

Gender influences on the work-related stress-coping process

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Abstract

The increasing incidence of occupational stress is recognised as a global phenomenon that is having a detrimental impact on both individuals and organisations. This study aims to identify if men and women adopted different stress and coping processes when subjected to stress in a work context. A total of 258 workers of various professions (Males = 106, Females = 152) participated in the study. Results indicated that men and women differed in their stress and coping processes, such that they formed two very distinct groups and adopted specific process models when encountering a stressful situation at work. Limitations and implications from this study were discussed.

Keywords: Occupational stress, Coping, Gender difference

Introduction

Employment patterns have changed markedly over the past few decades with the growing numbers of women entering the workforce. Women's labour force participation has increased over the last 10 years to 57.8% in December 2006 (Labour Force Australia, 2006). The role of women in the workforce has also changed significantly with women increasingly advancing into positions previously held exclusively by men. Not only do professional women competing in a once male-dominated work environment face similar work-specific stressors to their male counterparts, they also face stressors unique to women (Fritch Mills, 1995). Stressors reported primarily by professional women include: gender-role stereotypes, occupational sex discrimination, sexual harassment, social isolation, and work-home conflict (Portello & Long, 2001; Long, Kahn, & Schutz, 1992; Jick & Mitz, 1985). Based on this evidence, it is clear why the role of women in the workplace has generated a significant amount of research interest. However, previous literatures indicated that occupational stress research has predominantly focussed on outcome with limited attention afforded to examining the process of stress and coping for women. Further more the majority of stress research data has been derived from Caucasian, middle-class men, thus ignoring the unique experience of women (eg. Felsten, 1998; Lim & Teo, 1996, Long, Kahn, & Schutz, 1992). Therefore there is a disparity in the understanding of occupational stress and coping process with a clear bias towards male employees. The current study aims to examine the stress-coping process of male and female employees to determine if there is cross gender differences in the process. By adopting a more balance approach, it is hoped that the

stress phenomenon in a modern workplace for both female and male employees could be more adequately and accurately addressed.

Transactional models of stress and coping

Lazarus and Folkman are generally recognised as the key contributors to the transactional perspective of stress and coping (Suls, David & Harvey, 1996) and their model of stress and coping remains the most prevalent and widely accepted. Lazarus and Folkman's (1984) model of stress and coping proposed three processes that impact on the relationship between the stressor and the stress outcome: primary appraisal, secondary appraisal, and coping. The model suggests that a stressful experience serves as input into an ongoing, cognitive appraisal process. This process assesses the significance of work-related stressors for the employees' well-being (primary appraisal) and the availability and likely success of various coping options (secondary appraisal) that might be used to manage the stressors.

In broad terms, coping relates to the behavioural and cognitive efforts employed to manage environmental and internal demands (Dewe, 1991). Theorists (e.g. Lazarus & Folkman, 1980; Cox & Ferguson, 1991) associated with the transactional framework generally view coping as a major factor in the process between stressor and outcome, however it should be noted that coping mechanisms cannot be activated without first receiving input from the cognitive processes-the process by which an individual evaluates whether a particular interaction with the environment is personally significant and to what extent.

The stress- coping process in men and women

According to Martocchio and O'Leary (1989) few, if any difference exists between the amount of occupational stress men and women experience independently. Consensus though exists amongst researchers that males and females differ in their

management of stressful encounters (e.g. Folkman & Lazarus, 1980; Gunthert, Cohen, & Armeli, 1999; Tamres, Janicki, & Helgeson, 2002). A notion further supported by Bellman, Forster, Still, and Cooper (2003) who purport that difference might indeed exist between males and females in their perceptions of stress sources and outcomes. For example it has been reported that females have a tendency to appraise stressors as being more distressing than men (Eaton & Bradley, 2008). Further, Heppner, Cook, Strozier, and Heppner (1991) identified that males and females differed in their coping styles when addressing career related issues, while Day and Livingstone (2003) identified gender differences with regards to perceived levels of stress and the use of social support as a coping mechanism. Despite considerable research identifying that males and females have different sources of and coping patterns for dealing with work stress, little is known about whether they adopt different stress processes (Kohler, Munz, & Gratwisch, 2006). In other words, the entire process from exposure to the job stressor, to the cognitive and behavioural responses, and the eventual emotional/physiological experience of the stressor, has not been examined as a whole across male and female employees. Thus we hypothesize that:

Hypothesis 1: Stress coping process will differ between males and females

Method

Participants and procedures

The 258 participants who contributed to this study were recruited via different sources. A proportion were accessed from archival data ($N = 20$), while the remainder were recruited from a convenience sample ($N = 238$). Participants from the convenience sample represented members of the community, University staff and students who were given the option of completing surveys via the University

Psychology website or by receiving a hard copy, which was supplied with a return postal address and a pre-paid envelope.

