

A STUDY INVESTIGATING ACTIVE PROCRASTINATION AND IMPULSIVITY AS PREDICTORS OF RESILIENCE IN STUDENTS

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Abstract Factors that impact resilience must be identified, to cultivate it in those exposed to general stressors of the young adulthood stage of the lifespan, besides COVID-19 pandemic-related impediments. Procrastination is conventionally considered a maladaptive behaviour (Hen & Goroshit, 2018) without acknowledging active procrastination, positively associated with academic performance (Hensley, 2016). The ambiguous influence of impulsivity, linked to negative health and academic consequences (Hornor, 2017), on adult students' resilience must be clarified. Therefore, the present study investigated active procrastination and impulsivity as predictors of resilience in global young adult students. The two hypotheses respectively stated that active procrastination positively and impulsivity negatively would predict resilience. Around 150 students from 19 countries were administered the ten-item Connor-Davidson Resilience Scale, New Active Procrastination Scale, and Short Urgency, Premeditation (lack of), Perseverance (lack of), Sensation Seeking, Positive Urgency, Impulsive Behaviour Scale, using social media, to measure resilience, active procrastination, and impulsivity, respectively. Multiple regression analysis was conducted. Active procrastination was a significant positive predictor of resilience ($F(1, 149) = 11.35, p < 0.001$), which elucidated 6.5% of the variance in resilience (Adjusted $R^2 = 0.065$). Impulsivity was a significant negative predictor of resilience ($F(1, 149) = 5.32, p < 0.05$) that explicated 2.8% of the variance in resilience (Adjusted $R^2 = 0.028$). However, both predictor variables indicated a limited overall variance in resilience. Results support existing literature and open domains for new research in academia and public health. Educational reforms must commend active procrastinators for their resilience. Arresting impulsivity with relevant interventions may reduce its impact on resilience. Implications, limitations, and suggestions for further research are discussed.

Keywords: Resilience, Active Procrastination, Impulsivity, Multiple Regression, Pandemic

INTRODUCTION

Resilience is defined as the capability to cope with adverse events, trauma, and stressors (American Psychological Association, 2014). It entails a positive adaptation to challenges in life (Scoloveno, 2016) and varies according to individual differences (Franklin et al., 2012) and environmental factors (Benight & Cieslak, 2011). Resilience is impacted by interactions between risk factors, including poverty, chronic illness, and child abuse, and protective factors like positive affect, empathy, and realistic optimism (Choi et al., 2015). Neurobiological mechanisms, such as the neuroendocrine system and hippocampal, cortical, reward, and serotonergic circuits, facilitate resilience via prior experiences to enriched environments, suppression of amygdalic activity, and progressive learning of coping responses under stress (Franklin et al., 2012). Self-efficacy and self-care are suggested as pathways through which secure attachments contribute to the maintenance of resilience (Bender & Ingram, 2018). Besides, CBT and mindfulness interventions are recommended for developing

this ability (Joyce et al., 2018). Resilience predicts self-motivation, which in turn affects academic performance, and is hence encouraged among students for academic success (Trigueros et al., 2019). Resilience is also positively associated with autonomy and competence (Bar et al., 2018), making it a desirable trait for students to progress in their education. As students undergo the young adulthood stage of lifespan development, they may face several hindrances in their academic endeavours (Arnett, 2014). The resilient students adapt to the new changes in higher education systems and transition to adulthood (Balgiu, 2017). During the ongoing coronavirus 2019 (COVID-19) pandemic, students have faced several stressors, like distance learning, estranged relationships with peers and teachers, and changes in academic policies (Bozkurt & Sharma, 2020), so the implementation of strategies to improve their resilience may help them adaptively deal with these difficulties.

Despite resilience being positively related to procrastination and academic achievement (Ko & Chang, 2019), it may not discern between those individuals for whom procrastination is a disadvantageous strategy (Öksüz & Güven, 2014).

