

A Personality-Based Perspective on Academic Procrastination: Levels, Types, and Coping Strategies Among Medical Students

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ABSTRACT: Academic procrastination is a prevalent issue among students, including pre-clinical medical students. This study explored the level of students' procrastination, the types of procrastinators they identified as, and the strategies they used to cope, all examined through the perspective of their personality traits. A total of 101 pre-clinical students took part in a cross-sectional survey, which utilized four instruments: Lay's Procrastination Scale, the Procrastination Coping Strategies Inventory, the Procrastinator Type Questionnaire, and the Ten Item Personality Inventory. Results showed that over 80% of participants reported moderate to high levels of procrastination, with most identifying as perfectionists, crisis-makers, and dreamers. Cognitive strategies were the most commonly used method to manage procrastination, followed by behavioral and emotive strategies. Findings also indicated significant differences in procrastination levels based on the personality traits of agreeableness and openness to experience. Meanwhile, the types of procrastinators differed significantly according to emotional stability, with certain types more prevalent among students with lower levels of this trait. Students with higher openness to experience tended to use a combination of coping strategies, rather than relying on a single approach. These findings suggest that academic procrastination among medical students varies across personality traits in terms of its level, type, and coping strategies. Understanding these variations may help inform the development of more personalized and targeted academic support initiatives.

KEYWORDS: academic procrastination, coping strategies, medical students, personality traits, procrastinator types

I. INTRODUCTION

In daily life, individuals are constantly engaged in various activities, tasks, or work that must be performed or completed. However, delays in initiating or finishing these responsibilities are common. Postponing tasks or duties that should be completed in a timely manner can lead to negative consequences not only for the individuals themselves but also for others who are involved in or affected by the task.

This behavior is known as procrastination, a topic that has received extensive attention in scientific studies over the past few decades. Procrastination has been discussed across various fields such as psychology, education, and health. In psychology, for instance, procrastination has been examined in relation to individual personality traits (Ocansey et al., 2020; Steel & Klingsieck, 2015) and associated psychological issues (Grunschel, 2012). In the field of education, it is often linked to academic performance (Hayat et al., 2020), while in health research, procrastination is studied in relation to the delay of health-promoting behaviors (Kroese & de Ridder, 2015).

A study by Foroux (2019) found that procrastination is practiced by various groups, including employees, entrepreneurs, students, unemployed individuals, and retirees. Among workers, 80% reported procrastinating for 1–4 hours, while among students, the prevalence was 67.3%. Notably, a higher percentage of students (21.6%) reported procrastinating for more than five hours, compared to only 3.3% among workers and 3.6% among entrepreneurs.

Students who tend to procrastinate may experience substantial disadvantages. Hayat et al. (2020) indicated that procrastination negatively affects students' learning, attitudes, and academic performance. The mental health impacts of procrastination include increased levels of frustration, stress, anxiety, and in some cases, depression and low self-esteem (Tice & Baumeister, 1997).

A study by Daryani et al. (2021) on a sample of medical students revealed that more than half of the participants exhibited above-average levels of procrastination. In another study, Hayat et al. (2020) found that 29.25% of students engaged in academic procrastination, and 47.9% of those with moderate levels of procrastination reported that it caused problems for them. Other

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research has found negative correlations between academic procrastination and academic achievement (Akpur, 2020), as well as academic performance (Kim & Seo, 2015). Academic procrastination has also been shown to influence emotional state, mood, and both physical and mental well-being. Additional consequences include negative self-concept and prolonged duration of study (Grunschel et al., 2012).

Academic procrastination may be caused by several factors, including poor time management, self-doubt, and irrational beliefs about learning, as well as low academic performance and well-being (Atalayin et al., 2018). Other contributing factors include fear of failure, task aversion, test and classroom anxiety, self-concept issues, fear of seeking help, and fear of instructors (Onwuegbuzie, 2004). Psychological antecedents such as the personality trait of conscientiousness have also been linked to academic procrastination (Ljubin-Golub et al., 2019).