Of the total participants in the study, 106 were males and 152 were females. Hard copies of the surveys were provided to 136 potential participants. Of these, 31 surveys were returned, reflecting a response rate of 22.8%. The average age of participants was 33.15 years ($SD = 11.18$), average organization tenure was 11.98 years ($SD = 10.41$), average position tenure was 3.46 years ($SD = 4.35$), and average number of hours currently worked per week was 33.19 hours ($SD = 13.59$).

Measures

Description of an occupational stressor. This section asked participants to describe a recent event or situation at work that had resulted in considerable personal stress. Participants were then required to rate the perceived stressfulness of that event based on a five-point scale (1 = *among the least stressful* to 5 = *among the most stressful*). This event formed the basis upon which participants based their responses to the remainder of the survey.

Primary appraisal. The Primary Appraisal (PA) scale utilised, had been adapted by Dewe (1991), having originally been developed by Folkman and colleagues (1986) The eight-item scale is designed to measure participants' appraisal of the degree of threat posed by the previously identified stressful work situation, for example, "You feel that you will appear incompetent" and "You feel that you will appear to be in the wrong". Participants rated each item using a five-point scale, ranging from 1 (*not at all*) to 5 (*applies a great deal*). The higher the score on this scale, the more the particular event was perceived as threatening or harmful.

Secondary appraisal. The Multifaceted Control Scale (MCS) developed by Dewe (1991) was employed to measure the secondary appraisal. Using a five-point

scale, the MCS requires respondents to indicate the level of control they believed to have when addressing the previously identified stressful situation. The scale ranges from 1 (*not at all*) to 5 (*applies a great deal*), with a high level of perceived control being indicated by a high score. In the present study an overall level of perceived control was achieved by utilising the full scale

Job-related affective well-being scale. The Job-Related Affective Well-Being Scale (JAWS) was developed by Katwyk, Fox, Spector, and Kelloway (1999) to measure affective responses to work stressors. The current study only utilised the displeasurable (reverse scored) items in order to focus only on those situations that cause negative affective reactions in response to stressful work situations.

Participants were instructed to use a five-point scale, ranging from 1 (*never*) to 5 (*extremely often*), to indicate the frequency with which they experienced each emotion as a result of the identified stressful event. For example, “The stressful event made me feel confused” and “The stressful event made me feel frustrated”.

Ways of coping. The Ways of Coping checklist (WOC) revised version was used (Vitaliano, Russo, Carr, Maiuro, and Becker, 1985). There were five components: Problem-Focused Coping (15 items), Wishful Thinking (8 items), Social Support (6 items), Self-Blame (3 items), and Avoidance (10 items). For example, the problem-focused subscale contains the item “Made a plan of action and followed it”, while the wishful thinking subscale has the item “Wished I could change what happened”. Participants were required to indicate the frequency they would employ different coping strategies using a five-point scale, ranging from 1 (*not relevant*) to 5 (*used a great deal*). High scores on this scale are representative of the use of diverse and non-specific coping strategies.

Results

Normality screening

The normality of the variables was evaluated through examining the standardised skewness and kurtosis scores. With regard to kurtosis, none of the scores exceeded the critical value of ± 3 (Tabachnick & Fidell). All variables except for primary appraisal and affective well-being met the criteria for skewness. The variable primary appraisal was negatively skewed ($z_{\text{skew}} = -27.167, p < .001$), whilst affective well-being was positively skewed ($z_{\text{skew}} = +13.583, p < .001$). Both variables were transformed using \log_{10} in an attempt to normalize them. This transformation successfully normalized both variables; however further analysis of the data through regression revealed no significant difference in the outcome between the transformed and untransformed data. Thus, we employed the untransformed data for the analysis. Table 1 presents the mean and standard deviations for each variable as well as the correlations between variables.

