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What Does “Avoidance Mode” Feel Like?

The Association Between Avoidance Awareness and Negative Affect in the Moment

by

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Honors Thesis

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Abstract

For students in an academic setting, task avoidance is a common behavioral strategy used to cope with the unpleasant emotions associated with schoolwork and completing assignments. However, when this form of behavioral avoidance becomes a pattern, it has the potential to lead to negative long-term consequences—such as worse academic outcomes and increased stress. To counteract maladaptive behaviors such as task avoidance, a certain level of self-awareness of such behaviors may be necessary—even if this awareness leads to more negative emotions at first. To analyze the relationship between student task avoidance and emotions, the following study utilizes ecological momentary assessment (EMA) data from 101 undergraduate students to measure experiences of avoidance throughout the day in real-time and in participants' naturalistic setting. Multilevel modeling was used and all analyses were conducted in R using the lmer package. Results suggest that avoidance behavior has negative consequences for momentary emotional outcomes. Students who report more avoidance behavior in general are more likely to experience greater negative emotion and less positive emotion at a given moment. This is also the case when a given student is avoiding more than usual. Awareness of avoidance was also associated with these patterns. Although awareness of problematic behavior like avoidance is necessary to change such behavior, it might lead to negative emotional outcomes in the moment. The results of this study can be used to develop interventions designed to reduce avoidance behavior that also include strategies for coping with the temporary negative emotions that accompany awareness of this maladaptive behavior.

Keywords: Task avoidance, procrastination, awareness, negative affect, ecological momentary assessment

What Does “Avoidance Mode” Feel Like? The Association Between Avoidance Awareness and Negative Affect in the Moment

When faced with a difficult task or one that raises anxiety, people often avoid it. Task avoidance is one common strategy that students use when approaching and responding to challenges in academic settings. Most theories of task avoidant strategies suggest that individuals engage in this maladaptive behavior when faced by the prospect of failure (Nurmi et al., 2003). However, other research has suggested that the model of avoidance is broader than a fear of failure. One such study has found that engagement in behavioral avoidance provides immediate negative reinforcement, and is often preferred as an alternative to completing a task that would result in unpleasant emotions (Knouse & Mitchell, 2015).

Furthermore, this study investigated the function of overly positive automatic thoughts or avoidant thoughts (AT) during behavioral avoidance (Knouse & Mitchell, 2015). Researchers proposed that positively-valenced avoidant thoughts (i.e. “I do better waiting until the last minute,” “I’m a good person, so things are just going to work out for me”) serve to relieve momentary negative emotions in the short term but cause more harm in the long term through increasing patterns of behavioral avoidance and procrastination (Knouse & Mitchell, 2015). Therefore, behavioral avoidance, in conjunction with overly positive automatic thoughts in some cases, functions to regulate emotions as it provides a relief or escape from in-the-moment negative and/or aversive feelings.

Task avoidance is closely related to procrastination, or the lack of time spent working towards an upcoming target task (Lay et al., 1992). Consistent with this framework, research has further found that procrastination can be characterized as an emotion regulation strategy as opposed to a time management issue (Pychyl & Sirois, 2016). When individuals are faced with

aversive tasks, short-term mood repair takes priority, resulting in task avoidance or procrastination (Pychyl & Sirois, 2016). Therefore, individuals do not necessarily procrastinate because they are impulsive or lack self-discipline; rather, they procrastinate because they are using task avoidance as a means to regulate immediate negative emotions. According to early research on procrastination, it is noted that working on difficult tasks can stir up negative emotions like anxiety and worry, yet these negative feelings can be avoided by avoiding the task, or procrastinating (Ferrari, 1991; Solomon & Rothblum, 1984).

While procrastination can lead to seemingly positive immediate short-term outcomes like a decrease in negative emotions, it can lead to a wide array of long-term negative consequences. Academic procrastination is a form of procrastination where individuals unnecessarily postpone academic assignments. It is a common phenomenon among students and can lead to negative consequences like worse academic outcomes and increased stress. According to a study conducted by Ellis and Knaus (1977), over 70% of college students reported engaging in procrastination. More recent estimates indicate that 80-95% of college students engage in procrastination (O'Brien, 2002). According to a 2015 meta-analysis on academic procrastination, researchers found that across 33 studies (with a total of over 38,000 student participants), procrastination was associated with lower grades and worse academic performance (Kim & Seo, 2015).

