Influence of Stress, Social Support-Seeking, and Trait Resilience on Problem Solving and Avoidance: A Cross-Country Study

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Abstract

This study explored factors that contribute to problem-solving and avoidance strategies. A path model that connects stress to trait resilience, avoidance, social support-seeking, and problem solving was developed and tested in this study. Three hundred forty-three college students (177 recruited in the United States and 166 recruited in China) were involved in this study. In both the U.S. and Chinese samples, stress could predict avoidance, social support-seeking, and trait resilience. In addition, social support-seeking and trait resilience could each predict problem solving. Although social support-seeking and trait resilience indirectly influenced problem solving in both samples, stress directly influenced problem solving in the U.S. sample but not the Chinese sample. When under increased stress, students in both the U.S. and Chinese samples were able to make problem-solving decisions. The difference between these two samples was that U.S. participants’ problem solving was influenced by stress (direct effect) as well as social support-seeking and trait resilience (indirect effect) while their Chinese counterparts’ problem solving was influenced by social support-seeking and trait resilience (indirect effect). These findings are discussed from a globalization and localization perspective. Practical implications of the findings are also discussed.

Introduction

While globalization has been widely recognized, little attention has been drawn to mental health issues among countries. People’s mental health can influence their performance at work, regardless of their professions and nationality. For example, a manager of a store is expected to have good mental health in order to manage the store effectively. Researchers proposed that engaging in problem-solving strategies can be considered a specific type of stress-coping strategy that is positively related to individuals’ mental health (Law & Guo, 2012). This study explored factors that influence individuals to apply problem-solving strategies and factors that influence individuals to
apply avoidance strategies to cope with stress in U.S. and Chinese university students. A path model that connects stress, trait resilience, avoidance, social support-seeking, and problem solving was developed and tested. Results of the study may provide information for mental health practitioners of both countries to increase their counterparts’ tendency to apply problem-solving strategies to cope with stress.

Theoretical Framework

Globalization has been discussed for many years in a variety of fields such as business (Neubauer, 2000), communication (Banerjee, 2002), social work (Villereal, 2007), education (Blum & Ullman, 2012), and mental health (Sundell, Ferrer-Wreder, & Fraser, 2014). Globalization is closely associated with international trades, which in turn, can activate the process of cultural exchanges. However, many countries welcome international trades yet may not like to abandon their own culture and identity for globalization (“The Gated Globe,” 2013). Thus, although the process of globalization may increase the speed of cultural exchanges across countries, it may not foster a unified global culture. Local cultures will continue to play an important role in shaping individuals’ perspectives about self and the world around them. Compared to issues of international trades, mental health issues, such as coping with stress, receive little attention from researchers studying globalization. Since international trades are operated and managed by people, individual mental health status is likely to influence the trades to a certain degree. Stress coping is key as stress is a part of life and successful stress coping can enhance individuals' mental health (Hou et al., 2014). Problem solving has been considered one category of coping strategies (Amirknan & Greaves, 2003) that leads to positive mental health (Law & Guo, 2012). By contrast, using avoidance as a coping strategy can lead to depression and dissatisfaction with life (Chang & DeSimone, 2001; Eskin, Akyol, Çelik, & Gültekin, 2013; Holahan, Moos, Holahan, Brennan, & Schutte, 2005), therefore deteriorating individuals’ mental health. Mental health issues are developed within the culture in which individuals were raised. Thus, factors affecting stress and stress-coping strategies may vary across countries. Relatively few cross-cultural studies explored factors affecting individuals’ problem-solving and avoidance coping strategies. This study addresses this issue and may provide insight for international companies to develop effective training programs for enhancing the mental health of employees working in different countries.