Several researchers have identified personality traits as internal triggers and significant predictors of academic procrastination (Ocansey et al., 2020). Numerous studies have explored the influence of personality traits on procrastination, including those by Steel & Klingsieck (2016) and Kim & Seo (2015). Research by Ocansey et al. (2020) on a sample of university students in Ghana found a significant positive correlation between neuroticism and academic procrastination, indicating that individuals with high neuroticism scores are more likely to procrastinate. Meanwhile, the traits of openness, conscientiousness, extraversion, and agreeableness showed negative correlations with academic procrastination.

A procrastinator is often perceived as lazy and lacking in self-regulation. However, procrastination can be classified into two forms. The first involves individuals who do not intend to delay but end up doing so due to poor time management. The second includes individuals who manage their time efficiently but deliberately choose to delay certain tasks in order to concentrate better or prioritize more important tasks. These two forms are referred to as passive and active procrastination (Zohar et al., 2019).

Procrastination, particularly when it leads to adverse consequences and becomes problematic for individuals, requires intervention aimed at modifying or reducing the behavior. Several studies have discussed approaches to address or change procrastination behavior, including psychological methods such as cognitive, emotive, and behavioral techniques (Knaus, 2010), as well as self-management strategies involving practice and self-regulation (Basco, 2010; Combs, 2012). Erde, as cited by Snehitha et al. (2021), proposed strategies for overcoming procrastination, which include addressing avoidance behaviors, cognitive restructuring, and enhancing willpower.

Research on procrastination, particularly among medical students in the pre-clinical phase in Indonesia, remains limited. At the Faculty of Medicine, Cenderawasih University, a significant number of undergraduate students have taken longer than the expected time to complete their studies. This issue is potentially related to academic procrastination behavior among students in the pre-clinical phase. The present study focuses on the levels of procrastination, the types of academic procrastinators, and the strategies employed to cope with or reduce such behavior. While previous studies have identified psychological techniques and self-management as possible solutions, the researcher argues that it is important to map the techniques or strategies used by specific types of procrastinators based on their dominant personality traits. The findings of this study are expected to contribute to the development of educational programs aimed at addressing academic procrastination among students.

The aim of this study is to explore the profiles of academic procrastinators and the strategies used to overcome procrastination, examined from the perspective of personality traits among medical students. The specific objectives of this study are to: (1) identify the level of procrastination among students, the types of procrastinators, and the strategies used to manage procrastination; (2) examine differences in procrastination levels based on personality traits; (3) examine differences in procrastinator types based on personality traits; and (4) examine differences in procrastination coping strategies based on personality traits.

II. LITERATURE REVIEW

A. Procrastination

Procrastination is defined as the intentional delay of tasks despite awareness of potential negative consequences (Steel, 2007). It is regarded as a dispositional trait with cognitive, behavioral, and emotional components (Schraw et al., 2007). Procrastinators tend to engage in distracting activities to avoid task completion (Tibbett & Ferrari, 2015).

A central feature of procrastination is the gap between intention and action. Ferrari (1993) distinguished between functional procrastination (used to gain clarity or reduce stress) and dysfunctional procrastination, which involves irrational delays in completing high-priority tasks. Chronic procrastination is associated with decreased self-esteem, unhealthy coping behaviors, and psychological distress such as anxiety, insomnia, and depression. In academic settings, high levels of procrastination correlate with poor goal-setting, lower academic performance, and negative attitudes toward learning (Hayat et al., 2020).

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Procrastination is closely related to personality traits, particularly low self-control. Individuals with poor self-regulation are more prone to delaying tasks, not necessarily by deliberate choice, but due to being easily distracted or overwhelmed by competing activities. These individuals tend to prioritize immediate gratification over long-term benefits (Steel, 2007). Procrastination also shows a negative correlation with conscientiousness, a trait characterized by goal-directed persistence, which conceptually overlaps with procrastination itself.

Meta-analytic findings indicate that procrastination is more common among individuals with low self-efficacy and low self-esteem, often serving as a defense mechanism against perceived failure (Steel, 2007). This behavior is not necessarily due to a lack of skills, but rather a self-imposed limitation designed to protect one's ego. Additionally, task aversion, particularly in academic settings, is a significant predictor of procrastination. People tend to delay tasks they find unpleasant or anxiety-inducing, often due to fear of failure (Ferrari & Tice, 2000).

