RESEARCH PAPER

"Multidimensional Effects of the Common Yoga Protocol (CYP) on Human Health: A Systematic Review with Integrative Synthesis"

Sharda[1], Prof (Dr.) Nidheesh Kumar Yadav[2], Rama Mishra[3]
[1]Ph.D Scholar, Shoolini University
[2]Professor, Shoolini University
[3]Assistant Professor, Shoolini University
Corresponding Author:
Email: ramamishra1921@gmail.com
Received: 1st October, 2026; **Revised:** 5th October, 2026; **Accepted:** 8th October, 2026; **Available Online:** 20th October, 2026

ABSTRACT
Background: Arecoline is the major areca nut pyridine alkaloid that causes severe hepatotoxicity primarily due to the disturbance of redox homeostasis and oxidative and nitrosative stress.
Objective: This study evaluated the antioxidant and hepatoprotective potentials of Ludwigia adscendens extract against arecoline-induced hepatotoxicity in mice.
Methods: Preliminary phytochemical analysis, total flavonoid and total phenolic content were performed. Antioxidant and anti-inflammatory assays were performed using DPPH, ABST, reducing power, and egg albumin denaturation assays. Arecoline was administered to induce toxicity in mice. L. adscendens extract was co-administered at different doses of 250mg/kg and 500mg/kg to evaluate the hepatoprotective potential. The oxidative and nitrosative damage were measured using LPO, GST, GSH, SOD, and NO. Hepatic damage and its mitigation were evaluated by measuring liver biomarkers, including TB, DB, SGOT, SGPT, ALP, and TP.
Results: Arecoline significantly increased oxidative and nitrosative stress leading to liver injury, demonstrated by the elevation of liver biomarkers. Meanwhile, treatment with L. adscendens extract (250mg/kg and 500mg/kg) successfully attenuated the liver injury.
Conclusion: L. adscendens extract possesses antioxidant, anti-nitrosative, and hepatoprotective properties. The extract contains various bioactive phytocompounds that actively scavenge free radicals, thereby preserving liver integrity and function.
Keywords: Ludwigia adscendens, phytocompounds, antioxidant, hepatoprotection
How to cite this article: Sharda, Yadav NK, Mishra R., Multidimensional Effects of the Common Yoga Protocol (CYP) on Human Health: A Systematic Review with Integrative Synthesis. Int J Drug Deliv Technol. 2026;16(89s): 314-324; DOI: 10.25258/ijddt.16.89s.32
Source of support: Nil.
Conflict of interest: None.

INTRODUCTION

At the present age of urbanization to include technological explosion and sedentary lifestyle, has seen an upsurge in non-communicable diseases, as also the rise of physical as well as mental diseases. Hypertension, obesity, and cardiovascular diseases are now being diagnosed in almost all sections of the population (Arya et al., 2022; K. Sharma et al., 2022).

Problems such as anxiety, depression, and sleep disturbance are common with the increasing trends in lifestyle diseases and stress owing to environmental and lifestyle factors. Integrative strategies may be beneficial for the comprehensive treatment of these typical disorders. Standardized protocol is necessary for practicing yoga effectively and safely. The Ministry of AYUSH implemented the Common Yoga Protocol for the promotion of yoga. CYP refers to a module containing basic yogic practices considered essential for all to practice for health promotion, and also to prevent and manage disease by expert masses. It has achieved immense global popularity and is being practiced by many people all over the world. International Yoga Day held in various countries is being widely used for the occasion. It is also being spotlighted in educational institutions, hospitals, and also under community wellness programs. Usually, medical systems have a reliance on the conceptual and practical integration of body and mind necessary for health and disease prevention (Ministry of AYUSH, 2015). They primarily offer symptomatic treatment, not treat the root cause, driving healthcare models. CYP helps a lot with cardiovascular health, vascular stiffness, lipid profile, flexibility, respiratory endurance, body composition, and muscular fitness (Kirtania et al., 2025).This has been seen across different groups such as students, housewives, athletes and even COVID 19 survivors (Bej, 2025; Bora & Arya, 2023; Khodnapur et al., 2024). Also, beyond physical outcomes, CYP seems to work on mental health and emotional steadiness. Some studies reported reductions in stress, anxiety, and other psychological disturbances, and along with that an improvement in cognition as well as neurophysiological functions from regular practice (Anand & Sayal, 2016; Ghosh et al., 2024; Mohanty et al., 2021).

This limitation engendered an interest in holistic interventions and integrative health approaches concerning the individual as a unit body-mind-consciousness entity. On top of that, evidence indicates CYP supports better breathing efficiency and physiological adaptation for yoga practitioners and athletes, so overall functional health and wellness feels more supported (Yadav & Vyas, 2026). Even though most investigation found helpful results from CYP, a few studies noted non-significant changes in certain physiological parameters like blood pressure (Singh, 2025).

It is believed that yoga originated in India. Indian rishis are credited with the exploration of the mind-body connection (Cohen, 2020). Yoga, as an ancient science, is a mix of different Indian philosophies. It comprises of physical postures, breathing exercises and meditation combined with a stable and controlled lifestyle with awareness and consciousness. These practices not only enhance physical functions and boost energy, but also bring calmness making a person physically and mentally stable, thereby making him healthy. This concept is very much in line with the present era of lifestyle medicine and has been stressed upon in the old yogic scriptures in relating to health and disease through the concept of balance, i.e. equilibrium between body and minds(Dr. Chandrashekhar Pandey et al., 2021; Sehgal, 2016).

Over the past few years, there has been an escalating interest in investigating the benefits of the Common Yoga Protocol (CYP) among different interest sections of global populations and also towards several health conditions through various parameters such as physiological health, psychological well-being, autonomic balance, biochemical parameters, neurocognitive functions and some biological parameters. An increase in lung capacity, physical flexibility, general health and has also been observed among CYP practitioners (Arya et al., 2022; K. Sharma et al., 2023). Physical changes are not the sole outcome of the Common Yoga Protocol but it also helps in bringing down stress, anxiety, and emotional disturbances and promoting mental calmness through increased Sattva and decreased Rajas and Tamas (Maity et al., 2025; Tripathi et al., 2024). In addition, various studies reveal that there is an improvement in the quality of life of both young and old yogis through CYP practice (K. Sharma & Kumar Dubey, 2018).