Cross-Cultural Comparisons

This current study was developed based on two assumptions: (1) there are cultural differences between the United States and China and (2) the direction of cultural influences is more from the West (especially the United States) to other parts of the world, such as China, than the opposite direction (Giddens, 1990; Ritzer, 2002). One example of the American influence in China is that China has sent many students to study at U.S. universities. I created a path model (Figure 1) guided by Western theories and empirical studies and evaluated this model with a U.S. sample. If the path model fit well with the U.S. data, it would be considered to reflect U.S. culture. Then it would serve as a baseline against which the Chinese data would be compared. A multi-group analysis (involving
When conducting a multi-group analysis, both the U.S. and Chinese data were applied to the hypothesized model. Two temporary models, namely the fully constrained model and the fully unconstrained model, were developed based on the hypothesized model. The fully constrained model was developed by setting each of all the paths in the hypothesized model to be equal across the U.S. and Chinese samples (e.g., setting the path from stress to problem solving to be equal across the two samples). The fully unconstrained model was developed by allowing all the paths in the hypothesized model to be freely estimated (i.e., no path was set to be equal across the two samples). Once the multi-group analysis was executed, the fully constrained model and the fully unconstrained model were compared. If the results showed no difference between these two models, no significant difference was found in the hypothesized model between the U.S. and Chinese samples. On the contrary, if there was a significant difference between the fully constrained and the fully unconstrained models, a significant cross-country difference in the hypothesized model was detected. Consequently, follow-up procedures would be conducted to locate the part of the model that caused the cross country differences.

The Hypothesized Path Model

Based on a review of the literature, the primary researcher developed a path model that connects stress to avoidance, problem solving, social support-seeking, and trait resilience (see Figure 1). In this model, stress directly influences avoidance, problem solving, social support-seeking, and trait resilience; and indirectly influences problem solving through two mediators—trait resilience and social support-seeking.

\[ \text{Stress} \rightarrow \text{RES} \rightarrow \text{PRO} \rightarrow \text{AVO} \rightarrow \text{SSS} \rightarrow \text{PRO} \]

Figure 1. The hypothesized model. Stress = Stress, AVO = Avoidance, RES = Resilience, SSS = Social Support-Seeking, PRO = Problem Solving.

This path model was evaluated in the present study using a sample from the United States and a sample from China. The relationships among these variables are summarized in the following paragraphs.
Stress and Resilience

The effect of stress varies in different individuals. Some people have a lower threshold for stress, as evidenced by elevated symptoms of anxiety and depression (Dalton, Hammen, Najman, & Brennan, 2014; Ford, Mauss, Troy, Smolen & Hankin, 2014); while others bounce back from stress, as demonstrated by the ability to cope and recover from problematic and challenging situations. Those who bounce back from stressful situations are considered resilient individuals (Par, Montgomery, & DeBell, 1998). When stressed, these individuals’ trait resilience would be activated to buffer the effect of stress (Waugh, 2007). Thus, in this study, stress was hypothesized to negatively predict trait resilience.

Responses to Stress: Avoidance, Problem Solving, and Social Support-Seeking

People feel a menace to their ego as they encounter a stressful situation (Wiebe, 2008). People’s ego can be considered as a rational part of the personality (as opposed to the id) or their sense of self. When stressed, people may feel threatened or endangered. For example, people may develop a sense of insecurity when they lose their jobs. For the purpose of sustaining the ego, they would utilize available resources to cope with stress. Siegel (1999) proposed that people’s coping responses are associated with their past coping experiences. When stressed, people’s stress-related experiences, which are stored in memories, are activated to influence their coping with current stressful situations. While there are a variety of responses to stress, Amirkhan and Greaves (2003) proposed a coping model that contains three basic responses to stress: avoidance, problem solving, and social support-seeking.

Stress and avoidance. Avoidance is one basic response to cope with stress. Cannon (1939) proposed a fight-or-flight response model of stress coping. When individuals perceive a threat in the surroundings, their nervous system suddenly releases adrenaline and noradrenaline, leading to an increase in heart rate and blood pressure. These physical reactions prepare individuals to either fight the situation or run away from it. More recent studies supported Cannon's suggestion about the relationship between stress and avoidance (Briere, Hodges, & Godbout, 2010; Felsten, 1998). Felsten (1998) found that stress is strongly and positively related to avoidance. Additionally, Briere et al. (2010) demonstrated that severe stress directly influences individuals to avoid contacting the environment around them. Stress was expected to predict avoidance in this study.

