

The Impact of Personality Traits on Emotional Responses to Interpersonal Stress

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Objective: The aim of the present study was to examine the impact of personality traits on emotional responses to interpersonal stress.

Methods: Thirty-two healthy college students (18 men, 14 women; age 25.2±2.7 years) participated in the study. Mood and anxiety were assessed with the Beck Depression Inventory and the State Trait Anxiety Inventory. Personality traits were assessed with the Interpersonal Sensitivity Measure (IPSM). The subjective emotional responses of participants to different (i.e., negative, neutral, and positive) interpersonal feedback were measured.

Results: Subject responses were positive to positive interpersonal feedback and negative to negative interpersonal feedback. The IPSM fragile inner self subscore was negatively correlated with the subjective emotional ratings in response to interpersonal feedback. No correlation was found between validation measures (i.e., the degree of attention in the task and task difficulty) and subjective emotional responses.

Conclusion: Taken together, emotional responses to interpersonal stress may be modulated by personality traits and may impact health and psychological outcomes. Therefore, proper screening and stress management programs that focus on personality traits may improve the mental health of college students.

KEY WORDS: Interpersonal relations; Psychological stress; Emotional stress; Personality.

INTRODUCTION

Stress, particularly interpersonal stress, is a major risk factor for psychiatric disorders, including depression.^{1,2} The establishment of interpersonal relationships with friends, colleagues, and professors is important in the lives of young adult college students. Students who are unable to form close relationships and fail to adapt psychosocially are at increased risk for psychosocial problems, including depression, anxiety, and suicide.^{3,4}

Several previous studies have identified personality characteristics involved with emotional responses to interpersonal stress. Individuals who scored high in neuroticism display more negative emotions compared with individuals who scored low in neuroticism.⁵ Moreover, they showed greater reactivity to daily interpersonal conflicts.⁶

Undergraduate volunteers who scored high in sociotropy displayed dysphoric responses to social rejection scenarios.⁷ Personality traits have been shown to modulate physiological changes to interpersonal stress, which suggests a neurobiological link between personality and psychopathology.⁸⁻¹²

The personality trait called interpersonal sensitivity is defined as undue and excessive awareness of and sensitivity to the behavior and feelings of others.¹³ Clinical studies have shown that interpersonal sensitivity is related to depression and anxiety disorders.¹⁴⁻¹⁸ Interpersonal sensitivity is also associated with other personality traits, including neuroticism¹⁹ and harm avoidance.²⁰ Given these previous studies, interpersonal sensitivity may also be associated with emotional responses to interpersonal stress. To our knowledge, no previous study has examined the impact of interpersonal sensitivity on emotional responses.

Previous studies have applied a variety of methods to assess the emotional responses to interpersonal stress. Emotional responses were most frequently measured with questionnaires. While some support exists for the predictive validity of questionnaires, many studies that have

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used questionnaires were inconsistent and did not reflect daily stress.^{21,22)} A less frequently used approach is the measurement of affective reactions to a laboratory-based mood induction. An example of this approach is the Trier Social Stress Test, which, however, is difficult to replicate and requires trained experimenters.^{23,24)}

The present study used a computerized behavior paradigm to elicit and measure emotional responses to interpersonal stress. The present study design was implemented in an effort to overcome certain methodological limitations. The interpersonal stress challenge task used in the present study consisted of video clips of faces with positive, negative, or neutral expressions. Human facial expressions provide salient cues regarding an individual's emotional state, and faces provide a powerful nonverbal communication method for delivering social meaning.^{25,26)}

The aim of the present study was to examine the impact of interpersonal sensitivity on emotional responses to experimentally induced interpersonal stress in college students.

METHODS

Participants and Procedures

Forty healthy college students were recruited from The Catholic University of Korea, College of Medicine, from June 2009 to November 2009. The participants had no history of head injury, psychiatric illness, or substance abuse/dependence (>6 months) as assessed by the Mini-International Neuropsychiatric Interview.²⁷⁾ Following a brief explanation of the experiment, mood was assessed in the participants with the Beck Depression Inventory and State and Trait Anxiety Inventory. Personality was measured with the Interpersonal Sensitivity Measure (IPSM).¹³⁾ Then, the subjects participated in an interpersonal stress challenge task. All participants provided written informed consent prior to the experiment. The institutional review board of The Catholic University of Korea Uijeongbu St. Mary's Hospital approved the present study.

