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Review Article

Academic procrastination from the perspective of acceptance and commitment therapy: a narrative review

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Abstract

Background & Objective: Academic procrastination is widely recognized as a persistent self-regulation problem among university students, but it is often reduced to poor time management. From the perspective of Acceptance and Commitment Therapy (ACT), procrastination can be understood as a manifestation of psychological inflexibility, experiential avoidance, and cognitive fusion. This narrative review examines academic procrastination from the ACT perspective to clarify its underlying psychological processes and implications for intervention.

Materials & Methods: A narrative review was conducted using PubMed, Scopus, and Google Scholar, with searches focused primarily on publications from 2010 to 2026. Search terms included academic procrastination, acceptance and commitment therapy, psychological flexibility, experiential avoidance, cognitive fusion, and procrastination interventions. Empirical studies, randomized controlled trials, meta-analyses, and relevant theoretical papers were considered, while studies involving clinical populations, non-academic forms of procrastination, or insufficiently relevant evidence were excluded. The identified literature was synthesized thematically according to key processes of acceptance and commitment therapy.

Results: The literature was organized into five interrelated areas: psychological inflexibility as a central mechanism; experiential avoidance and cognitive fusion as maintaining processes; values clarification and committed action as potentially protective processes; the role of present-moment awareness and mindfulness; and preliminary evidence regarding ACT-based interventions. Overall, the findings suggest that psychological inflexibility may provide a useful framework for understanding academic procrastination.

Conclusion: Academic procrastination appears to involve more than difficulties with time management and may be closely related to psychological inflexibility and avoidance-based emotion regulation. ACT provides a theoretically coherent framework for understanding these processes and may offer useful directions for counseling, prevention, and educational interventions, including those in medical education.

Keywords: academic procrastination; students; universities; acceptance and commitment therapy; psychological flexibility; experiential avoidance; cognitive fusion

Introduction

Procrastination is generally defined as the voluntary delay of an intended course of action despite anticipating negative consequences [1]. Procrastination is highly prevalent among university students, although reported prevalence estimates vary considerably across populations and definitions [1, 2]. Research has

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identified a wide range of contributing factors, including test anxiety, difficulties in decision-making, resistance to external control, low self-esteem, poor self-regulation, an external locus of control, perfectionism, lack of assertiveness, fear of the consequences of success, perceived task aversiveness, and perfectionistic standards related to personal adequacy [3–6].

More recent research, however, suggests that many of these factors influence procrastination indirectly through maladaptive emotion-regulation and self-regulation processes [5, 7]. From this perspective, academic procrastination is often understood as a short-term mood-repair strategy aimed at avoiding negative emotions associated with academic tasks [8, 9]. Research has consistently linked procrastination with higher levels of stress and poorer well-being, while meta-analytic evidence indicates a negative association between procrastination and academic performance [10, 11]. High levels of procrastination among university students may therefore undermine both individual achievement and the overall effectiveness of the higher education system, making the identification of novel theoretical frameworks and effective interventions a matter of considerable importance.

Despite the growing recognition of emotional and avoidance-based factors in academic procrastination [8], most intervention approaches continue to focus primarily on time management and behavioral strategies [12]. Acceptance and Commitment Therapy (ACT) offers a transdiagnostic framework that directly targets the core psychological processes underlying procrastination, namely experiential avoidance, cognitive fusion, and psychological inflexibility [13, 14]. However, the literature examining academic procrastination from an ACT perspective lacks a coherent synthesis.

This narrative review therefore aims to: (a) examine how core ACT processes (experiential avoidance, cognitive fusion, lack of clarity about personal values, and present-moment awareness) contribute to academic procrastination; (b) synthesize empirical and theoretical evidence on ACT-based interventions in university settings; and (c) identify practical implications for designing ACT-informed counseling and prevention programs. The review is guided by three corresponding questions addressing the mechanisms of procrastination, the effectiveness of ACT interventions, and recommendations for academic counseling contexts.

