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The Pathway Linking Stress to Active Coping: Motivation and the Trait of Resilience

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Abstract

This study explored the pathway that links stress to active coping, which plays a vital role in the process of adapting to stressful situations. Three hundred sixteen college students in Taiwan were involved in this study. Findings showed trait resilience and motivation are two mediators in the pathway that links stress to active coping. Individuals who experience lower levels of stress and present higher levels of self-efficacy tend to have higher levels of motivation and are more likely to become so-called resilient persons. Those who show higher levels of resilience and motivation tend to actively cope with stressful situations. Secure attachment is not involved in the pathway but it directly influences individuals' selection of coping responses.

College life is stressful for many. Students learn how to adapt to their new college academic and social environments. Some students appear to adapt well to stressful situations. Others seem more vulnerable and struggle. Researchers have explored the process by which individuals adapt to stressful situations (Dickinson-Delaporte & Holmes, 2011; Misra & Castillo, 2004). Coping appears to play a significant role in the interaction between stressful situations and adaptations (Gaylord-Harden, Burrow, & Cunningham, 2012; Kara & Acikel, 2012). Active coping can be behavioral or cognitive. For example, students with a fear of failing a test may seek guidance (behavior coping) or reframe the meaning of failing a test (cognitive coping). Active coping has been studied as a mediator between stress and adaptation. However, relatively few studies have explored mediators between stress and active coping. The present study addressed this issue by exploring pathways connecting stress with active coping. Findings of this study can provide mental health counselors with information to help college students actively cope with stressful situations and prevent them from relying on avoidance coping approaches, such as using drugs to deal with stressful situations.

Theoretical Framework

The purpose of this study was to explore mediators between stress and active coping. Resilience researchers (e.g., Robertson & Cooper, 2013; Rutten, et al., 2013)

found that coping and adaptation are influenced by the interaction between contextual and personal factors. Researchers of the transactional approach to coping (e.g., Dickinson-Delaporte & Holmes, 2011; Lazarus & Folkman, 1984) suggested that when individuals encounter stressful situations, their cognitive appraisal systems evaluate the situations. On the basis of the evaluation, individuals determine appropriate reactions to the situations. Cognitive appraisal is a human thought process by which individuals interpret unfamiliar situations and assesses the situations for potential threats. An example is when an individual encounters a difficult task at work. If this individual has high self-efficacy, he/she may interpret this task as an opportunity to demonstrate his/her capability to the boss. On the contrary, if this individual has low self-efficacy, he/she may perceive the task as a potential threat to his/her image because the task can reveal his/her weaknesses. As can be seen in this example, cognitive appraisal involves an individual's interpretation and perception of a stressful situation. Thus, cognitive appraisal is a perception-related process (Dickinson-Delaporte & Holmes, 2011; Lazarus & Folkman, 1984). Based on literature related to resilience and cognitive appraisal, the researcher of the present study developed a theoretical model and hypothesized that when individuals encounter stressful situations, their perception-related traits interact with stress in determining individuals' coping responses.

Three perception-related traits were included in the model: secure attachment, self-efficacy, and trait resilience. The researcher tested the model in his dissertation (Li, 2006) and found it effective. However, the model was not as effective as expected. It contributed to 11% of the variance in the dependent variable, active coping. In order to enhance the effectiveness of the model, the researcher reshaped the model by adding another variable, motivation. The reshaped model, used in this study, is presented in Figure 1. Predictor variables included in this model were stress, secure attachment, self-efficacy, the trait of resilience, and motivation. How these variables influence one another in the process of determining coping responses was the issue addressed in the present study.

