

ORIGINAL ARTICLE

Role of peer support in competitive classroom climates: Focusing on the mediation effect of academic hatred in the JD-R model

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Abstract

This study aimed to verify the different effects of peer support on academic hatred depending on the levels of teachers' academic pressure. Additionally, we examined the effects of academic hatred on academic burnout and engagement by applying the job demand-resources (JD-R) model. Data were collected from 43 classes at 8 high schools ($N = 1015$, 94.2% response rate, 57.3% women) in South Korea. The results of a multigroup analysis were as follows: (1) peer support served as an important resource in classrooms experiencing high teachers' academic pressures; (2) peer support directly affected academic burnout and engagement, and reduced academic hatred; and (3) reduced academic hatred served as a mediator for lower burnout rate and increased engagement.

Keywords: Burnout; engagement; academic hatred; peer support; JD-R model

Korean society has high aspirations for academic achievement, with excessive value placed on studying. This phenomenon stems from Korea's rapid economic development. Education is considered an essential element for keeping pace with this swift growth, and admission to prestigious universities is viewed as a prerequisite for attaining high social status. The competition for entrance to prestigious universities has become increasingly arduous (M. Lee & Larson, 2000). Owing to this rigorous climate, teachers and parents put much academic pressure on students. In turn, this causes conflicts between parents and their children, leading to undesirable levels of academic motivation and academic stress (Bong et al., 2008). This scholastic context may be a reason for the incongruity between Korean students' high academic performance and poor psychological states. According to results from the Program for International Student Assessment (PISA), Korean students had much higher academic achievement scores than the average among the Organisation for Economic Cooperation and Development (OECD) countries. However, psychological elements such as joy, interest, motivation, and self-efficacy were lower than the average of OECD countries (Korea Institute for Curriculum and Evaluation, 2016). In addition, most Korean students feel perturbed because of their studies. According to the National Youth Policy Institute (Kim & Yu, 2016), 68.9% of Korean middle school students and 80% of high school students reported experiencing academic stress. Consequently, they gradually become exhausted and experience burnout as they get older (J. Lee et al., 2013). Notably, burnout is a psychological symptom of chronic stress.

Academic burnout studies take the concept of the job burnout model and apply it to a school context. This is an apt comparison, since academic activities (such as attending classes and doing homework) can be considered tasks (Schaufeli & Taris, 2005). Academic burnout consists of three

subdimensions: exhaustion, cynicism, and inefficacy. Exhaustion refers to emotional and physical fatigue. Cynicism is an expression of indifferent and distant attitudes towards academic activities. Inefficacy refers to a lack of academic accomplishment (Schaufeli, Martinez et al., 2002). Among these three constructs, exhaustion has been referred to as the core factor in burnout (Schaufeli & Taris, 2014). When students perceive that their exhaustion results from academic stress, they maintain distance from or have negative feelings towards academic activities. In so doing, they can conserve energy. Therefore, many scholars (e.g., Kristensen et al., 2005; Shirom, 2003) have suggested narrowing the concept of burnout down to exhaustion. The exhaustion items on the Maslach Burnout Scale (MBI) have frequently been used as a measure of burnout (Bekker et al., 2005). Accordingly, this study used this exhaustion scale to measure academic burnout.

Engagement is defined as energy, involvement, and efficacy (a concept which is the opposite of burnout; Maslach et al., 2001). Engagement has three components: vigour, dedication, and absorption. Individuals with high levels of engagement have intrinsic motivation and good feelings toward their job (Schaufeli, Martinez et al., 2002). Vigour means having elevated levels of energy and a willingness to devote that energy to one's work while maintaining mental resilience. Dedication involves deriving enthusiasm, a sense of challenge, and meaning from one's work. Absorption refers to being happily engrossed in one's work and hesitating to part from work. Among the three constructs, vigour and dedication have been recognised as the core dimensions of engagement (Schaufeli & Bakker, 2004). However, only vigour is significantly related to academic achievement in school settings (Casuso-Holgado et al., 2013; Schaufeli, Martinez et al., 2002). Moreover, vigour is the conceptual opposite of exhaustion (Maslach & Leiter, 1997; Schaufeli, Salanova et al., 2002). Thus, in this study, only vigour was used to measure academic engagement.