According to more recent evidence, CYP also controls many neurobiological and biochemical processes. For instance, studies have observed changes in the molecular markers brain-derived neurotrophic factor (BDNF), vascular endothelial growth factor (VEGF), and CD34+ stem cells, which indicate neuroplasticity, angiogenesis, and cellular regeneration (K. Sharma et al., 2023). As a result, this review paper fill this gap in the non-availability of a comprehensive review of evidence on the effect of CYP on multiple domains. The present study attempts to do a synthesis and critical analysis of evidence from some selected empirical studies for the first time in order to develop an in depth and comprehensive understanding of the multidimensional effect of CYP.

2. Rationale of the study:

The studies focusing on the Common Yoga Protocol provide evidence of beneficial effects on different health parameters. However, an assessment of the studies reveals varied designs, durations, sample groups and outcome measures. As studies are not consistent, we cannot generalise findings regarding IAPT's (Improving Access to Psychological Therapies) effectiveness. Moreover, no current evidence provides a structured and comparative analysis of the effect across varying domains. That might be due to the fact that most of the papers do not analyse multiple domains. As a result, it becomes difficult to evaluate and compare the strength and consistency of effects across different domains. An additional important gap to note is the absence of domain-wise synthesis, which could indicate which domains have strong evidence and which require further investigation. This limited-wise classification hampers translation of CYP in real life for clinical, educational and community settings.

Therefore, the present review is undertaken to organize and interpret the findings of selected studies in a systematic and domain-wise manner, enabling a clearer understanding of the pattern, consistency, and scope of CYP's effects.

3. Objectives of the study:

The present review study is undertaken with the following objectives:

- To methodically investigate a wide variety of physiological changes and health benefits resulting from the practice of the Common Yoga Protocol (CYP) in different segments of the population.
- To thoroughly scrutinize the psychological effects of CYP, especially dealing with stress, emotional stability, and the strengthening of mental resilience.
- To study the impact of CYP on the control of the autonomic system and biochemical processes, including heart-related changes, indicators of metabolic health, and substances linked to stress within the body.
- To explore the neurocognitive and biological reactions associated with the practice of CYP, especially brain functioning, structural changes in the brain, formation of new blood vessels, and alterations at the cellular level.
- To uncover prevalent trends, likenesses, and differences in the results documented by selected studies.
- To weigh the level and quality of the evidence extracted mined from various health sectors to reveal the domains that

strongly benefited from and are influenced by the CYP practice.
- To create a detailed and broad layout of the Common Yoga Protocol effect on the well-being of human life.

4. Methodology:

4.1 Research Design:

The present study adopts a systematic review-based design, aimed at synthesizing evidence from previously published empirical studies on the Common Yoga Protocol (CYP). The review follows a structured approach to identify, screen, and analyse relevant studies in order to develop a multidimensional understanding of CYP's effects across various health domains. The protocol of this systematic review was registered in the International Prospective Register of Systematic review (PROSPERO) under registration number CRD420261401632.

4.2 Data Sources and Search Strategy:

Relevant literature was retrieved from multiple electronic database and academic platforms, including:

- PubMed
- Google Scholar
- Research Gate
- Peer-reviewed scientific journals

The search strategy incorporate Boolean operators (AND, ON) using combinations of keywords such as "Common Yoga Protocol", "CYP", "CYP intervention", Yoga AND stress", "yoga AND cortisol", and "yoga AND HPA axis". The selection process focused on studies that examined the efficacy of CYP on the health-related outcomes.

4.3 Inclusion and Exclusion Criteria:

Inclusion Criteria

- Common Yoga Protocol studies or articles published between 2015 to 2026.
- Empirical studies such as quasi-
- experimental, pilot studies, RCT's.
- Research examining a measurable outcome in at least one of the domains (physiological, psychological, biochemical, etc.)
- The authors searched PubMed, SCOPUS, Google Scholar, and Medline to identify literature for the review.
- CYP could be administered in multiple ways, from group-based to individualized, which could be delivered through parents, teachers, clinicians or peers.
- Additionally, interventions may occur in a variety of settings and formats, such as in-class.

Exclusion Criteria:

- Studies not related to CYP (general yoga without protocol standardization), review articles, editorials, conceptual and opinion-based papers.
- Studies lacking quantitative outcome data searches.
- Duplicate records or inaccessibility of full-text articles.

Rationale: These criteria were specified to ensure methodological consistency, focusing specifically on standardized interventions of CYP, improving the validity and comparability of the findings.

4.4 Study Selection Process:

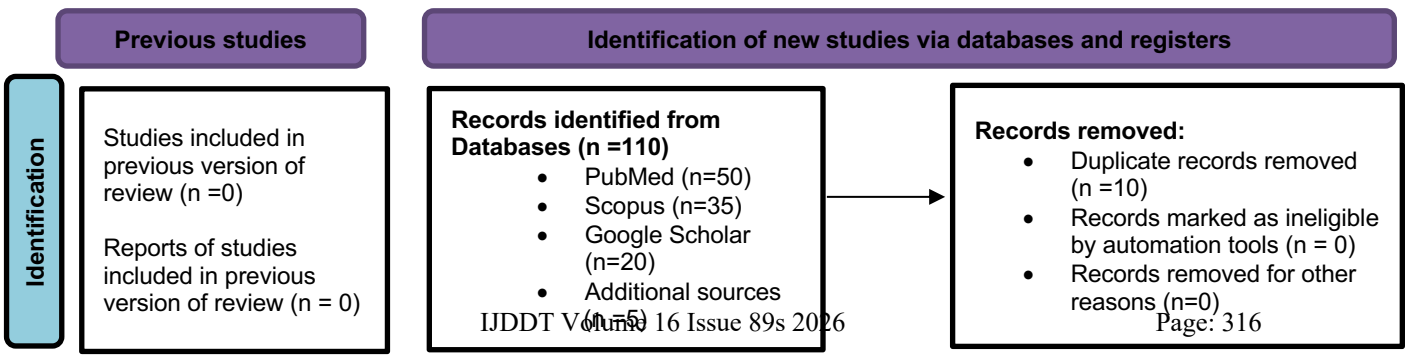
The study selection process followed the three phases of the PRISMA framework: Identification Screening, and Inclusion. A total of **110 records** were identified through database searching including PubMed (n=50) Scopus (n=35), Google Scholar (n=20), and additional (n=5). After removing duplicates records (n=10), **100 records** remained for title and abstract screening. Two independent reviewers screened the retrieved records for relevance and methodological suitability. During the screening phase, **46 records were excluded** based on following reasons:

- Irrelevant to Common Yoga Protocol (n=26)
- Duplication of concepts (n=10)
- Non-empirical nature (n=4)
- Other methodological limitations (n=6)

Further, **54 full-text articles** were assessed for eligibility. Following detailed evaluation, **34 studies were again excluded** due to the following reasons:

- Lack of CYP-specific intervention in 15 studies
- Incomplete or insufficient outcome data in 10 studies
- Non-original or non-empirical research in 9 studies

Finally, **20 studies were included** in the qualitative synthesis for final systematic review and analysis after meeting all methodological quality with inclusion criteria. The complete study selection process is illustrated in the PRISMA flow diagram (Figure 1)



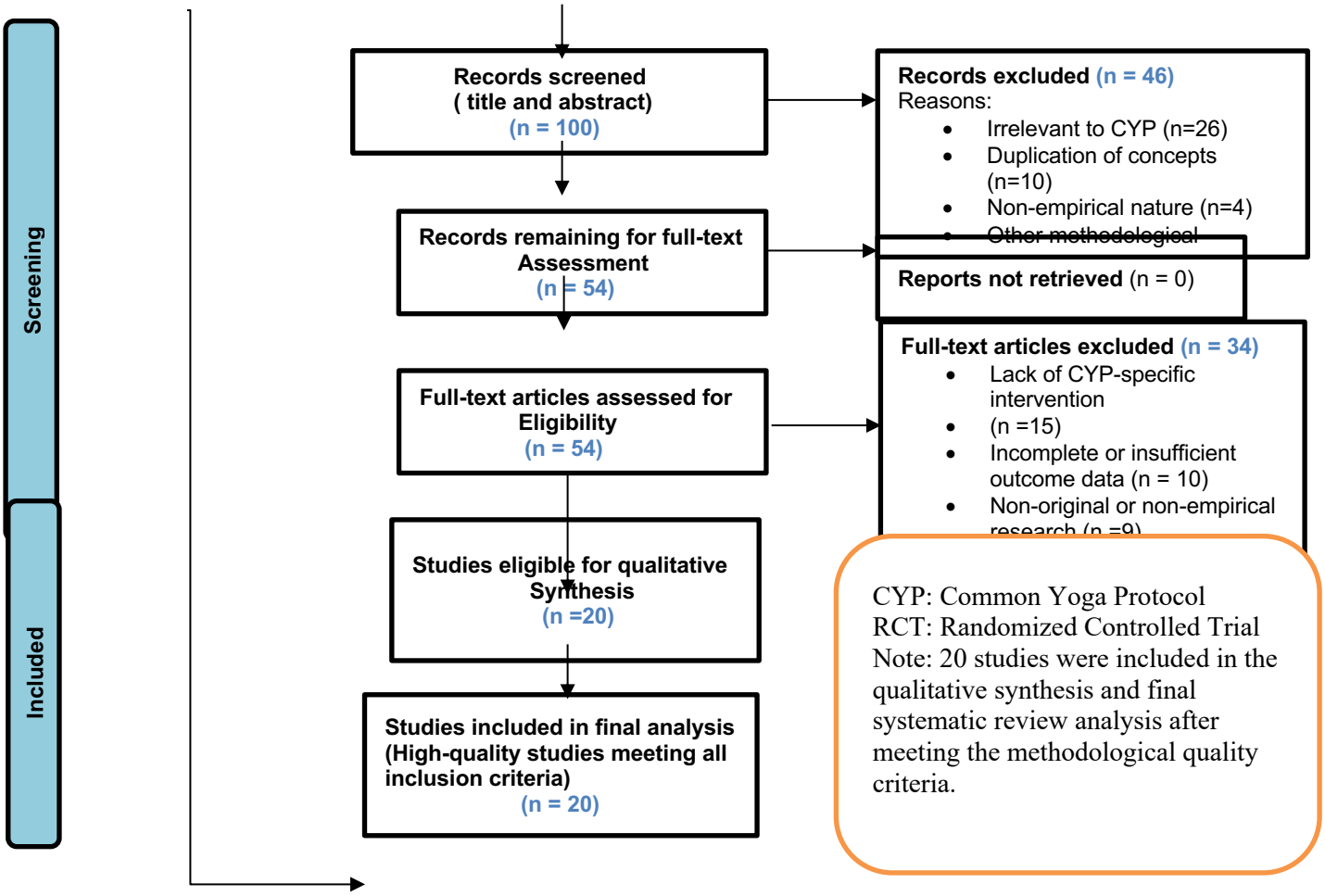


Figure: 1
PRISMA flow diagram illustrating the selection process of studies included in the systematic review

4.5 Data Extraction:
A structured data extraction sheet was developed to systematically collect relevant information from each included study. The extracted data included:

- Author's and year of publication
- Population characteristics
- Sample size
- Study design
- Duration of intervention
- Outcome measures
- Key finding

Data extraction was performed independently and cross-verified to ensure accuracy and consistency.

