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Article 95

An Exploration of Trait Resilience's Influence on Graduate Students' Tendency to Actively Cope With Stress Across Time

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Trait resilience reflects an individual's ability to adapt well to stressful situations (Ahern, Kiehl, Sole, & Byers, 2006; Wagnild & Young, 1993). Although many factors such as easygoing disposition, self-efficacy, and self-confidence have been considered to be related to the development of resilience (Papalia, Olds, & Feldman, 2009), the nature of trait resilience has not been fully explored. Kumpfer's (1999) resilience theory implied that this trait can be a combination of two factors. One of the researchers of this study tested Kumpfer's implication and successfully extracted two factors from trait resilience: a solution-related factor (e.g., forming a plan to solve a problem) and a non-solution-related factor (e.g., looking for the meaning for engaging in such a problem-solving process; Li, 2006). Based on the findings, the researchers further explored two issues in the present study: (1) the relationship between the two factors across three time points and (2) the extent to which each of the two factors predicts graduate students' tendency to actively cope with stress (i.e., active coping) across the three time points. Results of the study can provide information for counselors to help graduate students enhance trait resilience in order to adapt to stress.

Theoretical Framework

Kumpfer (1999) proposed that stressful situations activate a person-environment interactional process in which personal factors are activated to influence environmental factors. Process-oriented researchers (e.g., Dickinson-Delaporte & Holmes, 2011; Olf, Langeland, & Gersons, 2005) posited that the process activated by stressful situations is composed of a cognitive appraisal process and follow-up reappraisal processes. In addition, they suggested that these appraisal processes rather than stress determine how one responds to stressful situations (coping styles).

Researchers indicated that resilient individuals tend to actively cope with stressful situations (i.e., active coping; Li & Nishikawa, in press; Slone & Shoshani, 2006),

implying that trait resilience plays a role in cognitive appraisal processes and is a determinant of active coping. As mentioned, Li (2006) found that trait resilience is composed of a solution-related factor and a non-solution-related factor. Because solution-seeking is related to cognitive appraisal processes, the researchers of this study hypothesized that the solution-related factor of trait resilience influences people's tendency to actively cope with stress more than the non-solution-related factor does.

Some traits are genetic-based while other traits are learned; genetic-based traits are considered to be stable (fixed) whereas learned traits are less stable (Papalia et al, 2009). Siegel (1999) proposed that repeated experiences help an individual to develop traits that are learned from person-environment interactions. In that sense, trait resilience can be regarded as a learned trait because it is developed in the process of successfully adapting to developmentally appropriate stressful situations (Hines, Merdinger & Wyatt, 2005; Masten, 2001; Pike, Cohen & Pooley, 2008; Wagnild, 2010). However, the extent to which trait resilience is stable across time has not been explored. The present study addressed this issue by detecting the stability of trait resilience and of its influence on active coping across three time points during a semester in a sample of graduate students.

Hypotheses

This study investigated the following hypotheses: (1) trait resilience is made up of a solution-related factor and a non-solution-related factor at each of the three time points, (2) trait resilience, the solution-related factor (factor one), and the non-solution-related factor (factor two) each remain stable across the three time points, and (3) the solution-related factor is more effective than the non-solution-related factor in predicting active coping at each of the three time points.

Methods

The sample consisted of 128 graduate students who voluntarily participated in this study. Participants were asked to identify a stressful situation initiated within the past week. Based on how they reacted to the situation, participants were asked to fill out a questionnaire. The same questionnaire was administered to the same participants at three different times with one week interval. Data were collected using a questionnaire that consisted of three sections: demographic information, the Resilience Scale (RS; Wagnild & Young, 1993), and the Coping Strategy Indicator (CSI; Amirkhan, 1990). The internal consistency (coefficient alpha) of the RS was found to be .85. The alpha of the CSI was found to be .89. In addition, both scales have demonstrated good validity (see Li, 2008).

Data Analysis

The study was based on a correlational design with four variables: trait resilience, the solution-related factor (factor one), the non-solution-related factor (factor two), and active coping. Data were analyzed by applying procedures of factor analysis, repeated measure ANOVA, and multiple regression. Factor analysis procedures were applied to test if trait resilience is composed of factor one and factor two at each of the three time points. Repeated measure ANOVA procedures were applied to detect if trait resilience, factor one, or factor two differs across the three time points. Multiple regression

procedures were applied to examine the relationships among factor one, factor two, and active coping at each of the three time points.

Results

Results of data analysis supported hypothesis 1, partially supported hypothesis 2, and failed to support hypothesis 3.

A factor analysis procedure was conducted to detect if trait resilience is made up of two different factors. Results showed that two factors—factor one (a solution-related factor) and factor two (a non-solution-related factor)—can be extracted from trait resilience. Factor one was found to be associated with items 1, 2, 6, 9, 10, 14, 20, and 21 of the Resilience Scale while factor two was found to be related to items 7, 8, 13, 15, 16, 17, 22, 23, 24, and 25 of the scale. The criterion used to separate factor one from factor two was a rotated coefficient of .40. The rotated factor matrix is shown in Table 1.