Currently, the revised job demand-resources (JD-R) model (Schaufeli & Bakker, 2004) is the most popular model for describing both burnout and engagement. The JD-R model is characterised by two different underlying psychological processes (i.e., the health impairment and motivational processes). Each plays a role in the development of job-related strain and motivation. The health impairment process explains how burnout has mediation effects on the relationship between continuous job demands and health problems such as depression and cardiovascular disease (Schaufeli & Taris, 2014). The motivational process refers to flourishing job resources (which motivate engagement) and their impact on positive work outcomes. In previous research (Demerouti et al., 2001), the JD-R model assumed that job demands are related to feelings of exhaustion, whereas a lack of resources is related to disengagement from work. Typical examples of job demands are physical workloads, time pressure, recipient contact, physical environments, and shift work. Meanwhile, examples of job resources are positive feedback, rewards, job control, job security, and supervisor support. In the JD-R model, characteristics of these contributing factors are not limited to specific job demands or job resources. Accordingly, it has been confirmed that academic burnout and academic engagement can be explained by adopting the JD-R model (Cho et al., 2018; Moon et al., 2018; Salmela-Aro & Upadyaya, 2014).

Academic demand (namely, academic pressure) means that students are required to undertake physical and psychological efforts and costs to achieve academic success (Bakker & Demerouti, 2007). For instance, students must perform overwhelming academic tasks in limited time periods and competitive situations. In this context, intense class climates could be considered important and stressful environments for students. In competitive classrooms, teachers force their instructional agendas on their students, thus hampering the students' inner motivation and engagement. This is problematic, in that these curriculums do not match students' needs and interests (Reeve et al., 2004). As a result, students show lower engagement levels when paired with oppressive teachers. However, students with teachers supportive of autonomous academic activities perform more enthusiastically and tend to display better psychological states (O'Connor & Vallerand, 1994). In this study, teachers' academic pressure was set as the criterion for dividing groups.

Social support is the most well-known and effective resource in work contexts (Cohen & Willis, 1985; Bakker et al., 2003). High-quality social support from co-workers and supervisors buffers the negative effects of workload and stress on burnout (Bakker et al., 2005; Bakker et al., 2007).

Moreover, social support has proven to have a positive effect on engagement (Garcia-Reid et al., 2005; Wang & Eccles, 2012). In the school context, especially for adolescents, peer support is more important than other resources. This is attributed to the fact that during puberty, self-concepts are developed through relationships with other students (Choi, 2018). According to previous research (Mead et al., 2001), peer support is 'a system of giving and receiving help founded on key principles of respect, shared responsibility, and mutual agreement of what is helpful' (p. 6). In addition, social support is based on the empathic understanding of others' situations via sharing painful emotional and psychological experiences. Moreover, peer support has positive effects on the development of adolescents' psychological wellbeing and self-identity (Buchanan & Bowen, 2008; Kaplan et al., 1977).

Interestingly, the effects of resources such as social support are more salient under stressful situations than in situations with low levels of stress. According to the conservation of resources (COR) theory (Hobfoll, 1989, 2002), people mobilise and use their resources in stressful situations to prevent burnout. In dealing with stressful situations, therefore, people need increased access to supportive social structures. When a situation is not so demanding that it threatens one's valued resources, they would not need to deploy them. In research on information services workers, the effects of personal resources on burnout (e.g., self-efficacy and coping style) were salient when work resources (e.g., supervisor support) were low. However, when work resources were high, personal resources were not beneficial in preventing workers' burnout (Rioli & Savicki, 2003). Bakker et al. (2007) found that the relationship between the use of job resources and teachers' work engagement was stronger when teachers were faced with significant pupil misbehaviour. (Control of students' misbehaviour was seen as teachers' main job requirement.) As is evidenced by these research results and COR theory, it is hypothesised that the effects of academic resources could vary, based on demand levels.

