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The impact of yogic counselling on cognitive distortions and psycho-social well-being in adolescents

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Abstract- Adolescents experience cognitive distortions that affect mindfulness, emotional well-being, and behaviour, often leading to anxiety and depression. Early intervention is crucial, and counselling based on yogic principles serves as a complementary therapy. This study examines the impact of the Yogic Counselling Module (YCM) on adolescents' psycho-social well-being, focusing on reducing cognitive distortions and improving mindfulness, emotional regulation, and self-esteem. A total of 100 students aged 13-18 were randomly assigned to a YCM group or a control group. The YCM group attended bi-weekly sessions for two months, incorporating self-reflection, emotional regulation, and mindfulness, while the control group engaged in library reading and socially useful productive work (SUPW). Standardized assessments measured pre- and post-intervention outcomes. Results showed significant reductions in cognitive distortions ($p < 0.001$) and anxiety ($p < 0.01$) in the intervention group. The outcomes of Pearson's coefficient showed a negative correlation of Repression with Cognitive Distortion and Anxiety and a positive correlation of Repression with Self-esteem. Similarly, Cognitive Distortion showed a positive correlation with Anxiety and Stress and a negative correlation with Resilience. The findings suggest that YCM effectively reduces cognitive distortions and enhances adolescent mental well-being leading to clarity in thoughts, understanding of emotions, and corrections in behaviour. Integrating yoga-based interventions into adolescent well-being strategies may offer long-term psychological benefits.

Keywords: Adolescents, Yogic Counselling, Cognitive Distortions, Psycho-Social Well-Being, Mental Health

INTRODUCTION

Adolescence is a critical period of emotional and social development, often marked by cognitive distortions that impact self-perception, leading to anxiety and depression.^{1,2} Globally, 10-20% of adolescents experience mental health challenges³, and in India, studies report that 23.33% of school children face mental health concerns, with a 7.3% prevalence in urban settings.⁴⁻⁶ Academic stress and societal expectations further exacerbate these issues.⁷

Beck's Cognitive Theory links cognitive distortions with adolescent vulnerability to mental health disorders.⁸ While behavioral therapies and community interventions effectively reduce adolescent distress⁹, research highlights the role of self-efficacy, social support, and mindfulness in promoting well-being^{10,11}. Indian philosophical texts emphasize self-reflection and emotional regulation, aligning with modern therapeutic approaches.¹² However, structured interventions integrating these principles remain limited, despite their potential to promote emotional intelligence and wellbeing.

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This study explores the integration of ancient Indian wisdom in addressing adolescent mental health challenges through the Yogic Counselling Module (YCM), which fosters inner clarity, resilience, and emotional balance for long-term well-being. YCM incorporates self-reflection (Svadhyaya), the practice of introspective study to understand one's thoughts and actions; contemplation (Mananam), deep thinking and reflection to internalize wisdom; and disciplined practice (Nidhidhyasanam), consistent application of learned principles in daily life¹², encouraging adolescents to align thought and action with Dharmic principles for sustainable mental health. These practices emphasize self-awareness, emotional regulation, and self-discipline, guiding individuals toward inner stability and long-term psychological well-being. By applying these principles in a structured manner, YCM serves as a transformative tool for addressing cognitive distortions and improving overall mental resilience.

The aim of this study is to examine the impact of the Yogic Counselling Module on the psycho-social well-being of adolescents experiencing cognitive distortions. It is

hypothesized that implementing YCM will have a positive effect in reducing cognitive distortions, thereby improving emotional stability, self-awareness, and psychological resilience in adolescents.

Given the rising prevalence of adolescent mental health concerns, targeted interventions that integrate traditional wisdom with contemporary psychological insights are crucial.^{9,13,14} By fostering self-awareness, emotional regulation, and a structured approach to introspection, this framework provides adolescents with the tools to navigate stress, develop emotional intelligence, and build resilience. This study offers a unique and culturally relevant model for adolescent well-being, addressing cognitive distortions through the principles of yogic philosophy. The YCM framework presents a scalable and structured approach that not only mitigates cognitive distortions but also enhances emotional and psychological well-being, equipping adolescents with lifelong coping strategies. The schematic presentation of YCM has been illustrated in Figure 1.