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Active procrastination is simplified as a “positive” form of procrastination, in which individuals deliberately procrastinate to yield favourable outcomes (Chu & Choi, 2005). In general, procrastination is characterised by postponements of critical tasks, leading to disadvantageous results due to self-regulatory failures (Grund & Fries, 2018). Procrastination is a frequent behaviour shown by college students (Küchler et al., 2019), wherein some, who engage in active procrastination, credit this strategy for improving their motivation to learn and the consequent academic performance (Hensley, 2016). Active procrastination is depicted as a multifaceted construct comprising cognitive (intention to procrastinate), affective (choosing to work under pressure), and behavioural (completing tasks closer to the deadline) dimensions, accompanied by the rewarding outcomes and ensuing satisfaction (Chu & Choi, 2005). Active procrastination is significantly correlated with self-efficacy, control of time, and academic achievement (Hensley, 2014), and predicted by flow and self-regulated learning (Kim & Seo, 2013). Extraversion in students too predicts active procrastination, indicating the role of personality in the maintenance of this adaptive behaviour (Zhou, 2019). Active procrastination does not facilitate behavioural delay due to the different trajectories adopted from typical procrastination, so its construct validity is doubted (Wessel et al., 2019). Active procrastinators have been differentiated from regular procrastinators based on improved academic achievement even when cramming on the eve of their examinations (Seo, 2012). Hence, rather than scrutinising active procrastinators for their tendency to delay their work, the focus must be shifted towards their remarkable academic scores. Overall, active procrastinators should be commended for their ability to thrive under pressures, including the COVID-19 pandemic, possibly suggesting their resilience.

Another facet previously linked to resilience is impulsivity, the tendency to act or react to a stimulus without delaying and considering the consequences (Friedman et al., 2020). Studies on impulsivity were formerly conducted in student cohorts, because adolescence corresponds to impulsivity (Cosenza et al., 2019). It was recently found that sleep disturbances moderate the relationship between stress and impulsivity (Park et al., 2020). Besides, impulsivity is negatively correlated with intelligence and academic performance, unless the students are high achievers (Lozano et al., 2014). Impulsivity in students predicts suicidal risk (Loftis et al., 2019) and is correlated with deliberate self-harm and suicide attempts in adolescents (Huang et al., 2017). Impulsivity has been associated with risk-taking behaviour (Giustiniani et al., 2019), along with maladaptive coping strategies like skin picking (Yeo & Lee, 2017), problematic smartphone usage (Grant et al., 2019), and substance abuse (Hamdan-Mansour et al., 2017). Such behaviours may occur in response to the pitfalls of adolescence and young adulthood (Gray &

Squeglia, 2018), for which resilience may be a protective strategy (Hornor, 2017). Generally, impulsivity is linked to unfavourable academic and health consequences in the available literature. As the COVID-19 pandemic has been adversely affecting students’ mental health (Grubic et al., 2020), it is likely that those with higher impulsivity resort to unhelpful coping strategies. Additionally, severe cases of Internet gaming disorder among students posit elevated impulsivity and reduced resilience (Shin et al., 2019). Impulsivity has also been termed a predictor of resilience in children to a certain extent (Eisenberg et al., 2004), but the relevance of these dated findings in a student sample must be checked. Therefore, there is a need to explore the correspondence between the two variables for the progress of those students who struggle due to their impulsivity in daily life.

REVIEW OF THE LITERATURE

Despite multiple studies being conducted on the correspondence between resilience and procrastination (Öksüz & Güven, 2014; Madjid et al., 2021), active procrastination and resilience are yet to be investigated together. Students with high resilience report lower procrastination behaviour (Ko & Chang, 2019); however, this research did not consider active procrastination and its possibly varied effect on resilience. Besides, improved self-efficacy is credited for promoting active procrastination, leading to enhanced academic performance (Qian & Fuqiang, 2018). Positive cognitive appraisals via self-efficacy build resilience against stress (Benight & Cieslak, 2011), contributing to academic achievements (Hernández et al., 2019). Therefore, it is speculated that there may be an undiscovered link between active procrastination and resilience, due to their associations with self-efficacy. Even when cramming a day before the exam, active procrastinators report superior academic achievement, questioning its effect on resilience (Seo, 2012). Unconventional traits like age, parenting responsibility, and employment status suggest enhanced resilience among students (Chung et al., 2017), so it is feasible that an unconventional academic strategy like active procrastination additionally influences this facet. Extraversion predicts active procrastination in students (Zhou, 2019) and resilience in males (Iimura & Taku, 2018), so these two constructs possibly correspond. Past researchers have recommended focusing on different types of procrastination concerning academic outcomes, instead of generalising this facet (Ko & Chang, 2019), which may elucidate the influence of active procrastination on resilience in the present study. Others have questioned whether active procrastination is a form of procrastination because it involves purposive delay (Chowdhury & Pychyl, 2018). Available research portrays procrastination as an undesirable behaviour in academic settings requiring prevention

(Datzer & Schippers, 2020). Moreover, procrastination impedes decision making, unless resilience is adopted as a protective strategy (Shin & Kelly, 2015). Thus, introducing the separate concept of active procrastination can prove beneficial in academic settings (Choi & Moran, 2009). Those students who engage in active procrastination may be appreciated for their resilience when facing academic pressure and establishing improved academic achievement. Rather than shunning them, active procrastinators should be identified in the student population and provided the appropriate incentives to sharpen this academic strategy. Thus, by separating active procrastination from other facets of procrastination, the current study pioneeringly intends to single out the influence of this adaptive academic strategy on resilience.