Snehitha et al. (2021) summarized eight key psychological factors that contribute to procrastination:

- a) Fear of failure: Unrealistic expectations or anxiety about making mistakes can prevent task initiation.
- b) Self-handicapping: Individuals intentionally delay to externalize the reason for failure.
- c) Low self-efficacy: A lack of belief in one's capabilities can reduce motivation to begin or complete tasks.
- d) Depression: Symptoms such as fatigue, reduced concentration, and lack of interest lead to avoidance behavior.
- e) Impulsivity: Spontaneous decisions to delay, often ignoring long-term consequences, are linked to procrastination.
- f) Lack of persistence: Difficulty maintaining effort in the face of obstacles often results in task avoidance.
- g) Low motivation: Externally motivated individuals are more likely to delay compared to those with intrinsic motivation.
- h) Perfectionism: Unrealistic standards can result in avoidance when perfection is unattainable, with delay justified by rationalized excuses.

According to Devi and Dhull (2017), procrastinators often exhibit an overly optimistic perception of their ability to complete tasks under tight deadlines. This is typically accompanied by verbal assurances that everything is under control, leading to a false sense that there is no need to start immediately. At this stage, individuals believe that there is still ample time. Eventually, substantial effort is directed toward completing the task as the deadline approaches, resulting in a sudden surge of activity. This last-minute burst of energy fosters the inaccurate belief that one "works best under pressure." In reality, progress occurs only because there is no longer an alternative, and by this point, the individual has lost the freedom to manage the task effectively. Chronic procrastination ultimately leads to decreased productivity and reduced personal agency.

Procrastinators tend to display several characteristic behaviors, including: (a) chronic lateness; (b) difficulty initiating tasks; (c) frequent complaints about how difficult or busy they are; (d) lack of a structured system or proper planning; (e) failure to complete what they start; (f) inability to prioritize tasks effectively; (g) being mentally overwhelmed with too many thoughts and an overextended to-do list; (h) forgetting important responsibilities; and (i) compulsive checking of social media and emails, often without any meaningful update to review.

Sapadin and Maguire (1997) categorized procrastinators into six distinct types:

- (1) The Perfectionist: This type is preoccupied with fear of not meeting excessively high standards. The desire to execute tasks flawlessly often results in self-criticism and the perception that their work is never good enough. Consequently, they delay starting or completing tasks, sometimes indefinitely. Their pursuit of perfection leads to excessive effort that ultimately hinders productivity.
- (2) The Dreamer: Dreamers generate many ambitious ideas but rarely follow through. They tend to spend an excessive amount of time preparing, gathering materials, reading extensively, or planning meticulously, yet the actual task remains incomplete due to over-preparation and avoidance.
- (3) The Worrier: Persons with this type avoid decision-making and resist change due to fear of the unknown. They often believe that their work will not meet expectations and fear failure. This anxiety leads them to delay task execution as a form of self-protection.
- (4) The Crisis-Maker: This type deliberately postpones tasks until the last minute, claiming that they perform best under pressure. However, the tendency to rely on looming deadlines often results in rushed work or incomplete tasks. The
- (5) Defier: Defier type-people resist external expectations, deadlines, and authority. They refuse to comply with instructions or suggestions, viewing procrastination as an act of autonomy or rebellion rather than a performance issue.
- (6) The Overdoer: Overdoers take on excessive responsibilities and have difficulty setting boundaries or saying "no." As a result, they struggle with time management and resource allocation, often leaving insufficient time to complete essential tasks and consequently resorting to delay.

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Efforts to overcome procrastination involve three key components: overcoming avoidance, implementing cognitive structuring, and strengthening volitional control (Eerde, 2003, as cited in Snehitha et al., 2021).

(1) Addressing Avoidance

Increasing self-efficacy can reduce the likelihood of avoidance, especially when procrastination stems from perceived incompetence. Making tasks more engaging in ways other than increasing time pressure may help in such cases. It is also possible to train competencies relevant to self-regulation in general, such as self-knowledge, self-monitoring, feedback-seeking, and awareness of the consequences of one's behavior.

(2) Cognitive Structuring

Planning is an effective strategy to manage distractions. Plans can involve three components: standards, monitoring, and strength. These include designing a structure for self-control, or considering external sources of control such as social feedback and environmental reinforcement. Time awareness is a crucial element in forming realistic plans. Mental strategies suggest that planning can occur cognitively and need not be written down, as long as the mental simulation is concrete, specific, and focuses on the process of goal achievement rather than merely its outcome.