Personality Measures

The IPSM is a self-report questionnaire with five subscale scores: interpersonal awareness, need for approval, separation anxiety, timidity, and fragile inner self.¹³⁾ The interpersonal awareness subtype is defined as a hypersensitivity to interpersonal relationships, and the need for approval subscale is characterized by the need to associate

closely with other people. The separation anxiety subscale is defined as anxiety for interpersonal relationships and insecure attachments to others, and timidity is characterized by a lack of self-assertiveness. The fragile inner self subtype reflects self-value. It includes feelings of the core inner-self that other people do not like or understand and the urge to hide from others. The Korean version of the IPSM was standardized by the authors and showed a test-retest reliability 0.81 and Cronbach's alpha 0.90 (Kyoung-Uk Lee *et al.*, unpublished data).

The Interpersonal Stress Challenge Task

The first part of the interpersonal stress challenge task is composed of geometric problem solving questions (taken from the standard Raven's Progressive Matrices [RPM]). It is similar to an intelligence quotient (IQ) test. After the subjects selected answers to the questions, they were shown prerecorded video clips that deliver interpersonal cues, including positive, negative, and neutral feedback. The subjects were instructed that they would receive feedback on their performance through the IQ expert's response that was displayed on the screen after each response. Therefore, the subjects could take the feedback personally. The subjects also rated their subjective emotional responses to the feedback of the IQ expert. Each trial lasted approximately 28 seconds and the experiment included 60 trials. After completing the trials, the participants were asked to rate their degree of attention (i.e., how attentive they were to the task: 1=not attentive, 9=very attentive), confidence (i.e., how confident they feel regarding their visuospatial functioning: 1=not confident, 9=very confident), and RPM difficulty (i.e., how difficult it was for them to solve the RPM puzzles: 1=not difficult, 9=very difficult).

Data Analysis

Demographic data and participant characteristics of mood, personality, and emotional ratings are summarized as the mean standard deviation and frequency and percentage, respectively. To determine the validity of the interpersonal stress challenge task, Pearson correlation analyses were used to compare measures of attention, confidence, and RPM difficulty with emotional rating scores. To determine the effects of personality on the emotional responses to interpersonal stress, Pearson correlation analyses were performed on personality measures and emotional rating scores in response to total, positive, neutral, and negative interpersonal feedback. Data from 32 subjects were analyzed in the present study. Subjects with

Table 1. Characteristics of mood, personality and subjective emotional ratings of participants

Variables	Mean (SD)
Mood status	
Beck Depression Inventory	6.0 (3.1)
State Anxiety Inventory	37.1 (5.0)
Trait Anxiety Inventory	43.2 (3.8)
Interpersonal sensitivity measure	
Total	93.6 (9.4)
Interpersonal awareness	19.6 (1.9)
Need for approval	23.7 (2.3)
Separation anxiety	18.1 (3.3)
Timidity	22.4 (3.5)
Fragile inner-self	9.5 (2.3)
Subjective emotional rating	
Total	4.6 (0.3)
Negative	3.1 (0.6)
Neutral	4.5 (0.4)
Positive	6.4 (0.9)
Validity measures	
Attention	7.5 (1.1)
Confidence	5.3 (2.6)
RPM difficulty	4.5 (1.9)

SD, standard deviation; RPM, the standard Raven's Progressive Matrices.

missing and incomplete data were excluded from the analyses. All data were analyzed using SAS/PC version 9.2 (SAS Institute Inc., Cary, NC, USA).

RESULTS

The mean age of the subjects was 25.2 ± 2.7 years (range 22-37 years) 14 (43.8%) were women and 18 (56.3%) were men. The characteristics of mood status, personality measures, scores of subjective emotional ratings, and validity measure scores are presented in Table 1. Depression and anxiety scores for all of the subjects were within the normal range for mood status.

The mean score for subjective emotional responses to interpersonal feedback stimuli was 4.6 ± 0.3 . Moreover, the subjects responded negatively to negative interpersonal feedback and positively to positive interpersonal feedback. The average scores for the subjective emotional responses to negative interpersonal feedback were 3.1 ± 0.6 and 4.5 ± 0.4 to neutral interpersonal feedback, and 6.4 ± 0.9 to positive interpersonal feedback.