4.5 Tool and Variables:
The studies utilized a range of standardized tools and measurable indicators:
Physiological Parameters

- Blood pressure (BP)
- Body Mass Index (BMI)
- Respiratory measures (vital capacity, oxygen saturation)

Psychological Measures

- Perceived Stress Scale (PSS)
- Depression Anxiety Stress Scale (DASS-21)
- WHO Quality of Life (WHOQOL-BREF)

Biochemical Indicators

- Lipid Profile (TC, LDL, HDL, TG)
- Blood glucose levels
- Cortisol (stress hormone)

Neurobiological/ Biological Markers

- Brain-Derived Neurotrophic Factor (BDNF)
- Vascular Endothelial Growth Factor (VEGF)
- Inflammatory markers (e.g. cytokines)

Table 1: Summary of Included Studies Using Common Yoga Protocol (Expanded with Author Names)

Author (year)	Population	Sample Size	Duration	Method/ Design	Tool/ Measure	Key findings
Amitha sehgal(2016)	Students	23	10 Days	Experimental	Basic physiological & psychological observation	Improved mental and physical well-being
Dubey,S. et.al. (2018)	Senior citizen	40	8 weeks	Experimental (Descriptive analyses)	WHOQOL-BREF	Significant improvement in quality of life
Pandey,C.S. et.al. (2021)	Healthcare professionals	30	4 Weeks	Experimental	Perceived Stress Scale (PSS)	Reduction in stress levels
Sharma,K. et.al. (2021)	Healthy adults	64	1 Month	Pilot study (Open label single arm exploratory)	VEGF, neurobiological markers	Neurobiological changes observed
Sharma,K. et.al. (2022)	Mixed population	374	1 Month	Experimental (Open label single arm exploratory)	BP, BMI	Cardiovascular improvement
Arya,J.et.al. (2022)	Dyslipidaemia patients	52	3 Months	Clinical trial (Three-arm randomized controlled trial)	Lipid profile (TC, TG ,LDL, HDL)	Improved lipid profile
Sharma,K. et.al. (2023)	Adult Females	25	3 Months	Experimental (Open label single arm exploratory)	CD34+, biological markers	Increase in stem cell activity
Kumar,V. et.al. (2023)	Nurses	88	8 Weeks	Experimental (Randomized control trial study)	BP, PSS	Reduction in stress and blood pressure
Tripathi,P. et.al. (2024)	Young adults	12	7 Weeks	Experimental	Sleep quality scale	Improved sleep quality
Yadav,A.K. et.al. (2024)	Students	50	8 Weeks	Experimental	Spirometry (vital capacity)	Improved lung capacity
Maity,K. et.al. (2025)	Prisoners	154	8 Weeks	Experimental (R)	Guna based personality assessment	Increase in Sattva, decease in Rajas & Tamas guna
Bora & Arya (2023)	Dyslipidemia patients	60	12 weeks	Clinical experimental	Lipid profile assessment	Reduction in cholesterol, trigly-cerides, LDL, VLDL, improve HDL
Khodnapur et al. (2024)	COVID-19 survivors	72	3 months	Prospective observational cohort study	Vascular stiffness assessment, BP, Pulse wave velocity	Reduction in heart rate, BP, pulse wave, arterial stiffness indices

Ghosh et al. (2024)	Students	166	6 weeks	Controlled experimental study	DASS-21, OHQ, ISI, Machine learning models	Reduce psychological stress, improved emotional wellbeing
Bej (2025)	Secondary school students	30 male students	8 weeks	Quasi-experimental pre-post design	Kinovea motion analysis, anthropometric measure	Improve flexibility, spinal mobility, BMI and body fat
Kirtania et al. (2025)	Rural & urban middle-aged housewives	60	12 weeks	Randomized experimental block design	BMI, muscular endurance, flexibility test	Improve flexibility, muscular endurance, BMI, especially among rural woman.
Yadav& Vyas (2026)	Inter university yoga players	60 male	8 weeks	Experimental	Breath-holding capacity tests	Improve in positive and negative breath holding capacity and respiratory endurance
Singh (2025)	School students	60 male	8 weeks	Experimental pre-post control group design	Sphygmomanometer blood pressure assessment	No significant changes observed in systolic and diastolic blood pressure.
Anand & Sayal (2016)	General population/ yoga practitioners	Not specified	One month training discussion	Commentary / Editorial article	Yoga and mind-body therapies	Improve stress regulation, anxiety, blood pressure, cognition, and neurophysiological functions.
Mohanty et al. (2021)	General population and healthcare workers	Not specified	Not specified	Commentary article	Yoga mindfulness, integrative medicine	Improve mental health, lung capacity, stress management, and overall well-being during COVID-19.

5. Result and Analysis:

5.1 Physiological and Biochemical Effects:

The findings suggest that the Common Yoga Protocol (CYP) leads to significant physiological adaptations across multiple domains. The significant

decrease observed in cardiovascular parameters, including systolic blood pressure ($p<0.001$), diastolic blood pressure ($p<0.001$), mean arterial pressure ($p<0.001$), pulse pressure ($p<0.001$), and rate-pressure product ($p=0.002$), reflects improved cardiac efficiency and impaired myocardial workload. These shifts go hand in hand with improved autonomic regulation, evidenced by the improvement of heart rate variability indices (power such as total ($p<0.001$), low ($p=0.006$), high ($p=0.006$) frequency, RMSSD ($p=0.039$), NN50 ($p<0.001$), and pNN50 ($p=0.013$) reflecting parasympathetic domains (V.K. Sharma et al., 2023). Reduced heart rate, blood pressure, and measures of vascular stiffness (pulse wave velocity arterial stiffness indices) compared with controls (Khodnapur et al., 2024). There was a positive change in respiratory function with a significant increase in vital capacity ($p=0.003$), accompanied by a reduction in breath rate, indicating improvement in pulmonary efficiency (Anoj et al., 2024; Sehgal, 2016). A significant reduction in CYP in serum cortisol levels and inflammatory markers in the form of TNF-α, IL-1, and IL-6 was also evident, along with an improvement in lipid profile (K. Sharma et al., 2023), and improvement in lipid profile after intervention: cholesterol, triglycerides, LDL, VLDL Reduced; HDL increased; overall heart health improved ($p<0.005$) (Bora & Arya, 2023).