Meanwhile, Schaufeli and Taris (2014) pointed out the importance of psychological mediators in explaining the mechanism of relationships between demand-resources and burnout-engagement. Furthermore, they suggested that it is necessary to integrate personal vulnerability factors (e.g., neuroticism, workaholism, and pessimism) to extend the JD-R model, as thus far only personal resources have frequently been studied in JD-R research. In this study, we set 'academic hatred', which is synonymous with hatred of academic works (Lee et al., 2019), as a personal vulnerability factor to describe why students would experience burnout or be less engaged with their studies. Although this concept was first introduced as a new dimension of the Korean Academic Burnout Inventory (KABI; Y.B. Lee et al., 2009) and labelled as antipathy, it has not been considered in burnout research. Furthermore, most of the items that measure antipathy in KABI are measured with the predicate 'hate', so some researchers (M. Lee, 2020; M. Lee et al., 2020) questioned the term 'antipathy' and tried to elaborate the concept of academic hatred by applying the typical characteristics of 'hate' to the academic context. 'Hate' is a secondary emotion that combines emotion and cognitive evaluation and has the characteristic of an emotional attitude that can persist beyond simple emotion (Ekman, 1992). In previous studies (Fischer et al., 2018; Sternberg, 2005), the emotion of hate reflects the individual's cognitive evaluation of the anger or disgust and the context in which these primary (or basic) emotions are triggered. Moreover, it is accompanied by a sense of powerlessness in the inability to change the threatening situation.

According to Lee (2020), academic hatred can be defined as a hostile emotional attitude towards academic works. This concept is based on the control-value theory (Pekrun, 2000) and reflects the Korea's competitive academic context, the emotions students experience in this context, and the individual's cognitive evaluation of these. It is based on the theoretical view that various academic emotions can be caused depending on how much students perceive their control of their academic context and whether they value academic tasks and outcomes and themselves as learners (M. Lee et al., 2020). In conclusion, students who feel physical or psychological threats owing to their studies would feel powerless when realising that they can no longer change their negative and threatening academic situation on their own, thus leading them to experience academic hatred (M. Lee, 2020; M. Lee et al., 2020).

Students with academic hatred express hostility towards their studies or environment, and thus would disengage from them. As academic hatred is one dimension of emotions, intensity and frequency

of this feeling could be affected by both one's characteristics and their context (Pekrun, 2006). According to the results of multilevel analysis performed by M. Lee et al. (2019), at the individual (intrapersonal) level, academic hatred was affected by depression, test anxiety, and the amount of academic pressure provided by parents. Lower socioeconomic status and higher level of teachers' support for students' autonomy engendered lower academic hatred at class (environmental) level. These research results showed that academic hatred is influenced by both environmental and individual characteristics. Many Korean teachers and parents force students to view their peers as competitors and exhort them to win competitions. Considering that these contextual factors stand out in Korea's academic climate, hatred should be considered in the study of academic burnout and engagement among Korean students.

This study investigated the effects of teacher-originated academic pressure, peer support, and academic hatred on the processes of academic burnout and engagement based on the JD-R model. Moreover, to evaluate the interaction effects between academic demand and resources, we conducted multigroup structural equation model (SEM) analysis. The participants of this study were senior high school students who were facing Korea's national college entrance exam in a month's time. Under these circumstances, their academic stress would be at its highest (E.H. Lee, 2009). Finally, only the dimensions of exhaustion and vigour were used, as they are the core factors of academic burnout and engagement respectively (Schaufeli & Taris 2014).

Hypothesis 1. (H1): Peer support has different effects on academic burnout depending on the level of teachers' academic pressure in their classrooms.

Hypothesis 2. (H2): Peer support has different effects on academic engagement depending on the level of teachers' academic pressure in their classrooms.