(3) Strengthening Volition

Enhancing the perceived immediacy and value of the avoided task, while reducing the salience and appeal of distractions, can support task initiation. When a task is seen as boring, strategies that increase interest may be employed. Tasks perceived as too complex or demanding can be made more manageable by setting proximal sub-goals and shorter deadlines. Reducing the availability of distractions is generally more achievable through inhibitory strategies. If distractions cannot be prevented, redirecting attention to alternative thoughts may be more effective than engaging with irrelevant stimuli.

B. Personality Trait

Trait refers to the dimensional differences among individuals in their tendencies to exhibit particular thoughts, feelings, and actions. The more traits a person possesses, the greater the likelihood that they will display corresponding behaviors, and consequently, the more frequently such behaviors may be observed. Traits are general dispositions that find expression in a variety of specific actions. Traits can guide individuals to construct entirely new behaviors, sometimes after deliberate thought and planning (McCrae & Costa, 2006). Traits are not directly observable; rather, they must be inferred from known patterns of behavior and experience that serve as indicators of the traits (McCrae et al., 2000, as cited in Matthews et al., 2009).

The Big Five personality traits represent the most fundamental dimensions of human personality, which determine characteristic patterns of thinking, feeling, and behaving. The five broad factors and their defining characteristics are Openness to Experience (O), Conscientiousness (C), Extraversion (E), Agreeableness (A), and Neuroticism (N). Each of the five dimensions is a composite of several distinct yet closely related traits, describing a continuum between two opposing poles (Novikova, 2013).

Table 1: Descriptions of the Big Five Personality Traits (Novikova, 2013; Soto, 2018)

Trait	Description
Openness to Experience	Differences in imagination, curiosity, and openness to new ideas. Highly open individuals are imaginative, artistic, emotionally rich, and eager to explore new experiences. Those low in Openness are conventional, narrow in interests, and less receptive to change.
Conscientiousness	Self-discipline, organization, and goal-oriented behavior. Highly conscientious individuals are orderly, reliable, and persistent, preferring structure and completing tasks effectively. Those low in Conscientiousness tend to be careless, disorganized, and less consistent in meeting responsibilities.
Extraversion	Differences in sociability, assertiveness, and energy. Extraverted individuals are outgoing, energetic, and enjoy social interactions, often experiencing positive emotions. Introverted individuals are more reserved, independent, and prefer quiet, low-stimulation environments.
Agreeableness	Compassion, trust, and concern for others. Agreeable individuals are kind, empathetic, cooperative, and respectful, while those low in Agreeableness tend to be skeptical, antagonistic, and more competitive than cooperative.
Neuroticism (vs. Emotional Stability)	Emotional reactivity and sensitivity to stress. Highly neurotic individuals often experience anxiety, mood swings, and irritability, while those low in Neuroticism are calm, resilient, and emotionally stable even in stressful situations.

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III. RESEARCH DESIGN

This study used a cross-sectional quantitative design, wherein variables were measured at a single point in time. The purpose was to describe the level of academic procrastination, the types of procrastinators, the dominant strategy for overcoming procrastination, and to examine differences in procrastination level, types and strategies based on personality traits.

Data were collected via a structured questionnaire consisting of four instruments:

- (1) Lay Procrastination Scale for Students (Lay, 1986), adapted into Indonesian, with validity scores ranging from 0.447–0.741 and a Cronbach's alpha of 0.805. The scale includes 11 items with a 5-point Likert response. Scores were categorized as low (<26), moderate (26–39), and high (≥ 40) based on mean and standard deviation calculations.
- (2) Procrastination Coping Strategies Inventory, includes 21 valid items ($r = 0.519$ – 0.806 , Cronbach's alpha of 0.951) across three domains: cognitive (7 items), emotive (6 items), and behavioral (8 items), with a 4-point scale (0–3). The dominant coping strategy was identified based on the highest average score.
- (3) Procrastinator Type Questionnaire, consisting of one item asking respondents to self-identify with one of six procrastinator types: Perfectionist, Dreamer, Worrier, Crisis-Maker, Defier, or Overdoer.
- (4) Ten Item Personality Inventory (TIPI) Indonesian version (Akhtar, 2018), which measures five traits: extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience. Responses were rated on a 7-point Likert scale.

