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Feasibility and Clinical Impact of Daily CBT-Based Self-Monitoring on Anxiety and Depressive Symptoms: A Prospective Four-Week Observational Study

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Abstract **Original Research Article**

Access to full structured cognitive behavioral therapy (CBT) protocols may be limited in routine psychiatric practice because of time constraints, therapist availability and patient adherence. Self-monitoring is a core CBT component, but its stand-alone clinical utility as a minimal intervention in real-world care remains insufficiently documented. This prospective four-week observational study evaluated the feasibility and short-term clinical impact of a daily CBT-based self-monitoring worksheet among outpatients followed at Ar-Razi Hospital, Salé, Morocco, for anxiety and/or depressive disorders. Participants completed a simplified daily CBT worksheet focused on situations, automatic thoughts, emotional intensity, behaviors, alternative thoughts and post-restructuring emotional intensity. Anxiety and depressive symptoms were assessed using the Generalized Anxiety Disorder-7 scale (GAD-7) and the Patient Health Questionnaire-9 scale (PHQ-9) at baseline and after four weeks. Feasibility was assessed by the number of completed worksheets and satisfaction. Twenty-eight patients were included. Mean age was 35.8 ± 6.5 years, and 64.3% were women. Diagnostic categories included anxiety disorders in 11 patients (39.3%), depressive disorders in 9 patients (32.1%) and mixed anxiety-depressive presentations in 8 patients (28.6%). Mean GAD-7 score decreased from 12.18 ± 2.45 to 7.71 ± 1.33, corresponding to a mean reduction of 4.46 points (approximately 36.7%). PHQ-9 scores also decreased, with a mean reduction of 4.75 points (approximately 36.2%). Mean emotional intensity decreased after cognitive restructuring by 4.23 ± 0.63 points. Participants completed a mean of 14.3 worksheets out of 20 expected, corresponding to approximately 71% completion. Daily CBT-based self-monitoring appears feasible and may be associated with short-term improvement in anxiety, depressive symptoms and emotional regulation. Larger controlled studies are required to confirm efficacy.

Keywords: Cognitive behavioral therapy, self-monitoring, anxiety, depression, GAD-7, PHQ-9, thought record, feasibility, outpatient psychiatry.

INTRODUCTION

Anxiety and depressive disorders are among the most common conditions encountered in psychiatric outpatient care and are frequently associated with functional impairment, reduced quality of life and high health-care utilization. Cognitive behavioral therapy (CBT) is an evidence-based psychotherapeutic approach for anxiety and depressive disorders, with robust support from meta-analytic literature [1]. However, access to complete structured CBT programs remains limited in many real-world settings because of therapist availability, consultation time, treatment costs and patient adherence constraints.

Self-monitoring is a central clinical tool within CBT. It helps patients identify the links between situations, automatic thoughts, emotions, physiological responses, behaviors and alternative interpretations [2]. In standard CBT, thought records and monitoring worksheets are commonly embedded within a broader therapist-led protocol. Nevertheless, in busy clinical settings, a simplified daily self-monitoring tool may represent a pragmatic, low-cost and scalable strategy to improve emotional awareness and support cognitive restructuring.

Previous research on CBT-based self-help and homework interventions has shown promising clinical effects for anxiety and depressive disorders [3,4]. However, fewer data are available on the feasibility and impact of CBT self-monitoring when used as a minimal stand-alone intervention delivered in routine psychiatric care. The present study aimed to evaluate the feasibility and short-term clinical effect of a daily CBT-based self-monitoring worksheet on anxiety and depressive symptoms over four weeks.

MATERIAL AND METHODS

Study design and setting. This was a prospective four-week observational study conducted at Ar-Razi Hospital, Salé, Morocco, among patients followed in outpatient psychiatric consultation for anxiety and/or depressive disorders.

Participants. Adult outpatients followed for an anxiety disorder, a depressive disorder or a mixed anxiety-depressive clinical presentation were eligible. Patients were excluded if they presented a current manic or hypomanic episode, acute psychosis, acute suicidal risk or severe cognitive impairment that could prevent reliable completion of the worksheet or questionnaires. All participants provided informed consent to participate in the study before inclusion.

Intervention. Participants were asked to complete a simplified CBT self-monitoring worksheet once daily, ideally five days per week for four weeks, corresponding to 20 expected worksheets. Each worksheet required approximately five minutes and focused on one daily situation. The worksheet included six sequential components: situation, automatic thought, initial emotional intensity, behavior or reaction, more realistic alternative thought and post-restructuring emotional intensity. The intervention was delivered in addition to usual psychiatric care.

