

Influence Of Selected Yogic Practices On Selected Psychological Variables Of College-Level Students



Debajyoti Acharyya¹, Prof. Dr. Srikanta Mishra² Dr. Subhabrata Kar³ and Dr. Kishore Mukhopadhyaya^{4*}

¹Research Scholar, Department of Physical Education, Fakir Mohon University, Odisha, India. debacharyya76@gmail.com

²HOD & Professor, Department of Physical Education, Baliapal College of Physical Education, Baliapal, Odisha, India. dr.srikantamishra@gmail.com

³HOD & Associate Professor, Department of Physical Education, Union Christian Training College, Berhampore, West Bengal, India. skarrana@gmail.com

^{4*}Associate Professor, Department of Physical Education, Union Christian Training College, Berhampore, Murshidabad, W.B & Honorary Professor, School of Physical Education & Sports, Sri Sri University, Odisha. kishore.km2007@gmail.com, <https://orcid.org/0000-0001-5384-837X>

***Corresponding Author:** Dr. Kishore Mukhopadhyaya

Associate Professor, Department of Physical Education, Union Christian Training College, Berhampore, Murshidabad, W.B & Honorary Professor, School of Physical Education & Sports, Sri Sri University, Odisha. kishore.km2007@gmail.com, <https://orcid.org/0000-0001-5384-837X>

Abstract

Introduction: The purpose of the study was to estimate the influence of yogic practices on selected psychological variables of college-level students. In today's demanding educational landscape, college students face escalating stress, anxiety, and mental health challenges from academic pressures, social transitions, and life demands, with high rates of anxiety or depression. Through regular practice of asanas, pranayama, and meditation, individuals experience reduced physiological arousal and emotional reactivity, which helps lower social anxiety and depressive symptoms while enhancing calmness and self-confidence. Yogic breathing and mindfulness strengthen perceived control by increasing self-awareness, self-regulation, and an internal locus of control, enabling better coping with stress and challenges. Over time, these practices contribute to positive personality development by fostering traits such as emotional balance, discipline, compassion, and resilience, making yoga an effective holistic approach for psychological well-being and healthy personality growth. **Methodology:** 60 male and 60 female students were selected for the study, and each gender category was divided into two groups of equal size (n=30). The male yoga group comprised 30 students, the female yoga group comprised 30 students, and the remaining 30 males and 30 females acted as the control group. Both yoga groups had 5 years of experience in yogic practice. The age group of the subjects was between 18-25 years. Social Anxiety, Behaviour and Depression, were measured using standard testing protocols. **Results:** All the criterion variables of the yogic practice group were significantly better than those of the control group. **Discussion:** Yogic practices regulate the nervous system, reduce stress, and enhance self-awareness, emotional balance, and self-regulation. Through asanas, pranayama, and meditation, yoga promotes calmness, confidence, adaptive behaviour, positive mood, efficient performance, and the development of stable, healthy personality traits. **Conclusion:** It was concluded that yogic practices play a significant role in improving social anxiety, behaviour and depression by promoting balanced regulation of the mind and body of college-level students.

Keywords: Yoga, Selected Psychological variables and College-level Students

Introduction:

Experiencing yoga in contemporary society has emerged as an effective remedy for the difficulties faced by modern individuals resulting from excessive reliance on technology and increasingly sedentary lifestyles. Although advances in science and technology have made daily life more convenient, they have also contributed to negative health consequences by reducing physical activity and altering habitual patterns of living. These lifestyle

changes intensify competition and generate psychological as well as physical stress. Through its structured and systematic practices, yoga offers a comprehensive approach to restoring balance and promoting overall well-being among practitioners (1-2). This approach makes the traditional practices of yoga accessible to individuals of all ages and levels of physical ability. It has been systematically structured to suit the requirements of contemporary life while carefully preserving the depth,

effectiveness, and philosophical foundations of this ancient wisdom (3-4).

