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Research paper

Effects of a self-directed cognitive behavioral therapy manual on depressive symptoms among youths incarcerated for drug-related offenses

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ABSTRACT

Background: Depressive symptoms are common among justice-involved youths, yet access to structured psychological support in correctional settings remains limited. This study examined the short-term effects of a self-directed cognitive behavioral therapy (CBT) manual on depressive symptoms among youths incarcerated for drug-related offenses.

Methods: A quasi-experimental two-group pretest-posttest design with a two-week follow-up was conducted among 100 male justice-involved youths in Thailand (50 per group). Participants were incarcerated for drug-related offenses and were receiving routine rehabilitation services within the correctional facility. Depressive symptoms were assessed using the Center for Epidemiologic Studies Depression Scale (CES—D). The intervention group completed an eight-session self-directed CBT manual, while the control group received routine care. Group-by-time effects were examined using two-way repeated-measures analysis of variance, with Bonferroni-adjusted pairwise comparisons and standardized effect sizes.

Results: A significant group-by-time interaction was observed, $F(1.726, 169.185) = 21.412$, $p < .001$, partial eta squared = 0.179. Compared with the control group, the intervention group had lower depressive symptom scores at post-intervention and the two-week follow-up. Within the intervention group, depressive symptom scores decreased significantly from baseline to post-intervention and follow-up, with large within-group effect sizes.

Conclusions: The self-directed CBT manual was associated with short-term reductions in depressive symptom scores among justice-involved youths incarcerated for drug-related offenses. These findings suggest that a structured self-directed CBT manual may be a useful low-intensity psychosocial support option in correctional settings. Further studies using more rigorous designs and longer follow-up periods are warranted.

1. Introduction

Depression is one of the most prevalent and clinically significant mental health conditions among adolescents and youths worldwide and represents a leading cause of disability during this developmental period (Steinberg, 2022). Global evidence indicates that approximately one in five youths experience depressive symptoms, with prevalence increasing during adolescence and contributing to a substantial and persistent global burden, including more than 56 million incident cases in 2019 (Lu et al., 2024; Hua et al., 2024). Depression during adolescence is associated with impaired school, family, and peer functioning, adverse developmental trajectories, recurrence, and elevated suicide risk, underscoring the need for accessible interventions for high-risk youth populations (U.S. Preventive Services Task Force, 2022; World Health Organization, 2025).

Depressive symptoms frequently co-occur with substance use and substance-related harms during adolescence and emerging adulthood. Adolescents with co-occurring depression and substance use are at increased risk of suicidality and poorer psychosocial functioning (Marino et al., 2024). Longitudinal evidence further indicates that adolescent depression co-occurring with alcohol use disorder is associated with poorer adult mental health outcomes, including later depression, anxiety, suicidality, and alcohol use disorder (Bohman et al., 2025). Despite this elevated vulnerability, many affected youths do not

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receive adequate screening or treatment for co-occurring depressive symptoms and substance-related problems (James et al., 2024; Welsh et al., 2025). Globally, illicit substance use remains high, with approximately 292 million individuals reporting use in 2022, and amphetamine-type stimulants continue to show increasing trends in East and Southeast Asia (United Nations Office on Drugs and Crime, 2024).

In Thailand, stimulant-related substance use among youths constitutes a major public health and criminal justice concern. Methamphetamine accounts for more than 80% of treatment admissions, with nearly one-third of individuals younger than 25 years and high rates of early initiation (Office of the Narcotics Control Board, 2024). Early exposure to psychoactive substances may disrupt neurodevelopmental processes involved in emotional regulation and cognitive control, thereby increasing vulnerability to persistent depressive symptoms (Baker et al., 2025).

