Journal of Contextual Behavioral Science 3 (2014) 81–88

Contents lists available at ScienceDirect

Journal of Contextual Behavioral Science

journal homepage: www.elsevier.com/locate/jcbs

Brief Empirical Reports

A preliminary investigation of the role of psychological inflexibility in academic procrastination

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ARTICLE INFO

Article history:
Received 16 May 2013
Received in revised form
1 November 2013
Accepted 7 April 2014

Keywords:
Academic procrastination
Psychological flexibility
Experiential avoidance
Mindfulness
Acceptance
Academic values

ABSTRACT

Estimates of the prevalence of academic procrastination are troublesome given the negative associations among procrastination, academic performance, and psychological and physical well-being. Multiple theories aimed at understanding factors that cause and maintain procrastination have been proposed, but none fully account for this problematic behavior. We hypothesize that procrastination can be understood as reflecting a state of psychological inflexibility, characterized by several processes, including experiential avoidance (i.e., attempts to avoid or escape from unpleasant internal experiences), diminished present moment awareness (i.e., diminished mindfulness), and difficulty articulating and engaging in valued activities.

The goal of the current studies was to explore the potential association between psychological inflexibility and procrastination. Two samples of students completed measures of trait procrastination, trait anxiety, and psychological flexibility. As predicted, procrastination was positively associated with anxiety and negatively associated with psychological flexibility. In addition, psychological inflexibility added to the prediction of procrastination over the contribution of trait anxiety. Implications for increased understanding of, and interventions for, procrastination are discussed.

1. Introduction

Procrastination is prevalent among students in higher education, with estimates that college students engage in this behavior between 30% and 60% of the time (Rabin, Fogel, & Nutter-Upham, 2010). Moreover, it has been suggested that graduate students procrastinate on academic tasks even more frequently than do undergraduate students (Onwuegbuzie, 2000). This high rate of procrastination is of concern given its adverse consequences on academic performance, physical health, and psychological well-being. Procrastination is negatively correlated with final overall course grades (Steel, Brothen, & Wambach, 2001), as well as grades on assignments such as papers (Tice & Baumeister, 1997) and exams (Steel et al., 2001; Tice & Baumeister, 1997). Students who self-report more procrastination exhibit more symptoms of physical illness and stress, and visit the health center more than do students lower in procrastination (Tice & Baumeister, 1997). Specifically, procrastination is associated with increased stress, as well as delays in seeking medical treatment (Sirois, Melia-Gordon, & Pychyl, 2003). Further, individuals high in trait procrastination have been shown to have weaker intentions to engage in health-promoting behaviors such as improving their diets or getting more sleep (Sirois, 2004). In addition, procrastination has been linked with poor mental health (Stead, Shanahan, & Neufeld, 2010), a failure to seek mental health services (Stead et al., 2010), and suicide proneness (Klibert, Langhinrichsen-Rohling, & Saito, 2005). Given these adverse effects, it is not surprising that the majority of students desire to reduce their procrastination (Solomon & Rothblum, 1984).

The development and provision of effective interventions for procrastination requires a strong, cohesive theoretical explanation of the behavior. Unfortunately, despite a recent increase in scientific research, much has yet to be learned about the causes and maintaining factors of procrastination (Steel, 2007). One common theory is that procrastination results from an inability to manage time (e.g., Burka & Yuen, 1983) and many of the most popular interventions for procrastination focus on increasing time management skills (e.g., Levrini & Prevatt, 2012). Although a meta-analysis provides some support for this theory (Steel, 2007), other studies that more directly examined time management and academic procrastination have not revealed a significant relationship between the two (e.g., Ackerman & Gross, 2005; Pychyl, Morin, & Salmon, 2000). Moreover, there is limited empirical support for the notion that time management strategies decrease procrastination (Van Erde, 2003).

Research also supports a relationship between procrastination and various unwanted internal experiences. Procrastination has been found to be associated with trait anxiety (e.g., Solomon &

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http://dx.doi.org/10.1016/j.jcbs.2014.04.002
2212-1447/

Rothblum, 1984), task-related anxiety (e.g., Fritzsche, Young, & Hickson, 2003), and statistics anxiety (e.g., Macher, Paechter, Papousek, & Ruggeri, 2012). Moreover, procrastination has been linked with several constructs that involve intolerance or fear of unwanted internal experiences such as frustration intolerance (e.g., Dryden, 2012), fear of negative evaluation (e.g., Bui, 2007), and fear of failure (e.g., Beck, Koons, & Milgrim, 2000). With regard to fear of failure, the relationship with procrastination was highest for people with low perceived competence, whereas those with higher perceived competence were more likely to begin working on tasks ahead of time (Haghbin, McCaffrey, & Pychyl, 2012). One possible explanation for these findings could be that some individuals procrastinate in an attempt to avoid a variety of aversive experiences such as fear, anxiety, and self-evaluative, anxiety-provoking thoughts. Support for this notion comes from a series of studies suggesting that procrastination may serve an emotion regulatory function (Sirois & Pychyl, 2013).

