



Short Communication

The association of gratitude with perceived stress and burnout among male firefighters in Korea



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ABSTRACT

We examined the association of gratitude with perceived stress and burnout in firefighters. A total of 464 male firefighters completed a self-administered questionnaire including sociodemographic characteristics, the Korean version of the Gratitude Questionnaire (K-GQ-6), Perceived Stress Scale (PSS), Maslach Burnout Inventory-General Survey (MBI-GS), Big Five Inventory-10 (BFI-10), and the Hospital Anxiety and Depression Scale. The K-GQ-6 score was negatively correlated with the PSS and MBI-GS exhaustion and cynicism scores. The linear regression analysis revealed that gratitude was negatively associated with perceived stress and the exhaustion and cynicism burnout subscales after controlling for religiousness, personality variables, anxiety, and depression. These findings suggest that gratitude acts as an independent protective factor against stress and burnout. Gratitude should be incorporated into training and psychoeducation throughout the course of a firefighter's career.

1. Introduction

As emergency service personnel, firefighters frequently experience life-threatening and highly stressful events in their work. Several studies have shown that firefighters experience high levels of stress and burnout, which have a negative impact on job performance (Ângelo & Chambel, 2015; Harvey et al., 2016; Katsavouni, Bebetos, Malliou, and Beneka, 2016). In particular, as firefighters work in close proximity to accident sites, these professionals are at the epicenters of trauma and represent an at-risk posttraumatic stress disorder. Indeed, perceived stress and burnout have been shown to be significant predictors of posttraumatic stress disorder among firefighters (Jo et al., 2017; Lee, Ahn, Jeong, Chae, and Choi, 2014). However, the resources needed to cope with stress and burnout are not readily available for firefighters. Recent studies have identified gratitude as a protective coping mechanism that can promote positive outcomes following a stressful event (Ng & Wong, 2013; Vieselmeyer, Holguin, and Mezulis, 2016). Gratitude, which is a cognitive-affective state typically defined as an individual's tendency to respond with appreciation to perceived benefits or positive aspects of his or her life, may interact with perceived stress and reduced burnout (Chan, 2010; Fagley, 2012; McCullough, Emmons, and Tsang, 2002). Gratitude involves a positive cognitive appraisal and affect with regard to a situation or event. A recent study showed that

positive affect was associated with adaptation to stress in firefighters (Shrira et al., 2015). Likewise, in the context of positive psychology, we tested whether gratitude could be predictors for stress and burnout in firefighters and expect to obtain more valid data in the dependent variables in a sample in which these are expect to occur in a high frequency. Furthermore, gratitude is positively associated with adaptive personality traits in the so-called Big Five domains and inversely related to psychopathological states such as depression and anxiety (Wood, Froh, & Geraghty, 2010; Wood, Joseph, and Maltby, 2008). Although gratitude has been conceptualized as a personality trait, previous studies have demonstrated that the effect of gratitude on positive outcomes is independent of the Big Five factors (Fagley, 2012). Thus, we hypothesized that gratitude is an independent protective factor against perceived stress and burnout after controlling for personality and psychopathology in firefighters.

2. Methods

2.1. Study design and participants

Our cross-sectional survey was conducted between July 2015 and June 2016. A self-administered questionnaire was delivered to 525 firefighters at fire stations in Gwangju in South Korea by the fire station

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management. The questionnaire was anonymous to protect respondent privacy. Informed consent was obtained from all subjects before participation in the study. The responses of the 37 female firefighters (sample size was too small for an analysis according to sex) and those of 24 male firefighters whose questionnaires were incomplete were excluded from the analysis. In total, the responses of 464 (88.4%) of 525 firefighters were included in our study. The study was approved by the Institutional Review Board.

2.2. Measures

Sociodemographic data were obtained from the firefighters including marital status, education, religion, and work-related duties.

Grateful disposition was measured using the Korean version of the Gratitude Questionnaire-6 (K-GQ-6) (Emmons & McCullough, 2004; Kwon, Kim, & Lee, 2006; McCullough et al., 2002), which consists of six items measuring gratitude on a 7-point Likert scale. Total scores range from 6 to 42, with high scores indicating higher levels of grateful disposition.

Personality was assessed using the 10-item short version of the Big Five Inventory (BFI-10) (Kim et al., 2010; McCrae & Costa, 1987; Rammstedt and John, 2007). The BFI-10 is a self-assessment tool that evaluates five personality dimensions: openness, conscientiousness, neuroticism, extraversion, and agreeableness. Each domain item is rated from strongly disagree (1) to strongly agree (5).

Anxiety and depression were measured using the Hospital Anxiety and Depression Scale (HADS) (Oh, Min, & Park, 1999; Zigmond and Snaith, 1983), which is composed of 14 items that measure symptoms of anxiety and depression (7 items each). Each item is rated on a 4-point Likert scale (range, 0–3) with higher scores indicating more severe symptoms.

Perceived stress was measured using the Perceived Stress Scale (PSS) (Cohen, Kamarck, & Mermelstein, 1983; Lee et al., 2012), which consists of 10 items about specific feelings experienced in the last month. Respondents were asked to rate the items on a 5-point Likert scale with higher scores indicating greater psychological stress.