Justice-involved youths are particularly vulnerable to depressive symptoms, with prevalence exceeding that observed in community populations (Beaudry et al., 2021). In Thailand, depressive symptoms have also been reported among youths and incarcerated populations with methamphetamine-related problems (Kantiya and Uthis, 2022). Within correctional settings, untreated depressive symptoms may undermine rehabilitation by increasing emotional distress, suicidal ideation, and barriers to participation in rehabilitation programs. Mental health problems are highly prevalent in prison populations, and people with psychiatric disorders may have difficulty coping with the stressors of the prison environment (Fovet et al., 2024). Suicidal ideation is also a major concern among justice-involved youths, and participation in prosocial facility activities has been reported as a protective factor against suicide ideation (Liu, 2025). These findings highlight the need for accessible psychological support within correctional settings.

From a cognitive–behavioral perspective, depressive symptoms may be conceptualized as resulting from interactions among environmental stressors, cognitive appraisals, emotional responses, and behavioral patterns (Beck, 2021). Applied to justice-involved youths, correctional environments may expose individuals to chronic stressors, including loss of autonomy, social isolation, stigma, disrupted family relationships, and uncertainty about the future, which may increase psychological distress and vulnerability to depressive symptoms (Fazel et al., 2016; Fovet et al., 2024). Within Beck's cognitive model, such stressors may activate negative automatic thoughts and maladaptive beliefs, thereby contributing to depressive affect and behavioral withdrawal (Beck, 2021).

Although evidence-based treatments for depression and substance-related problems are available, including pharmacotherapy, motivational interviewing, and CBT (Welsh et al., 2025), access to structured depression-focused psychological interventions in correctional settings remains limited because of workforce shortages, security constraints, and resource limitations (Fazel et al., 2016). This service gap highlights the need for feasible low-intensity psychosocial interventions that can be implemented in resource-constrained correctional environments. Empirical evidence supports CBT-based interventions across related populations and delivery formats. Brief CBT has shown beneficial effects on mental health outcomes among people with substance-related disorders (Alavi et al., 2023). Among youths, computerized CBT has demonstrated small but significant effects on depression and anxiety symptoms (Wickersham et al., 2022).

In Thailand, a self-directed CBT booklet reduced depressive symptoms and alcohol use among people with alcohol dependence, supporting the relevance of manualized self-help CBT in resource-limited Thai contexts (Thapinta et al., 2017). However, evidence remains limited regarding the use of self-directed CBT manuals for depressive symptoms among justice-involved youths in correctional settings. Accordingly, this quasi-experimental study examined the short-term effects of a self-directed CBT manual on depressive symptoms among justice-involved youths incarcerated for drug-related offenses in a Thai correctional facility.

2. Materials and methods

2.1. Study design

This quasi-experimental, nonequivalent control-group study included assessments at baseline, immediately post-intervention, and two-week follow-up. Study condition was assigned by correctional staff using pre-existing housing zones; the research team did not determine zone assignment. Zones 1–5 received the intervention, and Zones 6–10 received routine care. Participants were randomly selected within each condition-specific eligible pool; thus, randomisation applied to participant selection, not treatment allocation. Because participant data were recorded by study condition rather than by individual housing zone, within-zone dependence could not be estimated and cluster-adjusted analyses could not be performed.

2.2. Study setting and participants

The study was conducted in a central correctional facility in Thailand, where approximately 700 male youths were housed during the recruitment period. Participants were male justice-involved youths aged 18–25 years who were incarcerated for drug-related offenses, had not been formally diagnosed with substance use disorder for this study, and were receiving routine rehabilitation services.

Eligible participants had non-severe depressive symptoms, defined a priori as scores of 17–21 on the Thai Center for Epidemiologic Studies Depression Scale (CES—D; Trangkasombat et al., 1997). Additional eligibility criteria were adequate Thai literacy, no acute substance withdrawal symptoms, no documented psychiatric disorder requiring specialized treatment, no previous psychological treatment for depressive symptoms, and ability to provide written informed consent. Participants were excluded if they had severe depressive symptoms requiring referral, a diagnosed psychiatric condition requiring specialized mental health treatment, scheduled release before study completion, or inability to complete the self-directed manual activities.

