

Literature Review on *Cognitive Implementation Behavior Therapy* in Reducing Academic Procrastination Behavior

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Abstract. *This study is a literature review aimed at examining the effectiveness of the Cognitive Behavior Therapy (CBT) approach in reducing academic procrastination in students. Using a descriptive qualitative design, this study synthesized ten national and international empirical articles published between 2019 and 2025. The analysis process was carried out in three stages: identification of main themes, comparison between studies, and synthesis of general patterns. The results of the study show consistent findings that CBT is effective in reducing academic procrastination behavior across various educational contexts, whether through individual, group, or online formats. The mechanism of CBT focuses on cognitive restructuring and behavior modification, which helps students recognize and change irrational thoughts and develop adaptive learning habits. The duration of interventions varied from four to eleven sessions, with more stable long-term results in medium-duration programs. Self-efficacy, social support, and self-control were found to be key mediators and moderators that strengthen the therapy's effectiveness. Theoretically, these results strengthen the framework of Bandura's cognitive-behavioral and social-cognitive theories on the relationship between cognition, behavior, and emotion regulation. In practice, CBT has proven adaptable for both face-to-face and online academic counseling services and can be integrated as a*

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preventive and corrective strategy to improve students' self-regulation and learning motivation. This study confirms that CBT is a relevant, evidence-based approach to improving psychological well-being and academic success sustainably.

Keywords: *Cognitive Behavior Therapy; literature review ; academic procrastination.*



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Abstract. *Penelitian ini merupakan kajian literatur yang bertujuan untuk menelaah efektivitas pendekatan Cognitive Behavior Therapy (CBT) dalam mengurangi prokrastinasi akademik pada peserta didik. Menggunakan desain kualitatif deskriptif, penelitian ini mensintesis sepuluh artikel empiris nasional dan internasional yang diterbitkan antara tahun 2019–2025. Proses analisis dilakukan melalui tiga tahap: identifikasi tema utama, komparasi antarpelitian, dan sintesis pola umum. Hasil kajian menunjukkan konsistensi temuan bahwa CBT efektif menurunkan perilaku prokrastinasi akademik di berbagai konteks pendidikan, baik melalui format individual, kelompok, maupun daring. Mekanisme kerja CBT berfokus pada restrukturisasi kognitif dan modifikasi perilaku, yang membantu peserta didik mengenali dan mengubah pikiran irasional serta membentuk kebiasaan belajar adaptif. Variasi durasi intervensi berkisar antara empat hingga sebelas sesi, dengan hasil jangka panjang yang lebih stabil pada program berdurasi menengah. Faktor efikasi diri, dukungan sosial, dan*

pengendalian diri ditemukan sebagai mediator dan moderator utama yang memperkuat efektivitas terapi. Secara teoretis, hasil ini memperkuat kerangka teori kognitif-perilaku dan teori sosial-kognitif Bandura tentang hubungan antara kognisi, perilaku, dan regulasi emosi. Secara praktis, CBT terbukti adaptif diterapkan pada layanan konseling akademik baik tatap muka maupun daring, serta dapat diintegrasikan sebagai strategi preventif dan korektif untuk meningkatkan regulasi diri dan motivasi belajar peserta didik. Kajian ini menegaskan bahwa CBT merupakan pendekatan berbasis bukti yang relevan untuk meningkatkan kesejahteraan psikologis dan keberhasilan akademik secara berkelanjutan.

Keywords: *Academic procrastination; Cognitive Behavior Therapy; literature review*

Introduction

Education plays a central role in preparing students to face the dynamics of life in the era of globalization. With increasingly demanding learning quality, effective learning is key to ensuring each student not only acquires knowledge but also applies it in social, professional, and personal contexts. When the education system successfully creates meaningful and adaptive learning experiences, the goal of producing competent and characterful individuals becomes more easily achieved. However, amidst these expectations, challenges arise in learning practices that many students must face.

Currently, many students face various academic pressures: increasing workloads, suboptimal time management, and increasing mental health issues during and after the pandemic. For example, research in Indonesia found that academic procrastination, the tendency to delay or avoid academic tasks, is linked to academic anxiety in students (Imani & Rozi, 2024). In this context, the phenomenon of academic procrastination has received significant attention due to its impact not only on academic achievement but also on students' psychological well-being.