Explaining procrastination from the perspective of cognitive behavioral therapy

Most existing interventions for procrastination are grounded in cognitive-behavioral approaches, which primarily target irrational beliefs and maladaptive behavioral patterns [15, 16]. Cognitive Behavioral Therapy (CBT) conceptualizes procrastination primarily in terms of cognitive content—specifically, irrational beliefs about task demands and anticipated outcomes [17] and behavioral reinforcement and punishment histories [3]. In CBT, behavioral activation is used to modify avoidance patterns and increase task engagement [18]. Metacognitive accounts extend this framework by viewing procrastination as a strategy for regulating thoughts and negative emotions, rather than focusing solely on cognitive content [19–21].

Traditional CBT generally emphasizes identifying and modifying maladaptive cognitions and behaviors, whereas ACT places greater emphasis on changing the individual's relationship with thoughts and emotions rather than attempting to eliminate unwanted internal experiences [22, 23]. While meta-analytic evidence indicates that CBT produces significant reductions in procrastination, its effects have not always been sustained over time, and it has shown limited reach to the deeper emotion-regulatory processes underlying the behavior [24]. One possible explanation is that some CBT-based interventions emphasize modifiable cognitions and behaviors, whereas ACT explicitly targets broader processes such as experiential avoidance, psychological inflexibility, and values-based action [15, 22]. In contrast, ACT proposes that controlling or managing internal experiences is not a prerequisite for living a meaningful and value-consistent life [22], suggesting a fundamentally different therapeutic rationale.

ACT is a relatively recent and empirically supported intervention for a broad range of psychological and physical conditions, including emotional and behavioral disorders. Although early research did not directly examine ACT for procrastination, it has been proposed that ACT may reduce procrastinatory behavior in part by addressing neuroticism-related vulnerability and experiential avoidance. A randomized controlled trial comparing ACT and CBT group therapy in undergraduates with academic procrastination found that both approaches produced significant short-term reductions in procrastination, whereas ACT showed a stronger effect at the 3-month follow-up [15]. ACT participants showed progressive declines in negative affect across assessment points, whereas CBT participants showed stronger gains in time-management

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skills. These differential outcomes suggest that ACT and CBT operate through distinct mechanisms, rather than differing merely in delivery or format.

The differences between these two therapeutic approaches arise from their distinct theoretical foundations. ACT is grounded in functional contextualism and places greater emphasis on the context in which thoughts and emotions occur, rather than on their specific content. CBT, in contrast, primarily seeks to modify the content of dysfunctional thoughts. ACT also differs from CBT in its emphasis on personal values and the concept of self-as-context; accordingly, the mechanisms through which these therapies exert their effects are fundamentally different. The central aim of ACT is to reduce experiential avoidance. More specifically, ACT targets emotional avoidance and rigid verbal reactions to cognitive content while simultaneously strengthening the individual's capacity to initiate and sustain value-based behavioral commitments [26]. Rather than focusing on the origins of emotions, ACT emphasizes how individuals respond to emotional experiences after they arise; in doing so, it seeks to enhance broader psychological functioning and, ultimately, improve quality of life [15].

Explaining academic procrastination from the perspective of ACT

Research has shown that procrastination is not merely a problem of poor time management; rather, it is a multifaceted process involving emotional, cognitive, and behavioral dimensions [27]. Affective and cognitive variables, including trait and state anxiety, social anxiety, guilt, shame, fear of failure, learned helplessness, and depression, have been associated with academic procrastination. From the perspective of ACT, these correlates are closely linked to experiential avoidance and cognitive fusion. The central goal of ACT is to increase psychological flexibility, defined as the capacity to choose actions in accordance with personal values even in the presence of unpleasant internal experiences such as distressing thoughts and emotions [28]. Emerging empirical evidence indicates that psychological inflexibility is a significant predictor of academic procrastination and that this association remains robust even after controlling for variables such as anxiety and depression. Accordingly, ACT conceptualizes procrastination as an avoidance-based problem and seeks to help individuals develop skills in nonjudgmental acceptance, present-moment awareness, and the pursuit of meaningful life goals [27].