2.3. Sample size and sampling

Sample size was estimated using G*Power version 3.1, with $\alpha = 0.05$, power $= 0.80$, and a small-to-moderate effect size of $f = 0.20$ based on prior CBT-based self-help research (Thapinta et al., 2017). The minimum required sample size was 42 participants per group; therefore, 50 participants were recruited per group to allow for potential attrition.

Recruitment followed a sequential procedure. First, the facility's pre-existing housing zones were designated administratively as intervention or control zones. Second, CES-D screening was conducted among male youths in the facility. Third, youths who met the depressive symptom criterion were classified according to their pre-existing housing zones. Of 124 eligible youths, 64 were from the intervention zones and 60 from the control zones. Finally, within each pre-specified sampling frame, 50 participants were selected using simple random sampling without replacement. Baseline equivalence between groups was examined before outcome analyses. Participant flow is shown in Fig. 1.

2.4. Measures

Demographic and background information was collected using a researcher-developed questionnaire covering age, education, prior occupation, income, marital status, family relationships, incarceration history, and substance-use history.

Depressive symptoms were assessed using the Center for Epidemiologic Studies Depression Scale (CES—D; Radloff, 1977). The validated Thai version consists of 20 items rated on a 4-point scale from 0 to 3, with total scores ranging from 0 to 60; higher scores indicate greater depressive symptom severity (Trangkasombat et al., 1997). The CES-D was used as a screening measure of depressive symptoms rather than