Stress and problem solving. Engaging in problem solving can be a “fight” response to stress. When stressed, individuals tend to cognitively appraise the problem situation that they are encountering (Dickinson-Delaporte & Holmes, 2011). The results of the appraisal determine strategies applied to cope with the situation. When the result of appraisal convinces individuals that abundant resources and adequate ability are available, these individuals are more likely to attempt to find solutions than to avoid the situation. On the other hand, when the results persuade them that they possess inadequate resources and ability, they are more likely to avoid the situation than find solutions. Stress and problem solving have been reported as negatively correlated (Martin, Dovey, Coulthard, & Southall, 2013). The higher the stress level experienced, the less likely it is for them to engage in problem solving. Hence, stress was expected to predict problem solving in the present study.
Stress and social support-seeking. Seeking social support is another basic response to stress. When natural disasters happen, people gather to discuss how to restore their homeland. Gladding (2012) suggested that it is natural for individuals to gather to resolve matters difficult for an individual to handle. Similarly, Mortenson (2006) reported that when college students face academic difficulties, they are likely to seek social support to cope with the stressful situations. Additionally, research suggests that getting emotional support from trusted people is an effective approach to coping with stress (Burleson & Goldsmith, 1998). Stress and social support-seeking were found to be positively correlated (Felsten, 1998). In general, those who have higher stress levels are more likely than their low stress counterparts to seek social support. In the present study, stress was expected to predict social support-seeking.

Trait Resilience and Problem Solving

Trait resilience reflects an individual's ability to adapt well to stressful situations (Ahern, Kiehl, Sole, & Byers, 2006). Individuals having higher levels of trait resilience possess a positive perspective of stressful situations (Li & Nishikawa, 2012). In addition, trait resilience was reported to predict problem solving (Li, Eschenauer, & Yang, 2013). In this study, I expected that trait resilience could positively predict problem solving and negatively predict avoidance.

Social Support-Seeking and Problem Solving

When under stressful situations, individuals seek social support (Mortenson, 2006). They may seek advice, share feelings and thoughts, or ask for resources from others. Social support-seeking was significantly correlated with problem solving (Felsten, 1998; Li & Yang, 2009). In addition, social support-seeking was reported to enable individuals to solve problems successfully (Daniels, Beesley, Wimalasiri, & Cheyne, 2013). Thus, in this study, I expected that social support-seeking could positively predict problem solving and negatively predict avoidance.

Purpose and Hypotheses

The path model presented in Figure 1 was created based on previous research. The path model illustrates relationships among stress, problem solving, avoidance, social support-seeking, and trait resilience. There is inadequate research to hypothesize cross-country differences in the above mentioned relationships. Thus, I evaluated the hypothesized model for cross-cultural differences on the individual paths. Specifically, this model hypothesized: (1) stress directly influences individuals' problem-solving tendency, (2) stress directly influences individuals' avoidance tendency, (3) stress directly influences individuals’ social support-seeking tendency, (4) stress indirectly influences problem solving through social support-seeking, and (5) stress indirectly influences problem solving through trait resilience.

Methods

Participants

A total of 343 college students participated in this study. Among them, 177 students were recruited from a business school in a metropolitan area on the East Coast of
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the United States and 166 students were recruited from a business school in a metropolitan area on the South Coast of China. The U.S. sample was composed of 46% (n = 82) males and 54% (n = 95) females. The Chinese sample was made up of 48% (n = 80) males and 52% (n = 86) females. Their mean age was 19.7 (range from 18 to 22, SD = 1.21). The participants ranged in age from 18 to 24 years (M = 19.5, SD = 1.64).

Instruments

**Stress.** The 51-item Student-Life Stress Inventory (SSI; Gadzella, 1991) was used to measure day-to-day stress in college life. This scale is based on a 5-point scale ranging from 1 (I have never experienced this specific stressor) to 5 (I have experienced this specific stressor most of the time). Gadzella, Masten, and Stacks (1998) demonstrated convergent validity of the SSI. Previous studies revealed a coefficient alpha of .92 with a U.S. sample (Gadzella & Baloglu, 2001) and .90 with a Chinese-speaking sample (Li, 2008). In the current study, for the U.S. sample α = .85 and for the Chinese α = .87.

**Trait resilience.** The 25-item Resilience Scale (RS; Wagnild & Young, 1993) was used to measure participants’ levels of trait resilience. This scale is based on a 7-point scale ranging from 1 (I disagree) to 7 (I agree). Wignild and Young (1993) demonstrated concurrent validity of the RS and reported that the internal consistency of the RS ranged from .76 to .91 in different studies. For the present study, alphas for U.S. and Chinese samples are .79 and .83, respectively.

**Problem solving.** The 11-item problem-solving subscale of the Coping Strategies Indicator (CSI; Amirkhan, 1990) was applied to measure participants’ tendency to use problem-solving strategies to cope with stress. The CSI is based on a 3-point rating scale ranging from 1 (I have not used this particular coping strategy at all) to 3 (I have used this particular coping strategy a lot). Concurrent validity of the CSI has been supported (Amirkhan, 1990). Additionally, the problem-solving subscale was reliable with Cronbach’s alpha of .89 (Amirkhan, 1990). In the current study, for the U.S. sample α = .80 and for the Chinese sample α = .84.