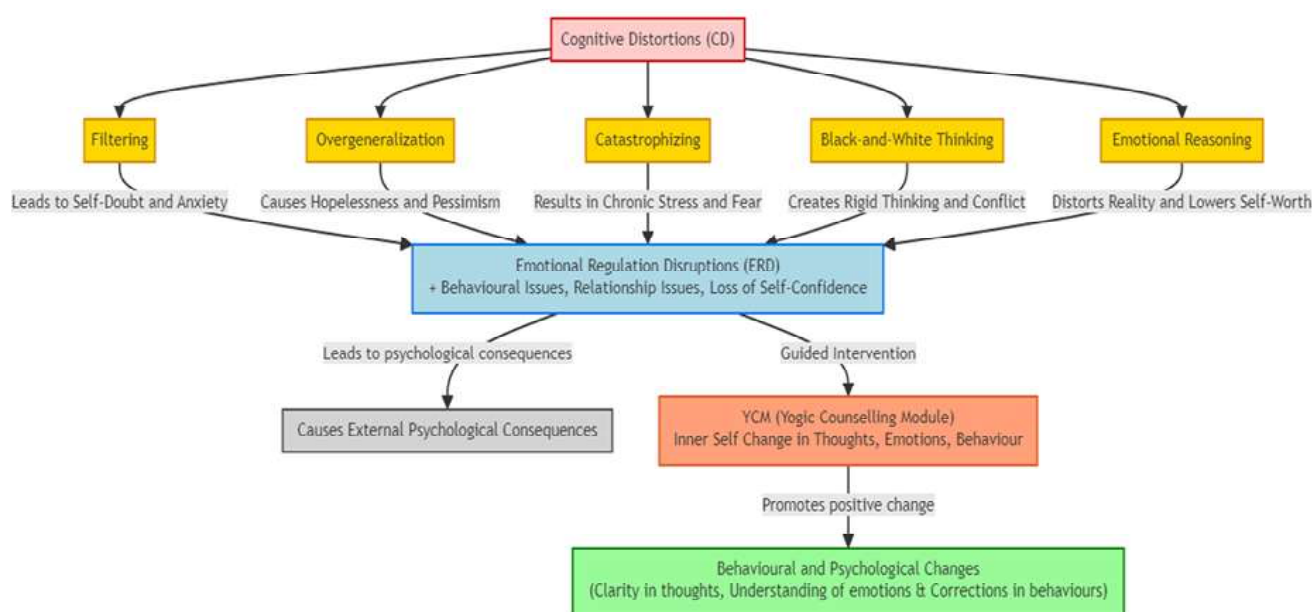


Figure 1: Conceptual Framework of the Impact of the Yogic Counselling Module on Cognitive Distortions

METHODS & MATERIALS

Study Design and Ethical Considerations

The present randomized controlled trial (RCT) was conducted among 100 adolescents, including 42 females, aged between 13 and 18 years (mean age: 14.54 ± 1.02). Participants were recruited from urban English-medium

schools in Bangalore. The study was conducted between March 2023 and February 2024. Ethical approval was obtained from the Institutional Ethics Committee (IEC) under Approval No: RES/IEC.SVYASA/223/2022, and the study was registered with the Clinical Trial Registry of India (CTRI/2022/06/043104). Prior to data collection, written

informed consent & assent were obtained from all eligible participants, and confidentiality was strictly maintained.

Sample Size Determination

The sample size was determined using G*Power software, with an alpha level of 0.05, power set at 0.95, and an effect size of 0.51 based on resilience scores ($p < .01$). The calculated sample size was 86 participants, with 43 in each group. Considering a 20% dropout rate, the final target was set at 50 participants per group, following an earlier intervention.¹⁴ After data collection, data analysis was conducted on 83 adolescent students due to attrition.

Participant Recruitment and Randomization

Participants were recruited based on predefined inclusion and exclusion criteria. Adolescents aged between 13 and 18 years with proficiency in English, no prior exposure to counselling interventions, and no reported physical or mental health conditions were included in the study. Informed assent and parental consent were mandatory for participation. Adolescents with major psychological disorders, neurological conditions such as epilepsy or severe ADHD, physical illnesses, or those unwilling to provide consent were excluded from the study.

Participants were randomly assigned to one of two groups: The Yogic Counselling Module (YCM) intervention group or the active control group. The control group engaged in Socially Useful Productive Work (SUPW), including activities such as library reading and community-based tasks. Stratified randomization was employed to ensure a balanced representation of gender and age across both groups. Schools were approached in person, and participants were sequentially enrolled based on their eligibility.