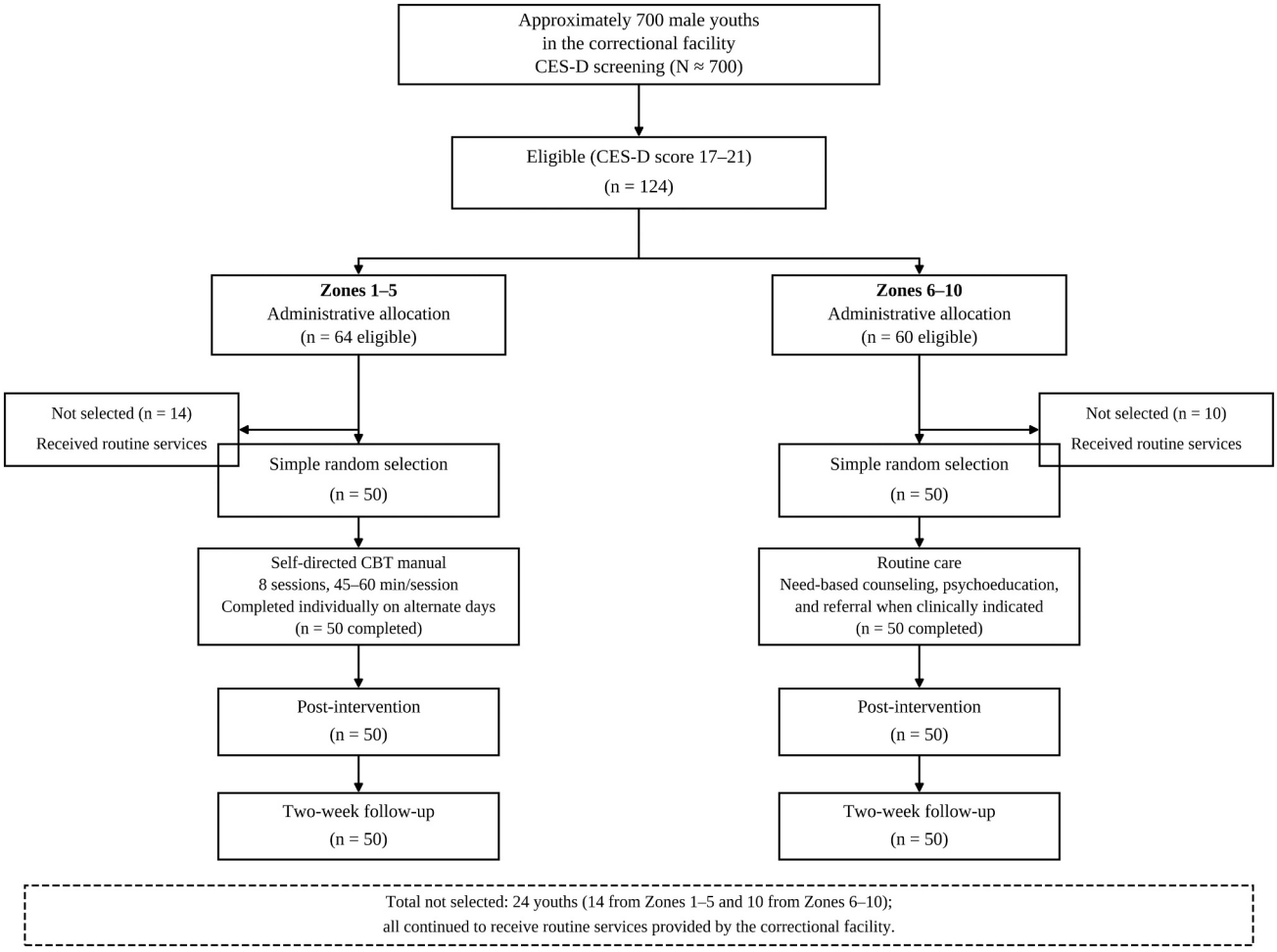

Fig. 1. Flow of participant recruitment, allocation, and follow-up.
Note. CES-D = Center for Epidemiologic Studies Depression Scale; CBT = cognitive behavioral therapy.

as a diagnostic assessment of depressive disorder. A score of ≥22 has been used to indicate clinically significant depressive symptoms in the Thai version; therefore, scores of 17–21 were used in this study to identify participants with non-severe depressive symptoms. The Thai CES-D has demonstrated good internal consistency among Thai youths (Cronbach's α = 0.86; Vannasri et al., 2025). Internal consistency in the present sample was high (Cronbach's α = 0.87).

2.5. Intervention

The intervention consisted of an eight-session self-directed cognitive behavioral therapy (CBT) manual developed from Beck's cognitive behavioral model and relevant literature on CBT-based self-help interventions. The manual was designed for independent use by justice-involved youths in the correctional setting and aimed to reduce depressive symptoms by helping participants understand depressive emotions, identify negative automatic thoughts, recognize cognitive–emotional–behavioral links, challenge maladaptive thoughts, practice relaxation and problem-solving skills, and set adaptive personal goals.

The eight activities were: (1) My Sad Feelings and Gloomy Days, (2) Catching My Thoughts, (3) Negative Thoughts, Negative Body and Mind, (4) Tagging My Distorted Thoughts, (5) Changing My Thought Path to Defeat Sadness, (6) Move, Adjust, and Release, (7) Face It, Find the Truth, and (8) Dream Far, Reach High. Participants completed one activity per session, lasting approximately 45–60 min, on alternate days. The manual was completed individually, with correctional healthcare staff and the research team providing logistical support and monitoring participant well-being but not delivering additional CBT or therapeutic guidance. An overview of the intervention components is presented in Table 2.

Content validity was evaluated by five experts in psychiatric–mental health nursing, psychiatry, clinical psychology, and CBT, yielding an Item Objective Congruence index of 1.00. The manual was pilot-tested with 10 justice-involved youths with characteristics similar to the study participants and was found to be clear, acceptable, and feasible for self-directed use.

2.6. Ethical considerations

The study was approved by an institutional review board (IRB No. 1–025/2024; April 4, 2024) and was conducted in accordance with the principles of the Declaration of Helsinki. Participants received written and verbal information about the study objectives, procedures, confidentiality, voluntary participation, and their right to withdraw at any time without penalty. Written informed consent was obtained before participation. Participants were informed that participation or withdrawal would not affect their legal status, sentence, rehabilitation privileges, access to routine services, or institutional benefits.