Hypothesis 3. (H3): Peer support has different effects on academic hatred depending on the level of teachers' academic pressure in their classrooms.

Hypothesis 4. (H4): Academic hatred differentially mediates the relationship between peer support and academic burnout-academic engagement on the level of academic pressure teachers exerted in their classrooms.

Methods

Participants and Procedures

This study used data from final-year high school students who were taking Soo-Neung (Korean College Scholastic Ability Test, or KCSAT) within a month's time, when students experience the highest levels of academic stress. For representative sampling, demographic characteristics (e.g., GPA, socioeconomic status, gender) were considered. As a result, eight schools, including 43 classes (on academic-only tracks), were assessed in this research. A total of 1015 students completed the survey, of whom 582 (57.3%) were female, with a response rate of 94.2%. Table 1 shows demographics and mean values (i.e., percentage of females, percentage of students of lower socioeconomic status, and number of classes). It also indicates mean scores of teachers' academic pressure at class levels among the two groups (in either competitive or noncompetitive classroom climates).

All participants agreed to provide personal information (e.g., gender), and voluntarily completed paper questionnaires under researchers' instructions. This study received ethical clearance from the institutional review board at one of South Korea's universities. To deal with missing data, we evaluated missing data completely at random (MCAR) by expectation-maximisation estimated statistics. The result of Little's MCAR test was accepted by the null hypothesis ($\chi^2=296.826, p = .247$). This means that there is no suspicious pattern in, or distribution of, the missing data. Hence, full information maximum likelihood (FIML) was conducted to treat the missing data.

Table 1. Demographics and mean values of two groups

Variable	LP (<i>n</i> = 557)	HP (<i>n</i> = 458)
1. Gender (female)	47.0%	69.9%
2. SES (lower)	56.0%	28.6%
3. Number of classes	60.5%	39.5%
4. Mean of teacher's academic pressure at class level	2.99	3.58

Note: LP, Low level of teacher's academic pressure group; HP, High level of teacher's academic pressure group.

Measures

Teacher academic pressure

This study used the survey items from the Korean Educational Longitudinal Study (KELS, 2005), conducted by the Korean Educational Development Institute (KEDI), to measure teachers' pressures for academic achievement. It comprises six items on a 5-point, Likert-type scale (e.g., 'My teacher emphasises high academic performance in examinations'). The reliability for teacher pressure was .71 in a previous study (Jeong, 2015), and .78 in this study.

Peer support

The Social Support Inventory (SSI) is a scale which was cross-validated by M.S. Kim (1995) using the original version of the Social Support Scale for Children (SSSC; Harter, 1985) and based on Korean academic culture. It includes three subscales: parental support, teacher support, and peer support. In this study, we used only the peer support questionnaire to measure social support by friends. It comprises six items on a 5-point, Likert-type scale (e.g., 'My friends are supportive of what I do'). The reliability for peer support was .71 in M.S. Kim (1995), and .91 in this study.

Academic Burnout and Academic Hatred

We used the KABI (Lee, 2009) to measure exhaustion and academic hatred. The KABI is based on the Maslach Burnout Scale–Student Survey (MBI-SS; Schaufeli, Martinez et al., 2002), which consists of three subscales (i.e., exhaustion, cynicism, and inefficacy). In addition, it captures new psychological characteristics (i.e., antipathy and anxiety) among Korean students, and added them as components of academic burnout. It was validated by Y.B. Lee et al. (2009). All scales are 5-point, Likert-type scales, each consisting of five items. In this study, only two dimensions were utilised: exhaustion (e.g., 'I feel emotionally drained by my studies') and antipathy (e.g., 'I hate to study'). Antipathy items corresponded to, and were used for, assessment of academic hatred because (despite its importance) no direct measures have been developed. Specifically, the five items for antipathy include: 'I hate to study', 'I hate a world that focuses only on studying', 'I hate a world that only prioritises studying', 'I want to live in the world without studying', and 'I am irritated with studying'. The reliability coefficients for exhaustion and antipathy were .85 and .90 in the original study, and .89 and .89 in this study respectively.

