Do Your Employees Use the Right Stress Coping Strategies?

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This study investigates the efficacy of coping strategies commonly used in the workplace to alleviate stress. The strategies included: seeking assistance, self assistance, group intervention, avoidance and changing beliefs. Data were gathered from a large-scale questionnaire survey of employees within four employment sectors in Taiwan (N =662). Five key findings were revealed: 1. the efficacy of coping strategies was not universal; instead efficacy depended upon employee gender, educational level and interactions between strategies. 2. The nature of the stressor was a useful indicator of efficacy, i.e. whether stress was ameliorated by the strategy employed, was catalyst dependent. 3. Stress reduction was not an inevitable consequence of using more than one form of stress coping strategy. 4. Self assistance was the most common and most effective strategy and avoidance the least. 5. Combining self assistance and group intervention strategies resulted in lower levels of perceived stress. The findings serve to augment the body of literature pertaining to stress related coping mechanisms in the workplace. The implications that these findings have for organisational management and personnel practices are discussed.

Key Words: Coping, Efficacy, Self Assistance, Stress.

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Introduction

Recent research on workplace stress has revealed that the coping strategies adopted by general employees are moderated by a series of factors, including: personality traits, attitude to work (Hsieh, 2004; Siu et al., 1999); and previous coping experiences (Chang and Lu, 2007; Mao, 2003; Siu et al., 2002). These moderators have been scrutinised in a bid to elucidate their impact on the stress experience. The heterogeneous nature of the research rendered the findings inconclusive, such that, the efficacy of specific coping strategies remained ambiguous. This research, aims to examine the efficacy of coping strategies commonly employed to reduce work induced stress. It seeks to determine which strategies can claim success in job stress reduction and which cannot. The findings serve to augment the body of literature pertaining to stress related coping strategies and to assist personnel practitioners in their understanding of the employee experience.

Literature Review

Occupational Stress and Coping

The primary difference between occupational stress and other forms of stress is the nature of the stressors and their interaction with the overall stress process. Occupational stressors can take a variety of forms (e.g., workload, workplace relationships), and the negative effects of these can be moderated by both individual (i.e. personality, personal stress tolerance levels) and organizational factors (i.e., supervisory support, collegiality) (Ahsan et al., 2009; Amble, 2006; Giga et al., 2003; Leka and Kortum, 2008).

Coping strategies are proactive behaviours adopted by individuals to deal with strain when confronted with environmental pressure, or perceived threat from stressors. Lazarus and Folkman (1984) explain coping in terms of both cognitive and behavioural attempts to manage the demands being placed upon them; demands that are stretching or exceeding their resources. Coping

is conceived of as a multidimensional process that involves cognitive and behavioural strategies (Ptacek et al., 2002). Cooper (1996) claimed that coping strategies involve a number of factors: social support, task strategies (e.g., time management and delegation), logic (e.g., prioritizing), time and involvement. These are hypothesised to serve as significant external, problem-focused stress moderators, and therefore contribute to stress alleviation. Cooper (1996) persisted that coping strategies assuage levels of perceived stress by diminishing the negative impact of sources of pressure at work. Coping strategies help to maintain job satisfaction and contribute to a sense of physical well-being, a claim supported by reports of tangible physical benefits such as reduced hypertension and migraine headaches (Morris and Long, 2002).

Despite evidence claiming that coping strategies can serve as potentially powerful stress reduction tools, the nature of the relationship remains contentious, with two contrasting views emerging. The first alludes to the complexity of the relationship, drawing attention to the many latent factors involved; such as, personal coping experiences and personality traits (Heslop et al., 2002). The opposing view asserts that the stress experience is not directly impacted by coping strategies, workplace leadership or organizational support, instead these factors are related to individual and organizational well-being which in turn may exert influence over the stress experience (Dobreva-Martinova et al., 2002). This latter position is endorsed by Tyson et al. (2002) who discovered that even in the absence of material changes at an organisational level, the correlation between an individuals' use of coping strategies and their perception of stress persisted.

Coping strategies have been the subject of many studies and various suggestions have been made regarding the most appropriate way to categorise them in terms of function and efficacy (Amble, 2006; Buys et al., 2010). Lazarus and Folkman's (1984) typology, which contrasts problem-focused (PF) strategies with emotion-focused (EF) strategies, is one of the most popular frameworks available for interpreting stress coping behaviours. EF relates to attempts to manage or