The act of procrastination can become a strong habit that is difficult to break. For college students, the inability to overcome procrastination tendencies can cause problems. Tuckman (1990) suggested that student awareness of procrastination may help rectify these problems before they escalate. In addition, Ludwig et al. (2020) importantly point out that bringing awareness to one's behavior can produce a change in how that person values the learned but

maladaptive behavior, which can lead to self-regulatory shifts that produce sustainable behavior change without force. Further, being able to predict the tendency to procrastinate would be useful in helping students overcome it before it leads to long-term consequences. With this in mind, researchers have developed scales for the awareness of procrastination (Kohama, 2010). However, when students are aware of their procrastination, they may experience more negative emotions such as anxiety and guilt than if they were unaware of their avoidance. As such, awareness of avoidance may be necessary to address it, yet it may result in immediate negative emotional consequences. Thus, awareness of avoidance can be considered a “double-edged sword,” but it is important to realize that it is the first step in working towards active and effective coping strategies.

According to O’Brien (2002), over 95% of procrastinators wish to reduce their task avoidance tendencies. In order to develop effective strategies to combat procrastination, further research is needed to understand the predictors and consequences of task avoidance and avoidance awareness. Limited research has been conducted thus far on daily and in-the-moment procrastination behaviors. One such study, conducted by Wieland et al. (2018), utilized Ecological Momentary Assessment (EMA) to measure daily procrastination. EMA requires participants to report on events or experiences as they occur in daily life through the use of mobile phones or electronic diaries. EMA is beneficial as it has the ability to capture an individual’s behaviors and experiences in real-time and in their natural environment (Shiffman et al., 2008). This differs from other methods that use questionnaires administered in lab settings to capture events or experiences that happened in the past. In the study conducted by Wieland et al. (2018), researchers argued that there are certain qualifiers that constitute procrastinatory behavior (i.e. it must be irrational, unnecessary, and evoke subjective discomfort) and that such

behavior is dependent on personality as well as temporal and situational prerequisites. Therefore, typical retrospective self-report strategies for measuring procrastination are insufficient at differentiating procrastination from other forms of delay (such as intentional delays or forms of respite).

In order to address this issue, Wieland et al. (2018) developed the *ecological momentary assessment of procrastination scale* (e-MAPS) and evaluated its validity by recruiting 80 undergraduate students to engage in eight days of EMA data collection using e-diaries. The e-MAPS included items such as “*If I’m honest, putting off this task is unnecessary,*” and “*If I think about it, putting off this task makes me feel rather uncomfortable,*” (Wieland et al., 2018). In conclusion, Wieland et al. (2018) found that the method of EMA was the most useful and valuable in the indirect assessment of procrastination and that their e-MAPS scale was accurate in distinguishing procrastination from other delays. Further, in exploring the convergent validity of e-MAPS and the use of EMA to study procrastination, Wieland et al. (2018) found that the frequency of observed procrastination (measured through EMA) was higher for participants with a high tendency to procrastinate (measured through the Tuckman Procrastination Scale (Tuckman, 1991), a traditional self-report trait procrastination scale) than for participants with a low tendency to procrastinate. These findings relate to the current study as it provides evidence and justification for the use of EMA to study procrastination and avoidance. Wieland et al. (2018) was the first known study to assess the use of EMA as a method for studying procrastination. Building off of these studies and learning more about how avoidance and avoidance awareness functions in the moment will help to develop more understanding of what targeted and specific strategies to reduce these tendencies that are tailored to the individual experiencing the momentary avoidance.