Descriptive analysis

Table 1 shows the correlation, mean, standard deviation and internal consistency (Cronbach alpha) of our variables. Nunnally and Bernstein (1994) stated that Cronbach's Alpha should be of a modest reliability of .70 or higher, such that our variables' Cronbach alpha indicated good reliabilities.

TABLE 1 IS ABOUT HERE

Analysis of Variance (ANOVA).

A series of one-way between-subjects ANOVAs were conducted which compared the mean scores from the male and female groups for each variable in the stress process. Results did not yield any significant mean score difference between the

males and females for any of the four variables. Specifically, results indicated: primary appraisal, $F(1, 244) = 2.057, p < .05$, partial $\eta^2 = .008$; secondary appraisal, $F(1, 244) = .000, p < .05$, partial $\eta^2 = .000$; coping, $F(1, 244) = 3.246, p < .05$, partial $\eta^2 = .013$, and stress outcome, $F(1, 244) = 3.050, p < .05$, partial $\eta^2 = .012$. Despite a lack of significant difference between male and female sample, it cannot be automatically assumed that the stress and coping process between the groups will be the same.

Examination of stress-coping process and gender difference

In the first instance Lazarus and Folkman's (1984) original stress and coping model was analysed to identify if either the male or female group data fitted the model. Results indicated an inadequate fit of the data for both the male group, $\chi^2 (3, n = 102) = 32.621, p < .001$, GFI = .873, NNFI = .110, CFI = .555, RMR = .099, and the female group, $\chi^2 (3, n = 144) = 56.668, p < .001$, GFI = .851, NNFI = -.321, CFI = .340, RMR = .112. As a result, Lazarus and Folkman's stress and coping model was rejected for both groups. In order to improve the male and female models, alternate and/or additional paths were sought. The previously identified criteria of statistical support, theoretical support, and the principle of parsimony were employed in identifying suitable path analysis models in the present study.

Path analyses for males. Adhering to the three identified steps for establishing alternate and/or additional paths for a male model, correlations between the four variables (primary appraisal, secondary appraisal, coping and stress outcome) for males were reviewed. Examination identified four potential pathways: primary appraisal to coping, primary appraisal to stress outcome, secondary appraisal to stress

outcome, and coping to stress outcome. Theoretical support for these potential pathways was also offered. Specifically research has identified that the path from primary appraisal to coping has been supported in response to the activation of coping following threat appraisal (Dewe & Ng, 1999). Further, Goh (2002) who identified that an individual's perceived stress will increase in direct response to the initial appraisal of a stressor gives support for the primary appraisal to stress outcome pathway. Karasek's (1979) demand and control theory that supports the notion that stress outcome is directly affected by perceived control (secondary appraisal), gives further support for the secondary appraisal to stress outcome pathway. Finally, the coping to stress pathway, which is an established component of Lazarus and Folkman's (1984) stress and coping model is also supported.

The principle of parsimony requires that a model with the least number of paths be established. Further it is acknowledged that the integrity of the original stress and coping model is maintained with a minimum of three pathways. Adhering to these criteria, four potential 3-path models were identified for the male group. The first model tested included the pathways: *primary appraisal to stress outcome, secondary appraisal to stress outcome, and coping to stress* (Figure 1). Results indicated that the model fitted the data with $\chi^2 = 13.004, DF = 3, p < .001, GFI = .941, NNFI = .700, CFI = .850, RMR = .059$. Further, all pathways were identified as significant.

The second model tested the pathways: *primary appraisal to coping, secondary appraisal to stress, and coping to stress* (Figure 2). Results indicated that the model fitted the data with $\chi^2 = 10.673, DF = 3, p < .001, GFI = .952, NNFI = .770, CFI = .885, RMR = .044$, and all pathways were identified as significant.

According to Marsh and Hau (1998), in the event that the same outcome can be explained in two different ways, empirical evidence is utilised to determine the

most parsimonious of explanations. Comparisons between the two models indicated that the second model had better fit indices than the first model. Additionally, unlike the first model, the second model identified a link between cognitive appraisal and coping, which was consistent with a transactional model of stress and coping. In view of the better fit and empirical evidence supporting the second model, it was selected as best representing the stress and coping process adopted by males in an occupational setting.