ACT appears to offer several advantages over other therapeutic approaches for addressing procrastination. First, it introduces interventions that emphasize acceptance of emotions rather than emotional control, cognitive defusion rather than attachment to thought content, clarification of values rather than exclusive focus on goals, and commitment to action. Second, ACT addresses common comorbid conditions associated with procrastination. Third, whereas many cognitive-behavioral interventions for procrastination are delivered in relatively brief formats ranging from 2 to 20 sessions, ACT has been proposed as a particularly efficient and effective approach. Fourth, because treatment dropout is often high among individuals with procrastination problems, engaging components such as values clarification may be especially useful in reducing attrition [29].

Procrastination frequently arises from deeper factors such as anxiety, worry, and self-doubt, and avoidance of tasks or decisions may gradually become chronic and debilitating [10]. From this perspective, procrastination is more accurately understood as a consequence of low psychological flexibility than as a simple deficit in time management, anxiety control, or self-regulation. Therefore, if low psychological flexibility, limited mindfulness, and weak contact with personal values are common predictors of procrastination, interventions that strengthen these processes should be expected to reduce procrastinatory behavior [13].

The existing literature on the effectiveness of ACT for procrastination suggests that many antecedents of procrastination can be understood within the framework of ACT-related psychological processes. Moreover, because ACT-based interventions have shown effectiveness in reducing procrastination, procrastinatory behavior can be meaningfully conceptualized in terms of ACT processes. The psychological flexibility model offers a comprehensive account of human behavior and behavior change that may deepen our understanding of procrastination and inform specialized interventions. This model conceptualizes six interrelated processes along a continuum from flexibility to inflexibility: acceptance versus experiential avoidance, cognitive defusion versus cognitive fusion, self-as-context versus conceptualized self, flexible attention to the present moment versus attentional fixation on past or future events, values clarification versus lack of value clarity, and committed action versus ineffective or impulsive action [30]. According to prior research, among these processes, experiential avoidance, cognitive fusion, lack

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of value clarity, and reduced committed action appear to explain procrastination more strongly than other components. Thus, procrastination may be viewed as a manifestation of psychological inflexibility characterized by experiential avoidance, diminished present-moment awareness, and difficulty maintaining contact with personal values [13].

The following sections examine the relationship between each major component of psychological inflexibility and procrastination.

Experiential avoidance

Experiential avoidance is one of the central ACT processes implicated in the explanation of procrastination. Within the ACT framework, experiential avoidance is considered a major factor in the development and maintenance of psychological disorders. Given the proposed etiology of procrastination, ACT may therefore have particular relevance for its treatment [29]. From this perspective, procrastination can be understood as an attempt to regulate or control distressing thoughts, emotions, and performance-related concerns. More specifically, when individuals respond to the emotional demands of daily life by procrastinating, they create temporary distance from anxiety-provoking tasks, thereby reducing tension and stress in the short term [31]. Empirical findings suggest that avoidance of unpleasant thoughts, feelings, and actions contributes to procrastinatory behavior and may intensify the stress associated with it [32]. Conversely, persistent patterns of experiential avoidance have been associated with restrictions in important areas of functioning and reduced quality of life [33].

A substantial body of research has consistently identified self-regulation failure as a core feature of academic procrastination [34]. The antecedents of procrastination are typically grouped into three broad domains: cognitive, behavioral, and emotional. Within the ACT framework, these domains can be understood in relation to processes such as acceptance, cognitive defusion, self-as-context, present-moment awareness, values, and committed action [14]. Importantly, the explanation of procrastination through the psychological flexibility model is consistent with recent conceptualizations that view procrastination as a self-regulation failure. When students encounter unpleasant internal experiences, such as negative emotions toward a particular task, procrastination may function as an emotion-regulation strategy that provides short-term relief despite task non-completion and later negative consequences. Affective and cognitive experiences such as trait and state anxiety, social anxiety, guilt, shame, fear of failure, neuroticism, learned helplessness, and depression can be understood as internal experiences that individuals may attempt to avoid through procrastination [30].

Frustration intolerance has been defined as a set of irrational beliefs that promote avoidance of unpleasant emotional experiences and escape from distress. This construct overlaps with experiential avoidance; thus, in addition to frustration, procrastinators may also seek to control or escape fatigue, anxiety, fear of failure, and related experiences [13]. Overall, available evidence suggests that students are more likely to procrastinate on tasks they perceive as difficult and anxiety provoking [13]. Furthermore, when students become fused with distressing task-related thoughts, their motivation to avoid those thoughts may increase, weakening awareness of academic goals and personal values and thereby promoting procrastination and its harmful consequences [30]. A desire to avoid unpleasant experiences may be an important motive underlying task delay. Procrastination can therefore function as a short-term emotion-regulation strategy, allowing students to obtain temporary relief from fear, anxiety, self-evaluative concerns, and other distressing internal experiences, even though such avoidance may increase longer-term academic costs [8, 13].