To do so, the current study will analyze a subset of data collected for a larger study that utilized ecological momentary assessment (EMA) to analyze and assess positive automatic thoughts (Knouse et al., 2022). For this larger study, participants from the University of Richmond were recruited to fill out a baseline questionnaire regarding their personal characteristics before completing six days of EMA data collection. During the EMA portion, participants were asked in a survey sent out three times per day to report on their degree of task avoidance in-the-moment, what task they were avoiding, how important and urgent the task is, as well as how aware they were of their avoidance prior to being asked. The method of EMA, where participants are asked to report on their thoughts, behaviors, emotions, and experiences as they occur, allows researchers to analyze in-the-moment occurrences that take place in participants' natural environments (Shiffman et al., 2008). When compared to retrospective self-reports limited by recall bias and how behaviors change across time and context, EMA offers a promising alternative.

Using data collected from an EMA method, I explored the following research questions surrounding procrastination, avoidance, and negative affect in the moment: (1) Does severity of procrastination/avoidance predict intensity of negative emotion? (2) Regardless of how intense, does the degree of avoidance awareness predict negative emotion? (3) Does the relationship between procrastination and negative emotion intensify incrementally with greater awareness?

The following directional hypotheses will be tested:

1. Main Effect: Given past research on task avoidance that has found a relationship between delaying a task and negative outcomes, I expect that the degree of avoidance will be positively associated with negative affect at the same time point.

2. Main Effect: Since awareness of maladaptive behaviors such as avoidance may lead to more negative emotions such as anxiety and guilt, I expect that when avoidance is occurring, the degree of avoidance awareness will be positively associated with negative affect at the same time point.
3. Interaction: Further, I predict that the degree of avoidance awareness will moderate the relationship between avoidance and negative affect such that instances with higher awareness will show a stronger positive relationship.

In addition to this hypothesis testing, I conducted exploratory analyses on the role of avoidance and avoidance awareness on momentary experiences of positive affect and anxiety.

Method

Participants

Data were collected from 102 smartphone-owning college student volunteers aged 18-22 at the University of Richmond during the Spring 2021 academic semester; however, one participant was excluded from the analyses because they only completed one EMA survey resulting in an analyzed sample of 101. The mean age of the sample was 19.70 years ($SD = 1.15$). With respect to gender identity, 73.3% self identified as “Cis-Female,” “Female/Woman,” and “She/Her/Hers”, 22.8% categorized themselves as “Cis-Male,” “Male,” and “He/Him/His”, 1.0% identified as non-binary, and 3.0% had missing data for this item. With respect to race, 61.4% of the sample were white/caucasian, 11.9% were Black, 21.8% were Asian, 1.0% were Pacific Islander, and 9.9% endorsed “Other.” (Note that percentages total to greater than 100% because participants could choose all that apply.) 17.% of the participants were first-generation college students (i.e., neither parent completed a Bachelor’s degree), and 61.4% reported

working for pay while in school. See Table 1 for additional sample demographics and descriptive statistics.

Table I. Sample Demographics.

<i>N</i>	101
Age (SD)	19.70 (1.15)
Gender (%)	
Male	23 (22.8)
Female	74 (73.3)
Non-Binary	1 (1.0)
Missing	3 (3.0)
Race (%)	
White/Caucasian	62 (61.4)
Black/African American	12 (11.9)
Asian	22 (21.8)
Pacific Islander	1 (1.0)
Native American	0 (0)
Other	10 (9.9)
Ethnicity (%)	
Hispanic	14 (13.9)
Non-Hispanic	87 (86.1)
Sexual Orientation (%)	
Asexual	6 (5.9)
Bisexual	10 (9.9)
Gay/Lesbian	3 (3.0)
Heterosexual/Straight	78 (77.2)
Pansexual	3 (3.0)
Queer	2 (2.0)
Prefer Not to Answer	2 (2.0)
First-Gen College Student (%)	
Yes	18 (17.8)
No	71 (70.3)
Missing*	12 (11.9)

Work for Pay (%)	
Yes	62 (61.4)
No	27 (26.7)
Missing*	12 (11.9)

Note. Participants were able to check more than one race and sexual orientation category. *Some entries for these variables were missing because they were added shortly after data collection began.