FIGURE 1 AND FIGURE 2 ARE ABOUT HERE

Path analyses for females. The first of the models tested included the pathways: primary appraisal to stress outcome, secondary appraisal to coping and coping to stress outcome (Figure 3). Results indicated that the model did not adequately fit the data with $\chi^2 (3, n = 144) = 35.173, p < .001, GFI = .898, NNFI = .208, CFI = .604, RMR = .074$.

Due to the inadequate fit of data for the first model, the alternative 3-path model was tested (model 2; Figure 4). This model tested the pathways: *primary appraisal to coping, secondary appraisal to coping and coping to stress outcome* (Figure 4). The results indicated that the model did not adequately fit the data with $\chi^2 = 32.617, DF = 3, p < .001, GFI = .913, NNFI = .271, CFI = .636, RMR = .069$.

FIGURE 3 AND FIGURE 4 ARE ABOUT HERE

The principle of parsimony identifies that all potential 4-path models should be examined following the inadequate fit of data to the 3-path models. The 4-path model was identified for stress and coping for women, which was inclusive of all potential pathways previously identified. The pathways tested were: *primary*

appraisal to coping, primary appraisal to stress outcome, secondary appraisal to coping, and coping to stress outcome (Figure 5). Results indicated that the model adequately fitted the data with $\chi^2 = 9.941$, $DF = 2$, $p < .001$, $GFI = .968$, $NNFI = .707$, $CFI = .902$, $RMR = .024$. Thus this model was identified as both valid and the most parsimonious stress and coping model for women. Further, all pathways were identified as significant.

FIGURE 5 IS ABOUT HERE

Testing for a unique fit of the data

In order to establish whether the identified stress and coping models for males and females fitted against the alternate data groups, further analysis was conducted. Specifically, data for the male sample was tested within the female model, just as data for the female sample was tested within the male model. Results indicated that the female model did not adequately fit the male sample such that $\chi^2 = 13.267$, $p < .001$, $DF = 2$, $GFI = .942$, $NNFI = .492$, $CFI = .831$, $RMR = .034$. Similarly, the data for the female sample failed to fit the male model, $\chi^2 = 30.631$, $DF = 3$, $p < .001$, $GFI = .909$, $NNFI = .320$, $CFI = .660$, $RMR = .065$. The lack of fit of each of the data groups to the alternate models indicated that the stress and coping models identified for males and females were specific to their relative groups only.

Discussion

The current study aimed to examine the model equivalence across gender. Results indicate that there are some distinct differences in the pathways used by males and females with regards to the stress and coping process. Specifically, a key difference between the models is that women experience stress immediately following primary appraisal activation, while men experience stress immediately following

secondary appraisal activation. The stress outcome for females showed the direct result of perceiving the situation as a threat. For men on the other hand, the stress outcome results following assessment of their resources for handling the situation at hand. Such that for men, stress increases as resources for managing the event are reduced.

The other distinct difference between males and females is the clear absence of a pathway between secondary appraisal and coping in the male model. Secondary appraisal in the male model is found to trigger stress outcome without any reference to putting coping mechanisms in place. This is as opposed to the female model where secondary appraisal leads to coping and then to stress outcome. As such, males appear to assess their resources for dealing with a stressful situation, and once evaluated experience stress dependent on whether resources are available to them or not, without acting upon the identified resources. Women on the other hand assess their available resources, put these into action and part of the subsequent stress experience is dependant upon how successful their coping strategies prove to be in managing the situation. What this suggests is that once females assess their resources for managing the stressor, they actually utilise their coping strategies based upon their available resources before experiencing the stress outcome based on the success of their coping strategy. While males on the other hand assess how successful they have been in addressing the presented threat based on both the success of their coping strategies, as well as the resources available to them. As such these results support the notion that “distinctive patterns of coping strategy selection” are determined by gender (Eaton & Bradley, 2008, p. 112). Specifically, based on the process models identified for each of the genders, coping for males is determined by primary appraisal, while females’ coping is determined by primary appraisal and secondary appraisal. Additionally,

results also imply that men and women source stress differently within the stress and coping process. A notion supported by Kohler et al. (2006), whom identified that perception, appraisal of a potential threat, and stress sources are unique to each of the genders.