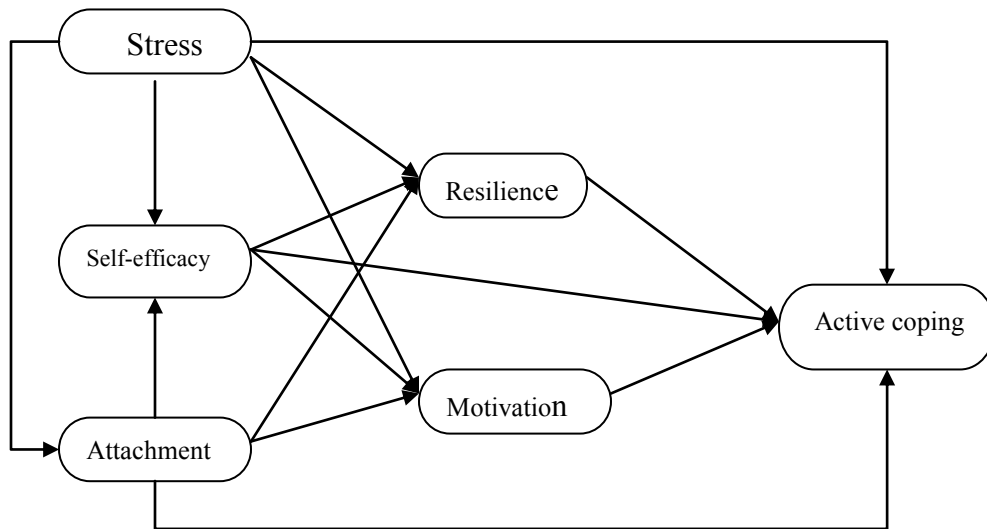


Figure 1. The reshaped model used in the study.

Using this model, the researcher hypothesized that (1) stress predicts self-efficacy, resilience, attachment, motivation, and active coping; (2) self-efficacy, resilience, attachment, and motivation can predict active coping; (3) resilience mediates between stress and active coping, between self-efficacy and active coping, and between attachment and active coping; and (4) motivation mediates between stress and active coping, between self-efficacy and active coping, and between attachment and active coping.

Method

Participants were 316 students enrolled in a college in central Taiwan. The six variables developed for this study were: stress, secure attachment, self-efficacy, the trait of resilience, motivation, and active coping. All variables except motivation were measured by instruments that have been used to study college students and have demonstrated adequate validity and reliability. These instruments were the Student-Life Stress Inventory (SSI; Gadzella, 1991), the Revised Adult Attachment Scale (AAS-Revised; Collins, 1996), the Chinese Adaptation of General Self-Efficacy Scale (GSS; Zhang & Schwarzer, 1995), the Resilience Scale (RS; Wagnild & Young, 1993), and the Coping Strategy Indicator (CSI; Amirkhan, 1990).

All of the instruments except the Chinese Adaptation of General Self-Efficacy Scale were translated from English into Chinese. Two bilingual Psychology professors and four bilingual doctoral students examined the translated instruments. A bilingual undergraduate student, who was blind to the original English instruments, back-translated the Chinese versions into English. The original instruments and the back-translated instruments were compared with each other. These two versions were very close in meaning, indicating correct language transference.

Motivation was measured by three items. Participants were asked to respond to these items on a 5-point scale, ranging from minimum (1) to maximum (5). Two of these items were based on Julian Rotter's (1967) concept about motivation: (1) How important was it to solve the problem at that time? and (2) How did you believe that you could solve the problem at that time? The third item asked participants, "Did you believe that you had enough resources to solve the problem at that time?"

For the purpose of *counterbalance*, the questionnaire was presented in two different versions, which were randomly distributed to participants. The only difference between these two versions was the sequence of the six sections. One of the versions was in a regular sequence and the other one was in a reversed sequence.

Regression analysis was used to test the mediational hypothesis. Following Baron and Kenny (1986), the associations between the predictors and dependent variables were first assessed. The next step included a regression analysis to test the associations between stress, secure attachment, and self-efficacy. The third step included a multiple regression analysis that explored the predictive relationships between stress, secure attachment, self-efficacy, and resilience. The fourth step was similar to step three, except that resilience had been replaced by motivation. The final regression analysis used stress, secure attachment, self-efficacy, motivation, and resilience to predict active coping. In addition, three simple regression procedures were used to explore the relationships between stress and self-efficacy, between stress and secure attachment, and between

secure attachment and self-efficacy. Before regression procedures were applied, the outlier was removed so it did not impact the accuracy of data analysis. The criterion used to screen outliers were (a) a Cook's distance greater than 1, and (b) a standardized residual greater than 3.