In contrast, although resilience and impulsivity have been studied previously, research has yielded mixed findings of non-significant values (Carli et al., 2014; Shin et al., 2019). Besides, many studies were conducted outside academic settings in clinical populations, and thus, relevant implications could not be surmised (Choi et al., 2015). Both constructs are credited for having opposite impacts on depression under stress (Lee et al., 2019). In attempted suicide, cognitive resilience is inversely related to the non-planning and inattention aspects of impulsivity (Ram et al., 2019). Resilience is also found to mediate the association between self-harm and impulsivity in Chinese adolescents (Ran et al., 2022). Subsequently, it is suggested by the available literature that impulsivity is a maladaptive trait whose effect may be subdued by resilience. This may be maintained by impulsivity being negatively related to academic performance, except in the case of high-achieving students (Lozano et al., 2014). Alternatively, both impulsivity and effortful control are concurrent and longitudinal predictors of academic achievement (Valiente et al., 2013), substantiating the ambiguous nature of impulsivity requiring clarification via the present study. Nevertheless, most studies on impulsivity report its undesirable consequences, such as it being a significant factor contributing to smartphone addiction in Korean university students, who report lower resilience (Kim et al., 2014). Impulsivity and effortful control have previously been shown to longitudinally predict adjustment, problem behaviours, and resilience in children (Eisenberg et al., 2004). Additionally, effortful control and impulsivity indirectly predicted internalising problems when mediated by resilience, unlike anger or sadness. There was no mediating effect of resilience on the effect of impulsivity and effortful control on externalising problems, which was performed by anger instead, except at the first-time point of the longitudinal study. Hence, people who tend to internalise their problems may benefit from resilience when dealing with impulsive urges. Results of these dated studies are yet to be clarified in cross-cultural academic settings. Therefore, there is an obligation to illuminate the equivocal influence impulsivity may have on students' resilience to

formulate necessary interventions for their aid when facing the challenges of young adulthood. Tendencies towards maladaptive strategies, including substance abuse, suicidal behaviour, and self-harm can be prevented and controlled. The present study asserts to process the connection between resilience and impulsivity, to contribute to the welfare of impulsive young adults.

Overall, resilience is a beneficial construct for students that enables them to handle academic and alternate stressors of the young adulthood lifespan stage. Although active procrastination and impulsivity are constructs relevant to all ages, students were specifically nominated for the current study to converge upon the resilience achieved by them, based on their self-reported abilities to deal with the challenges of their life stage. Active procrastination is an unconventional academic strategy that must be refined and encouraged among those who practise it. Although it enables elevated academic achievement despite prolonged delay and pressure, active procrastination has not been probed formerly concerning resilience. Impulsivity, albeit studied earlier, has led to enigmatic influences on resilience, which need to be explicated. Students whose impulsivity has led to detrimental consequences can be enlightened with strategies to improve their resilience.

AIM

The present study aims to investigate whether active procrastination and impulsivity act as direct predictors of resilience in adult students from 19 countries. Specifically, this research aims to explore whether active procrastination positively predicts, and impulsivity negatively predicts resilience in the given global sample of 150 students.

HYPOTHESES

- Self-efficacy predicts resilience in academic settings (Cassidy, 2015) and has also been associated with active procrastination (Hensley, 2014). So, active procrastination will positively predict resilience in students.
- Impulsivity directly predicts resilience in children (Eisenberg et al., 2004). It also predicts smartphone addiction in students with lower resilience scores (Kim et al., 2014). Therefore, impulsivity will negatively predict resilience in the present study.