This study involved 101 student participants who volunteered to take part. The sampling method used was non-probability incidental sampling. The participants were active pre-clinical medical students who were not on academic leave at the time of data collection. The characteristic of respondents are presented in table 2:

Table 2: Description of respondents' characteristic

Characteristic	Category	f	%
Ethnicity	Papua	36	35.6
	Non-Papua	55	54.5
	Mixed (Papua and non-Papua)	10	9.9
	N	101	100
Gender	Male	26	25.7
	Female	75	74.3
	N	101	100
Semester	Second	34	33.7
	Fourth	25	24.7
	Sixth	15	14.9
	Eight	19	18.8
	Tenth	8	7.9
	N	101	100

Among the 101 respondents, a majority were non-Papuan (54.5%), compared to Papuan students (35.6%) and those of mixed ethnicity (9.9%). In terms of gender, female students made up a significantly larger proportion (74.3%) compared to male students (25.7%). Regarding academic level, most students were in their second semester (33.7%), followed by the fourth semester (24.7%), eighth semester (18.8%), sixth semester (14.9%), and tenth semester (7.9%).

IV. RESULTS AND DISCUSSION

Academic Procrastination: Levels, Types, and Strategies

The frequency distribution of the variable categories including level of procrastination, types/styles of procrastinators, and the strategies used by students to cope with procrastination is presented in the following table:

Table 3: Levels, Types of Academic Procrastinator, and Strategies to Overcoming Procrastination

Variable	Category	f	%
Level of Procrastination	Low	19	18.8
	Moderate	75	74.3

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Variable	Category	f	%
	High	7	6.9
	N	101	100
Type of Procrastination	Perfectionist	32	31.7
	Dreamer	26	25.7
	Worrier	12	11.9
	Crisis-Maker	27	26.7
	Defier	3	3.0
	Overdoer	1	1.0
	N	101	100
Dominant Strategy for Overcoming Procrastination	Cognitive (C)	42	41.6
	Emotive (E)	20	19.8
	Behavior (B)	22	21.8
	C – E	4	4.0
	C – B	8	7.9
	E – B	2	2.0
	C – E – B	3	3.0
	N	101	100

The level of procrastination showed a mean score of 30.33 with a standard deviation (SD) of 6.582. A total of 81.2% of the research sample exhibited moderate to high levels of procrastination, with the majority (74.3%) falling within the moderate category. The most common procrastinator types were the perfectionist (31.7%), followed by the crisis-maker (26.7%) and the dreamer (25.7%). In managing procrastination behavior, 41.6% of participants employed cognitive strategies, while 21.8% used behavioral strategies, and 19.8% used emotive strategies. A number of participants used combination strategies, such as cognitive–emotive, cognitive–behavioral, emotive–behavioral, and a mix of all three.

The findings indicate that most procrastination behavior among pre-clinical medical students occurs at a moderate level. This suggests that academic procrastination remains a common issue within this population. Similarly, Chehrzad et al. (2017) reported moderate levels of academic procrastination among medical students. Shah et al. (2017) also found that nearly half of their medical student sample were classified as procrastinators, as indicated by high procrastination scores. Likewise, Hayat et al. (2020) observed that medical students exhibited moderate to high levels of academic procrastination.

The procrastination profile in this study also revealed the most common types of academic procrastinators. Among the six identified types, perfectionists, crisis-makers, and dreamers were the most prevalent, respectively. Perfectionist-type individuals tend to invest excessive time and energy to ensure that everything they do is flawless. They may delay tasks due to a fear of failure or uncertainty about doing them correctly (Sapadin & Maguire, 1999).

The relationship between self-oriented perfectionism and academic procrastination has been shown to be significantly negative. Individuals with self-oriented perfectionism tend to adhere to rigid and unrealistic standards they impose on themselves, while constantly evaluating their performance to maintain or achieve perfection (Kathleen & Basariah, 2021). In the context of medical education, academic demands may further reinforce such rigidity, as students strive for perfection in completing their academic tasks.