Table 1
Correlation Matrix of Variables in This Study

Variable	1	2	3	4	5	6
1. Stress	-	-.24**	-.28**	-.17**	-.17**	-.02
2. Trait of Resilience		-	.09	.58**	.20**	.29**
3. Secure Attachment			-	.12*	.07	.15**
4. Self-Efficacy				-	.27**	.19**
5. Motivation					-	.26**
6. Active Coping						-

** . Significant at .01 level.

* . Significant at .05 level.

Results

The correlation analysis, as presented in Table 1, showed that all variables but stress were significantly associated with active coping. The first multiple regression procedure examined the direct effects of secure attachment and stress on self-efficacy. Results showed that stress was the only effective predictor in this regression model. It explained 3% of variance in self-efficacy. Those who experienced higher levels of stress, as opposed to their less stressed counterparts, tended to have higher levels of self-efficacy. The results are showed in Table 2.

Table 2
Regression Analyses of Stress and Secure Attachment Predicting Self-Efficacy

Variable	B	β	R ² Change	<i>p</i>
Stress	-.03	-.12	.03	.04
Secure Attachment	.05	.10	—	.07

Note: Total R² Change = .03

The second multiple regression procedure examined the direct effects of four variables on the trait of resilience: stress, secure attachment, self-efficacy, and motivation. The results are presented in Table 3. In this regression model, stress and self-efficacy were effective predictors of resilience. They explain 35% of the variance in resilience. Those who experienced lesser stress levels, as opposed to those who experienced greater stress levels, demonstrated greater levels of resilience. Those who showed higher levels of self-efficacy were likely to show higher levels of resilience.

Table 3

Regression Analyses of Stress, Secure Attachment, Self-Efficacy, and Motivation Predicting the Trait of Resilience

Variable	B	β	R ² Change	<i>p</i>
Stress	-.14	-.15	.02	.00
Secure Attachment	-.05	-.02	-	.64
Self-Efficacy	2.2	.55	.33	.00
Motivation	.16	.02	-	.63

Note: Total R²Change = .35

The third multiple regression procedure examined the direct effects of four variables on motivation: stress, secure attachment, self-efficacy, and resilience. The results are reported in Table 4. In this regression model, stress and self-efficacy were effective predictors of motivation. They explained 9% of the variance in active coping. Those who experienced greater stress levels demonstrated lesser levels of motivation. Those who showed higher levels of self-efficacy were likely to show higher levels of motivation.

Table 4

Regression Analyses of Stress, Secure attachment, Self-Efficacy, and Resilience Predicting Motivation

Variable	B	β	R ² Change	<i>p</i>
Stress	-.01	-.14	.02	.01
Secure Attachment	-.09	-.003	-	.96
Self-Efficacy	.15	.25	.07	.00
Resilience	.05	.03	-	.63

Note: Total R² Change = .09

The fourth multiple regression procedure was conducted to investigate the relationship of stress, secure attachment, self-efficacy, resilience, motivation, and active coping. Findings are shown in Table 5. The trait of resilience and motivation were two effective predictors of active coping in this regression model. Together, they explained 13% of the variance in active coping. Individuals who held higher levels of resilience and motivation tended to cope actively.

The final path model with significant variables is shown in Figure 2. All four hypotheses were partially supported. Results of testing hypothesis (1) showed that stress could predict self-efficacy, resilience, attachment, and motivation. However, stress could not predict active coping. Hypothesis (2) was also partially supported. Results showed that resilience, attachment, and motivation could predict active coping. However, self-efficacy was not found to be a predictor of active coping. Similarly, hypothesis (3) was partially supported. Resilience was found to be a mediator between stress and active coping and between self-efficacy and active coping. Resilience could not mediate

between attachment and active coping. Finally, hypothesis (4) was partially supported. Motivation mediated between stress and active coping and between self-efficacy and active coping. Nevertheless, motivation did not mediate between attachment and active coping.