2.7. Data collection procedure

Data were collected between April and August 2024 in coordination with correctional healthcare staff. Baseline demographic information and depressive symptoms were assessed before intervention delivery.

Participants in the intervention group completed the self-directed CBT manual individually on alternate days in a private room within the correctional facility. A trained psychiatric–mental health nurse coordinated the sessions, monitored participant well-being, and provided logistical support, but did not deliver therapeutic guidance or additional CBT. Completion of manual activities was documented by the research team and correctional healthcare staff.

Participants in the control group received routine need-based mental health care provided by the facility's clinical psychologist and registered nurses. Routine care could include psychological support, counseling, psychoeducation, and referral to an external hospital when clinically indicated. It was not structured, manualized, or CBT-based, and the control group did not receive the self-directed CBT manual during the study period.

To reduce contamination, intervention materials were provided only to the intervention group, and movement across housing zones was restricted. Depressive symptoms were reassessed immediately post-intervention and at the two-week follow-up. Participant safety was clinically monitored throughout the study, including observation for worsening mood, psychological distress, suicidal ideation, and self-harm risk. When clinically indicated, participants received immediate support from facility mental health staff and referral to the responsible external hospital.

2.8. Statistical analysis

Data were analyzed using IBM SPSS Statistics for Windows, version 30.0. Descriptive statistics summarized participant characteristics and CES-D scores. Baseline group differences were examined before outcome analyses. A two-way repeated-measures ANOVA tested group, time, and group-by-time effects on depressive symptoms, with Greenhouse–Geisser corrections applied when sphericity was violated. Partial eta squared, Cohen's dz., and Cohen's d were reported as effect sizes. Bonferroni-adjusted pairwise comparisons were used, and statistical significance was set at $p < .05$.

3. Results

3.1. Participant characteristics

All participants were male justice-involved youths incarcerated for drug-related offenses. Baseline demographic, substance-use, incarceration-related, and depressive-symptom characteristics are summarized in Table 1. Groups did not differ significantly in age, number of incarcerations, sentence duration, or baseline CES-D scores. All participants completed the study protocol and provided outcome data at baseline, post-intervention, and the two-week follow-up. In the intervention group, all 50 participants completed the eight-session self-directed CBT manual and associated activities, with no study discontinuations or losses to follow-up.

3.2. Depressive symptoms

Mean CES-D scores for both groups across assessment points are presented in Table 3. At baseline, depressive symptom scores were similar between groups. In the intervention group, mean CES-D scores decreased from 19.30 (SD = 1.73) at baseline to 14.28 (SD = 4.20) post-intervention and 13.44 (SD = 4.83) at the two-week follow-up. In the control group, mean CES-D scores were 19.02 (SD = 1.79) at baseline, 18.54 (SD = 3.09) post-intervention, and 17.24 (SD = 3.93) at follow-up.

3.3. Effects of the self-directed CBT manual on depressive symptoms

A two-way repeated-measures ANOVA showed a significant main effect of group, $F(1, 98) = 23.446$, $p < .001$, partial eta squared = 0.193, and a significant main effect of time, $F(1.726, 169.185) = 53.259$, $p < .001$, partial eta squared = 0.352. Most importantly, the group-by-time interaction was significant, $F(1.726, 169.185) = 21.412$, $p < .001$, partial eta squared = 0.179. Mauchly's test indicated that the

Table 1
Baseline characteristics of participants by study group ($N = 100$).