Outcome measures. Anxiety symptoms were assessed using the Generalized Anxiety Disorder-7 scale (GAD-7) at baseline and at week four [5]. Depressive symptoms were assessed using the Patient Health Questionnaire-9 scale (PHQ-9) at the same time points [6]. Feasibility was assessed by the number of completed worksheets and by satisfaction rated from 0 to 10. Immediate emotional regulation was estimated using the change in emotional intensity before and after cognitive restructuring on each worksheet.

Statistical analysis. Descriptive statistics were used to summarize demographic and clinical variables. Continuous variables are reported as mean ± standard deviation when available, and categorical variables are reported as counts and percentages. Pre-post changes in GAD-7 and PHQ-9 scores were summarized as absolute and percentage reductions. The association between adherence and clinical improvement was explored using correlation analysis.

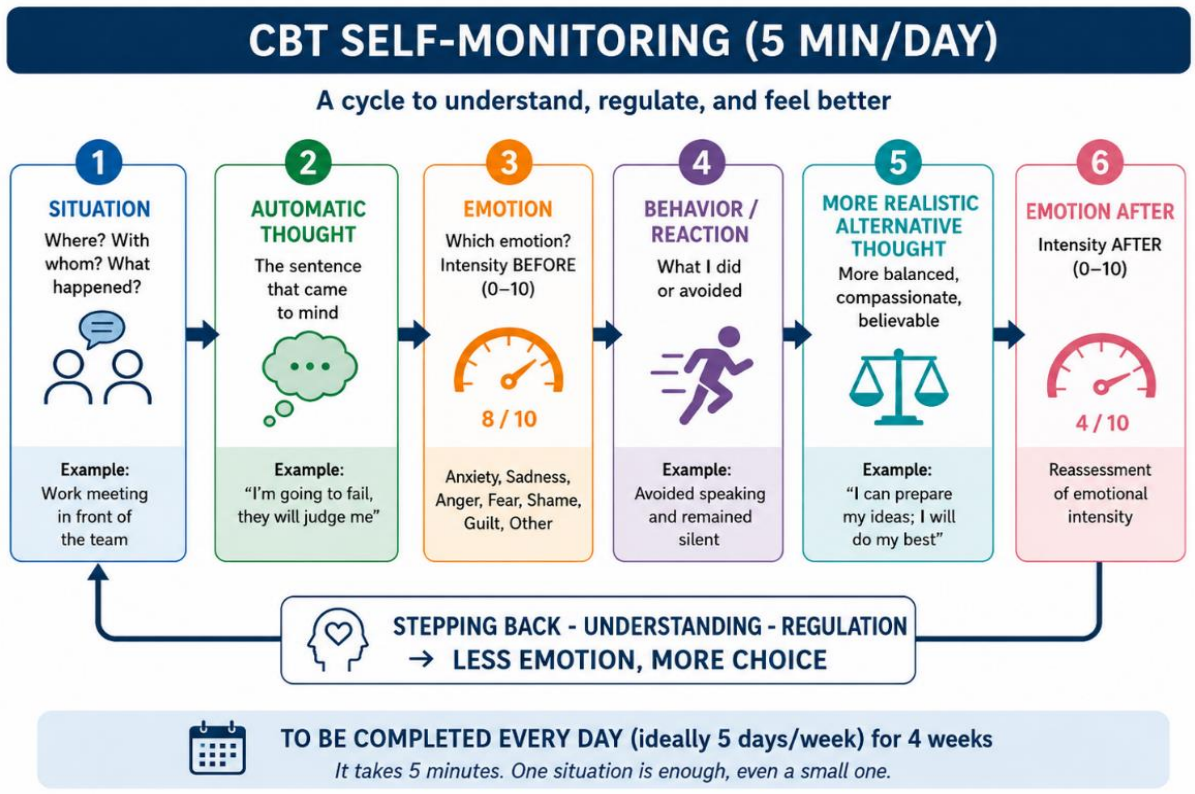

Figure 1. Daily CBT self-monitoring worksheet: simplified cognitive restructuring model.

RESULTS

The study included 28 outpatients. Mean age was 35.8 ± 6.5 years, with a predominance of women (64.3%). Diagnostic categories were anxiety disorders in 11 patients (39.3%), depressive disorders in 9 patients (32.1%) and mixed anxiety-depressive presentations in 8 patients (28.6%).