Academic procrastination can be defined as the tendency to voluntarily and irrationally postpone academic tasks, even though individuals are aware that such procrastination can negatively impact their academic performance (Budiman et al., 2020). Its manifestations can include postponing assignments, studying at the last minute, or a lack of initiative in initiating academic activities that should have been undertaken. The impact of this procrastination has been shown to be significant: in addition to declining academic achievement and increasing task failure, individuals who frequently procrastinate can experience decreased self-efficacy, increased anxiety, and impaired psychological well-being (Budiman et al., 2020). Therefore, interventions to address academic procrastination are crucial in efforts to improve the effectiveness of students' learning processes.

One promising intervention approach is Cognitive Behavior Therapy (CBT). The theoretical foundation of CBT is based on the assumption that thoughts (cognitions) and actions (behaviors) are interconnected, and that changing maladaptive cognitions can stimulate more adaptive behavioral changes. In practice, CBT helps individuals identify inhibiting automatic thoughts, replace them with more rational thought patterns, and then practice new behaviors that support adaptive goals. For example, in an academic context, a

student who views an assignment as “very difficult and boring” may be driven to procrastinate; a CBT intervention would seek to replace that belief with “this assignment is challenging, but it can be broken down into smaller chunks and I can start now,” and then implement concrete strategies such as dividing tasks and establishing a work schedule (Ayuna & Wahyuni, 2023). Commonly used interventions include cognitive restructuring, self-talk, time management, and behavioral training to initiate and maintain tasks until completion (Budiman et al., 2020).

Empirical reviews indicate that CBT has the potential to be effective in reducing academic procrastination. For example, international research shows that online CBT interventions can reduce procrastination and academic stress levels in college students (Turan & Rahman, 2023). In Indonesia, research has shown that CBT using self-talk techniques is effective in increasing self-efficacy and reducing procrastination in college students (Budiman et al., 2020). A group CBT intervention for junior high school students also showed a decrease in academic procrastination during distance learning (Lubis & Djuwita, 2022). However, several limitations remain, such as small sample sizes, limited intervention duration, and a lack of longitudinal research tracking long-term effects.

With these considerations in mind, this article aims to conduct a literature review on the CBT approach to reducing academic procrastination. The study focuses on the basic theory of CBT and a summary of empirical findings, both internationally and nationally. The problem statement is: although CBT interventions have shown positive results, there are still research gaps in the Indonesian context, particularly regarding variations in intervention protocols, the duration of long-term effects, and studies involving various educational levels. Therefore, this literature review is crucial for synthesizing current evidence, identifying research gaps, and providing recommendations for guidance and counseling practice and further research in the field of academic procrastination.

Method

This study employed a literature review design with a descriptive qualitative approach. *The literature review approach* was chosen to collect, analyze, and synthesize previous findings regarding the use of *Cognitive Behavioral Therapy* (CBT) in reducing academic procrastination in students. With its descriptive nature, this study does not test hypotheses quantitatively, but rather describes patterns, similarities, and differences in previous research findings and formulates their theoretical and practical implications.

The primary data sources were national and international scientific journal articles that met the following criteria. First, the articles were from accredited or international *peer-reviewed journals* to ensure publication quality. Second, the research topic must be relevant to CBT interventions and/or academic procrastination in students. Third, the publication year was limited to 2019 to 2025 to capture the latest developments in the application of CBT to academic procrastination.

The literature search was conducted through national and international electronic databases, such as Google Scholar, ScienceDirect, PubMed, ResearchGate, the Directory of Open Access Journals (DOAJ), and the national portal Garuda. Keywords used included

"academic procrastination," "academic procrastination," "cognitive behavioral therapy," and "CBT counseling intervention for procrastination." The search was conducted in two languages (Indonesian and English) to maximize literature coverage.

Inclusion criteria included: (a) empirical research articles discussing CBT in the context of academic procrastination; (b) a population of high school and college students; (c) publications in Indonesian or English; and (d) published between 2019–2025. Exclusion criteria included: (a) articles that only discussed general procrastination without academic relevance; (b) non-CBT interventions; (c) non- *peer-reviewed publications* ; and (d) pre-publication literature or literature published before 2019. The screening process was carried out in stages starting from reviewing the title, abstract, to *full-text* .