Mental health difficulties exert a persistent influence on cognition, emotion, and conation (5). Researchers have suggested that yogic practices bring about neural modifications, leading to greater activation of the left compared to the right prefrontal cortex (6). Several investigations have shown that yoga-based exercises promote the development of new neural pathways (7). Studies by Lazar et al. (2005) and Lazar (2006) further reported that yogic practices modulate resonance circuitry, increasing cortical thickness in the medial prefrontal cortex and insula—particularly on the right side—thereby enhancing empathy, interoceptive awareness, self-other attunement, and both logical and intuitive processing (7-8). These practices have also been associated with reduced vulnerability to stress among healthy, physically active adults (9). Working with 113 psychiatric patients, Lavey et al. (10) observed that yogic practices contributed to mood regulation, while Michaelson et al. (11) reported beneficial effects among emotionally distressed women. Further, yoga enhances emotional resilience via improvement in emotion regulation skills as well as enhanced emotions of subjective wellbeing (12).

The findings of Benedict and Gupta (13) pointed out to the fact that yoga interventions, which involve breathing and meditation techniques can be used as a natural adjunctive or alternative therapy in high stress jobs. The researchers have concluded that yoga significantly decreases cortisol levels, perceived stress and enhances emotional wellness. Yoga is highly effective when it comes to the reduction of stress and anxiety (14). College students increasingly face mental health challenges amid academic pressures and life transitions. Prevalence rates show 33-39% experience depression or anxiety, with 63% reporting overwhelming anxiety per ACHA (15-16). The impact of yoga on mental health and emotions is not limited to stress reduction. Yoga interventions have also found to impact mood regulation, depression and emotional stability (17). This is supported by a review of Farhi. 2025 (18), according to whom yoga encourages the inner peace and

emotional balance through including mindfulness and meditation in it. This is consistent with the results of research published by Zhang and Liu, 2022 (19) who observed that yoga brings about clear enhancements in emotional well-being among university students due to decrease in stress and increase in mood. Yoga integrates asanas, pranayama, and meditation to reduce depressive symptoms (20), alleviate anxiety (21), enhance executive function (22), and foster social support and compassion (23-24). Systematic reviews confirm moderate-to-large effects across diverse populations.

Regular yogic practice has a significant positive influence on personality development by enhancing emotional stability, self-regulation, mindfulness, and social adaptability. Yoga integrates physical postures, breathing techniques, and meditation, which together improve self-awareness, reduce anxiety and impulsivity, and promote traits such as calmness, discipline, empathy, and resilience. Research shows that yogic interventions can decrease neuroticism while increasing positive personality dimensions such as conscientiousness, openness, and emotional balance, thereby supporting holistic personality growth and mental well-being (25-28).

The purpose of the present study was to compare the selected psychological variables (Social Anxiety, Perceived Control, Perfection and Efficiency, Behaviour and Depression) between college level yoga practitioners and sedentary college students of both sexes.

Methodology:

The male yoga (MY) and female yoga (FY) samples were collected from the Yoga clubs of West Bengal, India; by using Simple Random Sampling Method and, male and female sedentary samples (MC & FC) were collected from the population of general students of age group between 18-25 years who have never participated in any yoga sessions and acted as control group by using the same technique. Figure- 1 represents the sample distribution for the study.

