitted from the regression the beta weight for instrumental support was still negative, showing that the combination of the other coping strategies also contributed to the reversed relationship.

Discussion

The current research investigated potential predictors of psychological distress and post traumatic stress within a career firefighter population. The key finding supported previous results which found that older firefighters reported more psychological distress (Chang et al., 2003). Contrary to expectations, there was no overall difference among the groups in mean distress or post-traumatic stress symptoms. However, older age was a significant correlate with higher distress and remained a significant predictor when coping strategies were also taken into account.

Groups differed in multiple ways. Similar to a 2003 study with Canadian firefighters (Regehr et al., 2003), recruits in this sample had a higher level of education than experienced firefighters and were more likely to have paid or voluntary emergency experience before joining the fire service. In the present study, increased age, rank, and years of service all correlated with increased distress, but in multiple regression age had the only significant independent contribution among these predictors. It is difficult to tease out the relative contribution of these three predictor variables given their natural interrelationship; in the present study age correlated .79 with years of service as a career firefighter and .69 with rank. Other studies have varied in which of these factors is most important in predicting distress; for example [Corneil et al. \(1999\)](#) found that PTSD risk increased with years of service in Canadian firefighters but with rank in United States firefighters. Years of service as a firefighter have frequently been found to predict higher distress ([Moran & Britton, 1994](#); Regehr et al., 2003; [Wagner et al., 1998](#)) including previous research in Queensland career firefighters ([Dean et al., 2003](#)).

In terms of coping strategies, all of the coping strategies analyzed were found to be significant in predicting higher levels of distress on the GHQ-12. For post-traumatic stress on the IES-R, higher use on all of the different coping strategies was associated with

significantly more distress. This may be seen as reflecting increased coping efforts for individuals who experience more stress, and does not necessarily indicate that the strategies themselves are maladaptive. Interestingly, the strategy of seeking instrumental or practical support from others was found to predict *lower* post-traumatic stress once the general tendency of individuals with higher stress to report higher use of all coping strategies was taken into account. This finding supports previous researchers who found similar results in UK (Haslam & Mallon, 2003), Canadian (Regehr et al., 2003) and Australian firefighters (Dean et al., 2003).

Overall though, the groups differed significantly on seven of the ten coping strategies analyzed, with the recruit group scoring the highest means. A limitation of using a standardized coping measure, the Brief COPE, was loss of information about participants' specific strategies; for example, many participants commented on using exercise as a coping strategy and this was not taken into account well on the Brief COPE measure. The highest coping means were for strategies such as acceptance, active coping, and planning, indicating that firefighters were not shying away from their reactions and they were actually processing and adaptively coping (Carver, 1997) with employment stressors.

A further limitation of this study was that social desirability was not measured. A previous study with 402 professional male firefighters excluded results of 22.9% of the sample from the main PTSD analyses as these participants' responses suggested a pattern of socially desirable responding (Wagner et al., 1998). It would be helpful to know whether social desirability effects vary with age in this population, as it is possible that older firefighters may be more willing to disclose some information than younger firefighters. However, the usual pattern of findings from the literature has been *higher* social desirability with increased age (Welte & Russell, 1993), which would be expected to produce lower

distress scores for older participants rather than higher distress as in this and other studies in firefighters.

Given that distress and post-traumatic stress can come from experience prior to joining the fire service, stress from training, work experiences both early and later in the firefighter's career, and personal experiences outside work ([Dean et al., 2003](#)), stress, resilience and coping strategy training appears warranted both during initial training and for experienced firefighters. Related occupational groups that may also benefit from such training are fire service communication officers, rural (volunteer), and auxiliary (part-time) firefighters. Resilience and positive experiences derived from emergency work are also notable and warrant further research (Moran & Colless, 1995).

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Table 1.

Means (with Standard Deviations) and Frequencies (with Percentages) for Demographic Characteristics of the Groups

Variable	Recruits (n=42)	On-Shift (n=51)	After Trauma (n=52)
Age (years)	31.5 (6.2)	41.0 (7.6)	44.9 (6.3)
Years of Service	-	12.7 (8.3)	16.7 (8.8)
Prior Emergency Experience			
Yes	28 (67%)	14 (27%)	9 (17%)
No	14 (33%)	37 (73%)	43 (83%)
Education ^a			
Year 10 or less	4 (9%)	20 (40%)	20 (38%)
Year 11, 12 or certificate	28 (67%)	23 (46%)	28 (54%)
University Degree	10 (24%)	7 (14%)	4 (8%)
Rank ^b			
Recruit	42 (100%)	-	-
4 th /3 rd /2 nd /1 st class	-	11 (22%)	11 (22%)
Senior firefighter	-	25 (49%)	23 (46%)
Leading firefighter or above	-	15 (29%)	16 (32%)

^a Missing for 1 participant in on-shift group

^b Missing for 2 participants in after trauma group

Table 2.

