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Exploring Procrastination Among Post-Secondary Students

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Have you ever had an assignment or work-related deadline and, knowing the deadline was approaching, decided to put off the task at hand to relieve some stress or to leave the issue for your future self (Pychyl & Sirois, 2016, abstract)? This phenomenon is known as procrastination, which occurs when one voluntarily delays a task intended to be done with the insight that doing so will lead to unfavourable consequences (Rahimi & Vallerand, 2021). One would think such an irrational phenomenon would be uncommon as it leads to undesirable results. However, researchers have found that as much as 95% of students procrastinate on their academic assignments, and 50% "reported a general delay in completing assignments" (Shaked & Altarac, 2022, p. 1). This form of procrastination is known as academic procrastination and was described by Rahimi and Vallerand (2021, para. 1) as the "irrational predisposition to delay the start and/or completion of an academic assignment/task."

Following this, it has been posited that procrastination can be even further broken down into subgroups such as "avoidant, arousal, decisional" (Steel, 2010, para. 3) as well as by many scholars, academic, as described earlier (e.g., Bobe et al., 2022; Eisenbeck et al., 2019; Joghataei et al., 2022; Ma et al., 2022; Rahimi & Vallerand, 2021; Shaked & Altarac, 2022). Scientists have long debated the underlying mechanisms that cause this phenomenon. Such mechanisms were traditionally thought to have been attributed to time management difficulties (Häfner et al., 2014), self-efficacy problems (Ma et al., 2022), loci of control issues (Silver, 1974), or factors such as psychological resilience (Türk-Kurtça & Kocatürk, 2020). However, more recent literature has begun to look at other factors, such as emotion regulation, or in better terms, emotion dysregulation (e.g., Eckert et al., 2016; Myrick, 2015; Pychyl & Sirois, 2016; Rezaei & Zebardast, 2021; Schuenemann et al., 2022). As research continues to examine procrastination and its possible underlying mechanisms, such as emotion regulation, underlying factors can be found. This analysis is critical because the real-world implications of procrastination can be detrimental to one's mental and physical health, including maladaptive coping and an elevated risk of hypertension and cardiovascular disease (Sirois, 2015).

This study has two aims; the first will be to determine the link between procrastination and emotion regulation. The second will be to identify the underlying mechanisms or precursors of emotion dysregulation. The current study will use correlations to analyze the relationship between procrastination and emotion dysregulation and a hierarchical regression to analyze emotional-self efficacy and childhood trauma predictivity. The purpose of this study will therefore be to add to the gap existing in the literature, as the link between procrastination and emotion regulation has been examined, but the factors which may be underlying emotion dysregulation have not been investigated thus far (e.g., Eckert et al., 2016; Joghataei et al., 2022; Myrick, 2015; Pychyl & Sirois, 2016; Rezaei & Zebardast, 2021; Schuenemann et al., 2022; Tice et al., 2001). The current study will specifically focus on academic procrastination, as the study's sample will be undergraduate students. This will allow the researchers to gain a comprehensive overview of academic procrastination, which may further generalize the construct of procrastination in future studies. Therefore, this paper will delve into the current literature surrounding procrastination, examine methods and measures used thus far, the implications surrounding such resources, further implications that this research may lead to, and possible suggestions for further research.

To explore the complex relationship between procrastination and the factors underlying emotion dysregulation, one can first begin by analyzing and reviewing relevant research. The previous literature can be grouped into two streams, the traditional and the modern, which will be examined. This paper will discuss studies about procrastination and what factors were initially thought to cause it, followed by emotion dysregulation and the factors said to cause emotion dysregulation according to previous literature. Finally, the current study's factors posited central to emotional dysregulation; therefore, procrastination will be evaluated by including childhood trauma and emotional self-efficacy.