EMA Measures

Note: The measures described below were a subset of all of the measures in the larger study.

Avoidance. Participants specified the extent (1 = *not at all*, 5 = *a great deal*) to which they were currently putting off doing something they needed to accomplish at each momentary assessment. If they gave a response other than “not at all,” they were also asked to choose the best answer for what it was they were putting off (“schoolwork,” “household chore,” “task for an extracurricular activity,” “task for work or internship,” “healthy behavior,” “communicating with someone,” or “something else”). Participants were then asked to specify the urgency of the avoided task (1 = *not urgent*, 5 = *very urgent*) and its importance (1 = *not important*, 5 = *very important*).

Avoidance Awareness. Participants who indicated some current avoidance (i.e., 2-5) were also asked to specify the extent to which they were aware of their avoidance prior to being asked about it in the survey (1 = *not at all aware*, 3 = *very aware*).

Mood. Items were drawn from the Positive and Negative Affect Schedule-Expanded form (PANAS-X; Watson & Clark, 1994) to assess the mood of each participant at each separate momentary assessment. Participants were asked to specify the extent (1 = *not at all*, 5 = *extremely*) to which they were currently feeling sad (*sad, lonely*), anxious (*jittery, nervous*), angry (*angry, hostile*), and positive moods (*happy, excited*). Ratings for sad, anxious, and angry

moods were averaged to yield one score reflecting negative mood. Ratings for the two positive mood items were averaged together to yield an overall measure of positive mood. Ratings for the two anxious mood items were averaged together to yield a measure of anxious mood.

Recruitment and Screening

Participants from the University of Richmond were recruited through flyers, email advertisements, word-of-mouth, and social media postings. To see if they were eligible for the study, participants filled out the Qualtrics screening survey, which required that all participants were aged 18 or above, studied on-campus at the University of Richmond, and owned a smartphone. If they were eligible, participants then scheduled their baseline visit and post visit sessions via Zoom. Data was collected during the spring semester of 2021 and continued until 102 participants with both baseline and post visit data were obtained.

Procedure

Study procedures were approved by the Institutional Review Board at the University of Richmond. Study procedures, measures, and analyses were also pre-registered on Open Science Framework: https://osf.io/2bmvvc/?view_only=c49fd12fadfe4a0abac4fc244f967600.

Baseline and EMA Data Collection. Participants completed a baseline visit with a research assistant via Zoom where they provided consent, were asked to complete self-report surveys, and informed regarding what to expect and how to set up SurveySignal for EMA data collection. After baseline, participants completed six days of EMA data collection. During EMA data collection, participants received three text messages per day with a link to a Qualtrics survey—one each between 10AM-2PM, 2PM-6PM, and 6PM-10PM. Surveys were sent a minimum of two hours apart and participants had two hours to respond to each survey prompt before the link became inactive. Reminder texts were sent 30 minutes after each text. A post visit

was conducted one week after the baseline visit, where participants were debriefed and provided with resources.

Compensation. Participants then received compensation for their participation in the study—\$20 Amazon Gift Code for completing the baseline and post visits and an additional \$0.50 for each EMA survey completed (up to \$29 total payment). In addition, participants who completed more than 75% of the surveys were also entered into a raffle to win one of two \$100 Amazon Gift Cards upon completion of the study.

Plan of Analysis

Multilevel modeling was used to test the hypotheses due to the hierarchical structure of the data. Data were structured within three levels: Occasion (Level 1), Day (Level 2), and Participant (Level 3). Avoidance, a predictor variable at Level 1, was centered within-person. When testing the effects of person-centered avoidance, both the within-person centered variable and each participant's mean was included in order to parse the within vs. between person variance associated with avoidance at Level 1 (Enders & Tofighi, 2007).