Cognitive fusion

Cognitive fusion represents another major ACT-related process in the explanation of procrastination. ACT is theoretically grounded in Relational Frame Theory (RFT), which proposes that the human capacity to derive arbitrary relations among stimuli gives rise to complex verbal behavior. Within this framework, cognitive fusion occurs when individuals become overly entangled with their thoughts, resulting in diminished contact with direct present-moment experience and increased behavioral control by verbal rules or mental events. In other words, internal and external events may be experienced as if they are occurring immediately and literally, and when these events are linked to positive or negative evaluations, they can exert a powerful and pervasive influence on behavior [15].

According to the psychological inflexibility model, procrastination involves both cognitive fusion with, and experiential avoidance of, unpleasant thoughts and emotions associated with academic tasks. Cognitive fusion occurs when internal events—especially thoughts—strongly shape an individual's behavioral

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responses, restrict available action choices, and increase psychological inflexibility. For example, when assigned an academic task, a student may think, "I cannot do this" or "I am not in the mood to study." When the student becomes fused with these thoughts, distress increases, and avoidance may follow in the form of unrelated activities such as watching television or browsing the internet. Although this response may provide short-term emotional relief, it also distances the individual from important values and goals, such as learning and academic achievement [30]. Individuals may experience fusion in several domains, including rules, reasons, judgments, the past, the future, and the self. When fusion dominates, the person's relationship with thoughts becomes an obstacle to living a valued and committed life [35].

To address cognitive fusion, ACT emphasizes cognitive defusion, through which individuals learn to observe their thoughts and internal experiences with greater distance rather than becoming absorbed in them. Defusion techniques weaken the impact of unhelpful cognitions and help individuals maintain a perspective that is separate from their thoughts [29]. During this process, individuals become more able to respond to alternative sources of behavioral guidance and to act in accordance with personal values rather than experiential avoidance [36]. From the psychological flexibility perspective, academic procrastination is thus best understood as the result of fusion with internal events and the use of experiential avoidance as a short-term mood-regulation strategy, despite its substantial long-term costs such as limited time for task completion and poorer academic outcomes [30]. More broadly, ACT processes—particularly cognitive defusion—enhance psychological flexibility and thereby support more self-regulated choices, improved well-being, and progress toward life goals [37].

Acceptance

In contrast to experiential avoidance, ACT promotes acceptance as a therapeutic process that supports values-based and committed action [35]. Rather than attempting to suppress or control unpleasant internal experiences, ACT encourages individuals to relate to them with openness and nonjudgmental acceptance while continuing to engage in valued activities [14, 37]. Research suggests that this therapeutic process may play an important role in reducing procrastination. Acceptance-based strategies are used to reduce avoidance of distressing thoughts, feelings, and memories [29]. Within ACT, instead of remaining entangled with negative cognitions such as perfectionistic thoughts, clients are encouraged to take distance from these cognitions and apply techniques that facilitate letting go. In essence, they learn to change their relationship with thoughts so that behavior is no longer governed by them. Similarly, rather than attempting to eliminate unpleasant emotions, clients are guided to accept these experiences consciously while maintaining focus on values such as learning and personal growth [26].

Although some studies have focused primarily on committed action, other findings indicate that acceptance is itself a significant predictor of procrastination. These findings are broadly consistent with theoretical perspectives that conceptualize procrastination as closely linked to experiential avoidance [30]. By strengthening an individual's willingness to experience negative events and emotions, ACT may increase openness and overall psychological flexibility [15]. If the core processes underlying psychological inflexibility are associated with procrastination, these findings support the use of ACT and other acceptance-based behavioral interventions in this domain. Studies examining procrastination in relation to the psychological flexibility model have found that procrastination is significantly associated with lower levels of acceptance, thereby reinforcing the view that procrastination is negatively related to psychological flexibility. Glick et al. reported that the combined effects of acceptance, mindfulness, and values predicted procrastination more effectively than trait anxiety alone. This finding suggests that anxiety, by itself, does not adequately explain procrastination; rather, the avoidance of unpleasant internal experiences—including distressing thoughts, emotions, and memories—may play a more central explanatory role [13].