Crisis-maker procrastinators tend to dramatize situations, seek attention, and thrive under pressure. They often delay tasks until the last minute, claiming heightened focus and creativity near deadlines. This behavior is linked to boredom intolerance and a need to prove competence in high-stress situations. The adrenaline rush from looming deadlines, followed by relief and euphoria upon task completion, may reinforce their tendency to procrastinate (Sapadin & Maguire, 1999; Schraw et al., as cited in Parker, 2014).

Dreamer-type procrastinators tend to withdraw from tasks they perceive as difficult or unpleasant. They are typically passive, inattentive to facts or details, and struggle to focus on demanding assignments (Sapadin & Maguire, 1999). This aligns with the concept of passive procrastination, where individuals do not intentionally delay tasks but fail to act due to indecisiveness. As deadlines approach, passive procrastinators often feel increased pressure and pessimism about achieving satisfactory outcomes (Chu & Choi, 2005).

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The predominant strategy for overcoming procrastination among respondents was the cognitive approach, considered effective for managing disruptions (Eerde, 2003, as cited in Snehitha et al., 2021). This strategy involves planning self-control structures, social regulation, environmental feedback, and time awareness. Indicators include reframing negative thoughts and addressing cognitive barriers. Individuals using cognitive strategies tend to learn from mistakes, believe in themselves, commit to goals, avoid negative self-talk, transform dreams into concrete plans, and view tasks as opportunities.

Behavioral and emotive strategies were also widely used. According to Tuckman and Schouwenburg (2004), behavioral interventions such as environmental restructuring, social influence, and long-term training can effectively reduce academic procrastination. Behavioral strategy indicators included assertiveness, time management, task structuring, and self-talk, with key traits like setting deadlines, breaking tasks into smaller parts, and maintaining productive routines.

Emotive strategies, characterized by emotional tolerance and positive focus, were identified through indicators such as managing discomfort, emotional substitution, and focusing on progress. Bytamar et al. (2020) emphasized the importance of regulating unpleasant emotions in overcoming procrastination, while Schuenemann et al. (2022) found that improving emotional regulation significantly reduces procrastinatory behavior.

Procrastination Levels Based on Personality Traits

The description of procrastination levels for each personality trait (Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience), as well as the results of the comparative analysis of procrastination levels based on personality traits, are presented as follows:

Table 4. Frequency Distribution and Differences in Procrastination Levels Based on Personality Traits

Personality Trait	Category Level	Procrastination Level						<i>p-value</i>
		Low		Moderate		High		
		f	%	f	%	f	%	
Extroversion	Low	1	1,0%	1	1,0%	0	0,0%	0,424
	Medium Low	7	6,9%	36	35,6%	4	4,0%	
	Medium High	8	7,9%	35	34,7%	3	3,0%	
	High	3	3,0%	3	3,0%	0	0,0%	
Agreeableness	Low	16	15,8%	61	60,4%	5	5,0%	0,008
	Medium Low	3	3,0%	14	13,9%	1	1,0%	
	Medium High	0	0,0%	0	0,0%	1	1,0%	
	High	0	0,0%	0	0,0%	0	0,0%	
Conscientiousness	Low	3	3,0%	24	23,8%	0	0,0%	0,053
	Medium Low	13	12,9%	30	29,7%	3	3,0%	
	Medium High	3	3,0%	21	20,8%	4	4,0%	
	High	0	0,0%	0	0,0%	0	0,0%	
Emotional stability	Low	6	5,9%	27	26,7%	4	4,0%	0,754
	Medium Low	12	11,9%	46	45,5%	3	3,0%	
	Medium High	1	1,0%	2	2,0%	0	0,0%	
	High	0	0,0%	0	0,0%	0	0,0%	
Openness to experience	Low	18	17,8%	57	56,4%	2	2,0%	0,003
	Medium Low	1	1,0%	14	13,9%	5	5,0%	
	Medium High	0	0,0%	4	4,0%	0	0,0%	
	High	0	0,0%	0	0,0%	0	0,0%	

From the personality dimensions assessed, significant differences in procrastination levels were observed for Agreeableness ($p = 0.008$) and Openness to Experience ($p = 0.003$). This indicates that variations in students' levels of procrastination are associated with individual differences in the personality traits of agreeableness and openness to experience.