The unique models for men and women also reflect the concept of dualism which refers to the representation of the human being as both unified and one in being, yet made up of a series of complex structures and functions that are as equally important and representative of our existence (Hergenhahn, 2005; Susman, 2001). In the case of the stress and coping process, all the components in the process are utilised by both males and females and as such reflect their common human makeup. Differentially though, each gender also adopts their own unique pathways within the process. This was supported in Goh's (2002) analysis of Lazarus and Folkman's (1984) transactional model where the transactional process was shown to be both highly dynamic and reactive, and subject to individual value and belief systems in the appraisal and management of occupational stress. This concept of dualism was clearly manifested in the absence of any significant difference in the stress and coping process between males and females at the variable level (i.e. no significant means difference across gender for primary appraisal, secondary appraisal, coping and stress outcomes), while significant differences occur concurrently at the process level (refer to Figure 2 and Figure 5). Thus from a male versus female perspective results highlight the capacity for the stress and coping process to differ between them in reaction to the learned and biological differences that separate the genders.

Similarities between the stress and coping models for men and women.

A number of similarities exist between the identified male and female models. The first of these is the activation of primary appraisal leading to the triggering of coping. Secondly both models exhibit pathways from coping to stress outcome. The pathway from coping to stress outcome being consistent not only with Lazarus and Folkman's (1984) original stress and coping model, but also with past studies investigating stress and coping with regard to personal variables of marital status (Jermyn, 2007), anxiety and depression (Simpson, 2006), as well as across culture (Goh, 2002). Results thus indicate a strong universality of the stress and coping process, such that certain pathways are invariably employed irrespective of the individual variables (i.e., gender, culture, marital status) that may apply to the situation.

According to Goh (2002), "the state of duality refers to the ability of an entity to perform two levels of function or possess features that belong to different levels or dimensions" (p. 369). Such that we are defined by both our sameness (e.g., humanity) as much by our differences (e.g., gender) and that each definition is of equal value in defining who we are. With regards to the stress and coping process in this study, the inherent commonality and sameness of males and females, as represented by their shared humanity, means that the same components of the stress and coping process are utilised, regardless of gender. Additionally, males and females are defined by their differences, these are represented by the different stress and coping processes adopted by each gender. In summary, the transactional stress and coping process has demonstrated its' adaptability and flexibility; it represents both the common and individual traits of men and women, without undermining the core concept of stress and coping as explained by the transactional theorists.

The current study encountered a number of limitations. The first was the low response rate of males. Possible explanation for which is given by a higher readiness of Australian women than men to complete surveys and to report incidence of stress (Australian Council of Trade Unions, 1997). Thus, it remains a possibility that differing paths may have emerged between the two groups had they been more even in membership size.

It is acknowledged that for the purposes of the current study constructs of coping were limited to coping as a single entity. The limitation that this creates is it is not known if differences occur between men and women as to the types of coping adopted. More specifically, the results of the current study which indicated that there was no difference between men and women in the amount of coping used when encountering a stressful situation in the workplace, fails to identify whether differences actually exist as to the style of coping adopted. As there is empirical evidence (e.g., Day & Livingstone, 2003; Heppner et al., 1991) to support that different coping styles exist, suggestion is made that future studies investigate potential differences that exist between the genders with regards to the coping style that is adopted. Specifically, with regards to an individual's ability to adjust to stressful events, consideration needs to be given to the dual role that event characteristics (i.e., gender) and coping resources play in determining appraisal of a stressful encounter by the individual (Jimmieson, Terry, & Callan, 2004).

Future research that focuses on retesting the findings of the current study is necessary. Once established, identification as to whether the results of the current study can truly assist in addressing the present organisational stress phenomenon can then only be met from an application perspective. Such that it is suggested that future research focus on measuring the success of gender specific stress management

interventions that take into account the process differences that have been identified. In doing this, we are step closer to determining if a better understanding of the process is indeed the way in which to address this growing phenomenon.