Academic engagement

The Korean Academic Engagement Inventory (KAEI) was developed and validated by J. Lee and Lee (2012). This measure was based on the Utrecht Work Engagement Scale-Students (UWES-S; Schaufeli, Martinez et al., 2002), and was applied in the current study to assess students' academic engagement. The KAEI consists of four subscales (i.e., vigour, dedication, absorption, and efficacy), and each dimension contains four items with 5-point, Likert-type scale. A typical item for measuring vigour is 'When studying I feel strong and vigorous'. The reliability coefficients for vigour were .89 in both the original study and this study.

Table 2. Descriptive statistics and intercorrelations of the research variables for LP ($n = 557$; below the diagonal) and HP ($n = 458$; above the diagonal)

Variable	LP	HP	Total	$F(1, 1015)$	1	2	3	4
	$M (SD)$							
1. Peer support	3.81 (.71)	3.96 (.70)	3.88 (.71)	10.50**	–	-.24**	-.21**	.29**
2. Academic exhaustion	2.50 (.96)	2.65 (.89)	2.56 (.94)	6.49*	-.10*	–	.46**	-.39**
3. Academic hatred	3.04 (1.13)	2.68 (1.11)	2.88 (1.13)	25.74***	-.10*	.33**	–	-.54**
4. Academic vigour	2.43 (.84)	2.70 (.85)	2.55 (.86)	24.79***	.22**	-.22**	-.48**	–

Note: ** $p < .001$, * $p < .01$, $\dot{p} < .05$.

Statistical Analysis

In this study, we used the multigroup mediation model to examine the different effects of classroom climates (which are formed by high and low levels of teachers' academic pressure). SPSS 21.0 was used in descriptive statistics and intercorrelations analysis, while AMOS 21.0 was used to run the multigroup mediation model. Teachers' academic pressure was calculated to the average score of each class, and converted into z -scores (i.e., standardised scores). The z -scores with positive numbers were included in the group (competitive climate group) with high levels of teachers' academic pressure. The negative z -score group was constructed as a group (noncompetitive climate group) with low levels of teachers' academic pressure. The mean split was conducted in this study based on previous research for examining multigroup analysis in vocational and burnout studies (B. Kim et al., 2016; Slaney & Brown, 1983).

Three fit indices were used in this paper to evaluate models; namely, the root-mean-square error of approximation (RMSEA) with the comparative fit index (CFI) and Tucker-Lewis index (TLI). The chi-square testing is sensitive to sample size; thus, it was not adopted as a fit index in this research. The models with CFI and TLI above .90 and RMSEA of below .06 are considered good models. Scaled chi-square difference and Δ CFI were used to compare models. The models differ in that the difference of scaled chi-square is significant, and the Δ CFI is greater than .01. Bootstrap analysis was run to estimate indirect effects with bias-corrected standard errors and 95% confidence intervals (CI).

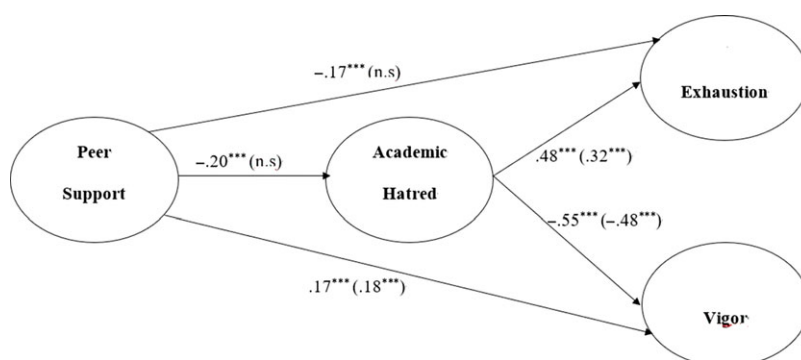
Results

Descriptive Analysis and Measurement Models

Table 2 demonstrates means, standard deviations, comparison of means and correlation matrix of both the low and high teacher pressure groups. A one-way analysis of variance (ANOVA) was performed to investigate whether there are differences in the means of variables between the two groups. The results demonstrated significant differences between means of the variables of the two groups. The students in the high teacher pressure group (competitive classroom) tended to perceive higher levels of peer support, show higher rates of exhaustion, and have higher academic vigour than students in the low teacher pressure group (non-competitive classroom). However, the mean of academic hatred was higher for the low teacher pressure group than for the high teacher pressure group.