In this study, students who procrastinated tended to score low on both traits. Individuals high in agreeableness are cooperative, appreciative, sympathetic, and generous. They exhibit positive regard and emotional attentiveness to others' well-being, often acting in accordance with others' preferences (Novikova, 2013; Alqaisy & Thawabieh, 2016). In contrast, those low in agreeableness may disregard social norms and show less concern for others. As Kim et al. (2017) suggest, agreeable individuals

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may avoid passive procrastination out of concern for others who depend on them completing tasks. Meanwhile, those high in openness to experience are intellectually curious, imaginative, and receptive to novel ideas and experiences (Novikova, 2013; Lampropoulos et al, 2022). This trait reflects a willingness to embrace new concepts, situations, and lifestyles, even those that are unconventional. Costa and McCrae (as cited in Nekljudova, 2019) describe open individuals as capable of processing both positive and negative experiences, maintaining emotional balance. Such cognitive-emotional flexibility may enable open students to manage academic tasks proactively. Conversely, students low in openness may procrastinate more due to limited adaptability and narrower interests in completing assigned work.

Procrastinator Types Based on Personality Traits

The distribution of procrastinator types (Perfectionist, Dreamer, Worrier, Crisis-Maker, Defier, and Overdoer) across the five personality traits along with the results of comparative analysis, are presented in the following tables.

Table 5: Frequency Distribution and Differences in Types of Academic Procrastinator Based on Personality Traits

Personality Trait	Category	Procrastinator Types						N	p-value
		Pe	Dr	Wo	Cr	De	Ov		
Openness to experience	Low	27	16	8	22	3	1	77	0.939
	Medium Low	5	7	4	4	0	0	20	
	Medium High	0	3	0	1	0	0	4	
	High	0	0	0	0	0	0	0	
Conscientiousness	Low	11	5	3	7	1	0	27	0.685
	Medium Low	15	8	6	15	1	1	46	
	Medium High	6	13	3	5	1	0	28	
	High	0	0	0	0	0	0	0	
Extroversion	Low	0	1	0	0	1	0	2	0.534
	Medium Low	13	13	5	13	2	1	47	
	Medium High	16	12	6	12	0	0	46	
	High	3	0	1	2	0	0	6	
Agreeableness	Low	28	20	9	22	2	1	82	0.441
	Medium Low	4	6	3	4	1	0	18	
	Medium High	0	0	0	1	0	0	1	
	High	0	0	0	0	0	0	0	
Emotional Stability	Low	5	11	6	13	1	1	37	0.014
	Medium Low	26	15	6	12	2	0	61	
	Medium High	1	0	0	2	0	0	3	
	High	0	0	0	0	0	0	0	

The distribution of procrastinator types across personality traits showed that the most common types were Perfectionist, Crisis-Maker, and Dreamer, particularly among individuals with low levels of Openness to Experience (76.2%) and Agreeableness (81.2%). In the Conscientiousness trait, the majority were at a medium low level (45.6%), with Perfectionist and Crisis-Maker types being the most frequent. For Extroversion, participants were mainly at medium low and medium high levels, with Perfectionist being the dominant type at the higher level.

Comparative analyses revealed no significant differences in procrastinator types across levels of Openness, Conscientiousness, Extraversion, or Agreeableness. However, a significant difference was found for Emotional Stability ($p < 0.05$), where Crisis-Maker types were more prevalent at low levels (12.9%), and Perfectionists dominated the medium low group (25.7%). Individuals with high emotional stability tend to be calm, self-assured, and emotionally balanced, even under stress. In contrast, those with low emotional stability are emotionally sensitive, easily irritated, and prone to negative emotions such as anxiety, worry, and impulsivity (Novikova, 2013; Khalifa et al., 2021). These personality characteristics may explain the variation in procrastination styles, as procrastination involves delaying tasks, which can be influenced by how individuals perceive and respond to stressors. Whether a student tends to procrastinate as a perfectionist, crisis-maker, or dreamer may be linked to their emotional stability trait.

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Strategies for Overcoming Procrastination Based on Personality Traits

The strategies used to overcome procrastination across each personality trait along with the comparative analysis of procrastination coping strategies based on personality traits, are presented in the following tables.