In addition, there were notable improvements in total antioxidant capacity with a significant rise in its level ($p=0.036$) and telomerase activity with a significant modulation ($p=0.024$), indicating a reduction in oxidative stress and improved cellular regulation (K. Sharma et al., 2023). There were significant changes in anthropometric parameters, such as body mass index (BMI), endurance, hip extension, spinal rotation and flexibility in rural housewives; urban housewives mainly improved flexibility and its association with behavioural traits exhibiting interaction between physical and functional health domains (Bej, 2025; Maity et al., 2025).Significant improvement was observed in resting heart rate ($p=0.004$), flexibility ($p=4.83e-6$), and muscular endurance ($p=0.005$). No significant improvement was found in predicted VO2max ($p=0.059$) (Kirtania et al., 2025), and systolic blood pressure ($F=0.042$, $p=0.839$) and diastolic blood pressure ($F=0.185$, $p=0.669$) after CPY intervention among school students (Singh, 2025).

Overall, Common Yoga Protocol shows statistically significant improvement in cardiovascular, respiratory, autonomic, biochemical, and inflammatory functions, and its involvement in improving physiological efficiency at the systemic level (Dr. Chandrashekhar Pandey et al., 2021; Sehgal, 2016). Significant improvement in Positive Breath Hold Capacity ($F=4.319$, $p<0.05$) and Negative Breath Hold Capacity ($F=4.240$, $p<0.05$) in the CYP group compared to control group (Yadav & Vyas, 2026).

5.2 Psychological Effects:

The systematic review reveals the consistent improvement of psychological well-being across the included studies, which are reflected in the reduction in stress, anxiety, and emotional disturbances. Significant reduction in perceived stress, depression, and anxiety scores was reported post-intervention, demonstrating enhanced emotional regulation and mental resilience (V. K. Sharma et al., 2023). Further evidence suggested a significant reduction in stress and anxiety levels ($p=0.011$) and an improvement in general mental health scores ($p=0.061$), indicating enhanced psychological adaptability and coping (Mohanty et al., 2021; K. Sharma et al., 2023). Improvement in overall emotional state was well supported with improved quality-of-life domains with the psychological domain ($p=0.045$) indicating improvement in mood and mental well-being (Dr. Chandrashekhar Pandey et al., 2021). The change in personality dimensions as evident by a significant increase in Sattva ($p=0.041$), a significant decrease in Rajas ($p=0.021$) and Tamas value ($p=0.056$) as measured by the Sattva-Rajas-Tamas scale. This improvement in positive mental attributes with pre and post-intervention reflection reduced stress, increased happiness, and confidence was evident in post-intervention (Maity et al., 2025). Yoga may improve stress regulation, anxiety, blood pressure, inflammatory responses, neurotransmitter activity, and cognitive functions (Anand & Sayal, 2016). Reduced psychological stress among students, random forest model showed best prediction performance for stress change ($R^2=0.71$, RMSPE=1.23) (Ghosh et al., 2024).

5.3 Neurocognitive and Biological Effects:

CYP intervention displays significant modulation of molecular and biochemical markers. An increase in neurobiological indicators such as BDNF (Brain-Derived Neurotrophic Factor) ($p=0.002$), and CD34+ stem cells ($p=0.001$) was evident, together with an alteration in the development of angiogenesis markers, including angiogenin ($p<0.002$) and VEGF (Vascular Endothelial Growth Factor) related ratios ($p<9.001$), reflecting increased neurogenic and angiogenic response. Assessment of neurotrophic and angiogenic markers, including BDNF and VEGF, was carried out by the use of ELISA-based estimation for protein in the included studies (K. Sharma et al., 2021, 2023). Also, evidence on biochemical modifications was evident in the improvement in lipid parameters, including a significant increase in HDL level ($p<0.001$) and overall cholesterol modulation following CYP intervention (Arya et al., 2022; K. Sharma et al., 2022).

Evidence on biochemical modifications was evident in the improvement in antioxidant and inflammatory parameters, a significant reduction in pro-inflammatory (IL-6, TNF-α, IL-1) and an increase in antioxidants ($p=0.036$), reflecting reduced inflammation and improved regulation of oxidative stress (V. K. Sharma et al., 2023). There was limited

evidence reflecting the significant neurobiological changes from the selection of studies, including an increase in VEGF level ($p<0.05$), reflecting increased angiogenesis activity.

There was improvement in cognitive function, especially in attention and memory aspects. However, these results are based on limited studies and need to be interpreted with caution. In addition, some biological markers show positive trends without consistent confirmation across studies, highlighting the need for further large-scale and controlled investigations.

5.4 Quality of Life (QOL):

Provisional results showed the improvement of overall quality of life in an type, was consistently seen post-intervention, a significant enhancement in quality of life in senior citizens was reported with a high F-value ($F=78.613$, $p<0.05$), indicating better overall well-being and functional status (K. Sharma & Kumar Dubey, 2018). Further change was seen in domain-specific outcomes with improvement in the scores of physical ($p=0.001$), psychological ($p=0.049$) and overall quality of life ($p=0.028$) was reported , demonstrating better everyday functioning and level of life satisfaction (Dr. Chandrashekhar Pandey et al., 2021). The quality of sleep, as shown in better sleep quality ($p<0.001$), indicated better restorative function and overall life quality of sleep (Tripathi et al., 2024). Assessment of QOL was evident in the use of the WHOQOL instrument, indicating significant enhancement in physical and psychological domains ($p<0.05$) in different numbers of studies. Different outcomes are shown with social and environmental domains, demonstrating less consistency with the different studies (K. Sharma & Kumar Dubey, 2018).

6. Mechanism of Action of CYP:

There are several mechanisms involved in the outcomes seen with the Common Yoga Protocol that can be related back to one another. A significant pathway could be regulation of the stress response via the hypothalamic – pituitary – adrenal (HPA) axis. Under stress conditions, the HPA axis is activated, leading to high cortisol levels, which can cause various physical and mental effects (V. K. Sharma et al., 2023). Restoring balance through yoga intervention techniques can result in decreased cortisol levels and an increase in parasympathetic tone, which can be measured through changes in autonomic balance and heart rate variability (HRV) measures (V. K. Sharma et al., 2023). HRV measures help indicate improved emotional stability, relaxation, cardiovascular functioning and better mood. **Figure 2** provides a domain-wise snapshot of effects reported in the eleven identified studies on the Common Yoga Protocol (CYP). The graph clearly shows that the highest numbers of positive effects were reported in the behavioural and quality of life domains, where in CYP seems to have a specific impact on well-being, behaviour, and overall quality of life.