regulate stressful emotions, whilst PF strategies serve to change the circumstances in which the challenge or threat arise (Lazarus and Folkman, 1984). PF strategies focus on direct and proactive behaviours aimed at removing stressors or reducing their impact, whilst EF strategies focus on minimizing the negative psychological and emotional effects of stressors. PF strategies might include problem solving actions, logical analysis of the circumstances, information gathering and seeking social support (Clarke and Goosen, 2008). EF strategies may include self blaming, avoiding the stressful context and wishful thinking (Karlsen and Bru, 2002). Both strategies can be applied within the same context. Research findings have been inconsistent regarding the efficacy of PF/EF strategies. The polarity of outcomes has generated much interest, with PF strategies being associated with more negative, and EF, more positive, outcomes. For example, PF strategies have been associated with higher levels of stress among certain groups, notably, the unemployed, (Pearlin et al., 1997); and direct action strategies, aimed at changing stressful conditions, have been found to elevate rather than reduce stress levels (Miller and McCool, 2003). Whilst EF strategies, such as emotional distancing, have yielded more positive outcomes when examined relative to re-employment (Leana and Feldman, 1995) and distress reduction (Gowan et al., 1999). This simple dichotomy does not go unchallenged, and claims for polarity reversal have been made. In research conducted by Feldman and Tompson (1993), findings suggest that active efforts for environmental change (PF) do serve to reduce sources of pressure, while passive efforts to handle the negative consequences of stress (EF) simply serve to expurgate an individual's energy without affecting or eradicating the problem. The utility of PF coping has also been demonstrated in health studies; findings suggest that where health problems are treatable and manageable PF coping is positively correlated with Quality of Life scores (Brink et al., 2002; Kristofferzon et al., 2005; Panthee et al., 2011; Ulvik et al., 2008). This debate may have produced more fruitful findings if the situated nature of stress (Sandler et al., 1994) had been more thoroughly explored. Sandler's work suggests that where efforts to affect stress are perceived to be impotent, PF strategies

may be rendered ineffective and EF strategies more likely to be successfully adopted. However, in such situations, poor utilisation of EF strategies may heighten rather than lessen the negative effects of stressors. Moreover, studies have shown that EF coping is correlated with poor mental health outcomes and low quality of life scores (Aspinwall and Taylor, 1992; Bouteyre et al., 2007; Solomon et al., 1990; Stewart et al., 1997). So, the evidence is clear, neither PF nor EF strategies can be promoted as solutions for all circumstances, so according to this view, the context and nature of the stressor have a powerful influence on the efficacy of a coping strategy. This is well expressed by Collins (2008) "*PF tends to predominate when something constructive can be done. It has been described as active coping; EF tends to predominate when stress is something that must be endured*" (p.1177). In sum, it has been consistently argued that the efficacy of different types of coping is dependent to some extent on whether the stressor is controllable or uncontrollable (Dressler, 1985; Littrell and Beck, 2001). This complexity is of considerable importance when considered in terms of applications to the workplace; organisations need to be cautious when recommending specific stress management or reduction techniques, because evidently no single approach has been found to be a panacea. Moreover, some stress strategies may exacerbate the problem (Chang and Lu, 2007).

Cross cultural studies suggest that people from different cultural backgrounds respond in markedly different ways to workplace stressors, differences that may be used to further support Sandler's claim, that the efficacy of stress coping strategies is situated. It appears from cross cultural studies that both workplace milieu and socio-cultural contexts are important. More specifically, the use of EF and PF strategies appears to differ across groups within the same workplace. The strategies commonly adopted by employees in advanced countries (e.g., UK, USA and France), include asking for help and seeking professional assistance whilst EF strategies are more common stress responses in developing countries (e.g., Taiwan, Philippine and Indonesia). Using samples from Chinese organisations, Selmer (2002), found that western expatriates were more likely than their

Chinese counterparts to probe the source of difficulties or engage problem solving discussions with colleagues (PF strategies); whilst employees from Hong Kong were observed to use fewer PF strategies than their US and French counterparts. Selmer explains this finding in terms of socio-political factors out with the organisation itself. Selmer suggests that people from Hong Kong experience high levels of envy or dislike from their mainland China counterparts and that this serves as an additional pressure. Sources of pressure such as these are impervious to PF strategies, they are not organisation specific i.e. they transcend the workplace. Interestingly, however, EF strategy engagement (e.g displaying tolerance or resorting to escapism) was more evident in expatriates from both Hong Kong and China. It is important to note that the increased reliance on EF over PF strategies does not necessarily correlate with effectiveness (Boyd et al., 2009; Chang et al., 2006; Dewe et al., 1993; Lee, 2003; Siu et al., 1999). Where the study of Dewe et al. (1993) study found PF strategies to be efficacious for individuals from advanced countries, Lee (2003) found evidence to suggest that EF strategies have either no impact, or a negative impact, on the stress experience of individuals from developing countries. In spite of the observed differences between groups, one PF strategy was used by individuals from both advanced and developing countries, self assistance (Siu et al., 1999). Self assistance is a strategy that has been found to contribute to predictions of perceived stress (Lu et al., 1999). In spite of a preparedness to engage in self assistance, Taiwanese employees were unlikely to seek assistance from others. A factor, Li et al. (2001) argued was mediated by past coping, job role and tenure. However, this reluctance to seek support from others is not necessarily a negative, research studies examining the role of social support in stress reduction yield contradictory findings. Seeking assistance from others (e.g., talking to friends, family members) and gaining spiritual (or material) support from personal social networks have been found to both alleviate (Davidson et al., 1995) and in some cases elevate stress (Chang and Lu, 2007). This contradiction may be an artefact of research design or it may imply that with social support there is a fine balance between

successful empowerment and disempowerment. It may be the case, that social support and concern from others can exacerbate the problem by generating feelings of helplessness maintaining focus on the sources of stress, whilst simultaneously failing to promote behaviours that may work to eliminate the problems.