Implications

The most prominent contribution of the present study is the identification of different stress and coping models for men and women. As such this development follows on from suggestions made by Kohler et al. (2006) that unique pathways were required for both males and females. To the best knowledge of the researchers, this is the first time that models have been developed that differentiate between the genders in their stress and coping process. Future validation is needed through utilising the models in this study as prototypes. It is thought that the identification of unique models from male and female will lead to better understanding of how the genders both relate and differ when encountering a potentially stressful work situation.

In addition, the stress and coping pathways that are specific to each gender lends weight to the call for looking at stress as a process rather than an outcome. For it has been suggested that in order to address the increasing presence of occupational stress, research needs to adequately identify relevant stress processes for specific contextual settings, and incorporate outcomes into the development of customised management measures. These identified measures will in turn actively and directly address the issues at hand and ultimately lead to a decrease in occupational stress (Kohler et al., 2006). Having identified distinct gender differences in the present study, it is hoped that more precise and effective individual stress management programs which account for both the rapidly changing gender mix of today's workplace and the unique response styles of each gender to occupational stress can be developed. A notion which has been given support by Gardner et al. (2005) whom acknowledge the

need to develop stress management programs from an identified theoretical viewpoint, rather than the historically unsuccessful one size fits all approach that has been adopted by organisations.

Table 1: the correlation, mean, standard deviation and internal consistency (Cronbach alpha) of our variables.

Variables	1.	2.	3.	4.	<i>M</i>	<i>SD</i>
1. Primary appraisal					2.90	.85
2. Secondary appraisal	.08	.41**			3.32	.54
3. Coping	.39**	.05	.16*		2.62	.56
4. Affective wellbeing	.45**	-.11	-.16*	.47**	2.97	.73