Structural Models

Group differences in the relationship between latent variables can be examined only if they are perceived identically in all groups (Hong et al., 2003). As recommended by Steenkamp and Baumgartner (1998), configural invariance and path invariance were evaluated in hierarchical order. To investigate whether the measured variables were identically perceived across high and low teacher pressure groups,



Note. Values in brackets correspond to the results of the low level of teacher's academic pressure group.

Figure 1. Final model (Standardised path coefficients) for both groups.

Note: Values in brackets correspond to the results of the low level of teacher's academic pressure group.

configural invariance was examined. If no significant difference existed between the unconstrained model and the constrained model, configural invariance would be proved. It did not show significant difference in ΔCFI (.002) in comparison with the unconstrained model; the model with factor loading was equally constrained across groups. To evaluate path invariance, the factor loading constrained model was compared with the path coefficients constrained model. There was no significant difference in ΔCFI (.000), suggesting that the model met path invariance.

For the next step, the direct effects of peer support on each variable were evaluated: academic hatred, academic exhaustion, and academic vigour. The direct effects of peer support on academic hatred and exhaustion were not significant in the group with low teacher pressure (academic hatred: $\beta = -.09$, $p = .58$; exhaustion: $\beta = -.08$, $p = .62$), but were significant in the group with high teacher pressure (academic hatred: $\beta = -.20$, $p < .001$; exhaustion: $\beta = -.17$, $p < .001$). The results support H1 (differential effects of peer support on exhaustion), as peer support was negatively related to exhaustion only in students with high teacher pressure. No significant relationship was found between peer support and exhaustion in the group with low teacher pressure. The data from both groups presented the direct effect of peer support on vigour (high teacher pressure group: $\beta = .17$, $p < .001$; low teacher pressure group: $\beta = .18$, $p < .001$). Therefore, H2 (differential effects of peer support on vigour) was not supported. This showed that peer support was positively related to vigour in students with both high and low teacher pressure. However, the results support H3 (differential effects of peer support on academic hatred), as peer support was negatively related to academic hatred only in students with high teacher pressure. In the low teacher pressure group, an insignificant relationship was found between peer support and academic hatred. Academic hatred was positively related to academic burnout in both samples (high teacher pressure group: $\beta = .48$, $p < .001$; low teacher pressure group: $\beta = .32$, $p < .001$) and negatively related with academic vigour (high teacher pressure group: $\beta = -.55$, $p < .001$; low teacher pressure group: $\beta = -.48$, $p < .001$).

As shown in Figure 1, we evaluated the mediation effect of academic hatred in the relationship between peer support and academic exhaustion using multigroup SEM models (high teacher pressure group vs. low teacher pressure group). To investigate the indirect effects of peer support, bias-corrected bootstrapping was performed. In the high teacher pressure group, the bootstrap estimate of the mediation effect from peer support to exhaustion through academic hatred was $\beta = -.095$ and did not contain zero on a 95% confidence interval $[-.16, -.05]$. However, there was no significant mediation effect among the group of low teacher pressure $\beta = -.028$, CI $[-.07, .00]$. This shows that academic hatred has a mediation effect in the relationship between peer support and academic exhaustion on the group in high teacher pressure climates. The same cannot be said of the group under low teacher pressure. The examination of the mediation effect of academic hatred on the relationship between peer

support and academic vigour was conducted in the same way. There were significant mediation effects on the group of high teacher pressure, $\beta = .127$ CI [.06, .21], whereas no significant mediation effects on the group of low teacher pressure $\beta = .046$ CI [-.01, .11] were present. Thus, the mediation effect of academic hatred was significant only in the group with high teacher pressure. Therefore, H4 (differential mediation effects of academic hatred in the relationship between peer support and academic burnout/academic engagement) was supported.