The nature of the relationship evidently requires further exploration. What is clear, however, is that the source of the stress, the situation in which it manifests and a number of individual and cultural differences may impact on the efficacy of a coping strategy. Given the complexity inherent in finding effective coping strategies for employees, employers may be tempted to arm people with a range of strategies and work on the premise that one of them may be successful, a scattergun approach. In the absence of research exploring the impact of multiple strategies this would be cautioned against. The evidence reviewed above, implies that coping techniques can themselves heighten stress, so simply adopting multiple strategies may have unexpected negative outcomes or may simply prove ineffective because positive effects from one strategy are cancelled out by negative effects from another. It is for these reasons that this research is focused on exploring the cumulative benefits (or otherwise) of adopting more than one stress coping strategy.

Efficacy of Coping Strategies: Single versus Dual

It is evident from the literature that the efficacy of coping strategies for workplace stress involves multiple factors (Boyd et al., 2009; Chang et al., 2006; Dewe et al., 1993; Lee, 2003; Siu et al., 1999). Moreover, the coping strategies adopted have the potential to exert positive, negative, or no influence over perceived stress (Aspinwall and Taylor, 1992; Bouteyre et al., 2007; Clarke and Goosen, 2008; Karlsen and Bru, 2002; Solomon et al., 1990; Stewart et al., 1997). The evidence does serve to illuminate the nebulous nature of this field but fails to offer much in terms of practical stress management solutions. This research seeks to redress this by examining the efficacy of specific stress coping strategies at work, i.e. to investigate which strategies are effective

for stress alleviation. Thus far, discussion has centred on the use of individual strategies and on the assumption that the source of the stress is uncomplicated. However, it is clear from the research reviewed that a significant number of variables are involved in an individuals' perception of the stress experience. Terbourg (1985) explained that stressors are often multi-faceted and so may not be satisfactorily alleviated by the implementation of a single coping strategy. Given the possibility that the complexity of the relationship between strategy and efficacy may be in part an artefact of single strategy designs, this research, intends to scrutinise the efficacy of dual strategy adoption and observe whether the interaction between strategies serves to support, counter or exert no influence over the stress experience. This issue is of significant relevance to organisations seeking to support their employees, because if strategies are selected without proper consideration of the nature of the stressor, the context of the stress experience, the role of individual differences and the potential impact of non-workplace stressors, the techniques promoted may be deleterious to the individuals perception of stress, their mental health and quality of life (Chang and Lu, 2007; Panthee et al., 2011; Siu et al., 2002). The findings seek to provide further insight into the complexities of coping mechanisms, and in so doing, provide explicit and reliable information to both stress researchers and intervention programme designers.

Research Framework Overview

The selection of an appropriate measure for coping strategy is pivotal to the validity of this research. For a number of reasons the Occupational Stress Coping Scale (OSCS: Chang and Hargreaves, 2006) was adopted. (1) The OSCS was developed within the context of the PF-EF typology (Lazarus and Folkman, 1984) and supplements the original by offering a broader range of strategies, it comprises five discrete strategies each comprising three items. (2) It offers a user-friendly interface and is relatively brief with just 15 items. Thus it compares well with its counterparts (e.g., *Occupational Stress Indicator*, Cooper et al., 1988; *Brief COPE Inventory*, Carver, 1997).

The OSCS includes five different types of coping strategy; *seeking assistance, self assistance, group*

intervention, avoidance and *changing beliefs*. The five strategies are understood to reflect a variety of approaches to the problem. Firstly, the *self assistance strategy* implies a proactive attitude and a willingness to recognize the presence of stressors. It requires people to reflect on the sources of stress and to evaluate these experiences. The *changing beliefs strategy* also offers an opportunity for people to evaluate the causes of stressors from a range of perspectives. This strategy helps people to re-consider the pressure more positively or optimistically. Unlike the previous strategies, the avoidance approach is about avoiding or ignoring the sources of pressure. Much like the avoidance strategy, both the *group intervention* and *seeking assistance strategies* are relatively passive coping techniques, as they intend to share or divest the stressors, e.g., ask (or expect) others help them deal with stressors.

The literature suggests that self assistance, changing beliefs and avoidance may be the most popular strategies observed, the first two strategies (self assistance and changing beliefs about the situation) being Problem Focused and the latter (avoiding the problem) Emotion Focused. Previous research further suggests that seeking assistance from others may be less prevalent within a developing country (Li et al., 2001).

H1: *The strategies of self assistance and changing beliefs will alleviate levels of perceived stress.*

H2: *The avoidance approach to stress relief will intensify levels of perceived stress.*

H3: *The strategies of seeking assistance and group intervention will be less effective at stress reduction than self assistance and changing beliefs.*

The concurrent use of coping strategies, i.e. employing dual strategies was a key concern for this study; however, given the dearth of research in this particular area, specific predictions were not made. Instead an exploratory approach was employed, allowing the direction of effects to be examined and useful suggestions for future research made.