At four weeks, anxiety symptoms decreased substantially. Mean GAD-7 score decreased from 12.18 ± 2.45 at baseline to 7.71 ± 1.33 at week four, corresponding to a mean reduction of 4.46 points, or approximately 36.7%.

Depressive symptoms also improved, with a mean PHQ-9 reduction of 4.75 points, corresponding to approximately **36.2%** relative improvement over four weeks.

Adherence was moderate. Participants completed a mean of 14.3 worksheets out of 20 expected, corresponding to approximately 71% completion. Interindividual variability was observed, with some patients completing fewer than 10 worksheets and others reaching near-complete adherence.

A decrease in emotional intensity was observed after cognitive restructuring, with a mean emotional intensity reduction of 4.23 ± 0.63 points. A strong positive correlation was observed between the number of completed worksheets and symptom improvement ($r \approx 0.85$), suggesting a possible dose-response relationship between adherence to self-monitoring and clinical benefit.

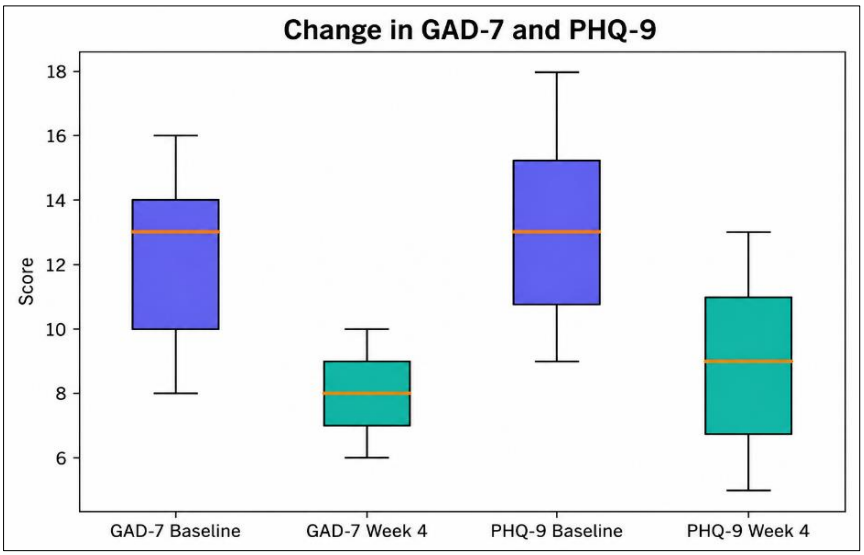

Figure 2: Evolution of GAD-7 and PHQ-9 scores between baseline and week four

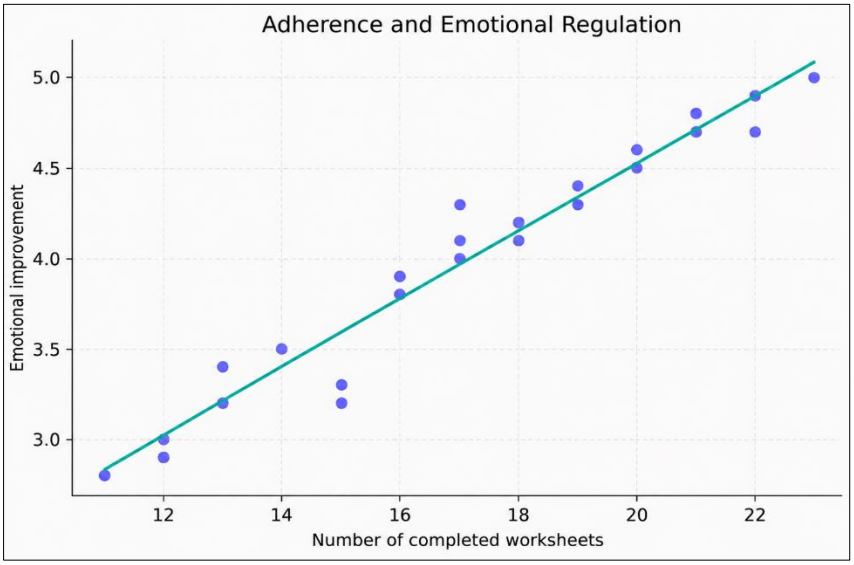

Figure 3. Relationship between the number of completed worksheets and reduction in emotional intensity after cognitive restructuring