Table 5

Regression Analyses of Stress, Secure Attachment, Self-Efficacy, Traits of Resilience, and Motivation Predicting Active Coping

Variable	B	β	R ² Change	p
Stress	.10	.14	—	.07
Secure Attachment	.12	.15	—	.06
Self-Efficacy	-.01	-.02	—	.93
Resilience	.11	.25	.09	.00
Motivation	.64	.21	.04	.00

Note: Total R² Change = .13

The final path model indicated that those who experienced lower stress levels, when compared with their highly stressed counterparts, tended to show higher levels of self-efficacy, which led to higher levels of motivation and resilience, which in turn, were linked to higher levels of active coping. In addition, those who experienced lower levels of stress were likely to show higher levels of secure attachment, which in turn, led to higher levels of active coping.

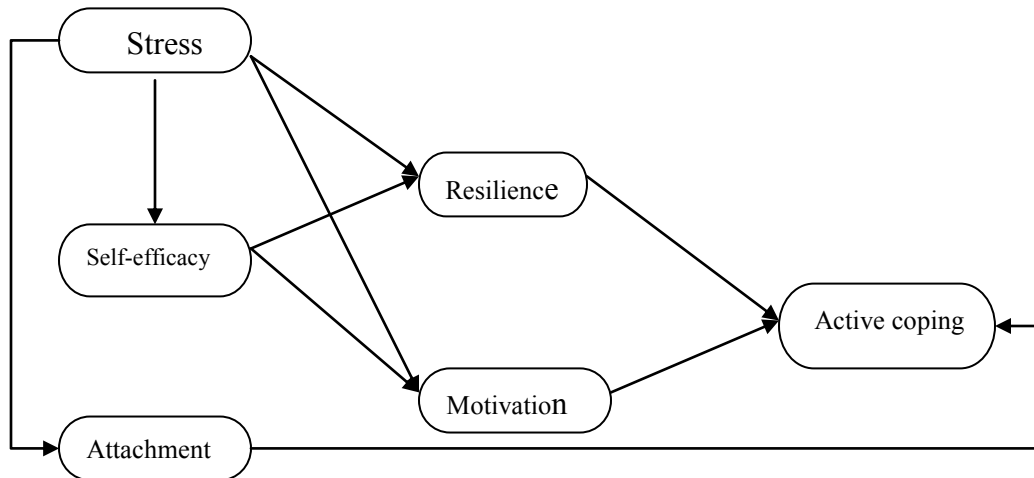


Figure 2. The Final Model.

Discussion

In this study, stress was not found associated with active coping, indicating that stress did not directly influence one's choice of coping strategies. This finding supports Dickinson-Delaporte and Holmes' (2011) assumption that stress activates a cognitive appraisal process, which determines coping strategies. It is this process instead of stress itself that influences one's choice of coping strategies. As shown in the final path model,

stress could predict motivation. This finding was no surprise because stress makes individuals uncomfortable. In order to get rid of the sense of discomfort, individuals were motivated to cope with stress. Stress was negatively correlated with motivation, indicating that lower levels of stress are related to higher levels of motivation. When stress levels are high, individuals may become too overwhelmed to be motivated. According to information processing theories (Marcus, 2008; Minsky, 2006; Rubin, 2006), individuals process information in short-term (working) memory, which has a small capacity for carrying information. When individuals' short-term memory is filled with stress-related information, not enough space will be left for information that can help them cope; lacking information or resources for coping, their motivation to cope shrinks.

Stress could predict self-efficacy, resilience, and attachment. This finding supports Chessick's (2004) and Wiebe's (2008) proposal that stress can activate traits in individuals. Stress was negatively associated with self-efficacy in this study. This finding is consistent with Bandura's (2001) proposal that lower stress levels, rather than higher stress levels, contribute to the development of self-efficacy. In addition, stress was negatively correlated with attachment and with resilience, indicating that lower levels of stress may provide an appropriate environment for attachment and resilience to function. As Siegel (1999) proposed, lower levels of stress enhance the flexibility of brain function (information processing) while higher stress levels may freeze the function of brain.