Methodology

Sample and Procedure

Employees from different occupations in Taiwan were recruited. Four heterogeneous occupations were selected as representative of the four largest recruitment sectors in modern society (DeCenzo and Robbins, 2002) namely *high school teachers*, *shop clerks*, *factory employees* and *civil servants*. Participants were contacted through personnel managers and/or secretaries in each occupation, and a snowball technique was employed. Questionnaires were distributed in booklet form, along with a covering letter assuring anonymity and elucidating the voluntary nature of participation. A follow up letter was despatched seven days after the initial invitation to boost the response rate. Questionnaires were mailed back to the researchers three weeks later. 880 copies of the questionnaires were distributed, 723 copies were returned, of which 662 were useable. This gave an overall response rate of 75.23%. The highest respondents were factory employees (n_1 = 178) and shop clerks (n_2 = 174), followed by civil servants (n_3 = 165), and high school teachers (n_4 = 145). No between-group difference was detected (χ^2(3, N = 4) = 4.89, *n.s.*).

Measures

Strategies of stress coping were measured by the Occupational Stress Coping Scale (OSCS: Chang and Hargreaves, 2006), which is comprised of five major stress coping strategy subscales each with three items. The subscales were as follows:

Seeking assistance strategy. An example of an item on this scale is as follows: "*Talk to psychiatrists, consultants or other professionals*?" This scale had a Cronbach's alpha of .85.

Self assistance strategy. An example of an item on this scale is as follows: "*Read stress intervention books*." This scale had a Cronbach's alpha of .83.

Group intervention strategy. An example of an item on this scale is as follows: "*Attend stress reduction programmes at work*." This scale had a Cronbach's alpha

of .77.

Avoidance strategy. An example of an item on this scale is as follows: "*Leave the stressful conditions or worksites*." This scale had a Cronbach's alpha of .76.

Changing beliefs strategy. An example of an item on this scale is as follows: "*Other employees may experience worse conditions*." This scale had a Cronbach's alpha of .78.

All scale items were preceded by the stem: *Which of the following strategies do you adopt to cope with job stress*. Responses were measured on a 5-point *Likert* scale (1 = *Never*, 5 = *Always*). Internal consistency for these five coping strategies was acceptable; specifically, seeking assistance (*Cronbach α* = .85), self assistance (*Cronbach α* = .83), group intervention (*Cronbach α* = .77), avoidance (*Cronbach α* = .76), and changing beliefs (*Cronbach α* = .78). The overall internal consistency was acceptable (*α* = .75).

Occupational stress was measured by the Occupational Stress Indicator (Cooper et al., 1988), respondents were given the opportunity to evaluate which items (i.e., job stressors) they perceived stressful. Sample items included: *Inadequate feedback about my own performance*. Or, *Lack of consultation and communication*. Responses were measured on a 6-point *Likert* scale (1 = *Very definitely is not a source*, 6 = *Very definitely is a source*). Internal consistency was satisfactory (*Cronbach α* = .83).

Common Method Variance

The cross-sectional design increased the likelihood of CMV (common method variance) bias (Podsakoff et al., 2003). To ameliorate its' impact, an additional Social Desirability Scale (SDS, Reynolds, 1982) was embedded (i.e., marker variable), to which the Pearson formula was applied to examine the correlation coefficients between SDS and all variables (see details of CMV remedies in: Podsakoff et al., 2003). Results showed that the coefficients ranged from .16 - .30, with no coefficient close to, or higher than, .70, indicating that the probability of CMV bias in the current survey was relatively low.

Results

Sample Demographics

The mean age of participants ($N = 662$) was 33.98 years old ($SD = 8.10$). The gender ratio: male (42.45%) versus female (57.55%). Mean job tenures were 8.49 years ($SD = 7.64$). Marital status was stratified, single (42.00%), married (50.90%) and others (7.10%). Educational levels were stratified as follows: high school (10.73%), graduate (74.77%) and postgraduate (14.50%). No statistically significant differences in demographic profiles were detected across the four occupations and so the four groups were merged for further statistical analysis.

Strategies of Stress Coping

Analysis indicated that the seeking assistance strategy ($M = 1.98$, $SD = .58$), group intervention strategy ($M = 2.02$, $SD = .97$) and avoidance strategy ($M = 2.14$, $SD = .71$) were used less frequently, whereas self assistance ($M = 3.34$, $SD = .71$) was more frequently-used (See Table 1). The less and more statements above refer to frequency variances but not absolute values.

In terms of frequency variances, subsequent analysis indicated that significant differences were detected across five different strategies ($F(1, 320) = 32.05$, $p < .001$; *Levene's Test* < 1, *n.s.*). More specifically, seeking assistance strategy was the least frequently used (*Mdiff* $= .52$, $p < .001$), and the self assistance strategy (*Mdiff* =

.62, $p < .001$) and changing belief strategy were the most frequently used (*Mdiff* = .81, $p < .001$). Compared to their counterparts, self assistance and changing belief's were relatively popular strategies.

In terms of correlations across strategies, the strategy of seeking assistance was positively correlated with the self assistance strategy ($r = .26$, $p < .01$). The group intervention strategy was positively correlated with seeking assistance strategy ($r = .27$, $p < .01$) and the self assistance strategy ($r = .28$, $p < .01$), but negatively correlated with avoidance strategy ($r = -.17$, $p < .01$). Interestingly, the changing beliefs strategy was not correlated with any other strategies, including: seeking assistance strategy ($r = .02$, n.s.), self assistance strategy ($r = .06$, n.s.), group intervention strategy ($r = .08$, n.s.), or, avoidance strategy ($r = .10$, n.s.).