Characteristic	Intervention ($n = 50$)	Control (n = 50)	p value
Age, years, mean (SD)	22.74 (2.14)	22.48 (2.06)	0.537
Male sex, n (%)	50 (100.0)	50 (100.0)	–
Single marital status, n (%)	46 (92.0)	45 (90.0)	–
Buddhist religion, n (%)	49 (98.0)	49 (98.0)	–
Upper secondary/vocational education or higher, n (%)	36 (72.0)	32 (64.0)	–
Employed before incarceration, n (%)	43 (86.0)	37 (74.0)	–
Monthly income before incarceration ≥10,001 THB, n (%)	31 (62.0)	25 (50.0)	–
Age at first substance use, years, mean (SD)	15.84 (2.99)	15.64 (1.97)	–
First incarceration, n (%)	35 (70.0)	43 (86.0)	0.117
Number of incarcerations, mean (SD)	1.30 (0.46)	1.16 (0.42)	0.117
Sentence duration, years, mean (SD)	3.28 (1.69)	3.50 (1.25)	0.461
Baseline CES-D score, mean (SD)	19.30 (1.73)	19.02 (1.79)	0.428
Amphetamine use history, n (%)	50 (100.0)	50 (100.0)	–
Tobacco use history, n (%)	39 (78.0)	35 (70.0)	–
Alcohol use history, n (%)	27 (54.0)	21 (42.0)	–
Cannabis use history, n (%)	24 (48.0)	21 (42.0)	–
Ice/crystalline methamphetamine use history, n (%)	24 (48.0)	20 (40.0)	–
Heroin use history, n (%)	3 (6.0)	2 (4.0)	–
Glue/inhalant use history, n (%)	7 (14.0)	1 (2.0)	–
Other substances use history, n (%)	2 (4.0)	2 (4.0)	–

Note. Values are presented as n (%) or mean (SD). CES-D = Center for Epidemiologic Studies Depression Scale; THB = Thai baht.

Table 2
Overview of the self-directed cognitive behavioral therapy (CBT) intervention.

Session	Activity title	Core objectives / skills practiced
1	My Sad Feelings and Gloomy Days	Exploring depressive emotions and understanding the development of depression, including awareness of emotional and cognitive responses.
2	Catching My Thoughts	Identifying cognitive distortions and practicing thought monitoring to increase awareness of negative automatic thoughts.
3	Negative Thoughts, Negative Body and Mind	Understanding the relationships among thoughts, emotions, physiological reactions, and behaviors based on the cognitive model.
4	Tagging My Distorted Thoughts	Detecting negative automatic thoughts in everyday situations and recognizing maladaptive thinking patterns.
5	Changing My Thought Path to Defeat Sadness	Practicing cognitive restructuring to challenge negative automatic thoughts and modify dysfunctional beliefs.
6	Move, Adjust, and Release	Learning stress-reduction and relaxation techniques to regulate emotional and physiological responses.
7	Face It, Find the Truth	Applying structured problem-solving skills to manage real-life challenges and reduce maladaptive responses.
8	Dream Far, Reach High	Strengthening motivation, encouraging behavioral activation, and promoting the application of CBT skills in daily life to reduce behavioral withdrawal.

Table 3
Mean CES-D scores for the intervention and control groups at baseline, post-intervention, and follow-up (N = 100).

Group	Baseline M (SD)	Post-intervention M (SD)	Follow-up M (SD)
Intervention group	19.30 (1.73)	14.28 (4.20)	13.44 (4.83)
Control group	19.02 (1.79)	18.54 (3.09)	17.24 (3.93)

Note. CES-D = Center for Epidemiologic Studies Depression Scale.

Table 4
Summary of two-way repeated-measures ANOVA for CES-D scores (N = 100).

Source of variation	SS	df	MS	F	p value	Partial eta squared
Between groups: Group	504.403	1	504.403	23.446	< 0.001	0.193
Error	2108.327	98	21.514			
Within groups: Time	776.660	1.726	449.879	53.259	< 0.001	0.352
Group x Time	312.247	1.726	180.868	21.412	< 0.001	0.179
Error	1429.093	169.185	8.447			

Note. Greenhouse-Geisser corrections were applied because the assumption of sphericity was violated.

Table 5
Bonferroni-adjusted pairwise comparisons of CES-D scores across time points in the intervention group (n = 50).