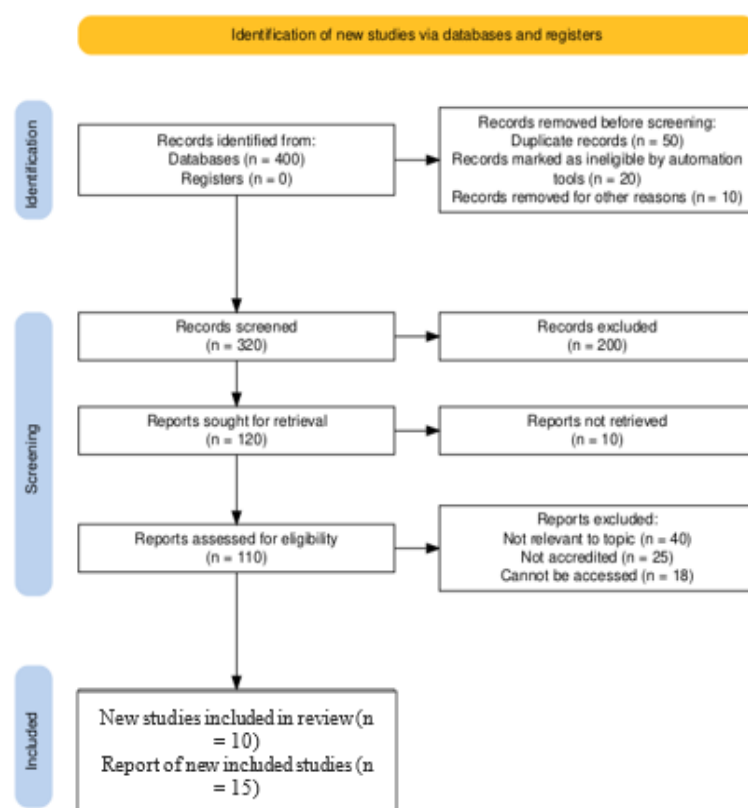


Figure 1. PRISMA diagram

The literature selection process and the number of included studies were reported using a PRISMA flowchart to ensure transparency and accountability in the literature review process. Of the 250 articles identified through the database, 40 were removed before the screening stage due to duplication (25), failure to meet automation criteria (10), or exclusion for other reasons (5). A total of 210 articles proceeded to the initial screening stage. After review of titles and abstracts, 150 articles were excluded for not meeting the inclusion criteria, leaving 60 articles for *full-text evaluation*. Of these 60 articles, 8 *full-text* reports were inaccessible, leaving 52 articles for eligibility assessment. During the eligibility assessment stage, 43 articles were excluded for being irrelevant to the study focus (22), inadequate methodological quality (12), or limited access (9). Thus, 10 studies were deemed

to meet the criteria and were included in the final synthesis of this literature review. This stepwise process ensured that only relevant, valid, and high-quality literature was used as the basis for the analysis.

The synthesis phase was conducted narratively, presenting study characteristics, CBT protocols used, intervention duration, sample size, and main results for each study. Where possible, the analysis was also stratified based on the type of academic procrastination, CBT protocol variations, and therapeutic approaches used.

Results and Discussion

The results of this study include an analysis and summary of articles related to cognitive behavioral therapy approaches to reducing academic procrastination. Based on the literature search, 10 articles were found discussing cognitive behavioral therapy approaches to reducing academic procrastination.

Table 1. Literature on Cognitive Behavior Therapy

No	Study identity	Design	Sample	CBT Intervention	Main results
1.	RD Putri et al., 2023 (Indonesia)	Literature review	9 reviewed studies	(literature synthesis on CBT protocols for thesis)	Conclusion: The literature shows that CBT is effective in reducing procrastination in completing a thesis through changes in cognition and motivation.
2.	Rahmad Budiman et al., 2020 (Indonesia)	Quasi-experimental	n = 16 (students)	CBT + <i>self-talk techniques</i> ; several sessions (not listed in detail)	Increased <i>self-efficacy</i> and decreased procrastination; significant effects
3.	NY Lubis & E. Djuwita, 2022 (Indonesia)	Online case/group intervention	n = 5 (junior high school students, 14–15 years old)	Online group CBT; focus on self-regulation, cognitive restructuring (multiple session duration)	Decreased levels of procrastination; participants reported positive changes
4.	K. Khurshid et al., 2025 (Pakistan)	Randomized controlled	n = 129 adolescent students	6–8 sessions of CBT; focus on emotion	Decreased procrastination ($\eta^2=0.29$) as well as burnout,