Values clarification and committed action

Values clarification and committed action constitute another pivotal ACT process in understanding and treating procrastination. ACT helps students identify what is genuinely meaningful in their lives and align their behavior with those values. From this perspective, procrastinatory behavior consumes time and energy in the service of temporary relief rather than meaningful personal goals, and thus reflects movement toward a dysfunctional short-term aim that is disconnected from core values [30]. Procrastination is frequently associated with poor value clarity; individuals delay activities to

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which they have committed while choosing immediately pleasurable alternatives instead [12]. Values clarification may help individuals who procrastinate align themselves with long-term goals, resolve value conflicts, and enhance productivity by increasing the subjective importance of a specific activity [29]. Psychological inflexibility serves as a broader construct linking the avoidance of internal experiences with insufficient value clarity and reduced committed action. Because procrastination is associated with impulsivity, avoidant coping, and difficulty pursuing personally important goals, lower levels of committed action may be associated with greater procrastination [13].

ACT interventions may reduce procrastination by decreasing avoidance and increasing engagement in value-based activities, particularly academic activities. Values clarification may reduce procrastination by strengthening the intrinsic reinforcing qualities of academic tasks. Individuals who procrastinate may, in some cases, be characterized by a diffuse sense of identity and low commitment to personal goals, responsibilities, and values. Such individuals may be more likely to sacrifice long-term goals for immediate rewards. Moreover, procrastinators often show a gap between their intentions and goals, on the one hand, and the goal-directed actions required to realize them, on the other [29]. Most studies on procrastination and psychological flexibility have focused mainly on acceptance, defusion, and present-moment contact, while giving comparatively less attention to values and committed action. Committed action refers to the flexible persistence of behavior in the service of personal values and goals, even in the presence of psychological barriers such as unpleasant feelings and thoughts; in this sense, it may be understood as the opposite of impulsivity or inaction [30]. ACT offers a range of strategies for facilitating action, and commitment to value-consistent behavior may help individuals continue progressing despite psychological obstacles, thereby narrowing the gap between the importance assigned to particular values (e.g., achievement) and the actions taken to pursue them [29]. Glick et al. [13] compared two internet-based interventions for procrastination; one based on ACT and the other on time management. Although they found no significant difference in overall efficacy between the two approaches, acceptance-based behavioral interventions appeared to be more beneficial for students with stronger academic values. These findings underscore the foundational role of values in reducing procrastinatory behavior [30].

Contact with the present moment

Contact with the present moment is another important ACT process relevant to the explanation of procrastination. The pathological processes described in ACT are highly interrelated; for example, reduced present-moment awareness among individuals who procrastinate may arise from both experiential avoidance and cognitive fusion. Although empirical evidence on the relationship between mindfulness and procrastination remains limited and somewhat inconsistent, several correlational studies using mindfulness measures have shown that lower levels of mindfulness are associated with higher levels of procrastination [30, 38]. Research suggests that procrastinators may prioritize immediate mood regulation over goal-directed action toward longer-term outcomes, particularly when academic tasks are experienced as aversive or challenging [8, 39]. From the ACT perspective, procrastination—like other maladaptive behaviors—reflects psychological inflexibility; that is, the procrastinating individual is unable to remain in contact with the present moment while persisting in, or adaptively changing, behavior in the service of personal values [14].

Materials & Methods

Design and setting(s)

This study employed a narrative review design to synthesize theoretical and empirical evidence regarding academic procrastination from the perspective of Acceptance and Commitment Therapy. A narrative review approach was selected rather than a systematic review because the primary aim was to integrate diverse types of evidence, including empirical studies, intervention trials, theoretical contributions, and conceptual models, rather than to conduct a quantitative aggregation of effect sizes. Given that ACT-based conceptualizations of academic procrastination remain an emerging and theoretically heterogeneous area, narrative synthesis provides a suitable framework for identifying underlying psychological processes, integrating findings across methodologies, and generating clinically meaningful interpretations [40, 41].