**Avoidance.** The 11-item avoidance subscale of the Coping Strategies Indicator (CSI; Amirkhan, 1990) was applied to measure participants’ tendency to use avoidance to cope with stress. The value for Cronbach’s alpha for the avoidance subscale was reported to be .84 (Amirkhan, 1990). In the current study, Cronbach’s alpha for the U.S. and Chinese samples are .85 and .80, respectively.

**Social support-seeking.** The 11-item social support-seeking subscale of the Coping Strategies Indicator (CSI: Amirkhan, 1990) was applied to measure participants’ tendency to seek social support in the process of coping with stress. The value for Cronbach’s alpha for the social support-seeking subscale was reported to be .84 (Amirkhan, 1990). In the current study, Cronbach’s alpha for the U.S. and Chinese samples are .82 and .81, respectively.

Procedure

After the study was approved by the IRB, a trained research assistant went to classrooms to recruit voluntary participants. The research assistant was a graduate student who completed courses such as Research, Assessment, and Advanced Data Analysis. In addition, this assistant had experiences of collecting data using questionnaires/surveys. The research assistant read a script of recruitment to invite students and distributed an
informed consent form to those who were interested in participating in the study. The faculty members of the classes and the research assistant emphasized the voluntary nature of the study. The participants completed a questionnaire during class time and then returned it to the research assistant. Those who decided not to participate were instructed to remain quietly in their seats. The questionnaire took about 10–15 minutes to complete. The same procedure was used in recruiting both Chinese and U.S. participants.

**Data Analysis Plan**

The hypothesized path model presented in Figure 1 was evaluated by AMOS 17.0. Previous literature on evaluation of path models has suggested the following model fit criteria (Hu & Bentler, 1999; Kline, 2005; Loehlin, 1998; Weston & Gore, 2006): a chi-squared ($\chi^2$) that is not statistically significant at the $p < .05$ level; a comparative fit index (CFI) $\geq .90$; a standardized root mean square residual (SRMR) $< .08$; and a root mean squared error of approximation (RMSEA) $< .06$. Thus, the hypothesized path model was evaluated based on these criteria.

**Results**

The model was first tested with the U.S. sample. As expected, the model fit the data well (NFI = .96, CFI = 1.0, RMSEA = .00, $\chi^2$ (4) = 3.02, SRMR = .03). Next, in order to determine if group differences (i.e., cultural differences) were present in the model, a multi-group analysis was conducted. The fully constrained model [$\chi^2$ (18) = 47.04, p = .00; CFI = .82, RMSEA = .07, SRMR = .08] was compared to the fully unconstrained model [$\chi^2$ (8) = 9.83, p = .28; CFI = .99, RMSEA = .30, SRMR = .05]. The chi-square test of difference showed that these two models were significantly different [$\Delta \chi^2$ (10) = 37.21, $p = .00$], indicating that there were some differences in the paths or variances between the U.S. and Chinese samples. In order to identify the path difference, z-tests for each pair of coefficients were conducted. Results showed a difference in the path from stress to problem solving across these two samples (C.R. = 2.28), which suggested that the process by which stress related to problem solving was not the same for the U.S. and Chinese individuals. When the model was tested in the Chinese sample, the model fit the data well (NFI = .93, CFI = .97, RMSEA = .065, $\chi^2$ (4) = 6.8, SRMR = .05). However, one path (i.e., from stress to problem solving) was not significant when the model was applied to the Chinese sample. In summary, results of the study supported all five hypotheses in the U.S. sample. In the Chinese sample, however, one of the five hypotheses (i.e., hypothesis one) was not supported. In this hypothesis, stress was expected to directly influence individuals' problem-solving tendency.