Comparison	Mean difference	SE	95% CI	Adjusted p value	Cohen's dz
Baseline - post-intervention	5.02	0.62	3.49 to 6.55	< 0.001	1.15
Baseline - Follow-up	5.86	0.70	4.12 to 7.60	< 0.001	1.18
Post-intervention - Follow-up	0.84	0.25	0.21 to 1.47	0.005	0.47

Note. Positive mean differences indicate reductions in CES-D scores over time. CI = confidence interval; CES-D = Center for Epidemiologic Studies Depression Scale.

Table 6
Direct between-group contrasts and between-group differences in change scores.

Contrast	Mean difference	95% CI	p value	Cohen's d
Post-intervention: Intervention - Control	−4.26	−5.72 to −2.80	< 0.001	−1.16
Follow-up: Intervention - Control	−3.80	−5.55 to −2.05	< 0.001	−0.86
Change from baseline to post-intervention	4.54	3.02 to 6.06	< 0.001	1.19
Change from baseline to follow-up	4.08	2.32 to 5.84	< 0.001	0.92

Note. For post-intervention and follow-up contrasts, negative values indicate lower CES-D scores in the intervention group. For change-score contrasts, positive values indicate greater reductions in the intervention group.

assumption of sphericity was violated; therefore, Greenhouse–Geisser corrections were applied (Table 4).

Bonferroni-adjusted pairwise comparisons within the intervention group showed significant reductions in CES-D scores from baseline to post-intervention (MD = 5.02, SE = 0.62, 95% CI [3.49, 6.55], $p < .001$, Cohen's dz. = 1.15) and from baseline to follow-up (MD = 5.86, SE = 0.70, 95% CI [4.12, 7.60], p < .001, Cohen's dz. = 1.18). CES-D scores also decreased from post-intervention to follow-up (MD = 0.84, SE = 0.25, 95% CI [0.21, 1.47], $p = .005$, Cohen's dz. = 0.47) (Table 5).

Direct between-group contrasts showed that the intervention group had lower CES-D scores than the control group at post-intervention (MD = −4.26, 95% CI [−5.72, −2.80], p < .001, Cohen's d = −1.16) and at the two-week follow-up (MD = −3.80, 95% CI [−5.55, −2.05], p < .001, Cohen's d = −0.86). The reduction from baseline to post-intervention was greater in the intervention group than in the control group (MD = 4.54, 95% CI [3.02, 6.06], p < .001, Cohen's d = 1.19), as was the reduction from baseline to follow-up (MD = 4.08, 95% CI [2.32, 5.84], p < .001, Cohen's d = 0.92) (Table 6).

No suicidal ideation, self-harm thoughts, serious adverse events, severe mood deterioration, emergency referrals, study discontinuations, or losses to follow-up were reported or detected during the study period.

4. Discussion

This study found that participation in a self-directed CBT manual was associated with lower depressive symptom scores among justice-involved youths incarcerated for drug-related offenses. The significant group-by-time interaction and direct between-group contrasts indicated greater short-term reductions in CES-D scores in the intervention group than in the routine-care control group. These findings should be interpreted as preliminary short-term evidence rather than definitive evidence of sustained effectiveness.

The findings are consistent with prior evidence supporting CBT-based self-help and low-intensity interventions. Thapinta et al. (2017) reported reductions in depressive symptoms following a self-directed CBT manual among individuals with alcohol dependence, while Wickersham et al. (2022) found that computerized CBT produced small but significant improvements in depression and anxiety symptoms among adolescents. More broadly, CBT has been shown to be effective for youth with depressive symptoms, particularly when interventions include components such as cognitive restructuring and behavioral activation (Oud et al., 2019). However, evidence on psychological interventions for depression in incarcerated populations remains comparatively limited; therefore, the present findings contribute preliminary evidence from a highly constrained correctional context.