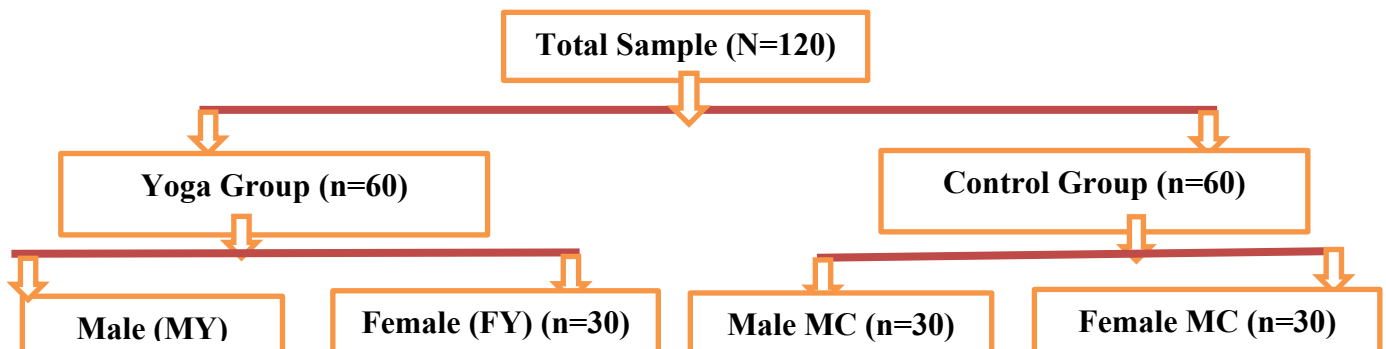


Figure-1. the sample distribution for the study

Table-1 Represent the data collection procedure

Variables	Tests/ Questionnaire
Social Anxiety	Willoughby Social Anxiety Scale (WSAS) (29)
Behaviour	Child Behaviour Inventory (CBI) (32)
Depression	Beck Depression Inventory (BDI) (33)

The data were analysed using ANOVA test and for significance f ratio Post HOC Test Were conducted following Tukey LSD method (34).

Results: The descriptive statistics of the study are represented in table-2, the results of the study are represented categorically in the following tables;

Table 2: Descriptive statistics of psychological variables

Variable s/Group	WSAS		ECBII		ECBIP		BDI	
	Mean & SD	SD	Mean	SD	Mean	SD	Mean	SD
MY	47.33 ± 4.16	4.16	106.93	12.61	12.83	3.57	26.0333	9.63286
MC	50.76	5.58	125.03	16.578	19.1	6.15	32.3	4.5573
FY	46.83	3.68	118.9	12.69	16.4	4.80	22.9	7.9583
FC	52.46	6.17	138.8	30.24	22.4	5.56	26.9	8.77044

Where, WSAS = Willoughby Social Anxiety Scale, ECBII = Child Behaviour Inventory intensity, ECBIP = Child Behaviour Inventory Problem, BDI = Beck Depression Inventory, MY = Male Yoga Group, FY = Female Yoga Group, MC = Male Control Group and FC = Female Control Group.

Table-3. One-Way ANOVA on Depression

Source	DF	Sum of Squares	Mean Square	F Statistic	P value
Groups (between groups)	3	1375.2	458.4	7.2241	0.0001736*
Error (within groups)	116	7360.6664	63.454		
Total	119	8735.8664	73.4106		

Significant at 0.01 level (Critical value 3.92). Post hoc test for depression is shown in the Table-4.

Table No. 4: Post HOC Test for depression between the study groups

Pair	Difference	SE	Q	Lower CI	Upper CI	Critical Mean	p-value
MY-MC	6.2667	1.4544	4.3089	0.9054	11.628	5.3613	0.01499 *
MY-FY	3.1333	1.4544	2.1545	-2.228	8.4946	5.3613	0.4269 **
MY-FC	0.8667	1.4544	0.5959	-4.4946	6.228	5.3613	0.9747 **
MC-FY	9.4	1.4544	6.4634	4.0387	14.7613	5.3613	0.00007168*
MC-FC	5.4	1.4544	3.713	0.03871	10.7613	5.3613	0.04766 *
FY-FC	4	1.4544	2.7504	-1.3613	9.3613	5.3613	0.2153 **

*Significant, **Not-Significant

Table-4. indicates that level of depression of Male Yoga group (MY) is significantly lower than Male Control Group (MC) whereas, Male Control Group is exhibited significantly higher than Female Yoga Group (FY) and Female Control group is significantly lower than Male control group. Table-5 & 6 represent the one-way Anova and post hoc test respectively for social anxiety.