Information sources and search strategy

A structured literature search was conducted in PubMed, Scopus, and Google Scholar for peer-reviewed publications published between 2010 and 2026. The search strategy combined terms related to academic procrastination (“academic procrastination”, “procrastination”) with ACT-related concepts

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("acceptance and commitment therapy", "ACT", "psychological flexibility", "experiential avoidance", "cognitive fusion", "values clarification", and "committed action"). Boolean operators AND and OR were used to combine search concepts, and reference lists of relevant articles were additionally screened to identify further eligible studies.

Study selection and eligibility criteria

The initial search identified 227 records from the primary electronic databases, including 98 records from PubMed and 129 records from Scopus. Google Scholar was searched as a supplementary source to identify additional potentially relevant publications and was not included in the primary record count or duplicate-removal process.

After removing duplicate records (n = 105), 122 titles and abstracts were screened. At this stage, 54 records were excluded because they were unrelated to academic procrastination, focused on non-academic procrastination, involved unrelated interventions, or did not meet the inclusion criteria. The remaining 68 articles were assessed through full-text review. Twenty-three articles were excluded due to exclusive focus on non-student or clinical populations (n = 7), insufficient relevance to ACT-related processes (n = 8), inadequate methodological information or limited theoretical contribution (n = 5), and duplication (n = 3). Consequently, 45 publications were included in the final narrative synthesis of the substantive literature.

Data synthesis and analysis

Eligible studies included peer-reviewed empirical studies, randomized controlled trials, meta-analyses, and high-quality theoretical papers examining ACT-related processes in relation to academic procrastination among university students. The included literature was synthesized thematically, focusing on the role of psychological flexibility, experiential avoidance, cognitive fusion, acceptance, values clarification, committed action, and present-moment awareness in understanding and addressing procrastination.

Because this review was designed as a narrative synthesis rather than a systematic review, a formal risk-of-bias appraisal and Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram were not undertaken. Instead, the review emphasized thematic integration and critical interpretation of the available literature [40, 41], with a particular focus on the six core ACT processes and their interrelationships with procrastination [40].

Results

The reviewed literature was synthesized thematically to examine how ACT processes have been used to explain academic procrastination and to identify evidence regarding ACT-based interventions. The findings were organized around psychological inflexibility, experiential avoidance, cognitive fusion, values and committed action, present-moment awareness, and intervention evidence. This involved summarizing the key theoretical explanations, empirical findings, and patterns reported across the reviewed studies to provide an integrated overview of the current understanding in the field. The studies consistently highlighted five major areas: psychological inflexibility as a central explanatory mechanism; experiential avoidance and cognitive fusion as maintaining processes; values clarification and committed action as potentially protective processes; present-moment awareness and mindfulness as relevant processes; and preliminary evidence regarding the potential effectiveness of ACT-based interventions in reducing procrastination [10, 13, 30, 42].

Psychological inflexibility as a core mechanism

Across the reviewed literature, academic procrastination was consistently associated with psychological inflexibility, suggesting that procrastinating students may have difficulty maintaining adaptive contact with uncomfortable internal experiences while pursuing academic goals. Within the ACT framework, procrastination is conceptualized as a maladaptive coping strategy aimed at regulating distress rather than merely a deficit in time-management skills. Empirical studies indicate that psychological inflexibility is associated with academic procrastination and may help explain why students disengage from goal-directed activities when confronted with negative emotions or self-evaluative thoughts [13, 46, 47]. This difficulty in remaining engaged with valued academic tasks in the presence of discomfort appears to represent a central process sustaining procrastination.

Experiential avoidance and cognitive fusion as maintaining processes

A recurring finding was the role of experiential avoidance in maintaining procrastination. Students frequently postpone academic tasks to escape aversive emotions such as anxiety, fear of failure, frustration, or negative self-evaluation. Evidence suggests that psychological inflexibility may serve as an important

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mechanism linking psychological distress to academic procrastination. In a study of university students, psychological inflexibility mediated the relationship between psychological distress and academic procrastination, including distress related to anxiety, depression, and stress [46]. This process is further intensified by cognitive fusion, in which individuals become entangled with distressing task-related thoughts, such as beliefs about incompetence or anticipated failure. When thoughts are experienced as literal truths rather than transient mental events, behavioral avoidance may become more likely, increasing procrastination behaviors [10, 43].