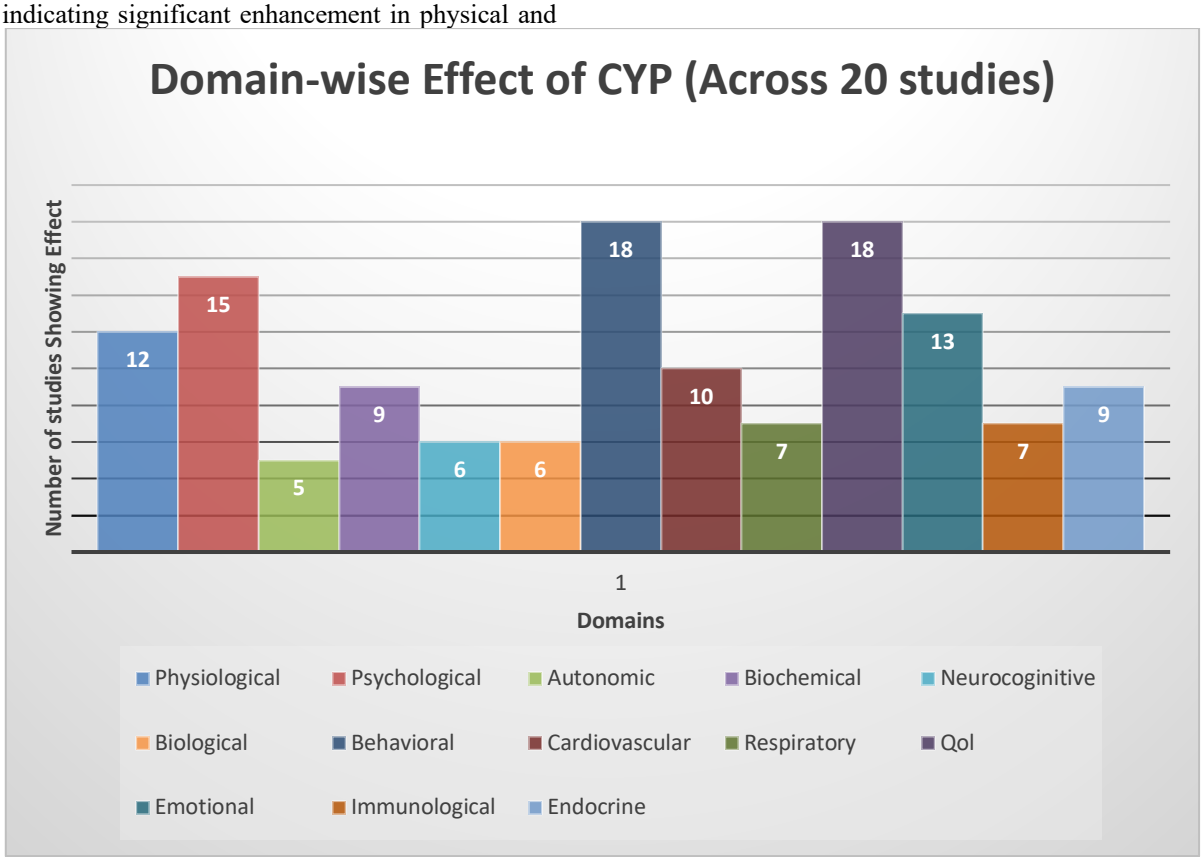


Figure: 2

Domains related to psychological and emotional functioning also showed substantial improvements as participants experienced decreases in stress, anxiety, emotional imbalance, regulate stress-related neuroendocrine mechanisms and improved

sleep quality (Mohanty et al., 2021; Tripathi et al., 2024). In contrast, fewer studies investigated autonomic, neurocognitive, neurotransmitter activity, biological and immunological CYP outcomes (Anand & Sayal, 2016). The preliminary findings, although promising, need more research. The figure illustrates a comprehensive definition of CYP, affecting physical as well as psychological, behavioural, and general lifestyle-related outcomes, and thus clearly indicates potential benefits. This can be seen in **Figure 3**, that CYP was a behavioural intervention that started a cascade of reactions to restore HPA axis regulation, which decreased cortisol output and increased PNS. Some studies mentioned decreased stress markers significantly ($p<0.05$), which can relate to the HPA axis. However, some studies did not see this outcome until the participants practiced yoga for a longer time duration.

Figure 3 also shows that the alternative pathway could be related to molecular markers. These markers include an increase in neurotropic/ angiogenic marker in the form of BDNF ($p=0.002$) and VEGF pathway indicator ($p<0.001$), as well as an increase in CD34+ stem cell ($p=0.001$), which can be tied to neural plasticity as well as angiogenesis (K. Sharma et al., 2023). Furthermore, the reduction in inflammatory cytokines (IL-6, TNF-α, IL-1) as well as an increase in antioxidants ($p=0.036$) could be tied to lessened inflammation and reduced oxidative stress, which may lead to improvement in the immune regulation system (V. K. Sharma et al., 2023).

Eventually, these mechanisms can lead to reductions in stress and improvement in heart health, cognitive function, and overall quality of life, as seen in Figure 3. However, these mechanistic assessments are based on limited evidence of biomarkers and need to be interpreted with caution.