Intervention Content and Implementation

The YCM intervention was conducted twice weekly for two months, followed by weekly sessions for three months. Each session lasted 45 minutes and comprised guided discussions, silent sitting, and yogic activities targeting thought clarity, emotional regulation, and ethical decision-making. The intervention was structured around traditional yogic concepts, incorporating self-reflection (*Svadyaya*), contemplation (*Mananam*), and disciplined practice (*Nidhidhyasanam*), emphasizing the consistent application of yogic principles in daily life. The detailed description of each session is enumerated in Table 1. The control group engaged in the library reading and community-based tasks based on socially useful productive

work (SUPW) to provide structured engagement without psychological interventions.

Assessment Measures

The following standardized tools were administered at both baseline and post-intervention time points. The scoring for each assessment tool was adapted from the manual of the respective tools

How I Think (HIT) Questionnaire

It was developed by Barriga *et al.* (2001)¹⁵ and assesses self-serving cognitive distortions in adolescents using a Likert scale. It evaluates domains such as self-centred thinking, blaming others, minimizing/mislabelling, and assuming the worst. The test, designed for ages 12 to 21, has Cronbach's alpha values ranging from 0.77 to 0.95 and test-retest reliabilities of 0.81 to 0.89 over two weeks.

Depression Anxiety Stress Scale-21 (DASS-21)

Developed by Lovibond *et al.* (1995)¹⁶, it measures depression, anxiety, and stress through 21 self-report items. Each subscale has Cronbach's alpha values between 0.81 and 0.97, with test-retest reliability ranging from 0.71 to 0.81.

HARE Self-Esteem Scale

It was designed for ages 10 to 18, this scale assesses self-esteem in home, school, and peer environments.¹⁷ It measures personal beliefs, peer relationships, and family dynamics with Cronbach's alpha values between 0.70 and 0.85.

Short Warwick-Edinburgh Mental Well-Being Scale (SWEMWBS)

This seven-item scale evaluates mental well-being in individuals aged 10 to 18 developed by Stewart *et al.* (2009)¹⁸. It has Cronbach's alpha values of 0.84 to 0.91 and a one-week test-retest reliability of 0.83.

Emotion Regulation Questionnaire – ERQ (CA)

The ERQ-CA, adapted by Gross (2003)¹⁹, measures cognitive reappraisal and expressive suppression in adolescents aged 13 to 18. The 10-item questionnaire has Cronbach's alpha values from 0.71 to 0.88, with a test-retest reliability of 0.69 to 0.73 over three months.

Child and Adolescent Mindfulness Measure (CAMM)

It was developed by Greco *et al.* (2011)²⁰, the 10-item CAMM evaluates present-moment awareness and non-judgmental responses in adolescents. It has Cronbach's alpha of 0.80 and moderate test-retest reliability.

Brief Resilience Scale (BRS)

It was developed by Smith *et al.* (2008)²¹, and assesses resilience and the ability to recover from stress. It includes both positively and negatively worded items, with Cronbach's alpha around 0.80 or higher.

Data Collection and Statistical Analysis

Data was obtained at the beginning of the study and after two months of intervention. Data scoring was conducted following stipulated manual instructions. Responses were anonymized, entered into SPSS 21 (Chicago, USA), and verified by two independent reviewers

for accuracy. Normality and homogeneity of variance were assessed using the Shapiro-Wilk and Levene's tests, respectively. Repeated measures analysis of variance (RM-ANOVA) was used to compare within-group and between-group differences over time. A 2x2 ANOVA was conducted to analyse the interactions between group (YCM vs. Control) and time (Pre vs. Post) across all 18 study variables. Pairwise comparisons were adjusted using Bonferroni correction, and Pearson's correlation was applied to determine relationships among self-reported variables.