Stress Influences Active Coping Through Motivation and Resilience

The effect of stress on active coping was found to be mediated by motivation and resilience. As discussed earlier, lower levels of stress lay a foundation for motivation and resilience to function. Motivation has been considered as an internal set of processes (Mitchell & Daniels, 2003). It determines persistence, energy, and direction of human behaviors (Ferguson, 2001). In addition, it is related to coping strategies (van Damme et al., 2013). Thus, when lower levels of stress activate individuals' motivation to cope, the motivation would influence them to actively cope with stress (active coping). In addition to motivation, resilience functions as a mediator between stress and active coping. Resilience enables individuals to successfully adapt to life challenges (Masten, 2011). When activated by stress, resilience reduces psychiatric symptoms such as those of PTSD (Bensimon, 2012) and promotes individuals' emotional regulation (Daniels et al., 2012). Garmezy (1991) suggested that resilience brings up a positive perspective of life challenges. This positive perspective may influence individuals to embrace an active attitude toward life events and cope with the events actively (Li & Nishikawa, 2012).

Self-Efficacy Influences Active Coping Through Motivation and Resilience

Self-efficacy is performance-related because it is related to how individuals perceive their own ability to complete a task successfully (VandenBos, 2007). Self-efficacy in this study was found to indirectly influence active coping through motivation and resilience. Regarding motivation as a mediator between self-efficacy and active coping, Mitchell and Daniels (2003) indicated that self-efficacy is an important component of motivation, which is linked to performance. Additionally, people with higher levels of self-efficacy have more self-confidence (Papalia & Feldman, 2012), which in turn, motivates them to actively cope with challenging situations such as passing

a difficult course. Concerning resilience as a mediator, the finding that self-efficacy influenced resilience parallels Yi's (2006) and Roberts' (2007) suggestion that self-efficacy contributes to the development of resilience. The finding that resilience influenced active coping is consistent with Li and Nishikawa's (2012) finding that resilience is an effective predictor of active coping. When individuals' self-efficacy is promoted, their resilience is also promoted. The higher their levels of resilience, the higher their tendency to cope actively becomes.

Secure Attachment Directly Influences Active Coping

Contradicting the expectation, secure attachment did not influence one's choice of coping response (active coping) through motivation or resilience. Instead, it directly influences active coping. Secure attachment, as a pattern of emotional tie between two persons (Papalia & Feldman, 2012), can be more of an emotional trait than a cognitive one (Siegel, 1999). Therefore, it may not go through cognitive appraisal in order to influence one's selection of coping strategies. Bowlby (1988), in explaining his attachment theory, indicated that individuals' attachment patterns are most likely to be activated when they are in stressful situations. As predicted, secure attachment directly influences active coping. This finding is in line with those of previous studies. Laible and Panfile (2009) indicated that securely attached persons actively cope with their negative emotions during and after stressful situations. Myers and Vetere (2002) reported that securely attached persons hold more resources for stress-coping than do their insecurely attached peers. Perhaps from their earlier secure attachment experiences, individuals with secure attachment pattern learn that the world is safe and that they can build a trusting relationship with others (Papalia & Feldman, 2012). Relationships provide individuals with social support and coping resources in stressful situations. As a consequence, they are likely to respond to stress in an active way.

Conclusion and Practical Implications

The combined findings led to the conclusion that resilience and motivation functioned as mediators in the pathway that links stress to active coping. Individuals who experienced lower levels of stress and presented higher levels of self-efficacy tended to have higher levels of motivation and resilience. Individuals who showed higher levels of motivation and resilience tended to actively cope with stressful situations.

When individuals encountered stressful situations, their cognitive appraisal mechanisms were activated in order to process information coming from the environment through the lenses of personality traits. The results of the cognitive appraisal determined the coping responses. The present study proved that a cognitive factor (motivation) and perception-related traits (self-efficacy and the trait of resilience) played a significant role in shaping individuals' coping responses. Secure attachment was not involved in the cognitive appraisal process but it directly influenced individuals' selection of coping responses. The findings of the study imply that mental health counselors can help their clients to actively cope with stress by enhancing their trait of resilience, self-efficacy, and motivation. Since the trait of resilience mediates the effect of self-efficacy on active coping (see Figure 2), more emphasis on resilience than on self-efficacy is suggested (Li & Nishikawa, 2012).

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