The observed pattern of findings is theoretically congruent with Beck's cognitive theory of depression (Beck, 2021), which emphasizes the interaction among cognition, emotion, behavior, and physiological responses. Justice-involved youths may experience chronic stressors, including loss of autonomy, separation from family, stigma, restricted routines, and uncertainty about the future. These stressors may activate negative automatic thoughts and maladaptive beliefs related to hopelessness, worthlessness, and anticipated rejection, thereby contributing to depressive symptoms.

Within this framework, the self-directed CBT manual may have operated through structured cognitive and behavioral learning processes. Manual-guided activities encouraged participants to identify negative automatic thoughts, examine cognitive–emotional–behavioral links, and practice cognitive restructuring. Behavioral activation components encouraged engagement in feasible and institutionally permitted activities, such as reading or writing exercises, structured self-care, physical activity, educational or vocational routines where available, and goal-directed daily activities. Relaxation and problem-solving exercises may also have supported coping with stressors within the correctional environment. However, the present study did not directly measure cognitive distortions, behavioral activation, emotional regulation, or other mediators; therefore, these explanations should be regarded as theoretically plausible rather than empirically demonstrated mechanisms.

The use of simplified language, visual aids, and step-by-step exercises may have enhanced accessibility and supported independent completion of the manual despite environmental constraints. All participants in the

intervention group completed the manual and associated activities, suggesting procedural feasibility in this setting. Nevertheless, feasibility, acceptability, implementation cost, staff burden, and scalability were not formally evaluated and should be examined in future implementation studies.

Participants in the control group received routine need-based mental health support, including counseling, psychoeducation, and referral when indicated. Such routine care may provide general emotional support but does not necessarily include structured cognitive and behavioral skill acquisition. The observed between-group differences suggest that the structured CBT manual may provide additional short-term benefit beyond routine care. However, because the study used a quasi-experimental design with zone-based allocation and non-cluster-adjusted analyses, causal conclusions should be drawn cautiously.

4.1. Limitations and future directions

This study has several limitations. The quasi-experimental design and absence of individual randomisation limit causal inference. Because study conditions were assigned by housing zones, participants within the same zone may not have been statistically independent; however, data were recorded by study condition rather than by individual zone, so within-zone dependence could not be estimated and the analyses were not cluster-adjusted. In addition, participants were incarcerated for drug-related offenses and had histories of amphetamine use, but substance use disorder was not formally diagnosed using DSM-5 or ICD criteria, and continued substance use during the trial was not assessed. The findings should therefore not be generalized to clinically diagnosed substance use disorder populations. Depressive symptoms were also measured by self-report, and generalizability is limited by the single-facility male sample and two-week follow-up. Future studies should use randomized or cluster-adjusted longitudinal designs, diagnostic assessments, longer follow-up, multisite samples, mediator measures, and implementation outcomes.

4.2. Implications for practice

Self-directed CBT manuals may provide a practical, low-intensity adjunct to routine correctional mental health services for justice-involved youths with depressive symptoms. In settings where access to specialist psychotherapy is limited, structured manualized interventions may help increase access to basic cognitive-behavioral coping skills with minimal specialist input. However, scalability, implementation cost, staff burden, and integration into routine correctional care require formal evaluation in future implementation studies.

5. Conclusion

This study provides preliminary short-term evidence that participation in a self-directed CBT manual was associated with lower depressive symptom scores among justice-involved youths incarcerated for drug-related offenses. Given the quasi-experimental design, zone-based group allocation, non-cluster-adjusted analyses, restricted CES-D range, self-reported outcome, single-facility male sample, and short follow-up, the findings should be interpreted cautiously. Further multicenter studies using diagnostic assessments, randomized or cluster-adjusted designs, longer follow-up, and implementation outcomes are warranted.

CRediT authorship contribution statement

Pakinee Detchaiyot: Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Duangjai Vatanasin:** Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Siripim Chupan:** Writing – original draft, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation. **Sarawalee Suntornvijitr:** Validation, Resources, Investigation, Formal analysis, Data curation.

Declaration of competing interest

The authors declare no conflicts of interest. The authors alone are responsible for the content and writing of this manuscript.

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