Correlation analyses were performed to ensure the validity of the interpersonal stress challenge task. For the validity measures, the subjects responded that they were attentive (7.5 ± 1.1), slightly confident (5.3 ± 2.6), and felt that the task was slightly difficult (4.5 ± 1.9). No correlations were noted between a participant's subjective emo-

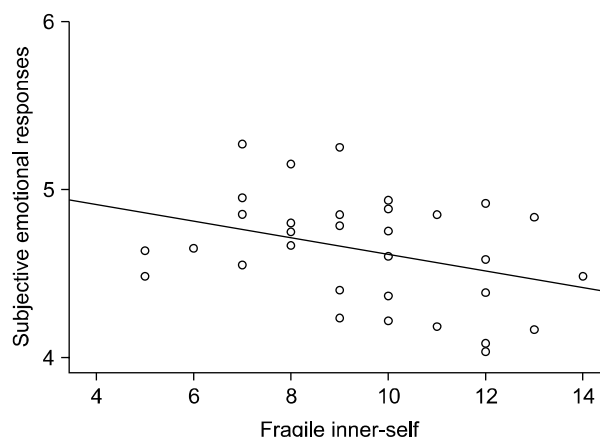


Fig. 1. Negative correlation between fragile inner-self and mean scores of subjective emotional rating in response to all interpersonal feedback ($r = -0.36$, $p < 0.05$).

tional responses to the interpersonal feedback and the validity measures of attention, confidence, or RPM difficulty.

To evaluate the impact of personality traits on the emotional responses to interpersonal stress, correlation analyses were conducted between the scores and subscores of the IPSM and the subjective emotional responses. The IPSM fragile inner self subscore was negatively correlated with the subjective emotional ratings in response to the interpersonal feedback ($r = -0.36$, $p < 0.05$; Fig. 1).

DISCUSSION

The results of the present study demonstrated that the more participants displayed the fragile inner self personality trait, the more they showed a negative emotional response to the interpersonal feedback. The fragile inner self, one of the subscales of the IPSM, is characterized by the difficulty an individual has disclosing his/her innermost feelings due to a fear of rejection or criticism. In a study by Sato *et al.*,²⁸⁾ among the other subscales of the IPSM, only the fragile inner self was able to determine non-melancholic with melancholic subtypes of depression. Moreover, the fragile inner self subscale significantly predicted bulimic symptomatology in a previous study.²⁹⁾ In a study by Wilhelm *et al.*,¹⁶⁾ the fragile inner self subtype was associated with the perception of decreased parental care and high overprotection, particularly from the mother. Blatt *et al.*³⁰⁾ investigated the differences in interpersonal sensitivity in individuals with depression and reported that the self-critical subjects who were depressed possessed a stronger fragile inner self trait compared with the participants who had dependency de-

pressive vulnerability. Therefore, the fragile inner self subscale may be related to negative emotional processing to interpersonal feedback and may contribute to psychopathology.

The findings of the present study support the notion that personality may influence individual differences in reactivity to stressful life events. The present study is consistent with previous works that reported negative personality vulnerability variables in subjects with depression, including neuroticism.^{6,31,32)} Moreover, hostility augmented stress responses, including negative emotional and cardiovascular responses to interpersonal stress.¹⁰⁾ Recent advances in neuroscience have further expanded our understanding of the neurobiological basis for the relationship between personality and depression.⁹⁾

The present study has certain limitations. Caution should be taken when interpreting the results due to the small sample size. Therefore, studies with larger sample sizes may provide additional information from correlation analyses. Eight of the 40 total participants were excluded from the final analysis due to missing or incomplete data. Thus, a selection bias could have affected the results of the present study.

Previous studies have suggested gender differences in stress responsiveness.^{33,34)} Therefore, a larger sample may provide useful information about gender differences in emotional responses to interpersonal feedback. Moreover, the participants were medical students, and the results may not be generalizable to all young adults. Previous studies have suggested that medical students experience a high incidence of personal distress and burnout,³⁵⁻³⁸⁾ which could have adverse consequences on academic performance.^{39,40)}

Future studies that explore the effects of other personality dimensions on emotional processing, as well as studies that investigate biological changes in clinical samples, may further expand our current understanding regarding the emotional processing of interpersonal stress.

In conclusion, the present study suggests that early detection and intervention of personality vulnerabilities to social stress in college students may improve mental health. Preventative programming efforts should begin early in medical education and address a wide variety of concerns from academic to interpersonal relationships.

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