

Effectiveness and Applicability of Psychological Interventions and Treatments for Mental Health patients: A Pre- and Post-Test Study

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ABSTRACT

Background: Mental health disorders are a significant global concern, requiring effective, evidence-based interventions to improve psychological well-being.

Objective: This study aimed to evaluate the effectiveness and applicability of structured psychological interventions in reducing symptoms of depression, anxiety, and stress among individuals with mild to moderate mental health conditions.

Methods: A pre- and post-test quasi-experimental design was conducted involving 120 participants recruited through purposive sampling. The eight-week intervention consisted of cognitive-behavioral therapy (CBT), mindfulness practices, and psychoeducation. The Depression Anxiety Stress Scales (DASS-21) was administered before and after the intervention. Data were analyzed using paired t-tests and Cohen's d for effect size.

Results: There was a statistically significant reduction in depression, anxiety, and stress scores post-intervention ($p < 0.001$ for all). The effect sizes were large (Cohen's $d = 1.24$ for depression, 1.19 for anxiety, and 1.31 for stress), indicating a strong practical impact.

Conclusion: The combined psychological interventions were both effective and applicable in improving mental health outcomes. These findings support their broader implementation in clinical and community mental health programs.

Keywords: Psychological Intervention, Mental Health, Cognitive-Behavioral Therapy, Mindfulness, Psychoeducation, Effectiveness

Introduction

Mental health disorders, such as depression, anxiety, and stress-related conditions, have emerged as some of the most prevalent non-communicable health issues globally. According to the World Health Organization, approximately 970 million people worldwide were living with a mental disorder in 2019, with depression and anxiety being the most common conditions [1]. The COVID-19 pandemic has further exacerbated the burden of mental health disorders, highlighting the urgent need for effective and accessible psychological treatments [2].

Psychological interventions, especially cognitive-behavioral therapy (CBT), mindfulness-based therapy, and psychoeducation, have shown considerable promise in treating a wide range of mental health issues [3-5]. CBT remains one of the most extensively researched therapeutic approaches, with evidence supporting its efficacy across cultural settings and diverse populations [6]. Mindfulness-based interventions, which focus on cultivating awareness and acceptance of present-moment experiences, have also demonstrated significant reductions in psychological distress and improvements in emotional regulation [7]. Additionally, psychoeducational programs enhance individuals' understanding of mental health, reduce stigma, and promote self-management strategies [8].

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Despite growing evidence supporting these modalities, their practical application and effectiveness in community and primary care settings—particularly in developing countries—are still under-explored [9]. In Indonesia, mental health remains a stigmatized issue, and access to professional care is often limited, especially in rural areas [10]. Consequently, there is a pressing need to assess and adapt psychological interventions to local cultural and healthcare contexts to ensure relevance and sustainability.

This study aims to evaluate the effectiveness and applicability of a combined psychological intervention—consisting of CBT, mindfulness practices, and psychoeducation—in reducing symptoms of depression, anxiety, and stress among individuals with mild to moderate mental health symptoms. The study adopts a pre- and post-test design and targets a population within a primary health care context in Makassar, Indonesia. The findings are expected to provide empirical support for implementing structured psychological programs in broader community health settings.

Methods

Study Design

This study employed a quasi-experimental, pre- and post-test design without a control group. This design is commonly used to evaluate intervention outcomes in real-world settings where randomization may not be feasible but where temporal comparisons provide meaningful insights into treatment effectiveness [11].

Participants and Setting

The study was conducted in several community health clinics in Makassar, Indonesia, from January to December 2024. A total of 120 participants were recruited using purposive sampling. Inclusion criteria included individuals aged 18–45 years who exhibited mild to moderate psychological symptoms based on the initial DASS-21 screening and who were willing to participate in all sessions. Exclusion criteria included those with severe psychiatric disorders requiring specialized care or those currently undergoing psychotherapy or psychiatric medication [12].