Analyses were conducted in R using the lmer package to conduct multilevel modeling using full information maximum likelihood estimation for continuous outcomes. For each dependent variable (pre-registered: Negative emotion; exploratory: Positive emotion and anxiety), a null model was calculated to estimate the proportion of variance at each level and confirm that multilevel modeling was the appropriate analytic approach for the data (i.e., that there was substantial variance present at each level). Although none of the key variables of interest were Level 2 (Day) variables, Level 2 was included for two reasons. First, null models indicated substantial variance at this level in the data (see Table 2) and excluding Level 2 of nesting in the model ran the risk of redistributing the variance at that level to Levels 1 and 3 and

reducing power by inflating the standard error of Level 1 estimates (Moerbeek, 2004). Second, prior evidence suggests that day of the week—particularly weekend (1 - Friday and Saturday) vs. weekday (0 - Sunday through Thursday)—might account for significant variance in outcome variables (e.g., Ryan et al., 2010). Fridays and Saturdays were designated as weekends, given college student patterns of socializing and alcohol use observed in prior studies (Del Boca et al., 2004; Maggs et al., 2011) as well as local norms. Thus, when possible, Level 2 and the random effects of weekend were included in the model. Level 1 predictors were included as random effects, allowing the strength of the effect of these variables to vary across higher levels. Some models, however, failed to converge using this approach. In those cases, the recommendations of Barr et al. (2013) were followed, and effects were fixed systematically in each model based on degree of theoretical interest until convergence was obtained. Specifically, the slopes for WKND were fixed first because that variable was not of theoretical interest. If this model did not converge, the slopes of other variables based on theoretical importance were fixed such that the most important fixed effects also had corresponding random slopes. Finally, some models required a removal of Level 2 from the model. In all cases, the text and tables indicate which model was calculated for each outcome.

Per the pre-registered analyses (<https://osf.io/uvmgt>), I first tested whether avoidance (Level 1) predicted negative emotion. Next, I tested whether avoidance awareness (Level 1) predicted negative emotion. Effects on positive emotion and anxiety were also analyzed in a similar exploratory fashion. Next, I then tested whether avoidance awareness increased the strength of the relationship between avoidance and negative emotion in the moment. For exploratory purposes, I also tested the interaction of avoidance and avoidance awareness on positive emotion and anxiety.

Table 2. Null models for each outcome variable (negative emotion, positive emotion, and anxiety).

Outcome Variable	Level 2 Variance (Day)	Level 3 Variance (Person)
Negative Emotion	.14	.54
Positive Emotion	.18	.40
Anxiety	.10	.52

Results

Regarding the EMA dataset, it is important to note that duplicate surveys were present in the dataset—most often this would occur when a participant clicked on the survey link in a reminder text, completed the survey, and then went back and clicked on the link in the original text message and completed the survey again. 82 duplicate surveys were identified in the dataset (4.7%) and deleted, keeping the survey that was earlier and therefore closer in time to the original survey prompt. In addition, as mentioned in the Participants section, one participant was identified who only completed a single EMA survey. Given guidelines for EMA that suggest at least 5 data points per participant (Bolger & Laurenceau, 2013), this participant was excluded from EMA analyses. This resulted in a total of 1668 EMA data points from 101 participants, where the number of surveys completed ranged from 6 to 18 per participant with a mean of 16.51 ($SD = 2.61$). As related to the topic of this study, the majority of avoided tasks reported by students was schoolwork related (74%).

Momentary Relationships between Avoidance and Emotion

Main effect. As shown in Table 3, as predicted, the degree of avoidance was positively associated with negative emotion. This relationship was significant for both the momentary level (person mean centered variable) ($b = .04$, $SE = 0.01$, $p < .001$) and the person level (each

person's grand mean) ($b = .40, SE = 0.05, p < .001$). In other words, when someone was engaging in more avoidance behavior than usual for them, they were more likely to experience negative emotion at the same time point. Further, people who report more frequent avoidance in general are also more likely to experience greater negative emotion at a given moment.

In exploring the relationship between avoidance and positive emotion, a negative association between the two variables was found at the momentary ($b = -.06, SE = 0.02, p < .01$) and person level ($b = -.22, SE = 0.09, p < .01$). In other words, when someone was engaging in more avoidance behavior than usual for them, they were less likely to experience positive emotion at the same time point. In addition, people who report more frequent daily avoidance in general were more likely to report less positive emotion at a given moment.