No	Study identity	Design	Sample	CBT Intervention	Main results
		d trial (RCT)	(experimental vs. waitlist allocation)	regulation, cognitive restructuring, relational skills	anxiety, self-handicapping; significant effect
5.	SMH de Haas et al., 2025 (Netherlands /Sweden)	RCT (online)	n = 71 (students)	<i>Temporal Motivation Theory (TMT)</i> based group CBT ; online; multiple sessions	Large decrease in procrastination (d = 1.09); increase in self-efficacy; change in Value & Impulsivity
6.	RO Febriani et al., 2020 (Indonesia)	Single-subject design (A1-B-A2)	5 students (high school)	<i>Cognitive Behavior Modification</i> individual; baseline–intervention–follow-up phase	Consistent decrease in procrastination per subject after intervention
7.	S. Turan & F. Rahman, 2024 (Türkiye/Bangladesh)	RCT (online)	n = 30 (students; 15 intervention, 15 control)	11 weeks of online CBT (45–60 minutes/session)	Significant reduction in procrastination and academic stress; effects persisted for 4 months
8.	S. Setiyana, 2019 (Indonesia) – thesis	Pre-post experiment (group)	Class X SMK students (small sample size/class)	CBT (self-monitoring, restructuring, problem-solving group counseling)	Procrastination reduction; practical results though non-peer reviewed
9.	CS Ugwuanyi et al., 2020 (Nigeria)	Pre-post RCT + follow-up (2 months)	n = 64 (undergraduate PCME)	8 group CBT sessions (90 minutes, 2x/week for 6 weeks)	Significant decrease in procrastination in post-test & follow-up (large η^2)
10.	EC Buana & E. Zulwidyaningtyas, 2024 (Indonesia)	Mixed-methods (sequential explanatory)	n = 7 students (grade IX of junior high)	Cognitive restructuring group (4 meetings)	Mean drops from 78% → 50% (significant, t-test); strong practical effect

No	Study identity	Design (ory)	Sample (school)	CBT Intervention	Main results
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Table 1 shows consistent findings that Cognitive Behavior Therapy (CBT) is effective in reducing academic procrastination levels across various student groups. Of the ten articles analyzed, all reported significant reductions in procrastination behavior after CBT interventions, whether administered individually, in groups, or online. Large-scale experimental studies such as those by Ugwuanyi et al. (2020), de Haas et al. (2025), and Khurshid et al. (2025) demonstrated robust results with large effect sizes ($\eta^2 = .801$; $d = 1.09$) and retention of results several months after the intervention. These findings align with previous evidence suggesting that CBT is effective in improving self-regulation and learning motivation through cognitive restructuring and guided behavioral training. Meanwhile, smaller-scale studies in Indonesia, such as those conducted by Budiman et al. (2020) and Buana and Zulwidyaningtyas (2024), also demonstrated similar positive trends, albeit with limited samples.

In general, the mechanism of action of CBT in reducing academic procrastination is rooted in changing maladaptive thought patterns and behaviors that underlie procrastination. Cognitive restructuring techniques, which target irrational beliefs and negative automatic thoughts, are a dominant component in nearly all studies (Buana & Zulwidyaningtyas, 2024). Through this process, students learn to recognize cognitive distortions that lead to avoidance of academic tasks and replace them with more rational and productive thoughts. Furthermore, CBT interventions emphasize the development of self-regulation skills, time management, and realistic goal setting (Lubis & Djuwita, 2022). Behavioral components such as *behavioral activation*, planning exercises, and *self-monitoring* reinforce the application of cognitive changes in real-world contexts, resulting in increased self-efficacy and academic responsibility.

The duration of interventions in the analyzed studies varied between four and eleven sessions. Studies with medium to long durations (6–11 sessions) tended to produce more stable and lasting effects. For example, the six-week interventions in Ugwuanyi et al.'s (2020) study and the eleven-week interventions in Turan and Rahman's (2024) study showed significant reductions in procrastination and academic stress up to four months post-intervention. This suggests that cognitive restructuring and behavioral habit formation require time for consolidation. Conversely, shorter interventions, such as those conducted by Febriani et al. (2020) and Buana and Zulwidyaningtyas (2024), still produced meaningful results, but their long-term effects have not been empirically tested.

In terms of population and cultural context, research shows interesting variation. Studies in Indonesia generally involve high school and college students, with an emphasis on social and emotional factors such as family pressure, perfectionism, and negative perceptions of academic tasks (Putri et al., 2023; Budiman et al., 2020). Meanwhile, international research in Europe, South Asia, and Africa highlights the role of self-regulation, academic stress, and social support as important aspects influencing the

effectiveness of CBT (de Haas et al., 2025; Khurshid et al., 2025). Cultural context has been shown to moderate intervention outcomes: in collectivistic environments like Indonesia and Pakistan, social pressure and family expectations can reinforce the need for group support and empathy-based counseling approaches; conversely, in individualistic contexts, CBT effectiveness is more determined by internal factors such as motivation and self-control.