All participants were provided with detailed information regarding the research and signed informed consent forms prior to enrollment. Ethical clearance for the study was obtained from the Ethics Committee of Poltekkes Kemenkes Makassar (Ref: EC/230/2024).

Intervention Protocol

The intervention lasted for eight weeks and consisted of structured psychological sessions that included:

- **Cognitive-Behavioral Therapy (CBT):** Weekly 60-minute group-based sessions focused on identifying and restructuring negative thought patterns, improving coping mechanisms, and behavioral activation strategies [13].
- **Mindfulness-Based Techniques:** Participants engaged in guided mindfulness exercises, including breathing awareness, body scan, and mindful movement practices aimed at reducing automatic negative responses and enhancing present-moment awareness [14].

- **Psychoeducation:** Sessions provided information on mental health, stress management, and emotional regulation strategies, with the goal of increasing mental health literacy and self-care [15].

All sessions were delivered by licensed psychologists trained in the use of CBT and mindfulness methods. The combination of these components has been shown to be effective in previous community mental health programs [16].

Measurement Instruments

The primary outcome measure was the Depression Anxiety Stress Scales (DASS-21), a validated self-report instrument widely used in psychological research and clinical practice. It consists of 21 items grouped into three subscales: depression, anxiety, and stress. DASS-21 has demonstrated strong internal consistency, construct validity, and sensitivity to change in intervention studies [17,18].

Data Collection and Analysis

Pre- and post-intervention assessments were conducted using the DASS-21. Data were analyzed using paired t-tests to determine the significance of differences between pre- and post-test scores for each domain (depression, anxiety, stress). Cohen's d was calculated to determine effect sizes, with $d > 0.8$ considered a large effect [19].

All statistical analyses were performed using SPSS version 26. A p-value of <0.05 was considered statistically significant. Missing data were managed using listwise deletion, which is acceptable in pre-post intervention studies with minimal attrition [20].

Results

The psychological intervention implemented in this study produced significant improvements across all measured domains of mental health, including depression, anxiety, and stress. Pre- and post-test comparisons using paired t-tests indicated statistically significant reductions in mean scores on the DASS-21 subscales ($p < 0.001$ in all domains), suggesting a robust treatment effect.

Variable	Pre-Test Mean \pm SD	Post-Test Mean \pm SD	t-value	p-value	Effect Size (Cohen's d)
Depression	15.2 \pm 4.8	8.1 \pm 3.7	16.42	<0.001	1.24
Anxiety	14.7 \pm 5.2	7.5 \pm 3.9	15.98	<0.001	1.19
Stress	17.3 \pm 5.6	9.4 \pm 4.3	17.21	<0.001	1.31

The large effect sizes (Cohen's $d > 1.0$ for all variables) indicate a strong clinical impact of the intervention. This aligns with previous findings where combined psychological approaches—especially those integrating cognitive-behavioral therapy and mindfulness—produced marked reductions in psychological symptoms in community samples [21].

These results also mirror global trends showing that brief, structured psychological interventions can lead to substantial symptom reduction in relatively short durations (6–8 weeks) [22]. In a comparable Indonesian study, a mindfulness-based group intervention delivered over six weeks showed significant

improvements in anxiety and stress among university students, supporting the cultural adaptability of these methods [23].

Interestingly, the greatest reduction was observed in the stress subscale (Cohen's $d = 1.31$), which may suggest that mindfulness exercises played a particularly strong role in emotional regulation. Similar findings have been reported in a meta-analysis that concluded mindfulness-based interventions were most effective for stress management among working adults and students [24].

Additionally, the absence of dropouts during the intervention suggests that the program was not only effective but also acceptable and feasible in the study setting. High participant retention has been noted in similar community-based studies, particularly when the interventions are interactive, culturally sensitive, and delivered by trained facilitators [25].

These findings indicate that psychological interventions, even when delivered in relatively low-resource settings, can yield clinically meaningful improvements in mental health outcomes. The scalability and adaptability of such programs in different populations provide a compelling case for their integration into public health strategies in Indonesia and similar contexts [26].