Literature Review

When examining procrastination as a general construct, one can explain this phenomenon in many ways, such as the "voluntary and needless delay of an intended action, despite inevitable unfavorable consequences" (Steel, 2007, p. 66). Not only is procrastination a delay of some kind, it is also seen as being related to stress and deadlines (Silver, 1974). Moreover, procrastination is more likely to occur when there is a significant amount of cognitive restructuring necessary to

complete the task and when there are multiple points wherein an individual can make a choice. These factors together create the interpretation of a more stressful situation. This build-up of stress can lead to "impaired learning, missed deadlines, slowed progression towards graduation, and myriad missed opportunities and reinforcers" (da Silva et al., 2020, p. 4).

Not only is there a general definition of procrastination, but many scholars posit that there are subtypes, including active and passive (e.g., Chu & Choi, 2005; Seo, 2013; da Silva et al., 2020; Wessel et al., 2019), decisional (e.g., Ferrari, 1994; Hen & Goroshit, 2020; Milgram et al., 1993), situational (Hen & Goroshit, 2020), behavioural (Ferrari, 1994), and academic (e.g., Ahmadi & Ilanloo, 2020; Arias-Chavez et al., 2020; Attia & Abdelwahid, 2020; Bobe et al., 2022; Brando-Garrido et al., 2020). Active procrastinators, according to Chu and Choi (2005), are procrastinators who delay working on a task with the intention that "they will finish a task even if they delay the work" (da Silva, 2020, p. 5) and believe that they have the efficacy to do so. On the other hand, passive procrastinators are anxious about the delayed task and become "paralyzed under pressure" (da Silva et al., 2020, p. 5) without those same feelings of self-efficacy. These procrastinators do not typically succeed in finishing the task at hand (Chu & Choi, 2005) and typically feel "guilt and depression" (Seo, 2013, p. 778) due to procrastination. Da Silver and colleagues (2020) built upon Chu and Choi's (2005) research, as the scholars found that those who actively procrastinate had significantly higher self-efficacy ratings than passive procrastinators. In contrast, Chu and Choi (2005) found passive procrastinators to have lower self-efficacy but could not detect a significant difference between the two. Moreover, regarding academic procrastination, Seo (2013, p.783) found that externally regulating, rather than internally, "increase(s) passive procrastination" while "[decreasing] active procrastination." This study, again, replicated Chu and Choi's (2005) finding that "extrinsic motivation is negatively related to active procrastination" (Seo, 2013, p.783). Seo also found that passive procrastination is increased by "high external regulation and low intrinsic motivation" (p. 783). Evidently, procrastination is affected by self-regulation and self-efficacy. The behavioural component of procrastination has also been examined, such that Wessel and colleagues (2019) found that passive procrastinations were more likely to make "greater delay(s) in assignment progress" (p. 156). Whereas, for those who actively procrastinated, the behaviour could not accurately be predicted. Decisional procrastination has also been studied; for example, Ferrari (1994) describes decisional procrastination as a chronic type of procrastination wherein individuals are making efforts to protect their self-esteem by delaying the

activity to not "reveal possible incompetence" (Hen & Goroshit, 2020, p. 556). Scholars who have examined decisional procrastination, such as Hen and Goroshit, have found the type to be distinct from other types, further supporting the theory that there are many forms of procrastination. The scholars also noted that decisional procrastination could predict negative emotions, whereas situational procrastination cannot, as it is beneficial for "immediate emotional relief" (p. 560). This idea that procrastination is used to cope with or regulate negative affective states will be revisited further in the paper. Lastly, many scholars have examined academic procrastination (e.g., Arias-Chavez et al., 2020; Attia et al., 2020; Bobe et al., 2022; Brando-Garrido et al., 2020; Dervishaliaj & Xhelili, 2014; Eisenbeck et al., 2019; Joghataei et al., 2022; Kandemir, 2014; Kandemir et al., 2014; Klassen et al., 2008; Rezaei & Zebardast, 2021; Seo, 2008; Uma et al., 2020; Ma et al., 2022; Ozer & Yetkin, 2018; Prihadi et al., 2018). Arias-Chávez and colleagues describe academic procrastination as related to academic activities or work, i.e., "non-compliance with schedules, delivery of assignments out of date, and delaying developing work" (2020, p. 340). Many scholars have studied academic procrastination and its many correlates, such as concerning self-efficacy (e.g., Kandemir et al., 2014; Kandemir, 2014; Klassen et al., 2008; Ozer & Yetkin, 2018; Uma et al., 2020), psychological distress (Eisenbeck et al., 2019), anxiety (Rezaei & Zebardast, 2021), locus of control (Dervishaliaj & Xhelili, 2014; Prihadi et al., 2018), and emotion regulation (Joghataei et al., 2022).