Discussion

Currently, many JD-R researchers (Bakker et al., 2007; Hakanen et al., 2005) are interested in how people can stay enthusiastic even in demanding job environments. This study, which applied the JD-R model to a school context, aimed to provide some answers to this question. For this purpose, we investigated how the interaction between teachers' academic pressure (i.e., demands) and peer support (i.e., resources) in the JD-R model affected students' academic hatred, exhaustion, and vigour. The results and implications of this study are as follows.

The first hypothesis (H1: differential effects of peer support on exhaustion) was supported, but the second hypothesis (H2: differential effects of peer support on vigour) was rejected. Peer support functioned as a buffer against academic burnout in the competitive classroom climate. However, the role of peer support to reduce emotional exhaustion has not been effective in classes where teachers apply low levels of academic pressure (noncompetitive classrooms). In addition, peer support enhances vigour to engage in studying in both competitive and noncompetitive classroom climates. This can be interpreted in a similar context as previous studies, which emphasised the importance of resources in an industrious environment. The job demands-control model proposes that high levels of social support can buffer the adverse effects of high demands on psychological wellbeing (Karasek & Theorell, 1990). In addition, the JD-R model combines a high level of resources and demands, which lead to greater work engagement (Bakker & Demerouti, 2007). Higher demands mean more challenges need to be addressed. Therefore, by solving the challenges through the use or promotion of resources, a chance to develop and learn more than otherwise emerges. Consequently, higher demands would not only serve as stressors but also imply the possibility of growth once the stressors are resolved.

Furthermore, in the COR theory, interpersonal stress can be considered a loss of potential or actual resources (Hobfoll, 2001). People who have strong resource pools will have greater likelihoods of seeking opportunities to gain more resources (i.e., gain spiral), whereas people with fewer resources are more likely to experience increased loss (i.e., loss spiral; Hobfoll & Shirom, 2001). Comprehensively, the results of this study can be explained by the following: 'increasing of motivational potential' (Hobfoll, 2002). As a resource, peer support is located at the level of interpersonal and social relations in school contexts (Bakker & Demerouti, 2007). It can allow students to alleviate suffering owing to academic demands. For example, students can talk to one another about their studies when faced with excessive academic demands and pressures from teachers. In this manner, they can reduce emotional burdens such as competitiveness and antipathy. In addition, by exchanging or sharing information about their studies, students can face challenges and solve difficult academic problems while maintaining individual competitiveness. Therefore, in stressful situations, students can enhance their ability to address problems by emulating the coping strategies of their more effective friends. To conclude, this potential motivational mechanism could not only alleviate students' academic burnout in higher-stress contexts but also have the power to help them focus on their studies without disengagement.

The third hypothesis (H3: differential effects of peer support on academic hatred) was supported. That is, peer support functioned as a buffer between teachers' academic pressure and academic hatred only in the competitive classroom climate. This result can be interpreted similar to H1. In previous studies, Korean high school seniors preparing to enter college experienced isolation by viewing their peers as competitors (S.B. Kim et al., 2011). Additionally, students who fell behind in the competition experienced frustration owing to feelings of failure, guilt about not meeting their parents' academic

expectations, and a sense of alienation from existing interpersonal relationships (S.H. Lee & Jung, 2014). The feelings of hatred that often arise between peer groups is caused by competition for limited resources (Laursen et al., 2010), and involves hostility as a response to a real threat (Stephan & Stephan, 2000). The real threat may either be a challenge to the existence within the group, or one's psychological and physical wellbeing. This could also apply to any academic standard or value or social identity (Hafen, 2010; Pellegrini, 2007). Furthermore, conflicts and the deterioration of relationships with close people can cause antipathy (Abecassis, 2003). Considering the background and characteristics of antipathy presented in the previous study, it is understandable that academic hatred (i.e., antipathy towards academic contexts) sometimes occurs. This is a natural emotion caused by negative academic attitudes among Korean students who have been taught to consider their friends to be competitors. Consequently, they perceive threats to their values and identity owing to competitive evaluation. When students can recognise their friends as colleagues or facilitators helping their growth and learning rather than competitors locked in a fierce competition, emotions of hatred about academic work can subside.