Table 1: Description of the validated yogic counselling module with 15 sessions

Session No	Topic of the session	Concepts	Practices
1	Understanding the Mind & Body ^{33,34,35}	Self-awareness of body-mind-senses connection, Abhyasa (practice), Vairagya (detachment)	Yama and Niyama principles, Introspective questions, Krida Yoga
2	Understanding Thoughts and Feeling ^{33,34}	Thoughts-emotions relationship, Three Gunas (Sattva, Rajas, Tamas), Emotional regulation, Self-awareness	Activities and narratives for self-reflection
3	Understanding the Kosha ³³	Kosha system, Cognitive distortions, Connecting thoughts-feelings-actions	Nadi Shodhana, Silent sitting, Guided visualizations, Svetaketu story
4	Understanding Relationships, Happiness & Guna ³³	Swadharma, Satsangam, Swachintana, Samarpana, Self-awareness, Positive thinking	Guided meditation, Self-reflection, Appreciation exercises
5	Introducing the Concept of Yama and Niyama ^{33,36}	Yama and Niyama principles: Ahimsa, Brahmacharya, Santosha, Swadhyaya, Iswara Pranidana	Guided meditations, Anger management, Journal writing
6	Concept of Chitta Vikshepa & Pratipaksha Bhavana ³⁶	Pratipaksha Bhavana, Emotional clarity, Gratitude, Balanced lifestyle	Maitri meditation, Mindfulness practices, Reflections on self-compassion
7	Gratitude in Life and Interconnectedness ^{33,36}	Role of gratitude in emotional balance, Goal-setting for well-being, Equanimity	Acts of kindness, Goal Tree creation, Self-reflection
8	Knowing My True Self: Satya Harishchandra Story ³³	Purushartha (human goals), True self, Meaningful activities, Healthy detachment	Karma Yoga, Visualizations of future self
9	Value of Friendship: Maitri ³⁶	Importance of relationships, Anandamaya Kosha (bliss sheath), Deep friendships	Personal mantra development, Contemplative meditation
10	Yama as Practice ³⁶	Practical application of Yama principles, Self-reflection	Select and embody one Yama principle
11	Niyama as Practice ³⁶	Practical application of Niyama principles, Behavioral improvement	Select and embody one Niyama principle
12	Stories from Scriptures or Recap	Moral lessons and values from ancient texts, Recap of previous sessions	Sharing stories, Reflecting on lessons learned
13	Cause and Effect Principle ³³	Cause-effect concept, Law of Karma, Free will, Expectation management	Reflective exercises, Practical examples
14	Law of Karma ³⁴	Understanding Karma, Taking responsibility for actions, Instilling positive habits	30-day challenge, Asanas, Engaging in hobbies
15	Closure Session	Reflection and Recap and Reviewing key takeaways from all sessions	

RESULTS

Repeated Measures of ANOVA

Repeated measures ANOVA using *post-hoc* with Bonferroni adjustment showed that there were significant

changes in State ($F(17,65) = 1.355, p < 0.05; \eta_p^2 = 0.262$) and Group ($F(17,65) = 2.06, p < 0.05; \eta_p^2 = 0.35$). The *post-hoc* outcomes showed significant group differences in the post of Self-Centeredness (SC) ($p < 0.001$), Blaming

Others (BL) ($p<0.001$), Minimizing and Mislabelling (MM) ($p<0.001$), Assuming the Worst (ASW) ($p<0.001$), Opposition Defiance (OD)($p<0.001$), Physical Aggression (PA)($p<0.001$), Lying (L)($p<0.001$), Stealing (STL)($p<0.001$), Cognitive Distortion ($p<0.001$), Anxiety ($p<0.01$).

Pearson's Correlation outcomes

The outcomes of Pearson's coefficient showed a negative correlation of Repression with Cognitive Distortion and Anxiety and a positive correlation of Repression with Self-esteem. Similarly, Cognitive Distortion showed a positive correlation with Anxiety and Stress, and a negative correlation with Resilience shown in Figure 2.

