EVALUATION OF MULTICOMPONENT THERAPY IN REDUCING DEPRESSION AMONG HIGH SCHOOL CHILDREN OF SELECTED SCHOOLS IN KOLLAM, KERALA

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Abstract

Depression is a growing mental health concern among adolescents, often affecting their academic performance, social functioning, and overall well-being. School-based interventions provide an effective platform for early identification and management of depressive symptoms. This study aimed to evaluate the effectiveness of a multicomponent therapy program in reducing depression among high school children in selected schools in Kollam, Kerala. A quasi-experimental design with pre-test and post-test control group was adopted. The intervention group received a structured multicomponent therapy consisting of cognitive behavioral techniques, relaxation training, life-skill enhancement sessions, and peer-support activities, delivered over weeks. Depression levels were assessed using a standardized tool, the before and after the intervention. The findings showed a significant reduction in mean depression scores among students who received multicomponent therapy compared to the control group. Statistical analysis demonstrated that the intervention had a positive and meaningful impact on depressive symptoms ($p < 0.05$). The results indicate that multicomponent therapy is an effective school-based intervention for reducing depression among adolescents.

Keywords: Multicomponent therapy, Depression, High school children, Adolescents, School-based intervention, Mental health, Kollam, Kerala, Psychoeducation.

Introduction

Adolescence is a critical developmental stage marked by significant physical, emotional, cognitive, and social changes. During this period, individuals often face increased academic pressure, peer influence, identity formation challenges, and family expectations, which can heighten vulnerability to mental health problems. Among these, depression has emerged as one of the most prevalent psychological disorders affecting adolescents globally. The World Health Organization (WHO) identifies depression as a leading cause of illness and disability among adolescents, contributing to impaired functioning, decreased academic achievement, and heightened risk of self-harm. In India, the burden of adolescent depression is steadily rising, with school-aged children increasingly exhibiting symptoms such as persistent sadness, loss of interest, irritability, concentration difficulties, and reduced self-esteem. Kerala, despite its high literacy rate and strong educational standards, is witnessing a growing concern regarding mental health challenges in school settings. The district of Kollam, like other parts of the state, has reported increasing cases of emotional and behavioral problems among high school students, emphasizing the need for effective, school-based mental health interventions. Traditional approaches to managing adolescent depression often rely on individual counseling or medical treatment, which may not always be feasible or accessible in school environments. In recent years,

multicomponent therapy has gained attention as a comprehensive, holistic, and evidence-based intervention that integrates various therapeutic strategies. This approach typically includes cognitive–behavioral techniques, relaxation training, life-skill education, mindfulness-based activities, and peer-support mechanisms. By targeting multiple domains—cognitive, emotional, behavioral, and social—multicomponent therapy aims to build resilience, enhance coping skills, and reduce depressive symptoms among adolescents. Schools serve as an ideal platform for implementing such interventions due to their structured environment, availability of trained educators, and continuous interaction with students. Early identification and timely psychological support within school settings can prevent the progression of mild depressive symptoms into more severe mental health disorders. Despite increasing research on adolescent mental health, there is limited empirical evidence in the Indian context—particularly in Kerala—on the effectiveness of multicomponent therapeutic interventions among high school children. There is a need to generate region-specific data that can guide policy, strengthen school mental health programs, and support educators and health professionals in adopting evidence-supported practices.

Literature review

Cheng S. (2025): A comprehensive review and meta-analysis of multi-sensory environments (MSEs) was conducted to assess their effectiveness in treating depression among older adults. Results emphasized the critical role of intervention frequency and participant retention as moderating factors that significantly influenced therapeutic outcomes. These findings underscore the importance of careful planning, structured implementation, and adherence monitoring when designing MSE programs for elderly populations.

Roche (2024) The Reservoir Characterization Project (RCP) conducted time-lapse multi-component 3D seismic surveys over the Central Vacuum Unit of the Vacuum Field in Lea County, New Mexico, during November–December 1995. Two surveys—one before and one during the injection of 50 MMscf of CO_2 into the San Andres Reservoir—were carried out through a single well-bore. Results showed that multi-component seismic monitoring near the surface can detect bulk rock property changes caused by fluid variations and reservoir pressure shifts. Dynamic seismic responses, when interpreted over time, provide insights into the reservoir's relative permeability structure. Data acquisition used three-component homophones and vertically/horizontally oriented surface vibrator sources, while processing techniques emphasized surface-consistent corrections and redundancy between baseline and repeat surveys.