Perceived stress was negatively correlated with self assistance strategy ($r = -.28$, $p < .01$), group intervention strategy ($r = -.17$, $p < .01$) and changing beliefs strategy ($r = -.13$, $p < .05$), but positively correlated with avoidance strategy ($r = .17$, $p < .01$).

The analysis revealed that, the more people adopt the strategies of self assistance, group intervention and changing beliefs strategies, the less stress they report experiencing and vice versa. The more people adopt an avoidance strategy, the more they feel stressed, and vice versa.

Efficacy of Coping Strategies

In order to further examine the association between

Table 1 Descriptive Statistics and Zero-order Correlations among Research Variables

	Means	*SD*	$\alpha^{\dagger}$	1	2	3	4	5
1. Seeking Assistance Strategy	1.98	0.58	0.85					
2. Self Assistance Strategy	3.34	0.71	0.83	.26**				
3. Group Intervention Strategy	2.02	0.97	0.77	.27**	.28**			
4. Avoidance Strategy	2.14	0.71	0.76	-.02	.06	-.17**		
5. Changing Beliefs Strategy	2.52	0.60	0.78	.02	.06	.08	.10	
6. Occupational Stress	2.66	0.52	0.83	-.11	-.28**	-.17**	.17**	-.13*

Note: †. Alpha (α) represents Cronbach's alpha values (* $p < .05$; ** $p < .01$; *** $p < .001$).

Table 2 Summary of Moderated Regression Analysis (Dependent Variable = Occupational Stress)

(Model)	$\beta^\dagger$	t	Statistics
Model I: Demographic Variables			
Gender	0.10	2.52 **	
Educational levels	-0.09	-2.49 **	
Job Tenure	-0.14	-2.28 *	
Age	0.02	0.34	
R^2			0.034
$\triangle R^2$			0.026
Total R			0.183
F			4.550 ***
(*df*)			(5,655)
Model II: Coping Strategies			
Avoidance Strategy	0.22	5.75 ***	
Self Assistance Strategy	-0.14	-3.83 ***	
Changing Beliefs Strategy	-0.09	-2.34 *	
Group Intervention Strategy	-0.05	-1.43	
Seeking Assistance Strategy	-0.04	-1.10	
R^2			0.117
$\triangle R^2$			0.103
Total R			0.341
F			8.580 ***
(*df*)			(10,650)

Note: †. The *ß* values are the standardized coefficients from the final simultaneous analyses, each term being corrected for all other terms in the model. The value of the constant in the equation is 33.54 (* $p < .05$; ** $p < .01$; *** $p < .001$).

perceived stress and coping strategy, a hierarchical moderated multiple regression analysis was undertaken. This approach was selected to lessen the influence of co-linearity. Thus, extending its' ability to reveal meaningful relationships across variables (Aiken and West, 1991). The analysis was carried out for the dependent variable (i.e., perceived stress) and the relevant variable blocks were added in the following order. At step 1, the demographic variables (e.g., age, gender, educational levels) were entered simultaneously. At step 2, five coping strategies were entered simultaneously. As Table 2 shows, the results showed that three demographic variables

$(F(5 ,655) = 4.55, p < .001)$ and three coping strategies $(F(10,650) = 8.58, p < .001)$ significantly predicted the levels of perceived stress. Collinearity diagnostics showed that multi-collinearity was not severe (*Condition Index* = 27.26).

The findings are interesting, for example, female employees were more likely to report feeling stressed at work ($\beta = .10, p < .001$), and employees with higher educational levels reported lower levels of stress at work ($\beta = -.09, p < .001$). Three coping strategies were found to be valid stress predictors, either alleviating or aggravating stress. These are: avoidance strategy ($\beta = .22, p < .001$),

Table 3 Summary of Dual Coping Strategies Efficacy (Dependent Variable = Occupational Stress)

(Model)	$\beta^{\dagger}$	t	Statistics
Seeking assistance strategy / Group intervention strategy	0.39	2.22 *	
Self assistance strategy / Group intervention strategy	-0.35	-2.52 **	
Self assistance strategy / Avoidance strategy	.31	2.27 *	
R^2			0.098
$\triangle R^2$			0.084
Total R			0.278
F			7.070
(*df*)			(10,650)

Note: †. The β values are the standardized coefficients from the final simultaneous analyses, each term being corrected for all other terms in the model. The value of the constant in the equation is 29.60 (* $p < .05$; ** $p < .01$; *** $p < .001$).

self assistance strategy ($\beta = -.14$, $p < .001$), and changing beliefs strategy ($\beta = -.09$, $p < .001$).

These statistical figures affirmed three important findings. First of all, strategies of self assistance and changing beliefs may alleviate levels of perceived stress. Secondly, reliance upon an avoidance strategy may intensify levels of perceived stress. Thirdly, the strategies of seeking assistance and group intervention may be ineffective when it comes to the alleviation of workplace stress. The findings provided preliminary support for the research hypotheses (*H1*, *H2* and *H3*).

Efficacy of Dual Strategies

In order to examine the efficacy of using dual strategies concurrently, a multiple regression analysis was adopted, by which stress was regarded as a dependent variable and dual-strategies pairs the predictors. As there are five strategies, the interaction matrix was relatively large, that is, 1×2, 1×3, 1×4, 1×5, 2×3, 2×4, $2 \times 5 \cdots$ (ten possibilities of interactions in total). For the sake of clarity, only the significant predictors were reported and discussed here (See Table 3). Analysis revealed three interactions were valid predictors, either alleviating or intensifying levels of reported stress.