Several moderator and mediator factors have also been consistently found to influence intervention outcomes. Self-efficacy emerged as a key mediator in most studies. Increased confidence in one's abilities has been shown to decrease procrastination and increase academic initiative (Budiman et al., 2020; de Haas et al., 2025). Furthermore, social support acts as a moderator, strengthening intervention outcomes, particularly in group settings. Academic impulsivity and anxiety are also cited as important mediators: a simultaneous decrease in impulsivity and anxiety contributes to increased self-discipline (Khurshid et al., 2025). Studies that added *self-talk* and *relaxation training components* reported improved outcomes because the combination of cognitive and physiological techniques had a synergistic effect on emotion regulation (Ugwuanyi et al., 2020).

Theoretically, these findings reinforce the notion that academic procrastination results from a complex interaction between cognitive beliefs, behavioral control, and emotional regulation. CBT is effective because it targets all three aspects simultaneously, reinforcing the concept of *triadic reciprocity* in Bandura's social-cognitive learning theory. Practically, these results demonstrate that CBT, particularly in group and online formats, has significant potential for implementation in educational institutions. Group formats are not only efficient but also facilitate social support, accelerating the process of behavioral change (Lubis & Djuwita, 2022). Meanwhile, online versions of CBT have proven adaptive and effective in the increasingly common context of distance learning (Turan & Rahman, 2024). Thus, this study confirms that CBT is an evidence-based psychological intervention that can be integrated into academic advising services to reduce procrastination and improve student well-being sustainably.

An analysis of ten articles on *Cognitive Behavior Therapy* (CBT) in reducing academic procrastination yielded three main sub-themes, namely: (1) differences in effectiveness between individual and group CBT, (2) effectiveness based on participant age range, and (3) effectiveness based on intervention duration. Findings across studies revealed a consistent pattern that CBT, in various formats and demographic contexts, demonstrated significant effectiveness in reducing academic procrastination behavior.

1. Differences in Effectiveness of Individual CBT and Group CBT

Thematic analysis showed that both individual and group interventions were effective in reducing procrastination. However, their effectiveness differed. Individual interventions, as reported by Febriani et al. (2020), provided consistent reductions because personalized cognitive and behavioral strategies allowed for more specific treatment of cognitive distortions. This format is suitable for individuals with severe procrastination or profound anxiety.

In contrast, group CBT in studies by Budiman et al. (2020), Lubis and Djuwita (2022), Ugwuanyi et al. (2020), and several cross-country RCTs, demonstrated stronger and more stable results, including retention of effects up to two to four months post-intervention. The effectiveness of the group format is influenced by increased social support, the formation of adaptive behavioral norms, and the strengthening of motivation through interactions between group members. Large-scale studies such as de Haas et al. (2025) and Khurshid et al. (2025) reported large effect sizes ($d = 1.09$; $\eta^2 = .29$), which are indicators of strong behavioral change after group CBT. Group CBT is superior in stability of effects and long-term skill transfer, while individual CBT is more optimal for personal and intensive treatment needs.

2. Effectiveness of CBT Based on Participant Age

Variations in effectiveness were seen across age groups. In adolescent participants (middle school–high school), as reported by Lubis and Djuwita (2022), Febriani et al. (2020), and Buana and Zulwidyaningtyas (2024), procrastination decreased rapidly. This effect was primarily driven by adolescents' high responsiveness to behavioral techniques such as *self-monitoring* and *behavioral activation*, in line with developmental characteristics that are still susceptible to impulsivity and unstable self-regulation.

In contrast, in college students, CBT has demonstrated more stable effectiveness. Studies by de Haas et al. (2025), Turan and Rahman (2024), and Budiman et al. (2020) show that college students are better able to utilize cognitive restructuring due to their more mature reflective and metacognitive capacities. In this group, increased self-efficacy was the most prominent mediator explaining the decrease in procrastination.

More broadly, a study of non-school adolescents in a Pakistani RCT (Khurshid et al., 2025) showed that CBT not only reduced procrastination, but also reduced burnout, anxiety, and *self-handicapping*, confirming that CBT has an effect on emotion regulation across age groups. Age range influenced the trajectory of change: adolescents were more responsive to behavioral components, while college students were more responsive to cognitive interventions.