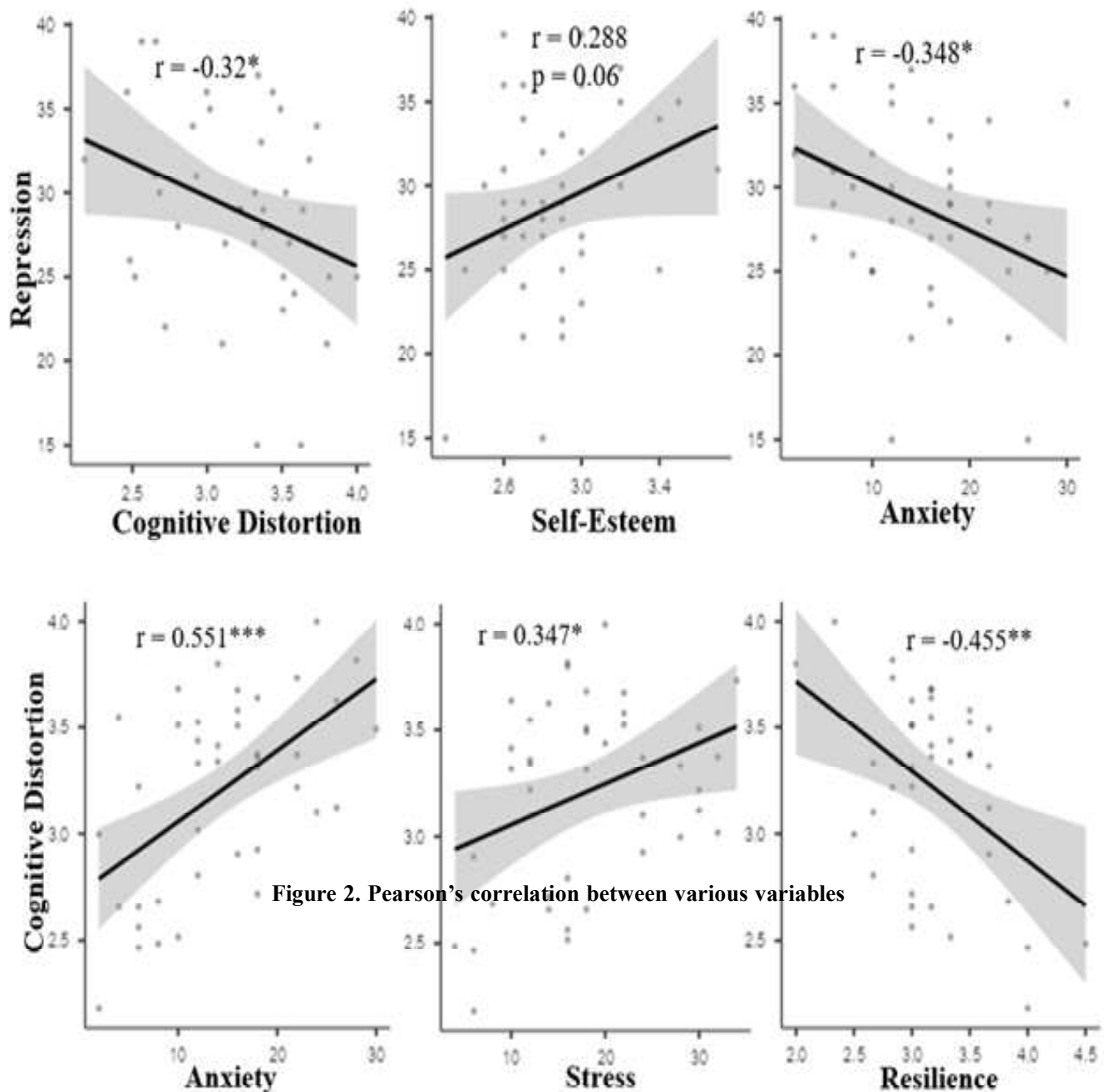


Figure 2. Pearson's correlation between various variables

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Table 2: Mean, Standard Deviation, and Statistical measures of Cognitive Distortions and Associated Factors