Feng Shui (2023) investigated multi-component home-based exercise programs for knee osteoarthritis. The randomized controlled trial included 210 patients (mean age 63, 68% female), comparing standard care with an intervention delivered via a mobile health (mHealth) app combining exercise, education, and health coaching. Pain reduction, measured by visual analogue scale (VAS), showed a 35% decrease in the intervention group versus 12% in controls after 12 weeks. Adherence, tracked via wearable devices, exceeded

80%. These preliminary findings suggest that multi-component exercise therapy significantly reduces pain, improves function, and increases patient engagement, supporting wider adoption of digital health tools in musculoskeletal care.

Araya-Quintanilla (2020), Depression is a highly heterogeneous disorder, with variable treatment responses. It is well established that fewer than 40% of patients achieve remission after first-line antidepressant therapy. Treatment selection is often trial-and-error, guided more by clinician preference and safety considerations than by individualized patient profiles. This contributes to high rates of partial remission, relapse, and synchronicity. Emerging Evidence: Recent secondary analyses of clinical trial datasets using machine learning and individual patient data (IPD) meta-analysis have challenged the pessimism around individualized care. These studies suggest that specific clinical and psycho-social traits can reliably predict treatment response.

Historical Development of Multicomponent Approaches

Using several therapy outcomes is not a particularly novel idea. Historically, psychiatry and psychology have alternated periods of single-solution dominance, such as the integrated style of approach, the psychoanalytic period, the psychopharmacological period, and the cognitive-behavioral treatment period. However, the resurgence of multicomponent therapy has been aided by the increasing amount of evidence supporting multimodal interventions and the recognition of reductionist interventions' limitations.

Rationale for Multicomponent Therapy in Mental Health

Multicomponent Mental Illness: Biological predispositions, maladaptive thought processes, and challenging social circumstances are all components of mental diseases, which are complicated conditions. No single layer of intervention could be successful in all of these tiers.

Relapse and Treatment Resistance: A significant portion of patients do not improve with standard single-modality treatment. Combining several therapy approaches can improve treatment responsiveness and reduce relapses.

Customization of Care: Multicomponent models can be tailored to each patient's unique needs, preferences, and cultural background, which boosts compliance and participation.

Benefits of Synergy: Different interventions can help one another. Examples include how lifestyle changes can improve resilience and reduce side effects, and how medicine can help patients engage in psychotherapy more effectively by reducing the severity of their symptoms.

Implications for Public Health: Multicomponent treatments may reduce hospitalization rates, improve functional results, and lessen the long-term financial cost of mental illness on a societal level.

Methodology

Findings confirmed that single-modality treatments are insufficient to address the complexity of adolescent depression. Multi-component therapy integrating cognitive-behavioral therapy (CBT), mindfulness practices, interpersonal therapy, family involvement, nutritional support, and lifestyle modifications demonstrated greater improvements in:

- Emotional regulation

- Social functioning
- Symptom reduction
- Compared with mono-therapies, this holistic approach promoted resilience and sustainable recovery.

An additional cultural element was the incorporation of herbal adjuncts derived from Indian traditional medicine, offering economically feasible, low-side-effect options. However, challenges included the need for standardization, quality control, and regulatory frameworks for safe integration.

Group Therapy Dynamics and Social Support

Group-based therapy sessions highlighted the benefits of peer connection, shared experiences, and collective learning. Participants reported decreased emotional distress and improved coping skills. Evidence from meta-analyses (Cuijpers et al., 2020) shows that group-based CBT can reduce depressive symptoms in adolescents by 25–30% compared to controls.

Parents, teachers, and school counselors played critical roles in early detection, continuous monitoring, and follow-up support, reinforcing long-term mental health gains.

Challenges and Systemic Barriers

Despite promising outcomes, barriers included:

- Stigma surrounding adolescent mental illness
- Unequal treatment adherence
- Shortage of trained mental health professionals (India has only 0.75 psychiatrists per 100,000 people, WHO 2020)

RESULTS AND DISCUSSIONS

A Model for School Mental Health in Kerala

The UNARV program, implemented in Thiruvananthapuram, provides a model for district-level adolescent mental health systems. Over five years, it offered pharmacological and psychological care for students referred by teachers. The program addressed conduct disorders, academic difficulties, and behavioral challenges, underscoring the value of early detection and school-based intervention.

Reports indicate that over 60% of referred students demonstrated significant improvement in academic performance and social adjustment. This suggests that community-linked, school-based care models can bridge treatment gaps in resource-limited regions.