In exploring the relationship between avoidance and anxiety, a positive association between the two variables was found at the momentary ($b = .04, SE = 0.02, p < .05$) and at the person level ($b = .63, SE = 0.07, p < .001$). Therefore, when someone was engaging in more avoidance behavior than usual for them, they were more likely to experience anxiety at the same time point. In addition, people who report more frequent avoidance in general are also more likely to experience greater anxiety at a given moment.

Momentary Relationships between Avoidance Awareness and Emotion

Main effect. As shown in Table 3, as predicted, avoidance awareness was positively associated with negative emotion ($b = .07, SE = 0.03, p < .05$). Thus, the more someone was aware of their avoidance behavior, the more likely they were to experience negative emotion at the same time point.

In exploring the relationship between avoidance awareness and positive emotion, a slight negative association was found ($b = -.06$, $SE = 0.05$, $p > .10$), but the relationship was nonsignificant.

In exploring the relationship between avoidance awareness and anxiety, a positive association was found ($b = .11$, $SE = 0.05$, $p < .05$). Thus, the more someone was aware of their avoidance behavior, the more likely they were to experience anxiety at the same time point.

Interaction between Avoidance and Avoidance Awareness

It was originally predicted that avoidance awareness would moderate the relationship between avoidance and negative emotion, such that instances with higher awareness would show a stronger positive relationship. As shown in Table 3, this effect was not significant.

Exploratory analyses did not detect significant moderation effects of avoidance awareness on the relationship between avoidance and positive emotion or anxiety.

Table 3. Avoidance and Avoidance Awareness Predicting Momentary Emotional Outcomes.

EMA Outcome	b (SE) Momentary Avoidance Level (CWC)	b (SE) Person Avoidance Level (GM)	b (SE) Avoidance Awareness	Interaction Avoidance*Avoidance Awareness
Negative Emotion	.04*** (0.01) ¹	.40*** (0.05) ¹	.07* (0.03) ¹	.02 (0.03) ¹
Positive Emotion	-.06** (0.02)	-.22** (0.09)	-.06 (0.05) ¹	.003 (0.05) ¹
Anxiety	.04* (0.02)	.63*** (0.07)	.11* (0.05)	.07 (0.04)

Note. Fixed effects for weekend (Level 2) was included in these models. ¹Effects were fixed for momentary avoidance (Level 1).

*** $p < .001$, ** $p < .01$, * $p < .05$

Discussion

According to the results of this study, avoidance and avoidance awareness can be characterized as significant predictors of momentary emotional experiences. Specifically, the results suggest that avoidance behavior has negative consequences for momentary emotional outcomes – the more one avoids a task, the more negative emotions and less positive emotions they will experience. Additionally, people who report more avoidance behavior in general are more likely to experience greater negative emotion and less positive emotion at a given moment. Further, although awareness of problematic behavior like avoidance is necessary to change such behavior, it might lead to negative emotional outcomes in the moment. Lastly, many of our results are significant at the moment level, providing support for the hypothesis that EMA is a useful metric of analyzing momentary behavioral and emotional experiences.

There are several possible explanations for the results of this study and the negative emotional outcomes associated with avoidance. The first is that students may be aware of the negative long-term consequences of academic task avoidance and procrastination as outlined in past research (Kim & Seo, 2015). Therefore, students may experience negative emotions while avoiding schoolwork, for example, because they are aware that this behavior may lead to increased stress and lower academic performance down the line. Secondly, avoidance and procrastination behavior is looked down upon and widely regarded by American society and American academic institutions as maladaptive and unproductive. Thus, students enrolled in American academic institutions may feel a sense of shame, guilt, and/or anxiety whenever they are engaging in task avoidance and academic procrastination. These theories may serve to explain the negative emotions surrounding avoidance behavior; however, student awareness of these factors is often not enough to change their behavior as it can easily become habitual.