Group Means (with Standard Deviations) and Frequencies (with Percentages) for Distress, Post-Traumatic Stress and Coping

Variable	Recruit	On-Shift	After Trauma	<i>F</i> (2, 142)
Distress (GHQ Likert; <i>M</i> [<i>SD</i>])	9.2 (4.0)	10.5 (4.7)	11.2 (5.3)	2.27
Below cutoff (0-1, GHQ scoring)	30 (71%)	33 (65%)	36 (69%)	
Above cutoff (2+, GHQ scoring)	12 (29%)	18 (35%)	16 (31%)	
Post-Trauma Stress (IES-R; <i>M</i> [<i>SD</i>])	12.1 (14.0)	13.6 (18.8)	13.3 (18.5)	0.13
Below cutoff (0-32)	36 (86%)	46 (90%)	45 (87%)	
Above cutoff (33+)	6 (14%)	5 (10%)	7 (13%)	
Coping Strategies (<i>M</i> [<i>SD</i>])				
Acceptance	2.6 (0.9)	2.3 (1.0)	2.4 (1.1)	1.09
Active Coping	2.2 (0.9) ^a	1.8 (0.7)	1.5 (0.7) ^b	9.29***
Planning	2.0 (0.8) ^a	2.0 (1.0) ^a	1.3 (0.6) ^b	15.66***
Positive reframing	2.2 (0.8) ^a	1.7 (0.8) ^b	1.3 (0.6) ^c	18.03***
Humour	1.9 (0.9)	1.6 (0.7)	1.6 (0.9)	1.27
Emotional support	1.8 (0.6) ^a	1.6 (0.7)	1.4 (0.6) ^b	6.01**
Instrumental support	1.8 (0.7) ^a	1.7 (0.8) ^a	1.3 (0.6) ^b	8.51***
Venting	1.6 (0.5)	1.6 (0.6)	1.5 (0.7)	1.21
Self distraction	1.6 (0.6) ^a	1.4 (0.7)	1.3 (0.6) ^b	3.42*
Self blame	1.5 (0.7) ^a	1.5 (0.6) ^a	1.2 (0.5) ^b	6.70**

Note: Across a row, different letters indicate means that differ significantly from each other.

ANOVA and post-hoc comparisons were based on transformations (see text), but descriptive statistics are shown for untransformed scores. * $p < .05$ ** $p < .01$ *** $p < .001$

Table 3.

Correlations Across All Groups

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Dependent Variables																		
1. Distress	-																	
2. Post-Traumatic Stress	.61***																	
Demographic Variables																		
3. Age	.29***	.08																
4. Education	-.08	.01	-.47***															
5. Prior experience	-.00	.04	-.32***	.15														
6. Years of service	.23**	-.03	.79***	-.43***	-.46***													
7. Rank	.23**	-.06	.69***	-.31***	-.43***	.82***												
Grouping Variables																		
8. Recruit/Others	.17*	-.03	.60***	-.30***	-.43***	.68***	.85***											
9. No trauma/Trauma	.16	.05	.45***	-.16	-.30***	.47***	.41***	.48***										
Coping Strategies																		
10. Acceptance	.27**	.46***	-.04	.16	.05	-.15	-.08	-.09	.04									
11. Active coping	.31***	.41***	-.26**	.18*	.16	-.30***	-.32***	-.30***	-.27**	.41***								
12. Planning	.26**	.29***	-.27**	.21*	.16	-.27**	-.23**	-.24**	-.41***	.37***	.66***							
13. Positive reframing	.24**	.31***	-.30***	.23**	.32***	-.42***	-.38***	-.38***	-.38***	.49***	.61***	.66***						
14. Humour	.30***	.32***	-.07	.02	.26**	-.18*	-.15	-.13	-.07	.42***	.29**	.28**	.46***					
15. Emotional support	.19*	.34***	-.26**	.19*	.21*	-.35***	-.30***	-.23**	-.23*	.45***	.55***	.46***	.56***	.17*				
16. Instrumental support	.17*	.19*	-.34***	.14	.15	-.35***	-.26**	-.23**	-.30***	.43***	.60***	.63***	.59***	.26**	.72***			
17. Venting	.43***	.49***	-.04	.09	.12	-.12	-.09	-.07	-.11	.46***	.51***	.38***	.41***	.41***	.42***	.41***		
18. Self distraction	-.32***	-.45***	.19*	-.19*	-.18*	.19*	.27**	.27**	.20*	-.26**	-.44***	-.39***	-.40***	-.37***	-.21*	-.35***	-.43***	
19. Self blame	-.39***	-.34***	.12	-.18*	-.18*	.13	.09	.11	.28**	-.26***	-.36***	-.60***	-.42***	-.26**	-.28**	-.40***	-.36***	.40***

Note See text for list of transformations. Inverse transformations for self distraction and self blame reversed the direction of scoring so that, after

transformations, lower scores represented higher use of the strategy. * $p < .05$ ** $p < .01$ *** $p < .001$