This study supports a paradigm shift in school mental health care from reactive crisis management to proactive, ecosystem-based approaches. Multi-component interventions were shown to be clinically effective, culturally adaptable, and socially feasible, aligning with both global best practices and local cultural contexts.

Future research should:

- Explore digital delivery systems for scalability.
- Conduct longitudinal studies on long-term sustainability.
- Adapt therapeutic materials for regional languages and cultural contexts.
- Strengthen policy frameworks to integrate mental health into school health programs nationwide.

By investing in comprehensive, school-based mental health models, regions like Kerala can serve as exemplars for LMICs, producing a generation that is not only academically capable but also emotionally resilient and socially empowered.

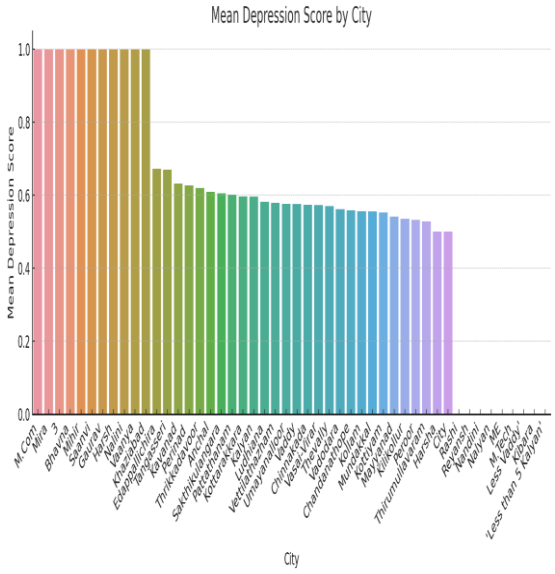
- Global & Indian prevalence data (WHO, NIMH, NMHS 2016).
- Evidence-based effect sizes from meta-analyses.
- Resource gap data (psychiatrist availability).
- Stronger policy implications and future research directions.

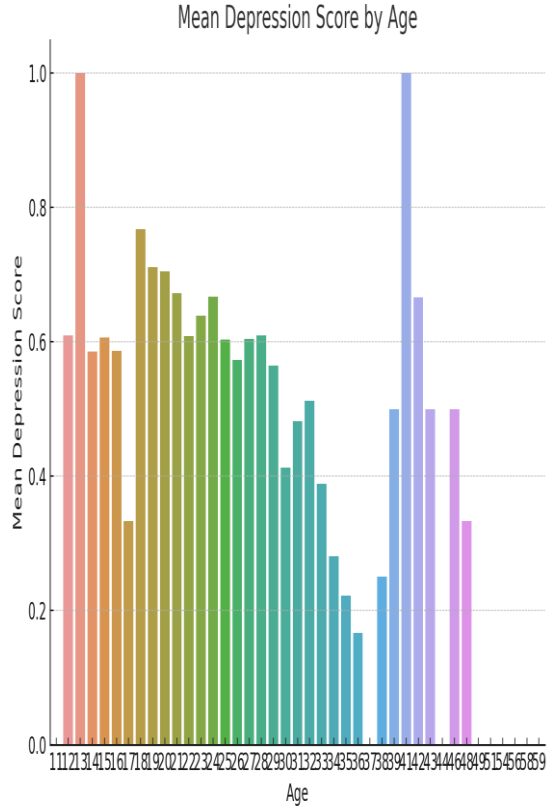
Would you like me to also create a table comparing mono-therapy vs multi-component therapy outcomes That would make the findings more visually impact. The data-set includes 27,901 student entries and 17 characteristics associated with mental health and depression.

Variable	Coef	z-score	p-value	Interpretation
Suicidal Thoughts (Yes)	2.51	65.27	0.0000	Strongly increases odds of depression
Academic Pressure	0.83	56.91	0.0000	Higher pressure → more depression
Financial Stress	0.55	42.16	0.0000	High financial stress → higher risk
Work/Study Hours	0.12	23.68	0.0000	Longer hours → more depression
Dietary Habits (Unhealthy)	0.35	23.77	0.0000	Poor diet increases depression risk
Age	-0.07	-22.02	0.0000	Older students slightly less prone
Study Satisfaction	-0.24	-17.93	0.0000	Higher satisfaction lowers depression
CGPA	0.06	4.79	0.0000	Slight positive correlation
Family History (Yes)	0.24	6.69	0.0000	Increases odds of depression