A repeated measure ANOVA procedure was conducted to test the difference in trait resilience across three time points. Results showed a significant difference, Wilk's $\Lambda = .95$, $F(2, 124) = 3.291$, $p = .041$. A follow-up paired samples test showed a difference between Time 1 and Time 2 ($p = .017$), and between Time 1 and Time 3 ($p = .02$). No difference was found between Time 2 and Time 3 ($p = .770$). The findings indicated that trait resilience was not stable across time.

In order to test if the two factors of trait resilience were stable across time, procedures of repeated measure ANOVA were conducted. Regarding factor one, results of the ANOVA showed Wilk's $\Lambda = 9.26$, $F(2, 124) = 4.93$, $p = .009$, indicating a time effect on factor one. A follow-up paired samples test showed a difference in factor one between Time 1 and Time 2 ($p = .012$), and between Time 1 and Time 3 ($p = .002$). No difference was found between Time 2 and Time 3 ($p = .469$). These findings indicated that factor one was not stable across three time points. In terms of factor two, results of a repeated measure ANOVA showed Wilk's $\Lambda = .975$, $F(2, 124) = 1.6$, and $p = .206$, indicating that factor two was stable across the three time points.

A series of multiple regression procedures were conducted to explore whether trait resilience could predict active coping across three time points. Results showed that resilience could predict active coping at Time 1 ($B = .136$, $B = .230$, R square change = .053, $p = .009$) but not at Time 2 and Time 3.

Furthermore, the extent to which the two factors of trait resilience could predict active coping across three time points was examined. Results of multiple regression procedures showed that factor two could predict active coping at Time 1 ($B = .413$, $B = .259$, R square change = .067, $p = .003$). At Time 2 and Time 3, neither factor one nor factor two could predict active coping.

In summary, two factors—factor one (a solution-related factor) and factor two (a non-solution-related factor)—could be extracted from trait resilience at each of the three time points. Trait resilience and factor one were not found to be stable across time. However, factor two presented to be stable across time. Trait resilience could only predict active coping at Time 1 but not at Time 2 and Time 3. Between the two factors making up trait resilience, factor two could effectively predict active coping. However, the factor's ability to predict active coping was found only at Time 1.

Conclusion and Practical Implications

While some researchers regard resilience as a learned trait (Pike et al., 2008; Wagnild, 2010), no adequate studies have scientifically examined the stability of the trait and the two factors making up the trait across time. This study addressed that issue. The combined findings of the study led to the conclusion that trait resilience was constantly composed of a solution-related factor and a non-solution-related factor across time. Only in the initial stage of the coping process (Time 1) did trait resilience influence people to actively cope with stressful situations. In the stage, the non-solution-related factor dominated the solution-related factor in influencing people's active coping. Neither of the two factors influenced active coping in later stages of the coping process (Time 2 or Time 3). The implication seems to be that trait resilience is an integration of past coping experiences (including solution and non-solution-related experiences). When responding to a stressful situation, people's trait resilience starts a coping process (which is a cognitive appraisal process) by applying past non-solution-related experiences to cope with the situation. Such experiences may include feelings and thoughts about past successful coping experiences. As time goes by, people begin to cognitively appraise and re-appraise the situation and, as a consequence, rely less on trait resilience to cope.

For counseling practitioners who help clients deal with stressful situations, it can be useful to know whether trait resilience influences people's coping responses throughout the coping process or just in the initial stage of the process. The study showed that trait resilience influences coping responses only in the initial stage of the coping process. When clients are in the initial stage of the coping process, counselors can help their clients deal with current stressful situations by engaging clients in reflection of their previous positive coping experiences rather than by abruptly making a quick plan to cope with current stressful situations. When clients are in a later stage of the coping process, counselors can help their clients to make well-thought-out plans to cope with the stressful situations.

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Table I. Rotated Factor Matrixes of the Resilience Scale

Items	Factor 1	Factor 2
Item 1	.423	.276
Item 2	.493	.395
Item 3	.599	.176
Item 4	.085	.672
Item 5	.472	.404
Item 6	.028	.662
Item 7	.457	.219
Item 8	.518	.111
Item 9	.617	.050
Item 10	.650	.063
Item 11	.557	.193
Item 12	.361	.263
Item 13	.497	.332
Item 14	.336	.362
Item 15	.258	.559
Item 16	.070	.564
Item 17	.460	.508
Item 18	.494	.386
Item 19	.491	.389
Item 20	.481	.283
Item 21	.325	.429
Item 22	.172	.336
Item 23	.645	.355
Item 24	.364	.465
Item 25	.431	.061