Table-5: One-Way ANOVA test, using F distribution on Social Anxiety (WSAS)

Source	DF	Sum of Square	Mean Square	F Statistic	P-value
Groups (between groups)	3	663.6335	221.2112	8.8251	0.00002561*
Error (within groups)	116	2907.6666	25.0661		
Total	119	3571.3001	30.0109		

*Significant **Not-Significant

Table-6: Post HOC Test Social anxiety

Pair	Difference	SE	Q	Lower CI	Upper CI	Critical Mean	p-value
MY-MC	3.4333	0.9141	3.7561	0.0637	6.803	3.3696	0.04408 *
MY-FY	0.5	0.9141	0.547	-2.8696	3.8696	3.3696	0.9802 **
MY-FC	5.1333	0.9141	5.6159	1.7637	8.503	3.3696	0.0007113*
MC-FY	3.9333	0.9141	4.3031	0.5637	7.303	3.3696	0.01517*
MC-FY	1.7	0.9141	1.8598	-1.6696	5.0696	3.3696	0.5553 **
FY-FC	5.6333	0.9141	6.1629	2.2637	9.003	3.3696	0.0001659*

*Significant **Not-Significant

Male yoga group showed significantly lower values of WSAS than MC, whereas, FY group showed lower value of WSAS than FC group. Table-7 & 8 represent the one-way Anova and post hoc test respectively of Child Behaviour Inventory intensity (ECBII).

Table-7: One-Way ANOVA test, using F distribution df(3,116) on Child Behaviour Inventory (ECBI) Intensity

Source	DF	Sum of Square	Mean Square	F Statistic	P-value
Groups (between groups)	3	15820.8336	5273.6112	13.9729	7.731e-8 *
Error (within groups)	116	43780.3323	377.4167		
Total	119	59601.1659	500.8501		

*Significant

Table-8: Post HOC Test Child Behaviour Inventory (ECBII) Intensity

Pair	Difference	SE	Q	Lower CI	Upper CI	Critical Mean	p-value
MY-MC	18.1	3.5469	5.103	5.0247	31.1753	13.0753	0.00254 *
MY-FY	11.9667	3.5469	3.3738	-1.1086	25.0419	13.0753	0.08553 **
MY-FC	31.8667	3.5469	8.9844	18.7914	44.9419	13.0753	2.572e-8 *
MC-FY	6.1333	3.5469	1.7292	-6.9419	19.2086	13.0753	0.6137**
MC-FC	13.7667	3.5469	3.8813	0.6914	26.8419	13.0753	0.03494*
FY-FC	19.9	3.5469	5.6105	6.8247	32.9753	13.0753	0.0007212 *

*Significant **Not-Significant

Both male and female yoga groups showed significant lower value of ECBII in comparison with control groups, whereas, male control group is significantly lower than the female control group and male yoga group is lower than the female control group. Table-9 & 10 represent the one-way Anova and post hoc test respectively of Child Behaviour Inventory problem (ECBIP).

Table-9: One-Way ANOVA test, using F distribution df(3,116) (ECBIP)

Source	DF	Sum of Squares	Mean Square	F Statistic	P-value
Groups (between groups)	3	1511.2251	503.7417	19.2498	3.373e-10*
Error (within groups)	116	3035.5665	26.1687		
Total	119	4546.7916	38.2083		

*Significant

Table-10: Post HOC Test Child Behaviour Inventory problem (ECBIP)

Pair	Difference	SE	Q	Lower CI	Upper CI	Critical Mean	p-value
MY-MC	6.2667	0.934	6.7098	2.8237	9.7096	3.4429	0.00003532 *
MY-FY	3.5667	0.934	3.8188	0.1237	7.0096	3.4429	0.03927*
MY-FC	9.6667	0.934	10.3501	6.2237	13.1096	3.4429	2.8e-10 *
MC-FY	2.7	0.934	2.8909	-0.7429	6.1429	3.4429	0.178 **
MC-FC	3.4	0.934	3.6404	-0.04295	6.8429	3.4429	0.05427 **
FY-FC	6.1	0.934	6.5313	2.6571	9.5429	3.4429	0.00005907*

*Significant **Not-Significant

Male yoga group showed significantly lower values of ECBIP than MC, FY and FC, whereas, FY group showed lower value of ECBIP than FC group. Table-9

& 10 represent the one-way Anova and post hoc test respectively of social anxiety (WSAS).