Consequently, the fourth hypothesis (H4: differential mediation effects of academic hatred in the relationship between peer support and academic burnout-academic engagement) was supported only in competitive classrooms with higher levels of teachers' academic pressure. Correspondingly, peer support is a significant resource only in classrooms where teachers' academic pressure is high. This interpersonal resource (social support) not only directly affects academic burnout and academic engagement but also indirectly influences burnout and engagement by reducing feelings of academic hatred. That is, reduced academic hatred serves as a mediator to lower burnout and increase engagement. Several studies (e.g., Brown & Larson, 2009) reported that the characteristics of peer groups influence academic motivation and achievement by affecting interactions between students. Furthermore, antipathy among peers interferes with academic performance and success (Witkow et al., 2005), because a competitive spirit and hostility create conflicts, hindering collaborative learning and educational exchanges (Wentzel, 2009). Similarly, peer conflict negatively affects academic performance (Adams & Laursen, 2007). Thus, a harmonious and positive atmosphere among peer groups can lead to successful and abundant academic achievement, while educational performance can deteriorate in schools where peer group tensions dominate (Laursen et al., 2010).

Notably, the average scores for emotional exhaustion (as well as peer support and vigour) are higher in competitive classrooms with high levels of teachers' academic pressure. In addition, students belonging to this group have lower levels of academic hatred. This suggests that Korean students are already using their resources effectively to protect themselves in a competitive social climate. Such social support could motivate students externally, and internally (Bakker & Demerouti, 2007). Therefore, even though Korean students are exhausted, they will still be able to study with enthusiasm. A mechanism to reduce risks and threats, and conserve physical and psychological resources is to collaborate with peers. Our results imply that schools and teachers should help students to foster a more supportive climate among themselves. Currently, a variety of peer helping programs are offered in Korean schools. The most representative is the 'Solia Peer Counselling' program, conducted by the Korean government since 2007. A Solian (i.e., solve + ian) is a friend who listens carefully to their peers' troubles and worries, and helps to solve difficulties and concerns together.

Finally, correlation and regression coefficients between academic hatred and academic engagement are much higher than between academic hatred and academic burnout. Of course, this may be a characteristic of our data. It is difficult to generalise because studies of academic hatred have not been done in earnest. However, academic hatred significantly affects not only academic burnout, but also academic engagement, as an important mediator. Thus, future studies should consider academic hatred (one of academic emotion's core variables) and its relationship to psychological symptoms in school contexts.

Limitations of this study are as follows: First, academic hatred was measured as a dimension of academic burnout in the KABI. As academic hatred has been proven to be a significant emotional factor that can affect students' academic burnout and engagement, it is necessary to develop and utilise more sophisticated and independent psychological scales. Particularly, as the concept of academic hatred described in this study derives from the emotion of hate, subsequent studies should clarify

the components of hate characteristics that would occur in the academic context and reflect them in the development of scales. Furthermore, the development and validating hate scale used in other research fields (e.g., scale of brand hate; Zarantonello et al., 2016) can be proposed as useful by applying it to the academic context. Second, our period of measurement was too specific, that is, immediately before the Soo-Neung (the most important task for Korean school students). Therefore, future studies should measure academic hatred continuously in a general context. To do so, it is necessary to develop scales optimised for the measurement of academic hatred. Given the methodological limitations, we hope that this study would be a pilot effort for the basis of future research in academic development.

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