Table 2: Evidence Mapping Table

Pathway	Evidence Source	Outcomes
CYP → Anxiety ↓	Mohanty, 2021	Anxiety reduced
CYP → Neurotransmitter activity ↓	Anand & Sayal, 2016	Neuroregulation improved
CYP → Stress ↓	Kumar et al., 2023	PSS score reduced
CYP → Cortisol ↓	K. Sharma et al., 2023	Serum cortisol reduced
CYP →Autonomic Balance↑	V.K. Sharma et al., 2023	HRV improved
CYP → BP ↓	Sharma et al., 2022	BP reduced
CYP → VEGF ↑	Sharma et al., 2021	Neuro change
CYP → Sleep ↑	Tripathi et al., 2024	Improved sleep quality

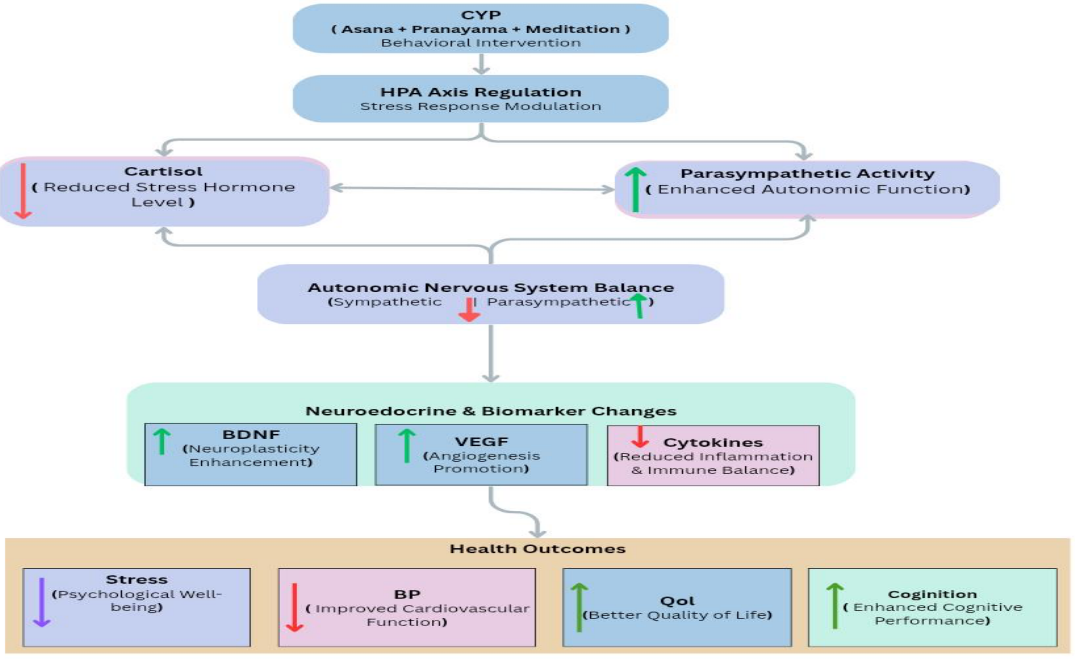


Figure 3

7. Discussion:

The findings across the included studies demonstrate a distinct pattern of domain-specific variation in the impact of the Common Yoga Protocol (CYP). The domain-wise comparison (Figure 2) highlights a greater number of

studies reporting on significant outcomes within behavioural, quality of life, psychological, and physiological domains, suggesting the relative strength and consistency of evidence in these areas. Beyond the numerical interpretation, in order to add an interpretative perspective, the domain-wise findings were further classified into levels of evidence (Figure 3).

Figure 3 provides a proportional representation of the strength of the evidence as measured in 4 different categories, complementing the comparative analysis depicted in (Figure 2), underscoring the relative concentration of evidence based on domains. Classification shows that the domains which are behavioural regulation, quality of life and psychological wellbeing falls within the category of strong evidence reflecting both the frequency and consistency of statistically significant findings. This suggests that CYP may possess a notable influence on adaptive behaviour, emotional balance and general well-being, which are key to holistic health frameworks. Domains such as cardiovascular, bio-chemical, and emotional outcomes are related to moderately evidenced results. Even though there was evidence of improvements, the variation in the statistical significance across the studies suggests that these effects may be affected by factors such as duration of intervention, participant characteristics and methodological heterogeneity.

Contrastingly, the neurocognitive, biological, immunological and autonomic domains fall under the area of possibly emerging evidence. Even though preliminary evidence point to a benefit of such domains, there is a possible presence of benefits such as improvement of cognitive performance, angiogenesis and immune modulation. These domains are not well represented by the volume of included studies resulting in inconsistencies in their findings thus requiring further rigorous studies on large scales.

In general, both figures in an integrated manner present an interpretation that CYP works through interrelated physiological and psychological pathways and not independent mechanisms.

8. Conclusion:

From the literature search, the present review article identifies eleven empirical studies and concludes that the CYP influences human physiology, physiological and human biochemistry in a consistent, multidimensional way with new evidence emerging in neurocognitive and biological processes. It was found that CYP had significantly improved aspects of health like stress, cardiovascular health and quality of life.

It is worth nothing that the present review adds to the existing body of knowledge by integrating the different strengths of evidence that were found across different areas of health. Thus, we can say that there is strong evidence supporting the positive effect of the CYP on physical and psychological health. Nevertheless, due to the lack of rigorous trials, heterogeneous evidence was found in biological and immunological domains.

Practically, the CYP presents a cheap and scalable intervention that can be applied in preventive healthcare, educational system, and work environments. The variation between various studies regarding their methodology, sample size and intervention period makes us cautious about our conclusion. Concluding, the CYP has enormous potential as an intervention, however it requires further research and conduct of randomized large-scale trials and longitudinal studies.

References:

Arya, J., Singh, D., Manav, H., Maity, k., Bhat, Y., Vinayak, R., Jyoti, S., Ahuja, S., Gautam, M., Kaur, N., Arya, J., & singh, G., (2022). Efficacy of AYUSH Common Yoga Protocol along with Surya Namaskar on the dyslipidemia subjects in Haryana. Integrative Medicine Case Report, 3(2), 42-50. https://doi.org/10.38205/imcr.030242**,** https://www.jimcr.com/doi/IMCR/pdf/10.38205/imcr.030242

Cohen, T. (2020). Uddālaka's yoga in the Mokṣopāya. Religions, 11(3), 111. https://doi.org/10.3390/rel11030111

Pandey, C., Shewale, A., Puri, S., Bhayade, S., Daware, A., & Deshpande, I. (2022). Effect of yoga on quality of life of oral healthcare professionals during Covid-19 pandemic. International Journal of Life Science and Pharma Research, 11(4), L147–L152. http://dx.doi.org/10.22376/ijpbs/lpr.2021.11.4.L147-152