Discussion:

Sex-based variations in the progression and outcomes of depressive disorders remain insufficiently explored (33-35). Depression occurs more frequently among women and girls, indicating a substantial gender disparity (36). Biological vulnerability may place females at a greater risk for developing depression, and specific stages of the female life course, may further heighten this susceptibility. Differences in depression prevalence between boys and girls become evident during early adolescence (37). Notably, while adolescent males are diagnosed with depression less often than females (35),

Compared with men, women with depression more commonly exhibit appetite and weight disturbances, greater sleep disruption—particularly fatigue and hypersomnia—along with heightened somatic anxiety, hypochondriacal concerns, and psychomotor retardation (39). Women are also more likely to present with atypical depressive features and to report increased crying, feelings of guilt, and dissatisfaction with body image. Moreover, females tend to experience greater symptom severity, endorse a larger number of symptoms, and report higher symptom frequency than males (38-39). By contrast, depressed adult men more often describe occupational difficulties, health-related worries, insomnia, and agitation (38).



Figure -2 Represents the level of depression between the groups

Based on an emerging picture of how stress and mood are regulated within the nervous system, and considering the *Executive Homeostatic Network* concept that we have recently advanced, we provide an integrative overview of biological mechanisms and substrates that may mediate depression, which should be targets for research to evaluate how the practice of yoga can mitigate depressive symptomatology. The interplay between stressors, the environment, and the individual's ability to cope appears to be key factors in depression. Depression can be thought of as recuperative behavior, whereby in the context of psychological (stress) or physiological (illness) challenges, an individual withdraws from the environment in an effort to prevent further injury (33).

Current evidence suggests that a range of yoga-based interventions can enhance self-reported perceptions of stress and overall well-being (40-46) and reduce self-reported levels of depression, dysthymia, and

the frequency of major depressive episodes (43,45,47-50). However, relatively few studies have examined the physiological or neurological mechanisms through which yoga may exert its beneficial effects on mood and depressive symptoms. Activation of the sympathetic nervous system (SNS) and the hypothalamic-pituitary-adrenal axis (HPAA) is necessary for responding to acute stress. Yet, within the fast-paced, multitasking demands of modern life, these systems may become chronically overactivated. Prolonged SNS/HPAA arousal is associated with numerous physical and psychological consequences, including gastrointestinal disturbances, reduced immune functioning (e.g., increased susceptibility to colds and flu, delayed wound healing), heightened cardiovascular risk, endocrine complications (e.g., type 2 diabetes mellitus, erectile dysfunction, and reduced libido), anxiety, and depression (51). Moreover, acute physiological signs of SNS/HPAA activation—such as tachycardia and sweating—may

be interpreted by the limbic system, which governs stress, emotion, and memory, as indicators of imminent threat.

Conventional allopathic treatment for depression typically involves antidepressant medications grounded in the monoamine hypothesis. This model proposes that depression arises from imbalances in monoamine neurotransmitters, including catecholamines (epinephrine, norepinephrine, and dopamine) and indoleamines (serotonin), particularly deficiencies in norepinephrine or serotonin within the central nervous system (52). Although limited research has explored yoga's influence on neurochemistry, evidence indicates that practicing yoga postures can increase gamma-aminobutyric acid (GABA) levels, a neurotransmitter associated with antidepressant and anxiolytic effects (53-54). Additionally, slow, controlled breathing patterns that stimulate the vagus nerve—similar to those employed in yoga—have been shown to

elevate prolactin, dopamine, norepinephrine, and serotonin levels (55).