Discussion

The results of this study demonstrate a significant improvement in the mental health outcomes of participants following the implementation of structured psychological interventions. The reductions in depression, anxiety, and stress scores, alongside large effect sizes, underscore the strong therapeutic impact of the combined approach incorporating cognitive-behavioral therapy (CBT), mindfulness-based practices, and psychoeducation.

These findings align with a growing body of literature that supports CBT as one of the most effective interventions for a variety of mental health disorders, particularly depression and anxiety [27]. CBT works by identifying and restructuring maladaptive thought patterns, helping individuals to develop healthier cognitive frameworks and behaviors [28]. Studies have consistently shown that CBT produces medium to large effect sizes across short and long-term follow-up periods [29].

Mindfulness-based interventions have also been widely recognized for their role in enhancing emotional regulation, decreasing rumination, and improving psychological flexibility [30]. These practices, rooted in meditative traditions, train individuals to observe thoughts and feelings without judgment, thereby reducing the impact of negative affect [31]. Meta-analyses have found mindfulness programs to be particularly effective in both clinical and non-clinical populations, especially in stress reduction and anxiety management [32].

Psychoeducation plays a vital role in increasing mental health literacy, fostering resilience, and reducing stigma associated with mental illness [33]. By empowering individuals with knowledge and coping strategies, psychoeducational programs contribute significantly to early recognition and management of symptoms [34]. In community settings, psychoeducation has been shown to enhance engagement and improve treatment adherence [35].

Furthermore, this study's results are in line with integrated intervention models that combine therapeutic modalities to address the multifaceted nature of mental health disorders [36]. Integrating CBT with mindfulness and psychoeducation may offer synergistic effects, as each target's different mechanisms of psychological functioning [37].

From an implementation perspective, the significant improvements found in this study suggest that these interventions are not only effective but also feasible and acceptable within a primary healthcare or community-based framework. This is particularly relevant in low- and middle-income countries (LMICs), such as Indonesia, where mental health services are often underfunded and access to specialized care remains limited [38]. The delivery of structured psychological interventions by trained non-specialists within existing health systems has been increasingly advocated as a scalable solution to the global mental health treatment gap [39].

However, this study is not without limitations. The absence of a control group limits causal inference. Future research should adopt randomized controlled trial designs and evaluate the long-term sustainability of treatment outcomes. Additionally, exploring the differential impact of each intervention component (CBT, mindfulness, psychoeducation) may offer further insight into optimizing treatment combinations.

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Recent studies have emphasized the importance of culturally adapted interventions in improving engagement and outcome measures in psychological programs. For example, applying CBT within local traditions and belief systems enhances its relevance and acceptance [40]. Moreover, mindfulness-based strategies have been associated with physiological benefits such as reduced cortisol levels and improved sleep quality, which further support psychological recovery [41]. Psychoeducational approaches integrated with community health campaigns have also shown effectiveness in promoting help-seeking behavior and decreasing stigma in Balkan populations [42].

Conclusion

This study demonstrates that structured psychological interventions—comprising cognitive-behavioral therapy,

mindfulness-based techniques, and psychoeducation—are highly effective and applicable in reducing symptoms of depression, anxiety, and stress among individuals with mild to moderate mental health conditions. The significant statistical outcomes and large effect sizes indicate both therapeutic efficacy and practical relevance. These findings support the broader implementation of integrated psychological programs within community and primary healthcare settings, particularly in regions with limited mental health resources. Future research should explore long-term outcomes and comparative effectiveness using controlled study designs.

Author Contributions

Agussalim was responsible for the study conception, design, data collection, analysis, interpretation of results, and manuscript preparation.

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Ethical Clearance

This study received ethical approval from the Ethics Committee of Poltekkes Kemenkes Makassar (Ref: EC/230/2024).

Informed Consent Statement

All participants provided written informed consent prior to participation.

Data Availability Statement

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

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Conflict of Interest Statement

The author declares no conflict of interest.

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