METHODOLOGY

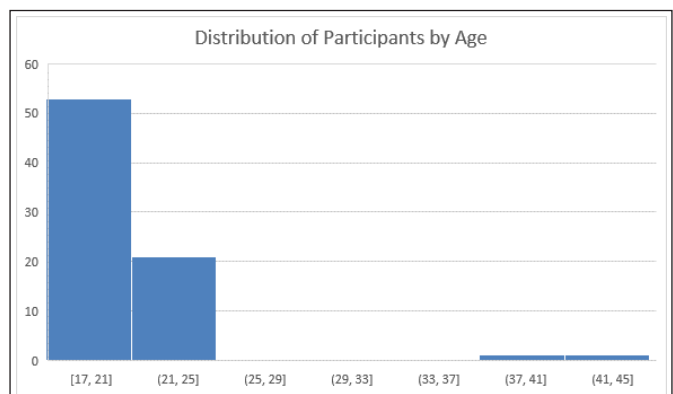
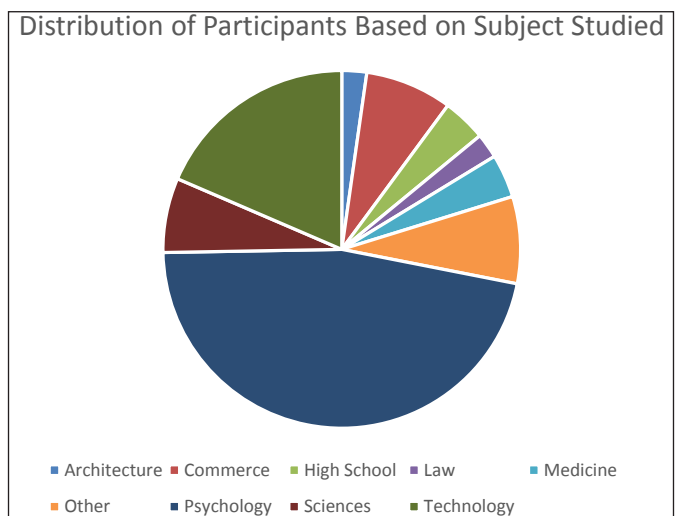
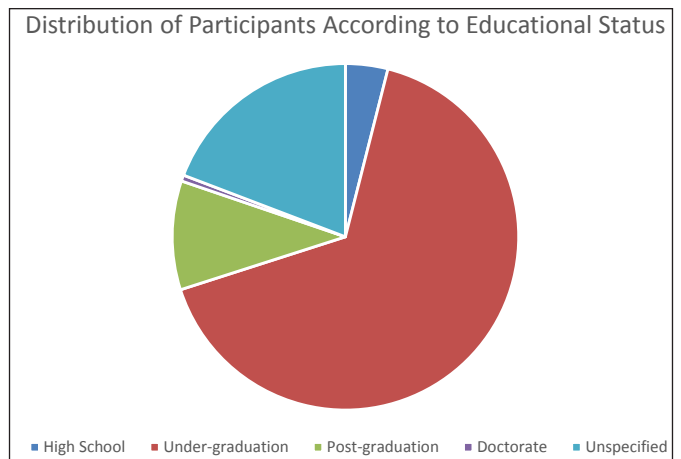
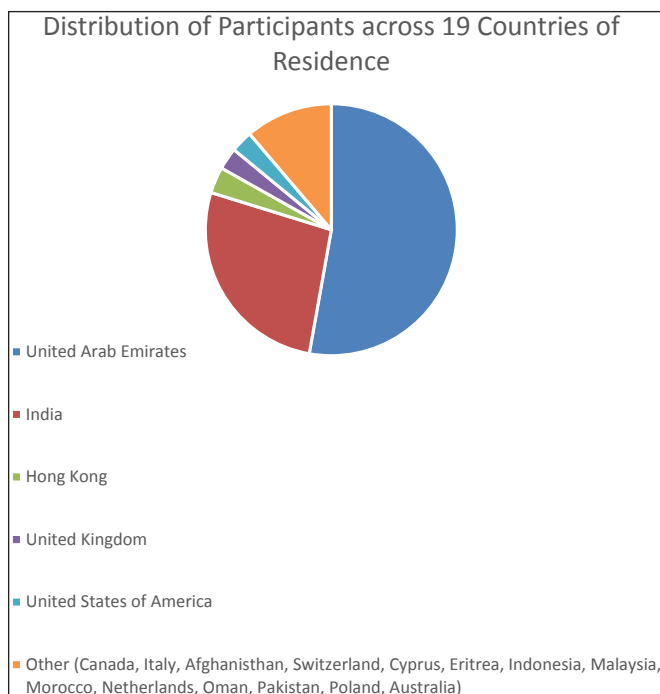
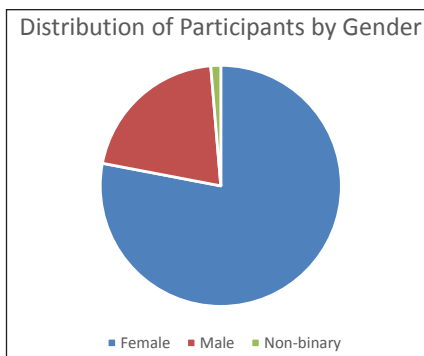
Design