Sl. No.	Variables/Groups	YCM		Active Control		RM-ANOVA		
		Baseline (Mean±SD)	Endline (Mean±SD)	Baseline (Mean±SD)	Endline (Mean±SD)	F (df=17,65)	η_p^2	p-value
1.	Repression	29.60±4.75	28.90±5.70	28.78±5.39	27.38±6.33	2.32	0.28	.132
2.	Suppression	17.36±4.68	15.26±4.15*	15.71±4.71	15.76±4.28	2.24	0.27	.138
3.	Self-Esteem	2.83±.29	2.86±0.29	2.91±.357	2.85±0.40	.113	0.001	.737
4.	Mental Well-Being	21.11±2.3	21.14±3.52	21.46±2.53	20.70±3.57	.113	0.010	.387
5.	Resilience	3.05±.388	3.19±0.479	3.14±0.394	3.10±0.42	.757	0.009	.378
6.	Mindfulness	19.12±4.63	21.48±4.46*	20.31±3.87	20.02±4.81	2.21	0.027	.140
7.	Stress	18.78±5.70	18.09±8.02	17.57±5.70	20.52±8.83	1.28	0.016	.261
8.	Anxiety	18.29±7.54	14.58±7.29*	16.00±7.06	19.14±8.06*	.078	0.001	.781
9.	Depression	18.58±7.95	18.34±8.04##	16.47±7.83	20.23±9.08*	2.12	0.025	.151
10.	Self-Centered	3.46 ± 0.84	3.20 ± 0.9###	3.55 ± 0.79	4.31 ± 0.7***	4.52	0.053	.037
11.	Blaming others	3.58 ± 0.64	3.29 ± 0.73###	3.45 ± 0.75	4.32 ± 0.78***	4.78	0.56	.032
12.	Minimizing /Mislabeling	3.63 ± 0.75	3.16 ± 0.88###	3.54± 0.77	3.98 ± 1.02	.873	0.11	.353
13.	Assuming the Worst	3.46 ± 0.75	3.31 ± 0.83###	3.53 ± 0.81	3.95 ± 0.88	.980	0.12	.325
14.	Stealing	3.78 ± 0.70	3.13 ± 0.91###	3.65 ± 0.78	4.55 ± 0.97***	1.01	0.12	.325
15.	Lying	3.45 ± 0.79	3.20 ± 0.79###	3.43 ± 0.80	3.99 ± 0.78**	1.65	0.20	.202
16.	Opposition Defiance	3.51 ± 0.70	3.25 ± 0.82###	3.61 ± 0.67	3.84 ± 0.82	.015	0.903	.000
17.	Physical Aggression	3.32 ± 0.68	3.11 ± 0.70###	3.45 ± 0.74	4.09 ± 0.85***	4.18	0.049	.044
18.	Overall HIT	3.49 ± 0.55	3.21 ± 0.44####	3.54 ± 0.61	4.13 ± 0.76***	2.92	0.035	.91

Legend: * $p < 0.05$, *** $p < 0.01$, and #### $p < 0.001$: *compares the within-group and # compares between-group analysis; η_p^2 are the effect sizes, indicating the amount of variance accounted for by the independent variable; F – value: It is the ratio of between-group variation and within group variation; p-value: Emotional Regulation: It includes Repression and Suppression; HARE: Self-esteem scale; SWMB: Short Warwick Mental Well-being; BRS: Brief Resilience Scale; CAMM: Child and Adolescent Mindfulness Measure; DASS-21: Depression, Anxiety, Stress 21 version; HIT: How I Think to assess Cognitive Distortion- Cognitive Distortion in domains of Self-Centred, Blaming others, Minimizing/Mislabelling, Assuming the Worst, Stealing, Lying, Opposition Defiance, Physical Aggression.

DISCUSSION

The findings of this study align with recent research demonstrating the benefits of mindfulness-based and cognitive-behavioral interventions for adolescents.²² The observed improvement in mindfulness supports existing evidence that highlights its role in enhancing cognitive flexibility and emotional regulation.²³ Increased mindfulness is often associated with reduced stress and anxiety, a relationship reflected in the significant reduction of anxiety levels in the YCM group.

A notable decrease in suppression within the YCM group further reinforces this trend. Suppression is linked to poorer emotional health when used as a habitual coping mechanism.²⁴ The decline observed in this study suggests that mindfulness training promotes adaptive emotional regulation strategies.²⁵

The divergence in anxiety trends between the two groups is particularly significant. While anxiety levels decreased in the YCM group, they increased in the control group, aligning with prior studies emphasizing the effectiveness of structured interventions in adolescent mental health.²⁶ These results underscore the role of

mindfulness and resilience-building activities in mitigating anxiety and stress, especially in high-risk youth populations.

Cognitive distortions and behavioral issues, such as self-centered thinking, blaming others, and aggression, worsened significantly in the control group but remained stable or improved in the YCM group. This pattern is consistent with research indicating that cognitive restructuring interventions can prevent the reinforcement of maladaptive thought patterns.²⁷ The worsening of cognitive distortions in the control group suggests that without structured intervention, these patterns may intensify over time.

Interestingly, self-esteem and mental well-being did not show significant changes. This contrasts with studies suggesting that psychological interventions often lead to improvements in self-esteem.²⁸ The absence of a significant effect may indicate that longer intervention periods or more targeted strategies are necessary to influence self-concept meaningfully.