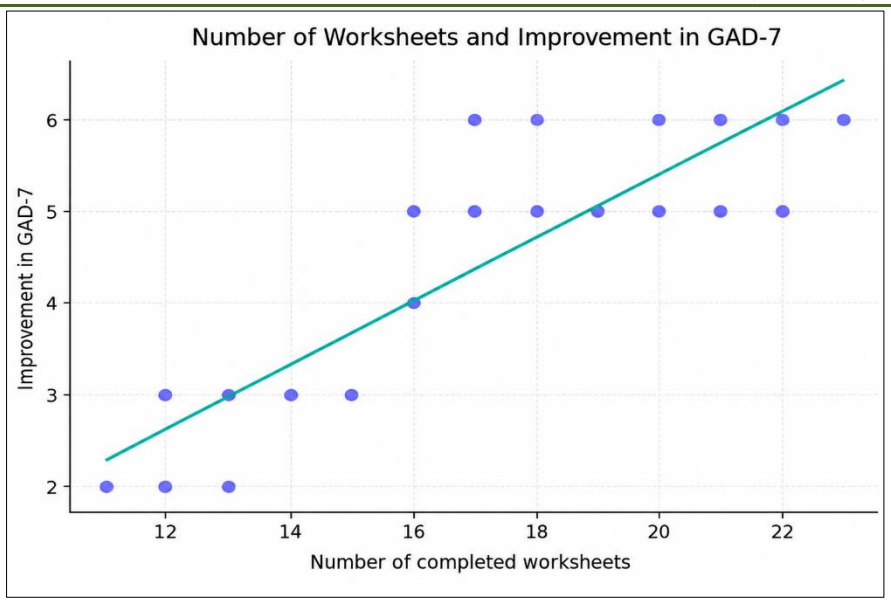

Figure 4: Relationship between the number of completed worksheets and improvement in GAD-7 score

DISCUSSION

This preliminary prospective study suggests that a brief daily CBT-based self-monitoring worksheet may be feasible and clinically useful for outpatients with anxiety and/or depressive symptoms. Over four weeks, participants showed meaningful reductions in GAD-7 and PHQ-9 scores, accompanied by a reduction in emotional intensity after cognitive restructuring. The average adherence rate of approximately 71% indicates that most participants were able to engage with the intervention despite the absence of a full structured CBT protocol.

The observed improvement is consistent with the theoretical role of self-monitoring in CBT. By helping patients identify automatic thoughts and evaluate alternative interpretations, the worksheet may increase metacognitive awareness, reduce emotional reactivity and promote adaptive coping. The strong association between the number of completed worksheets and symptom improvement suggests that engagement may be an important determinant of clinical benefit. However, this finding should be interpreted cautiously because adherence may also reflect motivation, baseline functioning, therapeutic alliance or other unmeasured patient-level factors.

The intervention may be particularly relevant for clinical settings where access to full CBT is limited. A five-minute daily worksheet is inexpensive, easy to disseminate and compatible with usual psychiatric follow-up. It may serve as a bridge intervention while patients wait for psychotherapy, as an adjunct to pharmacological treatment or as a structured homework tool during brief consultations.

Several limitations should be acknowledged. First, the sample size was small, limiting statistical power and generalizability. Second, the study did not include a control group; therefore, observed improvements cannot be attributed exclusively to the intervention and may partly reflect usual care, regression to the mean, spontaneous improvement, expectancy effects or concomitant psychotropic treatments. Third, follow-up was limited to four weeks, preventing conclusions about maintenance of gains. Fourth, outcomes relied on self-report questionnaires and self-completed worksheets, introducing possible reporting and adherence biases. Finally, diagnostic heterogeneity may have influenced response patterns.

Future research should use randomized controlled designs comparing daily CBT self-monitoring with usual care, psychoeducation or a waitlist condition. Larger samples would allow subgroup analyses by diagnosis, symptom severity, sex, age and medication status. Longer follow-up is needed to assess durability of improvement. Digital versions of the worksheet could also be evaluated to improve adherence monitoring, reminders and ecological validity.

CONCLUSION

Daily CBT-based self-monitoring appears feasible and was associated with short-term reductions in anxiety, depressive symptoms and emotional intensity in a real-world outpatient sample. Although the findings are promising, they should be considered preliminary. Larger controlled studies are needed to confirm efficacy, determine mechanisms of change and define the role of simplified CBT self-monitoring within stepped-care mental health services.

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