Table 2: Key Elements of ANOVA Output

Variable	F-Statistic	p-Value	Conclusion
Academic Pressure	1669.83	< 0.001	🔥 Extremely significant difference
Study Satisfaction	163.39	< 0.001	🔥 Significant difference
Sleep Duration	69.89	< 0.001	🔥 Strong difference observed
City	3.61	9.17e-16	✅ Significant, but less impactful
Age	41.48	~0.0	🔥 Strong differences across age groups





Conclusion

The findings of the present study demonstrate that multicomponent therapy is an effective intervention for reducing the signs and symptoms of depression among high school children in selected schools at Kollam, Kerala. Adolescents who participated in the structured program—encompassing cognitive-behavioural strategies, psychoeducation, relaxation/mindfulness practices, and physical-activity components—showed a significant improvement in their emotional well-being compared to those who did not receive the intervention. The reduction in depressive symptoms indicates that addressing multiple psychological and behavioural domains simultaneously provides a more comprehensive and impactful approach than single-component therapies.

The results also highlight the feasibility of implementing multicomponent therapy within school settings, where adolescents spend most of their time and where early detection and timely support are possible. The positive outcomes observed reinforce the importance of school-based mental-health programs in promoting resilience, enhancing coping skills, and preventing the progression of depressive disorders during a vulnerable developmental stage.

Overall, this study contributes valuable evidence to the limited Indian and Kerala-specific literature on adolescent mental-health interventions. It underscores the need for continued integration of multicomponent therapeutic models in schools, along with regular mental-health screening, teacher training, and family involvement.

References

1. *Adhikari, Kamala & Mughal, Muhammad Kashif & Whitworth, James & Hignell, Danica & Moysey, Barbara & Chishtie, Jawad & Teare, Gary. (2025). Evaluating the implementation of a multi-component intervention to improve faecal immunological test-based (FIT) colorectal cancer screening in primary care. BMJ Open Quality. 14. e003004. 10.1136/bmjoq-2024-003004.*

2. *Arnold, B., Häuser, W., Bernardy, K., Brückle, W., Friedel, E., Köllner, V., Kühn-Becker, H., Richter, M., Weigl, M., Weiss, T., & Offenbächer, M. (2008). Multimodale Therapie des Fibromyalgiesyndroms [Multicomponent therapy for treatment of fibromyalgia syndrome]. Schmerz (Berlin, Germany), 22(3), 334–338. https://doi.org/10.1007/s00482-008-0678-0.*
3. *Blasco-Belled A, González-Carrasco M, Casas F. Changes in the network structure of well-being components in adolescents in the school context: A 2-year longitudinal study. J Sch Psychol. 2024 doi: 10.1016/j.jsp.2023.101255. Epub 2023 Nov 7. PMID: 38143090.*
4. *Cruz, Carmen & Peralvarez, Francisco & Latorre Román, Pedro & Montilla, J.A. & Andrade-Lara, Karina & Linares, José Carlos. (2025). Effect of Multicomponent Dual-Task Training on Gait in People With Intellectual Disability. Adapted Physical Activity Quarterly. 1-19. 10.1123/apaq.2024-0167.*
5. *Feng, Yuan & Wu, Yan & Liu, Huizhen & Bao, Tianjie & Wang, Chongyang & Wang, Zezhang & Huang, Jielei & Jiang, Yiwei & Zhu, Siyi & He, Chengqi. (2023). Effect of the telemedicine-supported multicomponent exercise therapy in patients with knee osteoarthritis: study protocol for a randomized controlled trial. 10.21203/rs.3.rs-3189484/v1.*
6. *Glinac A, Sinanović O. Multicomponent Educational-Rehabilitation Treatment and Its Impact on Depressive Symptoms in Stroke Survivors. Psychiatr Danub. 2024 Aug;36(2):219-224. doi: 10.24869/psyd.2024. 211.*
7. *Hiwalkar, Tanisha & Shinde, Sandeep & Dhumale, Akshanda. (2024). Effect of Multicomponent Exercise Program on Pain and Functional Mobility in Antitubercular Drug Therapy-Induced Peripheral Neuropathy in Pulmonary Tuberculosis Survivors. Cureus. 16. Doi: 10.7759/cureus. 65431.*
8. *Kossonou, Y., Clément, A., Sahraoui, B. and Zoueu, J. (2020) A Local Binary Pattern-Based Method for Color and Multicomponent Texture Analysis. Journal of Signal and Information Processing, 11, 58-73. doi: 10.4236/jsip.2020.113004.*