Burnout was measured using the Maslach Burnout Inventory-General Survey (MBI-GS), which contains three dimensions: exhaustion, cynicism, and professional efficacy (Maslach and Jackson, 1981). We assessed exhaustion, which refers to the loss of emotional resources caused by work, and cynicism, which reflects indifference or a distant attitude toward work.

2.3. Statistical analyses

Mean scores for the individual variables in each category of perceived stress and burnout were compared using independent *t*-tests for binomial variables and analysis of variance (ANOVA) for multinomial variables. Pearson's correlation coefficients were used to evaluate relationships among continuous variables. We used hierarchical linear regression analyses to determine associations between potential predictors and perceived stress and burnout, entering religiosity, gratitude, personality variables, and emotional factors such as anxiety and depression.

The Statistical Package for the Social Sciences for Windows ver. 21.0 (SPSS, Inc., Chicago, IL, USA) was used to conduct the statistical tests. All statistical tests were two tailed, and *p*-values < 0.05 were deemed to indicate statistical significance.

3. Results

The PSS and MBI-GS exhaustion and cynicism scores according to sociodemographic characteristics presented that religious subjects were less likely to experience perceived stress, exhaustion, and cynicism than were non-religious participants.

Table 1 indicates the correlations among the various scales. The GQ-

6 score was significantly negatively correlated with the PSS, MBI-GS exhaustion and cynicism subscales, HADS, and BFI-10 neuroticism scale scores, and positively correlated with the BFI-10 openness, conscientiousness, extraversion, and agreeableness scale scores. Based on our final modeling of the results of Table 2, religion ($\beta = -1.015$, $P = 0.004$), GQ-6 score ($\beta = -0.192$, $P < 0.001$), conscientiousness ($\beta = -0.377$, $P = 0.021$), and agreeableness ($\beta = -0.527$, $P = 0.005$) (all of which are personality variables) negatively predicted perceived stress. However, the BFI-10 neuroticism ($\beta = 0.673$, $P < 0.001$), HADS anxiety ($\beta = 0.262$, $P < 0.001$), and depression ($\beta = 0.596$, $P < 0.001$) subscales were significant (positive) predictors of perceived stress. Of the independent variables, gratitude made the most significant contribution to the prediction of perceived stress. In Table 3, religion ($\beta = -1.439$, $P = 0.003$) and gratitude ($\beta = -0.117$, $P = 0.011$) negatively predicted MBI-GS exhaustion, whereas the BFI-10 neuroticism ($\beta = 0.829$, $P < 0.001$), HADS anxiety ($\beta = 0.426$, $P < 0.001$), and depression ($\beta = 0.639$, $P < 0.001$) subscales significantly (positively) predicted MBI-GS exhaustion. The results of Table 4 show that gratitude ($\beta = -0.135$, $P = 0.001$) negatively predicted MBI-GS cynicism, whereas the HADS anxiety ($\beta = 0.246$, $P = 0.004$) and depression ($\beta = 0.489$, $P < 0.001$) subscales positively predicted such cynicism.

4. Discussion

We investigated the association of gratitude with perceived stress and burnout among firefighters. We found that high levels of gratitude predicted low levels of perceived stress and burnout, supporting a protective role of gratitude against work-related stress and burnout (Chan, 2010; Cheng, Tsui, & Lam, 2015; Clark, Northrop, and Barkshire, 1988).

The burnout syndrome is characterized by emotional exhaustion and alienation from work-related activities as a result of excessive stress and dissatisfaction with life (Hozo, Sucic, and Zaja, 2015). Thus, our results suggest that gratitude reduces burnout by fostering positive emotions and improving satisfaction with life. Furthermore, we found that the neuroticism subscale of the BFI-10 was positively associated with exhaustion, which supports previous findings (Bühler and Land, 2004). However, we found no relationship between neuroticism and cynicism. The adaptive domains of personality were not associated with burnout, whereas gratitude was a significant protective factor against burnout. Previous cross-sectional and longitudinal studies have found that gratitude is a robust predictor of life satisfaction after controlling for symptomatology and the Big Five personality domains (McCullough et al., 2002; Wood et al., 2008).

Our finding that perceived stress and exhaustion were negatively associated with religiousness is consistent with previous studies (Ho et al., 2016; Meltzer and Huckabay, 2004). However, a previous study found no association between religion and burnout (Shaddock, Hill, and van Limbeek, 1998), and other studies found that the absence of religious beliefs was associated with stress and mental health problems (Harrison, Koenig, Hays, Eme-Akwari, and Pargament, 2001). Thus, the effect of religion on stress and burnout is controversial. Although religious coping strategies include gratitude and life satisfaction, our findings suggest that the effect of gratitude on burnout may be independent of religious beliefs and personality traits. Specifically, the gratitude scores on the K-GQ-6 instrument reflect individual differences in how frequently and intensely people feel gratitude rather than offer gratitude to God. Additionally, the stress-reducing effect of theocentric gratitude was more pronounced among females than males (Krause, 2006). Therefore, the attitudes toward gratitude among the males in our present study may be more strongly associated with their individual spiritual experiences and sentiments than with any specific theological orientation.

Effective use of coping strategies is associated with lower perceived stress and improved ability to function professionally (Boey, 1999).

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