The valid predictors were: Seeking assistance strategy/ Group intervention strategy ($\beta = .39$, $p < .001$), Self assistance strategy/Group intervention strategy ($\beta = -.35$, $p < .001$), and Self assistance strategy/Avoidance strategy

($\beta = .31$, $p < .001$). Collinearity diagnostics showed that multi-collinearity was not severe (*Condition Index* = 6.21). These statistical figures indicated that using seeking assistance and group intervention strategies when used concurrently actually exacerbate the levels of perceived stress, so too do self assistance and avoidance strategies. Only the use of self assistance and group intervention strategies together resulted in a reduction of perceived stress.

Additional Analyses

Initial analysis revealed that both demographic characteristics and coping strategies predicted the levels of perceived stress, either alleviation or intensification. For this reason, these variables were subjected to further examination. A series of analyses were conducted the statistically significant findings are reported below.

Both educational levels ($\beta = -.10$, $p < .01$) and self assistance strategy ($\beta = -.15$, $p < .01$) predicted levels of perceived stress. Their interaction produced a negative prediction ($\beta = -.17$, $p < .001$). These figures jointly indicate that educational levels moderated the nexus between self assistance strategy and stress perception. That is, higher educational levels promoted the efficacy of self assistance strategy in stress alleviation.

Moreover, analyses found that both gender ($\beta = .09$, $p < .01$) and avoidance strategy ($\beta = .21$, $p < .001$) predicted the levels of perceived stress. Their interaction

also produced a negative prediction (β = -.21, p < .001). These figures jointly indicated that gender moderated the nexus between avoidance strategy and stress perception. That is, males using an avoidance strategy reported less stress than females. Finally, analyses found that both gender (β = .09, p < .01) and the changing beliefs strategy (β = -.09, p < .001) predicted levels of perceived stress. Their interaction also led to a negative prediction (β = -.13, p < .001). The analyses indicated that gender moderated the nexus between changing beliefs strategy and stress perception. Males adopting a changing beliefs strategy would report less stress than females.

The findings reported above have a number of important contributions to make. The application of this research to the workplace may offer group leaders, organisational and personnel managers' pragmatic solutions for combating stress amongst their employees.

Discussion

This study suggests that in spite of the complex relationship between stress and coping, a number of techniques may be efficacious in stress reduction whilst others deleterious or impotent. Moreover, it suggests that combining techniques can be of benefit to employees but the outcome is likely to be determined by the combination selected. The goal was to provide managers and organisational leaders with evidence that could be fruitfully applied to their organisations and in this respect the study may boast some success. Ideally, coping strategies buffer the negative impact from sources of pressure, lessen the burden of stressors and reduce perceived stress. The five strategies investigated were not unanimously effective in this endeavour, which in itself, is a useful finding. These research findings have several important implications and supplement the existing body of literature.

Efficacy of Coping Strategies

This study reveals that the strategies of *self assistance* and *changing beliefs* do alleviate stress. These strategies are perceived as both positive and active (i.e., stress coping), implying an optimistic attitude and a willingness to recognise the presence of stressors. It is hypothesised that these two strategies help people locate the sources of pressure, remove stressors, and reduce negative emotions, such as anxiety, distress or anger. These findings endorse the view that where changes can be made these PF strategies can be effective ways to alleviate stress (Collins, 2008). They are also consistent with findings from health research that suggest that PF coping is most efficacious where health problems are treatable and manageable (Brink et al., 2002; Kristofferzon et al., 2005; Panthee et al., 2011; Ulvik et al., 2008).

Self assistance can include activities from muscle relaxing exercises to mediation and reading stress-relief books. During these activities, people can transfer the focus of their attention away from the stressors and so alleviate stressful situations. Moreover by increasing relaxation and distancing, individuals can return to the situation in a more reflective mode ready to critically consider the reason certain issues and situations result in their feelings of stress. By adopting self assistance individuals may be enabling problem solving and logical analysis e.g. prioritising strategies, to take place.

Albeit founded on slightly different assumptions, *changing beliefs* was also found to be an effective strategy for coping. This strategy is reminiscent of cognitive reframing, an approach designed to train people to re-think situations where their ability to directly influence change is limited. Similar techniques have been discussed recently, such as the enhancement of psychological acceptance, improvement of emotional and adversity quotients (Book and Stein, 2002). The fundamental principle underpinning the changing beliefs strategy is the recognition that, people are rarely able to avoid all pressure, so rather than squander energy trying to avoid pressure, individuals benefit from developing strategies to help them place barriers between themselves and the sources of stress. If people develop hardiness *prior to* the presence of stressors, they will feel relatively less stressed, and more able to cope, when stressors emerge. One specific interpretation of this approach is known as meaning evaluation (Guo et al., 2011), adopting this meaning focused coping strategy was found to improve

well being scores following significant loss (Guo et al., 2011).

