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School burnout: Diminished academic and cognitive performance

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ABSTRACT

Two studies examined relationships between school burnout (school related strain and stress) and indicators of academic and cognitive performance. Study 1 ($N = 790$) investigated school burnout and grade point average over three consecutive academic semesters. Hierarchical multiple regression (HMR) findings demonstrated a consistent, negative association between school burnout and academic performance. Study 2 ($N = 331$) investigated school burnout and individual differences in cognitive functioning through the assessment of problem solving (serial subtraction) and attentional/inhibition processes (word-color matching Stroop task). HMR results indicated that increased school burnout was related to diminished attentional capacity and problem solving success. Limitations of previous school burnout investigations were addressed by extending sampling into American universities and utilizing analyses that controlled for related affective symptoms. These studies are the first to show that school burnout is related to diminished academic and cognitive performance in US tertiary education. Several future lines of research are outlined.

The American College Health Association-National College Health Assessment II suggests that maladaptive affective functioning (i.e. depression, anxiety, and psychological stress) is a widespread impediment to collegiate academic success across the US (ACHA-NCHA, 2007). Accordingly, attention is being given to understanding and ameliorating psychological risk factors that decrease academic performance, retention, and that negatively impact mental and physical health, particularly stress, depressive symptoms, and anxiety symptoms (Eisenberg, Gollust, Golberstein, & Hefner, 2007; Hamaideh, 2011; Mowbray et al., 2006; Taylor, Bramoweth, Grieser, Tatum, & Roane, 2013). Although stress, and depression/anxiety symptoms are important risk factors that may negatively impact academic success in college students, there is emerging evidence to show that school burnout (school related strain and stress) may be a unique and independent predictor of academic success (Salmela-Aro, Kiuru, Leskinen, & Nurmi, 2009; Salmela-Aro, Kiuru, Pietikäinen, & Jokela, 2008; Walburt, 2014) as well as cardiovascular health (May, Sanchez-Gonzalez, Brown, Koutnik, & Fincham, 2014). However, the school burnout-academic performance association has yet to be documented among US college students and research on the potential impairment of cognitive processes that may contribute to the relationship between school burnout and academic underperformance is greatly limited. Therefore, this research explored the relationship between school burnout and academic performance in Study 1 and the relationship between school burnout and cognitive functioning in Study 2.

Applied to academic populations, school burnout is conceptualized as a three-dimensional affective response to school-related stress characterized by exhaustion (chronic exhaustion from school-related work), cynicism (cynicism toward the meaning of school) and inadequacy (a belief of inadequacy in school related accomplishment, Salmela-Aro et al., 2008; Salmela-Aro et al., 2009a; Salmela-Aro, Savolainen, & Holopainen, 2009b). There is evidence to show that school burnout is associated with physiology predictive of cardiovascular risk (i.e. increased blood pressure, sympathetic activity to the blood vessels, and arterial stiffness see May et al., 2014a; May, Sanchez-Gonzalez, & Fincham, 2014) as well as psychological and behavioral problems such as depression, absenteeism, school dropout, and academic underperformance (Brown, May, Sanchez-Gonzalez, Koutnik, & Fincham, 2013; Fimian & Cross, 1986; Frydenberg & Lewis, 2004; Salmela-Aro et al., 2009a; Salmela-Aro et al., 2009b; Salmela-Aro et al., 2008; Yang, 2004).

(Salmela-Aro et al., 2008; Salmela-Aro et al., 2009a; Salmela-Aro et al., 2009b; Parker & Salmela-Aro, 2011) has been instrumental in establishing the viability of investigating burnout within a school context and has greatly advanced understanding of the relationship between school burnout and educational outcomes; but major limitations are apparent. For one, Salmela-Aro et al. (2008), Salmela-Aro et al. (2009a), Salmela-Aro et al. (2009b), Parker and Salmela-Aro, (2011) utilized predominately high-school, European student samples. Extensive research needs to be conducted to establish the utility of school burnout among American college students. Also, the independence of school burnout, in relation to other related affective problems, namely depression and

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anxiety, in predicting indicators of academic performance has not been clearly established.

Indeed, existing data indicate that 3 of the top 6 impediments to academic success are affective in nature (ACH Association, 2013). Our initial pilot data, however, showed that even though burnout, anxiety, and depression are related, school burnout uniquely predicted key academic achievement outcomes (grade point average and retention); accounting for as much outcome variance as both anxiety and depression combined (Brown et al., 2013). Although it can be argued that burnout, depression, and anxiety can conceptually be independent constructs, empirically burnout shares overlapping symptomatology with other affective disorders. For example, Salmela-Aro et al. (2008), Salmela-Aro et al. (2009a) reported correlations exceeding 0.50 between depression scores and the SBI global and subscale scores. Work burnout researchers note the need to control for depressive and anxiety symptoms in designs focusing specifically on burnout (Melamed, Shirom, Toker, Berliner, & Shapira, 2006; Schaufeli & Buunk, 2004; Shirom, 2009). School burnout research similarly requires the control of other related affective symptoms in order to allow a clearer understanding of whether it is burnout, depressive, or anxiety symptoms that are the principal factor that is associated with poor academic outcomes. The current research seeks to address these limitations by investigating school burnout in American universities and through utilizing statistical analyses that account for related affective symptoms.