Accordingly, mind-body interventions such as yoga may complement pharmacological and psychological treatments by promoting adaptive autonomic regulation and enhancing self-regulatory coping strategies (56-59). Therefore, yoga interventions should be considered as supportive approaches for individuals experiencing depression to better manage life stressors and depressive symptoms. Nonetheless, further rigorous research is needed to elucidate the specific mechanisms underlying yoga's therapeutic effects.

Gender stereotypes may play a role in the ability to recognize depression. Life stress—particularly adverse childhood experiences—has been shown to increase an individual's risk of depression, especially among those with a genetic predisposition (60). The findings of the present study showed that Yoga plays a major role for lowering the level of depression male college students.

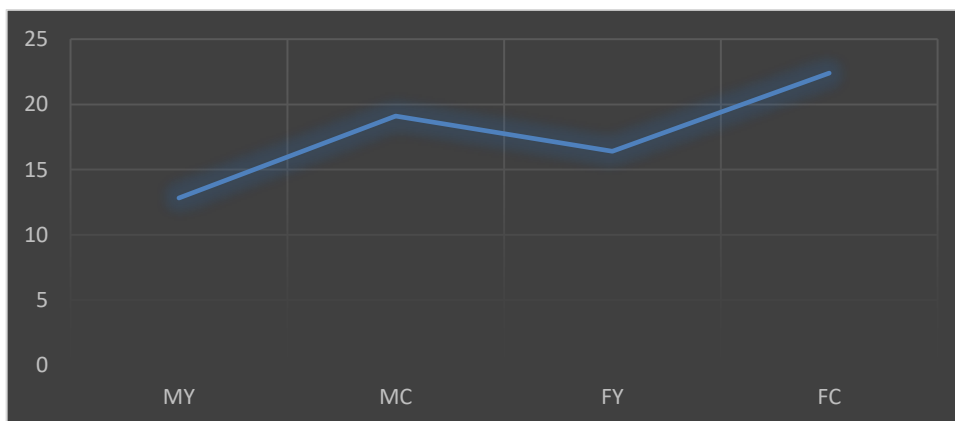


Figure- 3 Represents the level of SWAS between the groups

The figure 3, represents the comparison of SWAS between the groups, where we can find that yogic practise groups, both male and female were exhibited significantly lesser value of SWAS than non-practise groups.

Sharma and Gupta (61) examined the impact of regular yoga practice on mental health among Indian college students and reported significant improvements in emotional stability, self-confidence, and overall psychological well-being, suggesting that yoga enhances adaptive coping mechanisms and reduces mental distress. Telles et al. (62) further investigated yoga-based interventions among university students and found a marked reduction in anxiety symptoms and perceived stress following eight weeks of structured practice, highlighting yoga's effectiveness in regulating autonomic balance and emotional control. Similarly, Bhavanani (63) emphasized the therapeutic value of yoga in managing anxiety disorders among youth,

demonstrating that practices such as pranayama and meditation significantly lower anxiety levels and promote mental clarity, thereby supporting yoga as a valuable complementary mental health strategy in educational settings.

Social anxiety tends to decrease after long-term yogic practice due to a combination of neurophysiological, psychological, and behavioral mechanisms. Regular yoga practice (including asana, pranayama, and meditation) helps regulate the autonomic nervous system by reducing sympathetic overactivity ("fight-or-flight") and enhancing parasympathetic tone, which leads to decreased physiological arousal commonly associated with social anxiety (e.g., rapid heart rate, sweating). Yogic breathing techniques, particularly slow and controlled pranayama, improve vagal tone and promote emotional regulation, thereby reducing hyper-reactivity to social stressors. Additionally, meditation practices cultivate mindfulness and present-moment

awareness, which help individuals detach from negative self-evaluation and fear of judgment—core features of social anxiety. Over time, yoga also enhances self-efficacy, self-confidence, and body awareness, contributing to improved social comfort

and reduced avoidance behavior. Furthermore, reductions in cortisol levels and improvements in neurotransmitter balance (such as increased GABA activity) have been associated with long-term yoga practice, supporting its anxiolytic effects (62-66).