In contrast, reliance upon the avoidance strategy has been found to intensify rather than alleviate the stress experience. This may be because using an avoidance strategy involves disregarding or ignoring the sources of pressure, and while such a strategy may help individuals to feel less stressed initially, it does nothing to deal with the underlying problem and is therefore unlikely to be successful over time (Aspinwall and Taylor, 1992). Moreover, the re-emergence of the stressor at a later date may exacerbate the stress response in such a way that it is perceived to be greater on re-emergence than in its' original form. The temporary illusory of relief may have the potential to reduce tolerance (Bouteyre et al., 2007; Stewart et al., 1997).

Congruent with research predictions, two strategies failed, on their own, to produce any demonstrable effects on the stress experience, these were seeking assistance and group intervention. However, group intervention is not to be dismissed because it was found to be efficacious when combined with self assistance. The single strategy findings may be suggestive of a number of things: Firstly, involving multiple people within the intervention may impact on the dynamic in ways that are difficult to predict and so stress reduction may not be achieved. Secondly, the lack of efficacy may not be representative of all employees, just those participating in this research. It is conceivable that employee groups exist that would find these strategies highly valuable, for example, organisations where collaboration is prized over competition. Thirdly, the levels of stress reported in this study were not excessive and it may be that at higher levels of stress these two strategies become increasingly effective. Alternatively, any impact may simply have been too small to detect. The preliminary conclusion from this research sample is that seeking assistance and group interventions are ineffective methods for stress reduction when used in isolation.

Analysis of Dual Strategies

How people approach coping when under pressure remains unclear, with some research findings suggesting that individuals typically focus on a single coping strategy (Feldman and Tompson, 1993; Lazarus and Folkman, 1984) and others arguing the reverse (Cooper et al., 1988). Neither claim can be substantiated due to the relative dearth of literature exploring this question (Miller and McCool, 2003). Albeit with caution, this research offers some tentative claims, analysis revealed three interactions that were significantly associated with the alteration of perceived stress. (1) Seeking assistance and group intervention strategies combined can intensify the levels of perceived stress, (2) Self assistance and avoidance together may also increase levels of perceived stress. Only when using self assistance and group intervention together was stress observed to be reduced.

In contrast with previous studies (e.g., Lazarus and Folkman, 1984), this study discovered that heterogeneous strategies may not always stand alone and people may successfully adopt more than one strategy in the same context. It was evident from this study that people may adopt several coping strategies concurrently and that these strategies share a significant correlation, either negatively or positively. For example, the more people adopt the group intervention strategy, the more likely it becomes that they will adopt self assistance and seeking assistance strategies, but the less they will adopt avoidance strategy. This finding may be intuitive but remains important, how these strategies are combined impacts on the likelihood of success, so where combining group intervention and self assistance is likely to ameliorate the impact of stress, combining two 'other' oriented (seeking assistance and group intervention) techniques is not, moreover, combining avoidance and a group strategy appears likely to exacerbate the stress experience. This implies that active engagement at some level is important in stress reduction, where passing responsibility to others i.e. asking for help and group intervention is less effective or worse exacerbates the problem.

In terms of stress intervention, self assistance is most effective and avoidance the least. However the positive impact of self assistance can be undermined when combined with other strategies. It depends however on what the other strategy is, where the other strategy is seeking assistance for example the positive impact of self

assistance appears to be negated.

Analysis of Strategy Selection

Analyses reveal that seeking assistance, group intervention, and avoidance strategies were less frequently adopted than self assistance. However, in the absence of qualitative data to explain these frequency variances, a *post-hoc* inferential analysis was undertaken. The analysis suggested that variances were attributable to personal values at work: *self recognition*, *interrelationship valence* and *destiny*.

Self Recognition at work: Seeking assistance strategy is less frequently used because of possible influences from self recognition at work (e.g., how people they see themselves at work). Yang and Kuo (1991) claimed that, in many social settings, people's self recognition (SR) reflects their ability and influence. The higher a person's SR, the more powerful and able they appear. To seek assistance challenges SR and so may not be seen as a desirable option.

Interrelationship Valence: A second explanation for low reliance on a seeking assistance strategy may be the possible influence of interrelationship valence (IV). IV may be seen as an extension of the concept of a reciprocal social relationship. i.e. to accept assistance without timely reciprocity may leave individuals feeling indebted. This feeling of indebtedness may in itself be a potential stressor and so in times of stress may therefore, be avoided, rather than courted.

Destiny beliefs: May offer some form of explanation for the relatively low reliance upon avoidance. It may be that some employees believe that things in their life are influenced by destiny. Research indicates that some employees genuinely believe that sources of pressure are destined, neither removable nor avoidable (Chang and Lu, 2007). Equally, it may be that experience has taught the individuals sampled that avoidance offers temporary relief only and may in fact lead to higher levels of distress in the future.

In contrast, group interventions may be less prevalent for organisational rather than personal reasons. Cooper (1996) claimed that group interventions can help analyze the formation of stressors, prevent sources of pressure,

and help with the development of measures designed to cope with stress. Such a strategy seems to hold much promise, however, there are a number of practical reasons why its' adoption may be less visible in this research. It is rarely applicable in smaller-size organizations because it is costly in terms of professional fees and staff time. These costs are particularly pertinent in times of austerity. Moreover, many organizations retain a traditional authoritarian rather than a democratic culture (Hsieh, 2004; Tyson et al., 2002). Hierarchical characteristics are visible across all levels of the organisation so group composition may hinder success. The inclusion of higher ranked participants may have a negative impact on those from lower ranks but their absence may also be detrimental to the validity of the intervention.