Table 6: Frequency Distribution and Comparative Analysis of Procrastination Coping Strategies by Personality Trait Levels

Personality Trait	Category	Strategies for Overcoming Procrastination							N	p-value
		C	E	B	C-E	C-B	E-B	C-E-B		
Openness to experience	Low	31	12	19	4	6	2	3	77	0.013
	Medium Low	11	7	2	0	0	0	0	20	
	Medium High	0	1	1	0	2	0	0	4	
	High	0	0	0	0	0	0	0	0	
Conscientiousness	Low	9	5	8	1	0	2	2	27	0.437
	Medium Low	19	11	8	2	5	0	1	46	
	Medium High	14	4	6	1	3	0	0	28	
	High	0	0	0	0	0	0	0	0	
Extroversion	Low	1	1	0	0	0	0	0	2	0.875
	Medium Low	22	8	7	1	5	2	2	47	
	Medium High	17	10	12	3	3	0	1	46	
	High	2	1	3	0	0	0	0	6	
Agreeableness	Low	32	17	18	3	8	2	2	82	0.395
	Medium Low	9	3	4	1	0	0	1	18	
	Medium High	1	0	0	0	0	0	0	1	
	High	0	0	0	0	0	0	0	0	
Emotional Stability	Low	14	8	11	0	2	1	1	37	0.743
	Medium Low	26	12	10	4	6	1	2	61	
	Medium High	2	0	1	0	0	0	0	3	
	High	0	0	0	0	0	0	0	0	

Cognitive strategies were the most frequently used to overcome procrastination across all personality traits, particularly among students with medium-low and medium-high levels of extroversion (46.5% and 45.5%, respectively) and those low in agreeableness (81.2%). Similarly, students with medium low conscientiousness (45.5%) and emotional stability (60.3%) also preferred cognitive approaches, followed by behavioral and emotive strategies. Although most personality traits showed no significant differences in procrastination coping strategies, a statistically significant difference was found for openness to experience. Students with low openness predominantly used single strategies. Meanwhile, those with medium-high openness were more likely to adopt combined strategies, particularly cognitive-behavioral, indicating a tendency toward more integrative approaches among students with higher openness levels.

The trait of openness comprises six facets, including: actions, ideas, values, aesthetics, imagination, and feelings, that may influence how individuals manage procrastination. Individuals high in openness often display cognitive flexibility, intellectual curiosity, and a preference for novelty, enabling them to approach challenges with a broader set of coping mechanisms. Their openness to ideas supports cognitive restructuring, while openness to values may reflect a willingness to deviate from rigid norms and adopt unconventional problem-solving methods. Openness to aesthetics and imagination can encourage creative thinking, which helps students view academic tasks in a more engaging way. Students with higher levels of openness tend to have more flexible thinking and use a wider range of coping strategies. Openness to feelings reflects deep emotional sensitivity, which, while fostering introspection, may contribute to frustration under stress (Nekljudova, 2019; Woo, et al., 2015).

V. CONCLUSIONS

Medical students in this study generally exhibited a moderate level of academic procrastination. The most prevalent procrastination styles identified were the perfectionist, crisis-maker, and dreamer types. Cognitive strategies were the most frequently used approaches to cope with procrastination. Significant differences in procrastination levels were observed based on

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the personality traits of agreeableness and openness to experience. Additionally, procrastination styles varied significantly according to emotional stability, while the choice of coping strategies was significantly influenced by openness to experience.

These findings suggest that academic procrastination among medical students is not a one-size-fits-all phenomenon, but rather shaped by individual personality traits that influence both how students procrastinate and how they attempt to manage it. The prominence of perfectionist, crisis-maker, and dreamer types highlights the need for differentiated intervention approaches that address the specific psychological challenges faced by each type. Given the influence of traits such as openness to experience and emotional stability, it is important for academic support programs to integrate personality-based strategies into counseling, mentoring, and time management training.

Future research could address several limitations of the current study and expand the understanding of academic procrastination among students. While this study focused on the Big Five personality traits, other individual characteristics such as self-efficacy, intrinsic and extrinsic motivation, and stress levels were not explored. These psychological factors may also contribute meaningfully to procrastination behavior, and their inclusion in future studies could offer a more comprehensive understanding of the phenomenon. In addition, the identification of procrastinator types was based on a single self-reported item, which may not adequately reflect the complexity of these behavioral profiles. Future research may consider using more comprehensive instruments to better capture the variation among procrastinator types.

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