Yogic Counselling, rooted in Indian philosophical traditions, offers practical techniques such as mindfulness, detachment from outcomes, and management of emotional

reactivity. These approaches parallel modern psychotherapeutic methods that challenge irrational thoughts and enhance decision-making. By addressing distortions like catastrophizing and emotional reasoning, YCM fosters emotional stability, rationality, and problem-solving skills.²⁹

One of the most compelling findings of this study is the reduction in anxiety among participants. Adolescents are particularly vulnerable to anxiety due to academic pressures, social expectations, and developmental changes.³⁰ Research indicates that anxiety negatively impacts constructs such as self-esteem, resilience, mindfulness, stress, and depression.³¹ High anxiety can lower self-esteem and resilience, whereas mindfulness practices can reduce anxiety and improve emotional regulation.³² These findings suggest that Yogic Counselling may serve as an effective intervention for alleviating anxiety and fostering emotional stability.

Cognitive distortions play a critical role in the experience of anxiety. Patterns such as catastrophizing and emotional reasoning exacerbate stress and contribute to maladaptive thought processes.²⁹ Interventions like YCM that address these distortions have been shown to improve outcomes in anxiety management, self-esteem, and behavioral regulation. The reduction in anxiety observed in this study further suggests that emotional regulation strategies can positively influence other psychological variables responsible for cognitive distortions.

The significant reduction in anxiety observed in the YCM group highlights the potential for incorporating yoga-based counselling into educational mental health programs. Anxiety can impair academic performance, social interactions, and emotional well-being. Regular mindfulness-based sessions could serve as a proactive approach to managing these challenges. Implementing such interventions within school curricula may enhance emotional regulation and reduce anxiety-related burdens on students.

Furthermore, sustained participation in group sessions may help students develop self-regulation skills, enabling them to manage emotional responses to stress more effectively. Over time, this could contribute to a more resilient student population, better equipped to navigate the complexities of adolescence.

These findings emphasize the broader applicability of ancient wisdom in adolescent mental health. Regular

self-assessment through interactive mindfulness-based sessions can enhance self-awareness, resilience, and overall psychological well-being. Stakeholders involved in adolescent development, including educators and policymakers, should consider integrating these practices into holistic mental health strategies.

Finally, mental health professionals working with adolescents may benefit from incorporating yoga-based counselling into their treatment plans, particularly for those experiencing anxiety or stress. The cost-effectiveness, ease of implementation, and minimal side effects make these interventions a viable option for enhancing adolescent mental health.

Limitations and Future Direction

While this study provides valuable insights into the benefits of Yogic Counselling, several limitations should be noted. First, the frequency and duration of the intervention may not have been sufficient to produce significant changes across all study variables. Future research should explore longer interventions with more frequent sessions to determine optimal dosage. Additionally, individual differences in engagement levels may have influenced outcomes, highlighting the need for studies that assess adherence and participation quality.

The study relied on self-reported measures, which may introduce bias due to social desirability or inaccurate self-assessment. Future research should incorporate additional methods, such as teacher or parent evaluations, to cross-validate findings. Another limitation is the lack of long-term follow-up, making it unclear whether the observed benefits are sustained over time. Longitudinal studies should examine whether continued practice of Yogic Counselling leads to lasting improvements in emotional regulation and mental health.

Additionally, the study did not consider gender-based differences, which could influence how adolescents respond to mindfulness-based interventions. Future research should explore whether tailored approaches are more effective for different groups. The findings also highlight the need to examine cultural and socioeconomic influences on intervention outcomes. Adolescents from different backgrounds may engage with Yogic Counselling in unique ways, and further studies should explore how external factors like family environment and school support impact effectiveness.

Finally, while this study focused on psychological outcomes, the potential academic and social benefits of Yogic Counselling remain unexplored. Future research should assess whether improvements in mindfulness and emotional regulation translate into better academic performance, classroom behaviour, and peer relationships.

Despite these limitations, this study reinforces the value of integrating Yogic Counselling into educational settings. Future research should refine intervention strategies, consider long-term impacts, and explore ways to make these programs more accessible and effective for diverse adolescent populations.

CONCLUSION

The findings provide strong evidence for the efficacy of the YCM intervention in enhancing mindfulness, reducing suppression, and alleviating anxiety compared to the control group. Additionally, its protective effect on cognitive distortions underscores the importance of structured interventions in preventing negative behavioural patterns. However, the lack of significant improvements in self-esteem and mental well-being suggests that longer intervention durations or additional supportive measures may be necessary to foster change in these areas.

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