**Discussion**

This study evaluated a path model connecting stress with problem solving, avoiding, social support-seeking, and trait resilience. Results of a multi-group analysis showed a group difference between the U.S. and Chinese samples. The difference was caused by a significant difference in one of the six paths in the path model—the path from stress to problem solving.
These findings revealed that the relationships amongst stress, problem solving, avoidance, social support-seeking, and trait resilience in the U.S. and Chinese samples were more similar than different. In both samples, stress could influence avoidance. In addition, stress, social support-seeking, and trait resilience could influence problem solving. However, stress influenced problem solving differently across the two samples. In the U.S. sample, stress could directly influence problem solving and indirectly influence problem solving through two mediators: social support-seeking and trait resilience. In the Chinese sample, stress could not directly influence problem solving. It could only indirectly influence problem solving through these two mediators. When under increased stress, students in both the U.S. and Chinese samples were able to make problem-solving decisions. The difference between these two samples was that U.S. participants' problem solving was influenced by stress (direct effect) as well as social support-seeking and trait resilience (indirect effect) while their Chinese counterparts' problem solving was influenced by social support-seeking and trait resilience (indirect effect).

As mentioned, the direction of cross country influence is more from the West to the East (Giddens, 1990; Ritzer, 2002). Thus, the findings of more similarities than differences between the two samples may be interpreted by China having been greatly influenced by the United States, in the process of globalization. However, although globalization may have shrunk the cultural gap between the United States and China, cultural differences (localization) still exist. Results of this study indicated that, when under stress in general, Chinese students were less likely than their American counterparts to directly engage in problem solving. The Chinese culture values collectivism (Brammer, 2012) and thus, when stressed, Chinese students can be more accustomed to rely on group decisions than their own solutions. On the contrary, American culture values individualism (Brammer, 2012) and encourages individuals to find their own solutions. This cross-country difference in the tendency to problem solve may reflect a part of the Chinese culture (i.e., collectivism) that lives through Westernization.

Limitations

Due to the fact that this study was not a large-scale study and that convenience samples were used, the findings of the study have limited implications. In addition, the sample was composed of students majoring in business, thus, the findings cannot be generalized to the entire college student population in the United States and China.

Practical Implications

Stress was found to predict avoidance in both the U.S. and Chinese samples. Therefore, mental health practitioners are suggested to help clients reduce stress levels and encourage them to directly cope with stressful situations. In addition, based on the findings across the two samples, mental health practitioners may develop culturally sensitive interventions for American and Chinese individuals traveling to or residing in each other’s country. Stress directly influences American individuals (but not their Chinese counterparts) to engage in problem solving. This finding cannot be interpreted as that the Americans have somehow managed stress better than the Chinese. Instead, it should be considered as a cultural variation and not a weakness of Chinese students. Pitta,
Fung, and Isberg (1999) suggested that while Americans tend to think in a linear fashion (advancing from point A to point B and then to a conclusion at point C), the Chinese tend to think non-linearly (emphasizing the importance of harmony and taking a long-term perspective of the problems). The linear thinking might have led the Americans to look for quick solutions to problems and the non-linear thinking might have encouraged the Chinese to patiently wait for an appropriate time to take actions. Thus, culturally competent mental health practitioners in the United States may educate their stress-burdened Chinese clients about the importance of taking quick actions to find solutions and may direct them to access resources that can help them find the solutions. When necessary, workshops about problem solving may be conducted for Chinese clients. Culturally competent practitioners in China, on the other hand, may spend less energy on encouraging American clients to engage in direct problem solving. They may focus more on guiding American clients to explore the nature of the problems/stressful situations, in order for the clients to incorporate social/cultural factors into their solutions.

Because social support-seeking and trait resilience are mediators between stress and problem solving in both the U.S. and Chinese sample, mental health practitioners may enhance these two mediators for the purpose of promoting clients’ tendency to solve problems. Helping the clients to build social connections with local organizations and individuals can enhance the clients’ social support-seeking. Another approach to boosting the clients’ social support-seeking is encouraging them to participate in a counseling group formed by people experiencing similar problems/stressful situations.

In addition, enhancing the clients’ trait resilience can promote their tendency to find solutions to problems/stressful situations, regardless of their cultural backgrounds. As individuals grow, their experiences of successful adaptation to difficult situations contribute to the development of trait resilience (Masten, 2001). In the process of adaptation, family, school, and community can be helpful by providing support and guidance for them to deal with the situations (Alvord & Grados, 2005; Jain & Cohen, 2013). In adults, trait resilience can be enhanced by exploring and collecting memories of successful adaptation. Mental health counselors may encourage their clients to tell life stories, and help the clients to identify successful adaptations, regardless of the adaptations’ levels of obviousness. The clients can be encouraged to categorize the adaptations, organize them, and make sense of them. Once the clients can make sense of their adaptation experiences, their trait resilience can be enhanced.

References


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