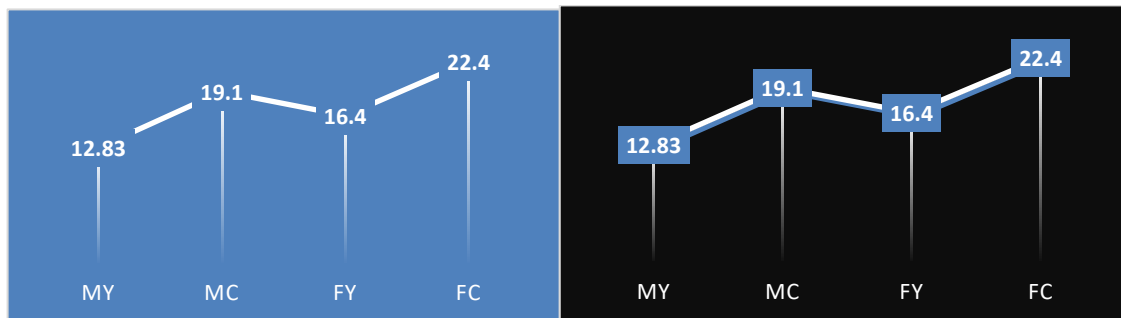


Figure- 4 & 5 Represents the level of ECBI-I & ECBI-P between the groups

Figure 4 & 5 represents the comparison of Child Behavior Inventory Intensity (ECBI-I) and Child Behavior Intensity Problem (ECBI-P) of both the groups. It represents that yogic practice groups were significantly lower value of than the non-practice control groups of both the genders.

activity), Improvement in executive function and attention, Reduction of stress hormones (cortisol) and Enhancement of emotional regulation pathways. Which directly target behaviours measured by ECBI (71-73).

The Eyberg Child Behavior Inventory (ECBI) is widely used to assess disruptive child behaviour through two dimensions: Intensity Scale (ECBI-I): Measures the frequency of problematic behaviours (e.g., noncompliance, aggression) and Problem Scale (ECBI-P): Measures whether parents perceive those behaviours as problematic or distressing. Both scales are sensitive to behavioural interventions and reflect improvements in emotional regulation, compliance, and social functioning (67).

Conclusion: In conclusion, regular yogic practices such as asana (postures), pranayama (breathing techniques), and meditation have been found to effectively reduce anxiety and depression among college students by improving emotional regulation and lowering stress levels. These practices enhance mental well-being, concentration, and resilience, which are essential for coping with academic and social pressures in college life. Therefore, incorporating yoga into daily routines or institutional wellness programs can be a valuable and holistic approach to promoting students' psychological health.

Yoga significantly improves social-emotional behaviour, self-regulation, and reduces anxiety in preschool children. Yoga-based interventions enhance adaptive coping, emotional stability, and behavioural control (supported across multiple studies and reviews) (68). Regular yoga practice improves attention, impulse control, and behavioural responses, which are core components measured by ECBI (69). Long-term adaptive yoga shows moderate to significant improvements in behavioural and emotional domains in children with developmental disorders (70).

Yogic practice significantly improves child behavioural outcomes, which would be reflected as reduced ECBI Intensity and Problem scores. Although direct ECBI-based yoga studies are limited, strong indirect evidence from behavioural, emotional, and neurocognitive improvements supports yoga as an effective intervention for reducing disruptive behaviours in children.

Yoga leads to Decrease in ECBI-I scores by Reduced frequency of disruptive behaviours, Improved attention and impulse control and Better self-regulation and emotional balance. Further, Yoga decrease ECBI-P scores by improving parent-child interaction, Reduced perceived behavioural stress by caregivers and enhanced compliance and social behaviour. Yogic practices (āsana, prāṇāyāma, mindfulness) act through: Regulation of autonomic nervous system (↓ sympathetic, ↑ parasympathetic

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