The present quantitative study incorporated a non-experimental and within-groups design. The predictor variables are active procrastination and impulsivity, and the

outcome variable is resilience. The within-groups design is relevant for this research, because all participants will be exposed to the same treatment, and the effects of the predictor variables on the outcome variable can be discerned (Field & Hole, 2002).

Participants

Around 235 students globally, from 19 countries, were selected for this study using convenience and snowball sampling from social media platforms such as Facebook, Twitter, LinkedIn, Instagram, and SurveyCircle. The final number of participants was 150, after screening the data for anomalies and missing input. Students had to be aged 17 and above and enrolled in school or university to participate. The mean age of the participants was 20.29, characteristic of the young adulthood stage of development. They were predominantly female (117), with 31 males, and two individuals identifying themselves as non-binary. Out of a total of 150, a majority, comprising 80 students, resided in the United Arab Emirates; 37 lived in India; and three did not mention their location.



Measures

Campbell-Sills and Stein's (2007) Ten-Item Connor-Davidson Resilience Scale (CD-RISC-10)

Campbell-Sills and Stein's (2007) Ten-Item Connor-Davidson Resilience Scale (CD-RISC-10) was applied to measure resilience. CD-RISC-10 comprises ten items on a five-point Likert scale, ranging from 0 to 4. The minimum score is 0, whereas the maximum score is 40. There are no

reverse items, and higher totalled scores indicate higher resilience. An example of an item from the CD-RISC-10 is, 'I try to see the humorous side of things when I am faced with problems'. When used in competitive sport settings, CD-RISC-10 retrieved a moderate positive correlation with positive affect and inverse relations with negative affect and performance anxiety, thus substantiating convergent and divergent validity (Gonzalez et al., 2016). Compared to other versions, the internal consistency of CD-RISC-10 was represented by a Cronbach's alpha coefficient of 0.88 (Kuiper et al., 2019). Cronbach's alpha coefficient in the current study was found to be 0.815, promoting excellent reliability.

Choi and Moran's (2009) New Active Procrastination Scale (NAPS)

Choi and Moran's (2009) New Active Procrastination Scale (NAPS) was implemented to quantify active procrastination. The NAPS has 16 items that measure four dimensions of active procrastination: preference for pressure, intentional decision to procrastinate, ability to meet deadlines, and outcome satisfaction. Each dimension is assessed using four items, rated on a seven-point Likert scale, from 1 (not at all true) to 7 (very true). The total active procrastination score ranges from 16 to 112. Higher total scores represent higher levels of active procrastination. Items 9, 10, 11, and 12 are reversed. An example of an item from the NAPS is, 'I intentionally put off work to maximise my motivation'. Cronbach's alpha coefficient lies between 0.70 and 0.83 for the four dimensions, consequently providing support for internal consistency, along with a satisfactory Cronbach's alpha coefficient of 0.80 for the overall measure. NAPS and its constituting dimensions are positively correlated with time management behaviour scale and satisfaction with life scale, which marks its convergent validity (Aziz & Tariq, 2019). Cronbach's alpha coefficient in the present research was 0.772, which is deemed good reliability.

Cyders and Colleagues' (2014) Short Urgency, Premeditation (Lack of), Perseverance (Lack of), Sensation Seeking, Positive Urgency, Impulsive Behaviour Scale (S-UPPS-P)

Cyders and Colleagues' (2014) Short Urgency, Premeditation (Lack of), Perseverance (Lack of), Sensation Seeking, Positive Urgency, Impulsive Behaviour Scale (S-UPPS-P) was used to measure trait impulsivity. There exist 20 items on a four-point Likert scale, ranging from 1 to 4, with higher ratings indicating stronger disagreement. There are five sub-scales (negative urgency, lack of perseverance, lack of premeditation, sensation seeking, and positive urgency) with

four items each, in this questionnaire. Higher values depict higher trait impulsivity. Items 1, 2, 4, 5, 7, 11, 12, and 19 are reversed. An example of an item would be, 'I quite enjoy taking risks'. S-UPPS-P has an internal consistency of 0.74-0.88 across sub-scales, and is deemed a valid and reliable measure of impulsivity (Cyders et al., 2014). Cronbach's alpha coefficient in the current study was calculated to be 0.736, suggesting good reliability.