INTERNATIONAL DAY OF YOGA INTERNATIONAL DAY OF YOGA Common Yoga Protocol Common Yoga Protocol. (2015). https://www.mea.gov.in/images/pdf/common-yoga-protocol.pdf

Sharma, K., Basu-Ray, I., Sayal, N., Vora, A., Bammidi, S., Tyagi, R., Modgil, S., Bali, P., Kaur, P., Goyal, A. K., Pal, D. K., Arvind, H., Jindal, K., Garg, V., Matyal, B., Thakur, N., Chhikara, A., Kaur, N., Maanju, P., … Anand, A. (2022). Yoga as a Preventive Intervention for Cardiovascular Diseases and Associated Comorbidities: Open-Label Single Arm Study. Frontiers in Public Health, 10. https://doi.org/10.3389/fpubh.2022.843134

Sharma, K., Maity, K., Goel, S., Kanwar, S., & Anand, A. (2023). Common Yoga Protocol Increases Peripheral Blood CD34+ Cells: An Open-Label Single-Arm Exploratory Trial. Journal of Multidisciplinary Healthcare, 16, 1721–1736. https://doi.org/10.2147/JMDH.S377869

Sharma, K., Pannu, V., Sayal, N., Bhalla, A., & Anand, A. (2021). Effects of one month of Common Yoga Protocol practice appear to be mediated by the angiogenic and neurogenic pathway: A pilot study. Explore, 17(5), 451–457. https://doi.org/10.1016/j.explore.2020.09.007

Sehgal, A. (2016). Effect of Short-term Yoga Practices on Physical and Mental Well-Being of Youth 4.

https://podarprabodhan.in/journals/2016/PodarPrabodhan2016_Yoga&Youth.pdf
Maity, K., Rain, M., Dixit, N., Kumar, S., Darmora, M., Verma, P., Choudhary, S. K., Gautam, M., Sharma, K., Singh, A., Nautiyal, R., Patra, S., Nadholta, P., Kumar, K., Majumdar, V., & Anand, A. (2025). Common Yoga Protocol Modulates Traditional Architecture of Personality and Its Association with the Socio-demographic Variables of Prisoners: An Exploratory Study. Annals of Neurosciences. https://doi.org/10.1177/09727531251335421, https://journals.sagepub.com/doi/10.1177/072731251335421 https://pubmed.ncbi.nlm.nih.gov/40376430/
https://www.journalofsports.com/pdf/2018/vol3 issue2/PartD/3-2-25.pdf
Tripathi, P., Bhatt, A. A., Mishra, S. K., & Dattani, K. (2024). Evaluation of the Quality of Sleep in Healthy Individuals Based on Practice of Common Yoga Protocol-A Pilot Study. https://doi.org/10.37591/RRJOASYN.v11i01.144125
Sharma, V. K., Kathrotia, R., Barde, P. B., Sharma, G., Chitturi, V., Parmar, N., Dhruva, G., & Kavathia, G. (2023). COVID-19-induced Stress in Health-care Workers: Effect of 8-week Common Yoga Protocol on Autonomic Function and Inflammatory and Oxidative Stress Markers. International Journal of Yoga, 16(2), 79–89. https://doi.org/10.4103/ijoy.ijoy_127_23 http://www.irjmsh.com/abstractview/18928
IRJMSH. Retrieved www.irjmsh.com https://doi.org//10.32804/IRJMSH www.irjmsh.com/article_pdf?name=18928.pdf&id=18928
Biswas, S., Kirtania, T., Saha, G. C., paul, S., & Rajak, D. K., (2025). Post-pandemic health conditions and influence of twelve weeks of yogic practices on young to middle-aged housewives in rural and urban environments. Public Health of Indonesia, 11(3), 9-16. https://doi.org/10.36685/phi.v11i3.921
Bej, D. K. (2025). Effect of yogic interventions on kinematical and anthropometrical parameters for holistic development among school students: An NEP 2020 perspective of India. International Journal of Kinanathropometry, 5(1), 154-160 DOI: https://doi.org/10.34256/ijk25115
Anand, A., & Sayal, N. (2016). International Yoga Day 2016: A call for analysis of one month training program on the health benefits of PM's call for yoga. Annals of Neurosciences, 23(3), 129-130 . https://doi.org/10.1159/000449176
Mohanty, S., Singh, A., & Avti, P. (2021). Integrative medicine as a panpharmacon for COVID-19 pandemic: A call for global advocacy. Annals of Neurosciences, 28(1-2), 8-10. https://doi.org/10.1177/0972753120950052
Bora, M., & Arya, J. (2023). Effect of the Common Yoga Protocol in the management of dyslipidemia: A clinical study. International Research Journal of Ayurveda & Yoga, 6(4), 45-52. https://doi.org/10.48165/IRJAY.2023.6305
Khodnapur, J. P., Khodnapur, G. P., Basavaraddi, I. V., Podder, A., Pal, R., Patil, S. M., & Doddamani, M. P. (2024). Yoga improves vascular stiffiness in COVID-19 survivors of vijayapur, Karnataka, India. Biomedical and Pharmacology Journal, 17(4) https://doi.org/10.13005/bpj/3038
Ghosh, S., Tripathi, K., Garg, A., Singh, D., Prasad, A., Bhavsar, A., & Dutt, V.(2024). Predicting stress among students via psychometric assessments and machine learning. Proceedings of the 17th International Conference on PErasive Technologies Related to Assistive Environments (PETRA'24) (pp. 1-10). ACM. https://doi.org/10.1145/3652037.3663949 https://doi.org/10.1145/3652037.3663949
Yadav, A., & Vyas, R. (2026). Effect of Common Yoga Protocol on breath holding capacity of inter university yoga players. International Journal of Yogic, Human Movement and Sports Sciences, 11(2), 25-30. https://doi.org/10.22271/yogic.2026.v11.i2a.1870
Singh, H. P. (2025). Assessing the role of the Common Yoga Protocol in regulating blood pressure among school students. International Journal of Yogic, Human Movement and Sports Sciences, 10(2), 40-45. https://doi.org/10.22271/yogic.2025.v10.i2i.1845