Values clarification and committed action as protective factors

Another major theme was the protective role of values clarification and committed action. The literature suggests that procrastination is often associated with weak value orientation, diminished commitment to long-term goals, and a tendency to prioritize immediate emotional relief over meaningful academic engagement. In contrast, studies indicate that greater alignment with personally meaningful values is associated with increased persistence and reduced procrastination [30].

Present-moment awareness and mindfulness

The reviewed studies also highlighted deficits in present-moment awareness among individuals who procrastinate. Lower levels of mindfulness have been associated with greater procrastination and poorer emotional well-being, suggesting that reduced present-moment awareness may be relevant to the regulation of procrastinatory behavior [32, 38]. Consequently, procrastinating individuals may prioritize immediate emotional relief rather than maintaining engagement with academic demands. This tendency toward present-focused mood regulation has been identified as an important process underlying procrastination and is consistent with the ACT conceptualization of psychological inflexibility [10, 45].

Evidence from ACT-based interventions

Finally, the literature provides preliminary evidence supporting ACT-based interventions as a promising approach to reducing academic procrastination [25]. Intervention studies have shown that ACT-based programs can enhance psychological flexibility, emotional acceptance, and values-based action, which may contribute to reductions in procrastination behaviors. Comparative research suggests that both ACT and cognitive-behavioral approaches can reduce academic procrastination, with ACT showing stronger effects at follow-up in one randomized controlled trial [15]. Other ACT-based interventions have also reported reductions in procrastination among university students [25, 27].

Discussion

Academic procrastination is increasingly recognized as a common self-regulatory problem among university students and has been associated with poorer academic achievement, greater stress, and adverse mental health outcomes. The findings of the present review support a view of procrastination that goes beyond a simple failure of time management. Rather, procrastination may function as a way of regulating unpleasant emotions within a broader pattern of psychological inflexibility. Students may postpone academic tasks in response to anxiety, boredom, or self-doubt because delaying the task provides short-term relief from these experiences, even when they recognize the longer-term consequences of doing so [8]. From an ACT perspective, academic procrastination can be understood as a pattern of behavior influenced by experiential avoidance and cognitive fusion, which may limit students' ability to act in accordance with their values. The problem is therefore not necessarily a lack of knowledge about what needs to be done. Rather, students who procrastinate may have difficulty remaining willing to experience the discomfort associated with starting and continuing an academic task [14, 27]. Previous research in student populations has also linked psychological inflexibility, particularly experiential avoidance, with procrastination, indecision, and academic stress [46]. These findings suggest that procrastination may be maintained by attempts to avoid or reduce unpleasant internal experiences rather than by a simple lack of motivation or planning. Experiential avoidance appears to be a central mechanism. When students encounter academic tasks that elicit worry about failure, perfectionistic concerns, or anticipated boredom, avoidance through postponement provides immediate relief, thereby reinforcing the procrastinatory response. Recent evidence indicates that psychological inflexibility is associated with academic procrastination and may contribute to its prediction beyond related emotional factors such as trait anxiety [13, 46, 47]. These findings support the idea that academic procrastination is better explained by how students relate to their thoughts

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and emotions than by simple deficits in planning or motivation.

Cognitive fusion further contributes to procrastination by limiting behavioral choices. Procrastinating students may become fused with self-critical and rule-based thoughts such as “I must feel ready before I start,” “If I cannot do it perfectly, there is no point in trying,” or “I always fail at tasks like this.” When these thoughts are taken literally, they may guide behavior toward avoidance and disengagement. ACT research has shown that cognitive fusion is associated with poorer psychological functioning and lower engagement in valued activities among students [30]. Defusion strategies, such as noticing thoughts as mental events, labeling them, or using perspective-taking exercises, may therefore be useful in interventions targeting academic procrastination.