Procedure

Students who read the information sheet and provided consent were recruited from online social media platforms. They answered the ten-minute-long questionnaire created in Qualtrics. They were informed that the study was approved by the Middlesex University Dubai Ethics Committee. Demographics such as age, gender, nationality, and current course studied were sought. Participants were asked to complete the CD-RISC-10, NAPS, and S-UPPS-P to measure their resilience, active procrastination, and impulsivity, respectively. After completing the survey, they were provided the debriefing sheet.

Statistical Analysis

Multiple regression analysis was performed on IBM SPSS Statistics 25 to determine whether resilience is predicted positively by active procrastination and negatively by impulsivity. This regression framework included two models. The first model (Model 1) introduced active procrastination as the predictor variable for resilience. The second model (Model 2) selected impulsivity as the predictor variable for resilience. Accordingly, the significance of these predictors and their influence on resilience can be demonstrated.

RESULT ANALYSIS

Around 150 students participated in the present study. Strong Cronbach's alpha values were determined for all three measures, upon employing reliability statistics. Descriptive statistics (Table 1) demonstrate the means and standard deviations for resilience, active procrastination, impulsivity, and age.

Table 1: Descriptive Statistics of Resilience, Active Procrastination, Impulsivity, and Age

Variables	Mean	Standard Deviation
Resilience	25.92	6.02
Active procrastination	63.21	13.33
Impulsivity	43.11	7.04
Age	20.29	2.27

N = 150

Active Procrastination and Resilience

Hypothesis 1: Active procrastination will positively predict resilience.

Table 2: Regression Analysis of Active Procrastination on Resilience

Block	Predictor	Resilience		
		Model Fit	β	t
1	Active procrastination	Adjusted $R^2 = 0.065$ $F(1, 149) = 11.35$	0.26	3.37

β = standardised regression coefficient.

Simple regression was applied to examine the influence of active procrastination on resilience. Table 2 shows that the above model (Model 1) is statistically significant ($F(1, 149) = 11.35, p < 0.001$) and explained 6.5% of the variance in resilience (Adjusted $R^2 = 0.065$). Therefore, Model 1 supports the hypothesis, implying that active procrastination is a significant positive predictor of resilience.

Impulsivity and Resilience

Hypothesis 2: Impulsivity will negatively predict resilience.

Table 3: Regression Analysis of Impulsivity on Resilience

Block	Predictor	Resilience		
		Model Fit	β	t
1	Impulsivity	Adjusted $R^2 = 0.028$ $F(1, 149) = 5.32$	-0.18	-2.30

β = standardised regression coefficient.

Simple regression was introduced to check the influence of impulsivity on resilience. Table 3 depicts that the given model (Model 2) is statistically significant ($F(1, 149) = 5.32, p < 0.05$) and accounted for 2.8% of the variance in resilience (Adjusted $R^2 = 0.028$). Overall, Model 2 reinforces the hypothesis, suggesting that impulsivity is a significant negative predictor of resilience.

DISCUSSION

The current study aimed to determine the influence of active procrastination and impulsivity on resilience in a worldwide sample of 150 students. As hypothesised, active procrastination was a significant positive predictor of resilience. Impulsivity was a significant negative predictor of resilience, congruent with the second hypothesis. Surprisingly, despite achieving statistical significance, both predictor variables accounted for limited variance in resilience, with active procrastination contributing only 6.5%, and impulsivity enabling 2.8%, of the overall variance.