Although engaging in pleasant leisure activities and taking breaks can be an effective way of dealing with academic stress, research demonstrates that students who pursue these activities as a way to enhance mood and avoid discomfort experience a paradoxical increase in distress (e.g., Patry, Blanchard, & Mask, 2007; Pychyl, Lee, Thibodeau, & Blunt, 2000). Further, students appear to be more likely to procrastinate when they believe they have the ability to impact (or control) their mood. Tice and colleagues (2001) demonstrated lower levels of procrastination among students who were led to believe that their mood was temporarily fixed than those who were led to believe their mood was changeable. This finding suggests that students who accept that they are unable to change or control their internal experiences may be less likely to procrastinate.

This model of procrastination is consistent with the more general theory of psychological problems proposed by Hayes, Wilson, Gifford, Follette, and Strosahl (1996), Hayes, Stroshal, and Wilson (1999), and Hayes, Strosahl, and Wilson, 2012. Hayes et al. (1996) initially proposed that *experiential avoidance* (*EA*), an unwillingness to remain in contact with certain private experiences (e.g. thoughts, emotions, physical sensations) accompanied by counterproductive or harmful attempts to alter or avoid these experiences, was a pathological process underlying many forms of psychopathology. These processes have become further specified and currently the term *psychological inflexibility*, defined by six key psychological processes (i.e., the "hexaflex" model; experiential avoidance, cognitive fusion, dominance of the conceptualized past or future, attachment to the conceptualized self, lack of values clarity, and unworkable action/inaction) is used to describe the model (Hayes, 2004). The hexaflex model of psychological inflexibility can be further divided into two, somewhat overlapping processes (Ciarrochi, Bilich, & Godsell, 2010). The first includes experiential avoidance and low mindfulness (experiential avoidance, cognitive fusion, dominance of the conceptualized past or future, attachment to the conceptualized self) whereas the second involves a lack of clarity and commitment to personal values (lack of values clarity, unworkable action/inaction, dominance of the conceptualized past or future, attachment to the conceptualized self). A growing literature supports the notion that psychological inflexibility is related to greater levels of depression, anxiety, stress, and overall psychological distress (e.g., Bond et al., 2011; Chawla & Ostafin, 2007). Moreover, there is mounting evidence for the efficacy of Acceptance and Commitment Therapy (ACT) and other acceptance-based behavioral therapies aimed at enhancing psychological flexibility in addressing a wide range of psychological problems. The goal of the current study was to explore the potential association between psychological inflexibility and procrastination. Specifically in two separate samples of students, we examined whether experiential avoidance, diminished mindfulness and low academic values would contribute to the variance in procrastination over and above the previously demonstrated contribution of trait anxiety.

One study has already established a relationship between procrastination and mindfulness, as measured by two of the four scales of the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004), the Mindful Attention Awareness Scale (MAAS; Brown and Ryan, 2003) and a 3-point scale measuring the extent to which participants practiced mindfulness in a given week (Sirois & Tosti, 2012). Despite its cross-sectional design, this study also found preliminary evidence that mindfulness mediates the effects of procrastination on stress and health.

We hope to replicate and expand on this study by assessing the relationship between mindfulness and academic procrastination in the larger context of the model of psychological inflexibility proposed by Hayes et al. (1996, 1999, 2004, 2012). If measures of some of the key psychological processes thought to underlie psychological inflexibility are associated with procrastination, this finding may have some implications for the use of ACT and other ABBTs as interventions for this problematic behavior.

2. Study 1: Method

2.1. Participants

Participants in this study were 258 undergraduate psychology students attending a large, urban university in the Northeast. The sample ranged in age from 18 to 26 ($M = 19.51$, $SD = 1.77$) and was comprised of 72% women ($n = 185$). Seventy-four percent of participants self-identified as White (Non-Hispanic), 7% as Asian/Pacific Islander, 4% as other, 3% as multiracial, 2% as Black/African American, 2% as Middle Eastern, and $< 1\%$ declined to state their race. Forty-nine percent of the participants were freshmen, 23% sophomores, 12% juniors, and 16% seniors. Participants were recruited for a study on procrastination (i.e., they were aware of the nature of the study) and received either course or extra credit for their participation.

2.2. Materials

Procrastination Assessment Scale-Students (PASS; Solomon & Rothblum, 1984). The PASS is a 44-item Likert-type self-report measure of trait procrastination. The first part (*Total Problems*) was used in the present study. On a five-point scale, students report the frequency with which they procrastinate as well as the extent to which it creates problems for them. A total procrastination score (ranging from 12 to 60) is generated, with higher scores indicating more procrastination. Reliability for the present sample was .86.

State-Trait Anxiety Inventory-Trait (STAI; Spielberger, 1983). The STAI-T is a widely used 20-item self-report measure assessing symptoms of anxiety. Responses are scored on 4-point Likert-type scale from 1 (*Almost Never*) to 4 (*Almost Always*). Scores range from 20 to 80, with high scores indicating higher levels of trait anxiety. The STAI-T has strong psychometric properties within student samples (Ramanaiah, Franzen, & Schill, 1983; Spielberger, 2010). Internal consistency for the present sample was excellent (Cronbach's alpha = .89).

Action and Acceptance Questionnaire (AAQ; Hayes et al., 2004). The AAQ is a scale that was originally developed to measure experiential avoidance, a construct proposed to relate to psychological flexibility. However, in the literature it has been referred to as both a measure of experiential avoidance/acceptance and one of psychological flexibility (e.g., Varra, Hayes, Roget, & Fisher, 2008). Several versions of the measure exist, including the AAQ-II (Bond et al., 2011), which was not available at the time we collected our data. We used a 16-item version of the measure, which we obtained