To date, research examining the relationship between school burnout and cognitive functioning is scarce with cognitive performance indicators limited solely to grade point average (GPA). However, in the occupational literature, research has examined relationships between cognition and workplace burnout. In contrast to traditional theoretical explanations involving either motivational deficits and/or a lack of resource reciprocity that attempt to account for the various negative relationships between burnout and indicators of job performance, the cognition-workplace burnout literature suggests cognitive dysfunction and impairments are key factors in understanding the negative work related outcomes attributable to burnout (Diestel, Cosmar, & Schmidt, 2013; Oosterholt, Van der Linden, Maes, Verbraak, & Kompier, 2012; van der Linden, Keijsers, Eling, & van Schaijk, 2005).

Empirical evidence derived from both self-evaluations of cognitive impairments and objective cognitive tests has identified burnout as being related to chronic impairments on tasks requiring executive control. Executive control refers to the regulation of representational, attentional and motor processes to adaptively engage in novel, complex and changing tasks. Such processes include working memory, verbal reasoning, task switching, cognitive flexibility, abstract thinking, inhibition, sequencing, planning, rule acquisition, and problem-solving. Derived from the theoretical conceptualization of executive control developed by Miyake et al. (2000) and supporting Hacker's (2003) Action Regulation Theory, that purports successful efficient goal-direct behavior at work involves effective executive control, studies have found executive control predicts task performance (Causse, Dehais, & Pastor, 2011; Frese & Zapf, 1994).

The current research seeks to advance the school burnout literature by examining how school burnout is related to indicators of cognitive functioning. This research utilizes two general cognitive tasks, a serial subtraction task and a word-color matching Stroop task. These tasks provide an assessment of general problem solving ability and general efficiency of attentional/inhibition cognitive processes.

Taken together, prior studies and our own research, point toward the conclusion that school burnout is potentially a critical, but often underappreciated factor, impacting health, cognition and academic success in the undergraduate student body in American colleges. Disappointingly, research on school burnout in American universities is lacking and is not recognized in the NCHA II assessment. Therefore investigation of the construct of school burnout in American postsecondary education contexts seems necessary and timely. Accordingly we explored school burnout relationships with academic performance (GPA) in Study 1 and with individual differences in cognitive functioning via assessment of problem solving and attentional/inhibition processes in Study 2. To address limitations of previous school burnout investigations (as noted earlier) the current research extends study sampling into American universities and uses analyses that control for related affective symptomatology (anxiety and depression).

1. Study 1

Study 1 was conducted to document a relationship between school burnout and indicators of academic performance in the context U.S. tertiary education. Given evidence from European counterparts that burnout can lead to lower academic performance (e.g., Salmela-Aro et al., 2008; Salmela-Aro et al., 2009a), it is prudent to explore this relationship at American universities. Today's US college student is more connected and more involved than previous generations of college students. Moreover, the current competitiveness of the job market adds a great amount of pressure for students to succeed academically — specifically to graduate with high GPAs. The level of involvement coupled with the added pressure of the job market suggests that American college students may be at particular risk for burnout. Understanding the phenomenon of school burnout will allow university educators and administrators to better assist students.

2. Study 1 method

2.1. Participants

Three samples of undergraduate students served as study participants. Students that completed at least 1 collegiate semester were eligible for study participation. Sample demographics include: N = 790 (505 females, M_{age} = 19.74 years, SD = 1.89), 72% Caucasian, 18% African American, 4.0% Asian, and 6% endorsed either biracial or non-disclosed ethnicity; 19% Freshmen, 24% Sophomore, 26% Junior, and 31% Senior.

2.2. Measures

2.2.1. School burnout

School burnout was measured using the School Burnout Inventory (SBI: Salmela-Aro et al., 2008; Salmela-Aro et al., 2009a). The SBI consists of 9 items measuring three first-order factors of school burnout: (a) exhaustion at school (four items), (b) cynicism toward the meaning of school (three items), and (c) sense of inadequacy at school (two items). Summed scores from the first-order factors comprise a second-order overall school burnout score. All the items are rated on a 6-point Likert-type scale ranging from 0 (completely disagree) to 5 (strongly agree). Higher composite scores indicate higher burnout. Reliability for the present sample was $\alpha = .93$.

2.2.2. Depression

Depression was measured using the 10-item Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977; Santor & Coyne, 1997). The CES-D has been widely used as a measure of depressive symptoms in nonclinical samples. It asks participants to respond to a list of ways they may have felt or behaved during the previous week. Sample items include, "I was bothered by things that usually don't bother me," and "I felt hopeful about the future," (reverse coded). Responses ranged from 0 = rarely or none of the time (less than one day) to 3 = most or all of the time (5–7 days). Responses were summed into one overall score, with a possible range of 0 to 30. Reliability for the sample was $\alpha = .77$.

2.2.3. Anxiety

Anxiety was measured using the 20-item State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970). Participants were asked to respond to anxiety items such as "upset," "calm," "secure," "at