The reported findings are primarily congruent with the existing literature on active procrastination, impulsivity, and resilience. This is the first study investigating the influence of active procrastination on resilience by separating it from the conventional idea of procrastination as a maladaptive strategy (Grund & Fries, 2018). Prior studies have associated active procrastination with self-efficacy (Hensley, 2014), a facet that predicts resilience (Cassidy, 2015). This may clarify the influence of active procrastination on resilience. As active procrastination involves yielding positive outcomes, for instance, in academics, by working under pressure (Hensley, 2016), it is plausible that this construct predicts high resilience, thus enabling them to deal with difficulties adaptively. Both resilience and active procrastination are correlated with academic achievement (Ko & Chang, 2019; Seo, 2012), which supports the influence that active procrastination may have on resilience. Seo (2012) ascertained superior academic achievement in active procrastinators, so the present study adds to this research with the correspondence between active procrastination and resilience. Its influence on resilience likewise differentiates active procrastination from typical procrastination, which was a concern for past researchers (Wessel et al., 2019). Stress impedes academic performance (Frazier et al., 2019), so active procrastinators with their enhanced resilience may be able to tackle educational demands for producing superior results in a restricted time. Extraversion predicts both active procrastination (Zhou, 2019) and resilience (Iimura & Taku, 2018), which may provide an alternate explanation, beyond academic performance and achievement, for the link between these two constructs. The extraverted nature of active procrastinators may induce them to seek more social support to maintain their resilience during adversity (Southwick et al., 2016). Notwithstanding, a surprising finding was that although a significant predictor, active procrastination suggested only 6.5% of the variance in resilience. Neuroticism negatively predicts resilience in females, but extraversion positively predicts it in male adolescents, suggesting gender differences in resilience based on personality (Iimura & Taku, 2018). As extraversion predicts active procrastination in students (Zhou, 2019), and possibly due to comparatively lesser male representation in the current study, there was limited reported variance of active procrastination on resilience. Additionally, young adults garner their resilience from social support (Gooding et al., 2012), and owing to the COVID-19 pandemic conditions, limited opportunities were available for this purpose (Yu et al., 2020). Hence, a disproportionate gender representation in the sample and restricted social interactions due to the pandemic may have contributed to the low variance of active procrastination on resilience in young adult students. Overall, active procrastination, associated with extraversion, self-efficacy, and academic achievement, significantly predicts resilience, making it an adaptive academic behaviour to be channelled in students who benefit from it.

Past research on impulsivity has found equivocal and non-significant influences of this facet on resilience (Shin et al., 2019). Regardless, the present study supports impulsivity as a negative predictor of resilience (Kim et al., 2014), and generalises the dated findings of a children's sample (Eisenberg et al., 2004) in young adults. Unlike available literature, which has targeted various clinical populations (Choi et al., 2015), the current research sought the influence of impulsivity on resilience in young adult students. This age group is transitioning from adolescence to adulthood, wherein resilience is a significant protective factor against the challenges (Hornor, 2017). A lack of resilience and the inability to cope with such impediments, which may be maximised during the COVID-19 pandemic (Barzilay et al., 2020), may possibly lead to the adoption of maladaptive coping strategies, such as self-harm, substance abuse, and Internet addiction (Shigeto et al., 2021). Resilience is related to academic achievement (Ko & Chang, 2019), so this may expound why impulsivity is linked to unsatisfactory academic performance, except in high achievers (Lozano et al., 2014). Impulsivity and effortful control are, however, concurrent, and longitudinal predictors of academic achievement (Valiente et al., 2013). According to the present study, impulsive students may not be resilient enough to cope with academic pressures and yield positive outcomes. Such young adults are likelier to adopt maladaptive coping behaviours (Shigeto et al., 2021). Regardless, there may be students, like the high achievers, whose impulsivity promotes their academic scores (Lozano et al., 2014), which is not described by its negative influence on resilience. It is plausible that impulsivity impedes resilience concerning the general pressures of young adulthood. Notwithstanding, other moderators involved in this equation must be identified to explain how the influence of impulsivity on resilience affects academic outcomes. Besides, impulsivity contributes to only 2.8% of the variance in resilience in young adult students, which may be due to the notion that resilience comes with age (Cohen et al., 2014). Older adults are more resilient regarding emotion regulation and problem-solving, whereas young adults report elevated resilience based on social support (Gooding et al., 2012). As this study was conducted during the COVID-19 pandemic, minimal social support was available (Yu et al., 2020), which may have impeded the resilience of the younger and more impulsive sample (Reynolds et al., 2019). The negative influence of impulsivity may describe how students adopt maladaptive behaviours to compensate for the limited resilience required to face the challenges of young adulthood. By acknowledging its prevailing contribution towards adverse health and academic consequences (Huang et al., 2017), it is conceivable that impulsivity negatively predicts resilience.

Practical Implications

As aforementioned, the findings of this research have several practical implications. Since the participants hailed from 19

countries in this global study, results regarding the influence of active procrastination and impulsivity on resilience may have multicultural advantages. The findings may be more generalisable to adult students worldwide and may aid the formation of educational reforms at an international level, including the distance learning policies corresponding to the COVID-19 pandemic.