3. Effectiveness Based on Duration of Intervention

Intervention duration was found to be an important determinant of effect stability. Short-duration interventions (4–5 sessions), such as those in Buana and Zulwidyaningtyas (2024), produced significant reductions relatively quickly, but have not provided adequate longitudinal evidence.

Interventions of medium duration (6–8 sessions), as demonstrated in RCTs by Ugwuanyi et al. (2020) and Khurshid et al. (2025), produce more stable effects, with retention of change through follow-up. This duration is considered optimal because it is sufficient to change maladaptive thought patterns while also allowing for the consolidation of new habits through behavioral practice.

Longer-duration programs (10–11 weeks), such as those in Turan and Rahman (2024), produced the most stable effects, particularly in reducing procrastination and academic stress, which persisted for up to four months. This suggests that cognitive changes and habit formation require time to solidify to be sustainable over the long term. A program with a duration of 6–11 sessions is recommended as the standard CBT intervention for academic procrastination because it produces stable and measurable changes.

Integration of Findings: CBT Working Mechanisms

The three sub-themes above reinforce the understanding that the effectiveness of CBT in reducing academic procrastination works through three main mechanisms:

1. Cognitive restructuring
Reducing irrational beliefs such as perfectionism, fear of failure, and unrealistic expectations.
2. Behavioral interventions
include *self-monitoring*, task planning, *behavioral activation*, which directly reduce avoidance patterns.
3. Emotional regulation
in the form of reducing academic anxiety, impulsivity, and stress so that participants are better able to complete tasks systematically.

Practical Implications

These findings recommend the integration of CBT, both in group and online formats, into academic advising and counseling services in schools and universities. The group format is highly recommended due to its resource efficiency, positive social impact, and demonstrated high stability of effects. A minimum duration of six sessions should be considered as the implementation standard to ensure optimal cognitive and behavioral changes.

Conclusion

This literature review confirms that Cognitive Behavior Therapy is a psychological intervention consistently effective in reducing academic procrastination across various educational levels. Of the ten studies analyzed, all showed a significant reduction in procrastination behavior following CBT implementation, whether in individual, group, or online formats. Evidence from large-scale experimental studies, such as those conducted by Ugwuanyi et al. (2020), Khurshid et al. (2025), and de Haas et al. (2025), strengthens the empirical validity of this approach, with high effect sizes and sustained results several months after the intervention. This consistency suggests that CBT functions not only as a corrective tool for maladaptive behavior but also as a preventive strategy to enhance self-regulation and academic motivation.

Conceptually, the effectiveness of CBT in the context of academic procrastination can be explained through cognitive restructuring mechanisms that target irrational beliefs and

negative automatic thoughts that trigger procrastination. As individuals learn to replace negative thoughts with more rational and realistic interpretations, levels of academic task avoidance decrease. Behavioral mechanisms such as *self-monitoring*, time management training, and *behavioral activation* reinforce intervention outcomes by providing concrete strategies to overcome behavioral barriers. Thus, CBT not only changes thinking but also builds stronger self-control skills and academic responsibility.

Intervention duration has been shown to influence the stability of outcomes. Programs with six to eleven sessions, such as those implemented in the studies by Ugwuanyi et al. (2020) and Turan and Rahman (2024), produced more consistent long-term effects than shorter interventions. Furthermore, varying the format between face-to-face and online did not diminish the effectiveness of CBT. In fact, group and online formats were shown to be more efficient and increased social support, which acts as a reinforcing factor for behavior change (Lubis & Djuwita, 2022).

The most prominent moderator and mediator factors are self-efficacy, social support, and Self-control. Increased self-efficacy is consistently associated with decreased procrastination as individuals become more confident in their academic abilities. Social support from intervention groups or learning environments reinforces cognitive and behavioral changes, while self-control reduces impulsivity, a common trigger for procrastination.

Theoretically, these findings strengthen the cognitive-behavioral theoretical framework. And Bandura's social-cognitive theory suggests that changes in academic behavior can be achieved through cognitive modification accompanied by adaptive behavioral training. Practically, CBT has great potential for integration into academic counseling services in schools and universities, both face-to-face and through digital platforms. Implementing a structured, measurable, and culturally appropriate CBT program can be an effective strategy for reducing procrastination, improving learning discipline, and supporting sustainable academic success.

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