Regarding prior literature on the topic, it is unclear from the results of this study whether avoidance behavior is serving as an emotion regulation strategy as suggested previously by both Knouse and Mitchell (2015) and Pychyl and Sirois (2016). To gauge whether avoidance functions to relieve negative emotions surrounding a difficult task, we would have to evaluate beyond the concurrent emotional experiences associated with avoidance behavior (the goal of this study) and investigate the consequences of avoidance behavior. To do so, we could test whether avoidance behavior leads to less negative emotions and more positive emotions two hours later, for example. Since this study only considers avoidance and its impact on emotional outcomes at the same time point, conclusions regarding the function of avoidance as an emotion regulation strategy cannot be evaluated. With that being said, the results of this study provide valuable insights into the immediate concurrent experiences of avoidance behavior.

In turn, knowledge and awareness of the aforementioned immediate negative emotional experiences of avoidance behavior can be applied to behavioral interventions designed to target avoidance in the moment. Instead of solely placing an emphasis on the long-term consequences of avoidance as a means for behavior change, interventions should also consider the short-term impacts like increased negative emotions and heightened anxiety in order to further deter students from putting off schoolwork. If a student can shift their thinking and continually begin to remind themselves they will feel worse if they start procrastinating a task, this might help to break the habit of task avoidance. Further, while awareness may be the first necessary step towards countering avoidance, it is also associated with negative emotion. Therefore, interventions designed to reduce avoidance behavior should also include strategies for coping with the temporary negative emotions that accompany awareness of this maladaptive behavior.

Such emotion regulation strategies could include mindfulness, stress-reduction, and cognitive reframing practices.

While the results of this study provide valuable insights, there are several limitations that need to be taken into consideration. First, the current study relies solely on participant self-report measures. While EMA reduces the risk of retrospective recall biases and memory biases associated with traditional self-report studies, factors such as social desirability may still influence results. For example, participants aware of the negative associations associated with avoidance behavior may have occasionally been reluctant to admit to their procrastination when asked through an EMA survey (even though information is confidential and de-identified). Regarding the measures themselves, it is important to mention the fact that avoidance awareness is a difficult concept to measure due to reactivity. Asking participants about their avoidance in turn makes them aware of it, and it may become difficult for them to think back in time to how they were thinking or feeling prior to being asked about their level of avoidance awareness. Lastly, the results of this study can only be applied to undergraduate students at an American institution—they are not generalizable to other age groups or countries as the nature and value of task avoidance may differ.

The analyses conducted in this study merely scratch the surface of what can be measured in terms of student task avoidance and there are many future areas to be explored. For one, this study asked what task students were avoiding in the moment, but it did not ask what they were doing *instead*. Asking what activity or tool students are using to procrastinate would be helpful information when designing interventions to reduce avoidance behavior. Considering current times and the convenience and accessibility of social media, future studies will consider social media and internet use as tools for avoidance and procrastination. For students now, the habit of

social media use and the habit of procrastination may go hand in hand. Current literature focusing on this relationship explores the enticing features of social media platforms (like notification features that encourage constant connection) that have the capacity to trigger procrastination and avoidance behaviors (Alblwi et al., 2019). Other studies have found that internet and social media addiction significantly predict academic procrastination more than any other factor (Nwosu et al., 2020). To further explore the relationship between social media use and avoidance, future research will use both EMA and smartphone sensing data to collect information regarding participant media use and screen time, thus providing valuable insights into the most common tools and applications for media procrastination. Gaining awareness of what forms of social media are most likely to contribute to avoidance will be beneficial in developing interventions that limit or block certain media use to reduce procrastination.

Overall, the results of this study contribute to the existing field of avoidance and procrastination literature by tracking and analyzing the momentary emotional consequences of such behavior and by further establishing EMA as a valuable method regarding the measurement of daily task avoidance. The next time someone finds themselves aware of their avoidance and in “*avoidance mode*,” they will most likely experience negative emotions. However, there is hope—recognizing the relationship between avoidance and avoidance awareness on experiences of negative emotion is helpful in developing more effective strategies designed to deal with these emotions and reduce the maladaptive behavior over time.

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