Firstly, active procrastination as a positive predictor of resilience can redefine the connotations behind this construct, because it will enable active procrastinators to be commended for their ability to stay resilient under academic and alternate pressures. Rather than grouping them with other procrastinators who suffer due to their delays, both mentally and academically (Zacks & Hen, 2018), active procrastinators can be presented as models of resilience to other students and praised for their enhanced academic performance (Hensley, 2016). Future research may distinguish active procrastination based on resilience when investigating the consequences of procrastination. Instead of conventionally viewing it as an unfavourable behaviour, procrastination will be termed as helpful or unhelpful depending on the outcome and not the process. Available educational interventions nevertheless have sought to recognise and prevent procrastination in students without considering those who benefit from this behaviour (Hen & Goroshit, 2018), potentially hindering the resilience of active procrastinators. Academic reforms must be devised to be more inclusive of this population. Active procrastinators may portray elevated levels of resilience in response to the difficulties imposed by the COVID-19 pandemic, which differentiates them from other procrastinators. Educational authorities need to formulate relevant interventions to challenge and channel their active procrastination, making them more resilient to academic and other pressures characteristic of young adulthood.

Additionally, impulsivity as a negative predictor of resilience allows for new insights into students' responses to adversity. Besides the challenges of transitioning from adolescence to adulthood in the young adulthood lifespan stage, these findings are especially relevant to the COVID-19 pandemic, wherein resilience accelerates coping with the lockdown restrictions and subsequent physical and emotional consequences (Ahmed et al., 2020). Students with higher impulsivity may resort to maladaptive coping strategies due to their limited resilience to tackle the pandemic-related difficulties, accompanied by the stressors of young adulthood (Shigeto et al., 2021). Rates of suicide ideation and attempts were higher in 2020 compared to 2019, which substantiates the distress young adults experienced when the pandemic progressed (Hill et al., 2021). The present study, by highlighting the detrimental influence of impulsivity on resilience, posits the importance of arresting impulsivity at younger stages so that its effect on resilience and the adoption of coping strategies is subdued. Likewise, impulsive

young adults must be recognised and provided relevant interventions, including the education and encouragement of adaptive coping strategies, to elevate their resilience and minimise impulsivity. This is a prominent task for authorities in educational and public health services to prepare students, specifically those reporting elevated impulsivity, to be more resilient during the COVID-19 pandemic and during the prevailing struggles of young adulthood.

A limitation of the present study may be that the results represent only adult students and may not be generalised to younger students and non-students. Conducting the study online on social media platforms may also have confounded the findings. Varied results may have been generated had the research been performed in a laboratory setting. Gender differences were not considered, especially when probing the influence of active procrastination on resilience, which may have provided a variation in the obtained findings. Although active procrastination and impulsivity were significant predictors of resilience, they exerted a minimal influence. More robust predictors of resilience or the mediators behind the variance achieved by the current predictor variables must be identified.

Suggestions for Future Research

Further research is required to clarify the limited variance in resilience exerted by active procrastination and impulsivity. Alternate constructs that contribute a higher variance on resilience need to be discovered using hierarchical regression analysis. For instance, the influence of distance learning on resilience in students may be investigated to determine its effectiveness during the pandemic, as the most prevalent educational resource and mode of social interaction (Bozkurt & Sharma, 2020). Gender differences may be found, as previously it has been demonstrated that gender moderates the relationships among resilience, perceived social support, and psychological distress (Zhang et al., 2018). The moderating influence of extraversion on variance created by active procrastination on resilience could be checked, because extraversion predicts both facets (Zhou, 2019; Iimura & Taku, 2018). Other such moderators that expound minimal variance may interest future researchers. They can replicate this study among younger students, who may be experiencing the characteristic challenges of adolescence (Bund et al., 2017) and may present higher impulsivity levels (Forrest et al., 2019). Although it is evident that impulsivity subdues the protective effects of resilience towards pandemic and general stressors, its ambiguous influence on academic performance is to be clarified. Exploring active procrastination and resilience in employees may deliver new insights on the prevalence and potential advantages of these facets in the workplace. Lived experiences of active procrastinators and impulsive students, and how they cope with adversity, including the COVID-19

pandemic, via resilience can open new research domains in academia and public health.

CONCLUSION

In essence, the present study contributes to the vast array of findings on impulsivity and active procrastination in students, and their contributions towards the maintenance of resilience. Interventions for identifying and strengthening active procrastination and cultivating resilience in impulsive students are required, for their assistance during the COVID-19 pandemic and miscellaneous challenges of young adulthood.

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