As predicted the most frequently adopted strategy was that of self assistance. Several explanations may be offered to support this finding: Firstly, using a self assistance strategy is self-manageable and does not involve others. Secondly, such a strategy is low-cost, convenient and users can control implementation. Thirdly, its efficacy is usually predictable.

Finally it is important to note the impact of demographic variables on efficacy. This research found that educational levels moderated the association between self assistance and stress, such that, higher educational levels promoted the efficacy of self assistance in stress alleviation. Gender also moderated the efficacy of avoidance and changing beliefs strategies, respectively. Whereby, if the users of avoidance strategy were male, they would feel less stressed (compared to their female counterparts). However, males typically reported fewer stress than their female counterparts so the area for further research presented here relates more to understanding the gender difference in the stress experience than it does making assumptions about its' relationship to strategy.

Management Implicaions

The results offer managers and intervention strategists a number of applications for the workplace. The importance of these findings cannot be underestimated if considered in the context of job satisfaction, productivity and staff turnover, as stated by Ugoji and Isele (2009),

"*workers are psychological beings whose productivity may rise or fall depending on whether they are motivated or demoralised in their work environment*" (p.473). More specifically, research shows that the consequences of poor organisational stress management initiatives can be evidenced in organisations where staff attendance is low, poor interpersonal relationships are observed, job satisfaction ratings are low and recruitment and training costs are high (Lee et al., 2011). According to Xiao and Cooke (2012) it is now recognised that for an organisation to be competitive and efficient its' workforce needs to be healthy and committed. A healthy and committed workforce is one that can manage the demands of the ever changing organisational workplace. To do this, organisations need to have clear stress management initiatives in place (Xiao and Cooke, 2012). However, simply extracting a range of stress management tools and making them available to employees, is argued by this research, not to be the best way of tackling the problem. Instead employers need to be guided by the research and advise employees on an informed basis, failure to do this may have the adverse consequence of exacerbating the stress experienced by their employees. In terms of stress coping, when employees possess a passive attitude or adopt aversive strategies to tackle pressure, they can become more susceptible to symptoms of stress. Stressors do not simply vanish and both self-neglect and avoidance methods are ultimately likely to result in increased pressure. In contrast, possessing a pro-active attitude and implementing constructive strategies to manage stressors appears to result positive outcomes. So awareness raising, within the workplace is an important step forward, reducing the stigma and empowering people to acknowledge and take steps to tackle their stress may yield significant organisational benefits. Employers would also be well advised to support active strategies such as promoting self assistance techniques rather than promoting seeking assistance strategies particularly if the intention is to also embrace group interventions.

Promoting stress awareness may also serve to challenge personal values. The results from this study, when considered in combination with previous research (Chang and Lu, 2007), demonstrate that personal values

applied to the workplace may influence an individuals' co-operation and active engagement with stress reduction techniques. Managers may be advised to design and implement stress management interventions that recognise and confront these beliefs. Prior to investment in stress management programmes managers would be well advised to survey employees on these values.

Finally, managers play a significant role in stress reduction, a factor that might be even more relevant in times of austerity, where workforces are reduced and uncertainty is high. The cost of failing to intervene may well be higher than that of investment. In other words, reducing stress in the workplace does have tangible benefits for organisational performance and success.

Limitations and Future Directions

Perhaps the most significant limitations of this research were (1) failure to examine the long-term effects of coping strategies, evidence suggests that coping strategies may have a different effect on short- and long-term adaptation (Ingledew et al., 1997). Future studies should adopt longitudinal designs in order to present a more comprehensive picture. (2) The nature of self-report data, where people are at liberty to share their experiences presents challenges (Podsakoff et al., 2003). The extent to which these experiences are congruent with reality is determined by a participants' preparedness to a. recognise, b. reflect, and c. report to a third party. Consequently, validity is open to challenge. (Podsakoff et al., 2003; Podsakoff and Organ, 1986). Moreover, the employment of self-reported scales may accurately depict individual experiences but may isolate stress from its broader context. This has implications for data interpretation because alternative explanations for the observed differences are available. Meyerson (1994) indicated that there may be different cognitive and symbolic systems for different occupations such that stress claims across occupations may be norm dependent. To overcome these methodological biases, Podsakoff and Organ (1986) suggested that researchers should obtain multiple measures of the conceptually crucial variables from multiple sources using multiple methods. (3) Reliance upon *post-hoc* inferential analysis means that the findings

extracted are largely exploratory so caution is required on application. (4) Finally, different social structures and historical contexts may produce disparate values and social norms so a prominent stressor at one worksite may be absent from another. Future research may benefit from the inclusion of a worksite value measurement, so that any influence of values on strategy selection can be further illuminated.

In conclusion, this research provides support for strategies that are pro-active and self generated whilst acknowledging that barriers may exist to efficacy in the form of personal values, educational attainment and gender. It further found evidence to suggest that some dual-strategies have a greater impact on stress than others, with the most positive being the combination of group interventions and self assistance.

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