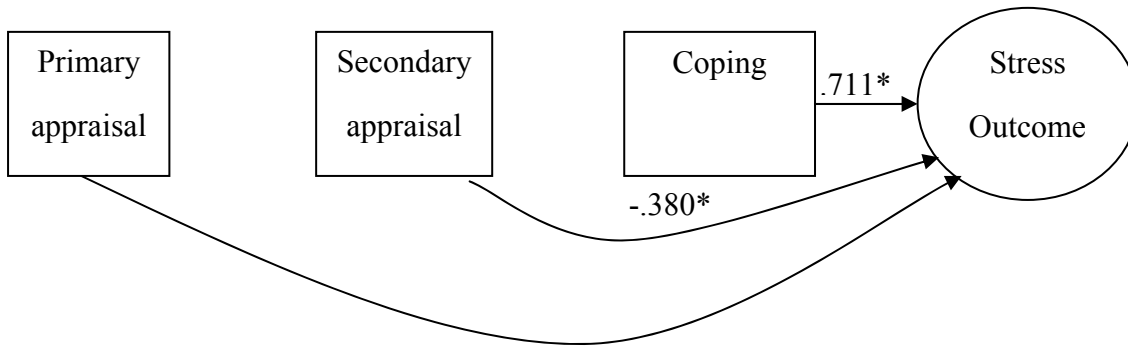


Figure 1: 3-path model (Model 1) for male samples

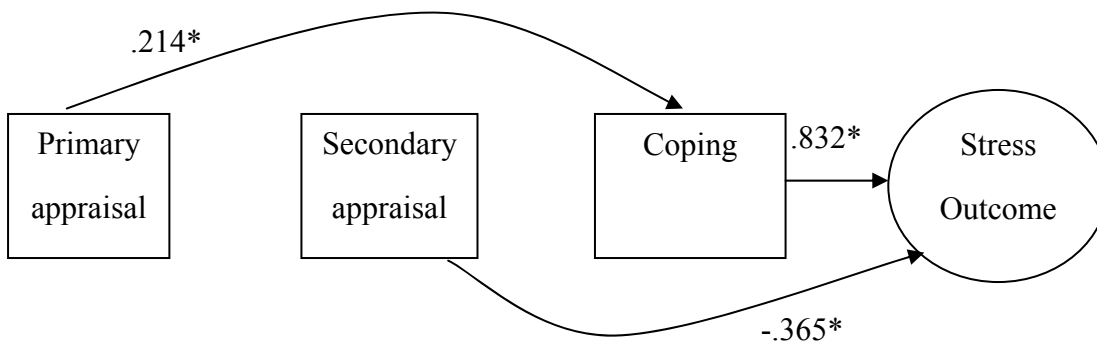


Figure 2: 3-path model (Model 2) for male samples

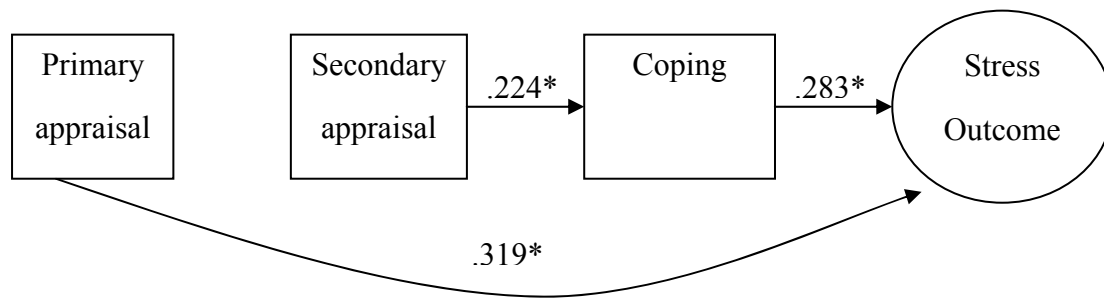


Figure 3: 3-path model (Model 1) for female samples

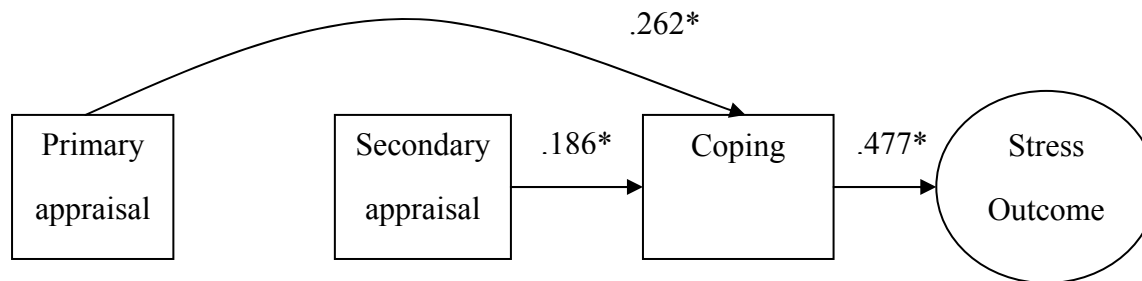


Figure 4: 3-path model (Model 2) for female samples

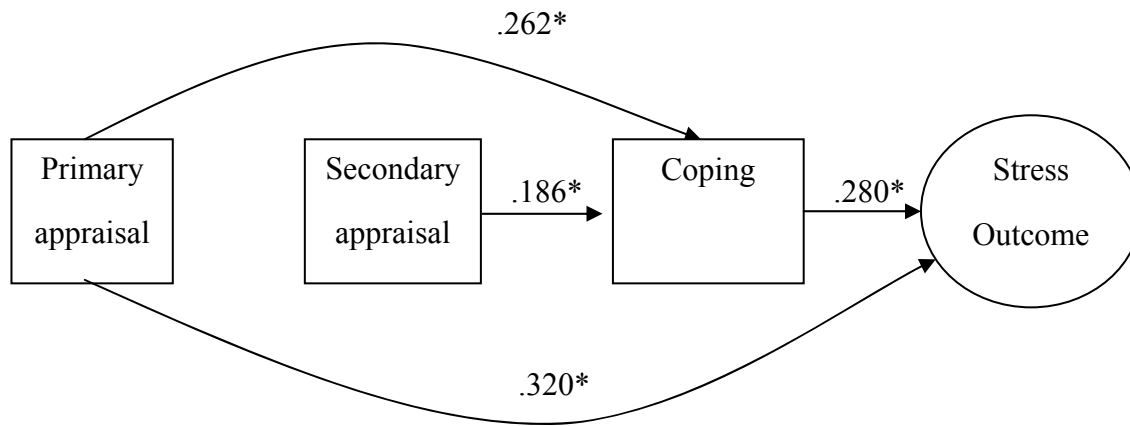


Figure5: 4-path model (Model 3) for female samples