Academic procrastination is an important topic of interest due to its effects on students' schoolwork and well-being, such as their self-esteem and self-image (Kandemir et al., 2014; Uzun-Özer, 2010), which is negatively impacted when the procrastinator feels as though they are out of control in terms of their behaviour. Due to the many negative psychological- (Kandemir et al., 2014; Uzun-Özer, 2010) and health-related (Sirois, 2015) impacts procrastination seems to have on those who do it, the authors of this study believe it imperative to understand how and why it occurs. Building off of Ma and Cheng's (2022) study, which examined how childhood psychological maltreatment affects procrastination among students, the authors of this study hope to examine how emotion dysregulation is caused and how it, therefore, affects academic procrastination. The authors hope to extend Ma and Cheng's (2022) research, as they were unable to determine how psychological maltreatment may affect academic procrastination, more specifically. This study will determine whether factors such as childhood trauma and emotional self-efficacy may cause emotional dysregulation and, therefore, procrastination.

Self-Efficacy

Regarding the literature on procrastination thus far, the original dominating stream examined how procrastination is related to factors such as self-efficacy, loci of control, and time management. One must first describe the concept to examine self-efficacy as a factor underlying procrastination. Bandura (1994) posited self-efficacy as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (p. 1); this is directly related to Silver's (1974) view of procrastination, which is examined in terms of control, or in relation to one's belief in their capability to complete a task. One can see how self-efficacy is strongly related, as well as a predictor, of procrastination, which has been demonstrated through prior literature (e.g., Arias-Chavez et al., 2020; Attia et al., 2020; Brando-Garrido et al., 2020; Da Silva et al., 2020; Graff, 2019; Hashemi et al., 2012; Haycock, 1993; Haycock et al., 2011; Katz et al., 2014; Kiamarsi & Abolghasemi, 2014; Klassen et al., 2008; Kurtovic et al., 2019; Liu et al., 2020; Ma et al., 2022; Ozer & Yetkin, 2018; Seo, 2008; Taghizadeh & Cherati, 2015; Uma et al., 2020). These studies, which hoped to determine the predictive factor that self-efficacy plays regarding procrastination, have also examined how factors such as self-esteem (e.g., Arias-Chavez et al., 2020; Brando-Garrido et al., 2020; Hajloo, 2014; Kandemir et al., 2014), self-regulation (Attia et al., 2020; Graff, 2019; Hashemi et al., 2012; Klassen et al., 2008), substance abuse (Taghizadeh & Cherati, 2013), study skills (Svartdal et al., 2021), and perceived goal achievement (Waschle et al., 2014) may affect the two. The scholars found that self-efficacy does indeed predict procrastination, so much so that there was a negative correlation between procrastination and self-efficacy (Taghizadeh & Cherati, 2013; Ozer & Yetkin, 2018), as well as between procrastination and the posited factors such as self-esteem and self-regulation (Brando-Garrido et al., 2020; Uma et al., 2020). These studies have indicated an inverse relationship between procrastination and self-efficacy or a negative correlation, which help to indicate a linear or directional relationship beyond just a correlation. The relationship between self-efficacy and procrastination was so strong that even when including other possible factors, self-efficacy mediated the relationship between the two (Svartdal et al., 2021; Waschle et al., 2014). Overall, the dominating stream of thought regarding self-efficacy predicting procrastination has been replicated in many studies. However, this traditional stream also examined another factor

that was once believed to be relevant to whether an individual will procrastinate, such as loci of control, a concept related to self-efficacy.