The present review also emphasizes the role of temporal focus and present-moment awareness. Procrastinating students may focus on past failures or anticipate negative future evaluation, which can increase emotional distress and interfere with effective task engagement. ACT proposes that flexible contact with the present moment, supported by mindfulness skills, can help individuals notice these mental events without being controlled by them [14]. Research suggests that higher mindfulness is associated with lower procrastination, while mindfulness-based interventions may also improve procrastination-related outcomes among students [48–50]. In addition, the ACT model provides a values-based perspective for understanding procrastination. Many students may experience academic tasks as externally imposed requirements that are not clearly connected to personally meaningful directions in life. In such situations, avoidance may become more likely because the connection between effortful behavior and valued outcomes is weak. ACT emphasizes that sustained behavioral change is more likely when actions are guided by clearly identified values that reflect what individuals want their lives to stand for [28]. Research on psychological flexibility and committed action suggests that greater alignment with personal values may be relevant to persistence and procrastination, although direct evidence for values-clarification interventions remains limited [13, 30].

This process-based understanding extends traditional theories of procrastination. Classic models have emphasized task aversiveness, low self-control, impulsivity, and temporal discounting [1, 51]. Although these factors remain important, ACT provides a framework for explaining why students may fail to act on their intentions despite recognizing the importance of academic tasks. Psychological inflexibility, as a transdiagnostic process, may be involved across different psychological and academic difficulties and may help explain co-occurring patterns such as procrastination, test anxiety, and perfectionism [52, 53]. This view is consistent with recent approaches in clinical and educational psychology that emphasize process-based interventions rather than focusing only on specific symptoms or disorders.

Several limitations of this review should be acknowledged. As a narrative rather than systematic review, the present work does not provide a quantitative synthesis of effect sizes or an exhaustive evaluation of all ACT-based studies on procrastination; future research should therefore consider systematic reviews or meta-analyses, together with component analyses to identify which specific ACT processes contribute most to reducing procrastination. In addition, direct empirical evidence on ACT for academic procrastination specifically remains limited, as several of the cited findings are drawn from broader studies of psychological inflexibility, mindfulness, and values-based interventions in student mental health samples; randomized controlled trials that directly test ACT-based interventions for academic procrastination, along with longitudinal designs examining whether changes in psychological flexibility mediate long-term academic outcomes, are needed to address this gap. Finally, the reviewed literature may overrepresent studies conducted in Western educational contexts, which limits the generalizability of the present conclusions to other cultural settings; cross-cultural research is therefore needed to determine whether these mechanisms operate similarly across different educational and cultural contexts.

Conclusion

Academic procrastination is more than a problem of time management and may reflect psychological inflexibility, particularly experiential avoidance, cognitive fusion, reduced present-moment awareness, and difficulty translating personal values into committed action. From an ACT perspective, procrastination can provide short-term relief from unpleasant internal experiences while interfering with longer-term academic goals. Although the evidence base for ACT specifically targeting academic procrastination remains limited, available findings suggest that ACT and related acceptance-based

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approaches may offer a useful framework for understanding and addressing procrastination among university students.

For medical education, ACT-informed approaches may be incorporated into student counseling, academic advising, and preventive programs that strengthen psychological flexibility and values-guided action. However, further rigorous randomized controlled trials are needed to establish the effectiveness of ACT for academic procrastination and to clarify which psychological processes account for treatment effects.

Ethical considerations

Ethical approval was not required because this study involved no human participants, identifiable personal data, or primary data collection.

Artificial intelligence utilization for article writing

During the preparation of this manuscript, the authors used Claude (Sonnet 5) for English language editing and grammatical improvement. The authors reviewed and revised the AI-assisted text as appropriate and take full responsibility for the accuracy, integrity, and final content of the manuscript.

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Conflict of interest statement

The authors declare no conflict of interest.

Author contributions

ZNS contributed to conceptualization, investigation, writing original draft, and writing review and editing. AHJ contributed to conceptualization, investigation, and writing original draft. AR contributed to investigation, writing original draft, and writing review and editing. OS contributed to supervision, conceptualization, and writing review and editing. All authors read and approved the final manuscript.

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Data availability statement

The datasets created and analyzed during the current study are available from the corresponding author upon reasonable request.

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