Loci of Control

Another factor in the literature that researchers have typically espoused as an underlying cause of procrastination concerning the traditional stream of thought was the concept of loci of control. The original concept posited by Rotter (1966) is that an individual's motivation for behaviour, regardless of conditioning or reinforcement, depends partially on whether they see rewards obtained based on an internal or external force. This definition aligns with the earlier definition of self-efficacy, as posited by Bandura (1994). Specifically in relation to whether individuals are passively engaging with the environment, wherein the environment is external to them, or are actively engaging with it and in control, allocating behaviour and outcomes to an internal force. This concept is directly related to the subtypes of procrastinators discussed in the introduction: active procrastinators tended to procrastinate less, whereas passive procrastinators tended to procrastinate more (Da Silva et al., 2020). The reason for this discrepancy is that active procrastination has been found to be negatively related to "extrinsic" or external motivation (Seo, 2013, p. 783), meaning these procrastinators find internal motivation to do their work. They have also been found to have strong self-efficacy beliefs (Chu & Choi, 2005; Da Silva, 2020). Whereas passive procrastination is related to "high external regulation and low intrinsic motivation" (Seo, 2013, p. 783), meaning these procrastinators may feel out of control, incompetent, anxious, guilty, and possess a low sense of self-efficacy regarding their procrastination behaviours (Chu & Choi, 2005; Da Silva, 2020; Seo, 2013).

Many researchers have linked this concept of loci of control and internal versus external loci's to examine how it may be related to procrastination, such as academic procrastination among students. For example, Dervishaliaj and Xhelili (2014) examined whether graduate students with an external locus of control tend to procrastinate more in relation to students with an internal locus of control. The results indicated that loci of control were significant in predicting procrastination. Other studies have indicated similar results, such as Sari and Fakhruddian's (2019), which found a significant negative correlation between internal locus of control, specifically, and academic procrastination. Furthermore, researchers such as Prihadi and colleagues (2018) have even linked loci of control to concepts such as learned helplessness in relation to procrastination, such that

procrastination may negatively impact mental health. The study examined academic procrastination specifically and was conducted among a sample of university students. The results found a correlation between loci of control and procrastination. In that, students would procrastinate less when feeling in control, as they are not feeling helpless about the task they must complete. Overall, these studies have examined procrastination through a focus based on Rotter's (1966) view of loci of control, supporting this traditional view that loci of control and self-efficacy beliefs are essential for predicting procrastination.

Time Management

Other procrastination studies in the traditional stream of thought have examined time management as another significant predictor. These studies typically view time management as a key aspect of whether individuals will procrastinate. Time management can be seen as the delegation of one's tasks in a way such that time is managed to produce the most efficient outcome (Nayak, 2019). Typically, this time management is regarding a specific time frame or period that is limited, and the management requires organizational and planning skills.

Such studies look at time management as the cause of procrastination and mental health problems as the outcome (Häfner et al., 2014). Such as in Häfner and colleagues' study which made use of an intervention program which aimed to aid students in their self-regulation, such that time management would no longer be an issue contributing to their procrastination. The scholars then compared intervention and non-intervention groups. Compared to the control group, which did not receive any intervention, the results showed that the treatment group procrastinated less. Other studies examining time management have found differing results, such that time management did not significantly impact procrastination (Košíková et al., 2020). The researchers examined students at two different universities and examined their time management skills in relation to procrastination. The results indicated that time management did not significantly predict procrastination. Overall, there is not a large body of literature supporting or disproving time management regarding procrastination compared to factors such as self-efficacy and loci of control.

Note that this paper is part of a more extensive work that discusses the more present stream of thought regarding procrastination and the method, results, discussion, and conclusion. The

results indicated that emotion dysregulation and procrastination correlate with the Behavioural and Emotional Academic Procrastination Scale (BEPS) and the Pure Procrastination Scale (PPS). As well as that, childhood trauma could predict procrastination (PPS and BEPS). However, emotional self-efficacy could not predict procrastination (PPS or BEPS). The implications of these results are discussed, and ideas for future studies are examined, followed by a conclusion.

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