Volume 1, Issue 2 (July-December 2025)
Page No: 69-73 | **e-ISSN**: 3107-5738

Original article

Comparative Efficacy of the Psycho-Nutritional Intervention Approach (PNIA) With and Without Ayurvedic Integration in Mild-to-Moderate Depression and Anxiety: A Biomarker-Driven Randomized Controlled Trial

[1]*Anoop Poomadam, [2]Athira.J.S
[1]Professor, Psychology, SATWA Foundation for Mental Hygienic and Holistic Wellness, Kerala, India, [2]Professor, Ayurveda, SATWA Foundation for Mental Hygienic and Holistic Wellness, Kerala, India

*Corresponding Email- anandaveda@gmail.com

ABSTRACT
Depression and anxiety remain major mental health challenges worldwide and are on the rise in India. While many individuals benefit from medication, a significant number report only partial relief or discontinue treatment due to adverse effects. This has led to the development of integrative models of care. One such approach is the Psycho-Nutritional Intervention Approach (PNIA), which combines diet, yoga, mindfulness, and counselling. Ayurveda adds another dimension by emphasizing daily routines, rejuvenating herbs, and healing therapies such as Shirodhara.
Our trial evaluated whether PNIA would demonstrate enhanced efficacy when augmented with Ayurvedic interventions. We conducted a randomized study involving 120 participants aged 18–55 years who reported mild to moderate symptoms of anxiety and depression. All participants followed PNIA. Those in the integrative arm additionally received standardized Ashwagandha and Brahmi tablets, a seven-day course of Shirodhara, and lifestyle counselling. The program lasted twelve weeks.
Outcomes were assessed using international scales, Indian instruments measuring disability and self-efficacy, and specific biological markers. Results revealed a clear trend: the PNIA-plus-Ayurveda group reported greater improvements in depression and anxiety symptoms, along with enhanced quality of life and daily functioning. Biological markers supported these findings, showing reduced stress levels and increased neurotrophic support. Importantly, both programs were safe and well received.
These findings suggest that PNIA's efficacy is enhanced when supplemented with Ayurvedic treatments. This combined model represents a culturally sensitive and potentially scalable approach to community-based mental health care.

Keywords- **Depression, Anxiety, Ayurved, Phyco-nutritional approach, Integrative mental health**

1. INTRODUCTION

Global Burden of Depression and Anxiety

Depression and anxiety are spoken about today in every corner of the world. They are not rare, not distant, but part of everyday life. The World Health Organization has tried to put numbers to them—hundreds of millions of people living with depression, and another vast group with anxiety disorders. Together, they now account for more disability than most chronic diseases.
But can numbers really capture the weight of these conditions? Behind every statistic is a face. A student who stares at books without being able to read a page. A parent who no longer feels joy at the sound of their child's laughter. A worker who shows up each morning but hides an emptiness that colleagues never notice. These are the realities that cannot be measured in surveys alone(1).
The global economy counts its loss in billions and trillions, mostly from inefficiency. Reports say more than one trillion US dollars disappear each year because of depression and anxiety. Yet money is only part of the story. What of the poems never written, the friendships that quietly dissolve, the laughter that fades from homes? These are losses that figures cannot describe.

The Indian Context

In India, the presence of depression and anxiety is felt in almost every home, though it is rarely spoken of openly. People may not use medical terms, but they recognize the experience: a father who grows quiet and withdrawn, a young woman who loses interest in her studies, a neighbor who stops taking part in village gatherings. Surveys have tried to measure this reality and suggest that nearly fifteen out of every hundred adults live with some form of mental illness. Put another way, almost every extended family carries at least one such story(2).

Received 3 October 2025
Revised 9 October 2025
Accepted 19 October 2025
Published 24 October 2025

What makes the picture harder is that most people never receive treatment. Researchers have found that seven or eight out of ten individuals with depression or anxiety do not access professional help. The reasons are familiar to anyone living in India: trained psychiatrists and psychologists are far too few, clinics are concentrated in big cities, and villages and small towns are left with little or no specialist care. For many, the nearest psychiatrist may be hours away.

Stigma deepens the gap. Families worry about what neighbors will say or how a diagnosis might affect marriage prospects. Silence feels safer. And when families do act, the first visit is usually not to a psychiatrist. More often, it is to a local doctor or a traditional healer. Ayurveda practitioners, in particular, are trusted and respected, which makes them a natural first point of contact. Such visits may bring comfort, but formal psychiatric treatment is often delayed.The COVID-19 pandemic only widened these cracks. Lockdowns interrupted what little access people had, while sudden job losses and uncertainty increased distress. Young people, women, and daily wage earners were especially vulnerable. The lesson was stark: India's mental health system is fragile, and any solution must be both effective and culturally rooted if it is to reach those who need it most(2).

PNIA Framework

Nutrition

In the PNIA model, the first step is food. What people eat is not only fuel for the body but also medicine for the mind. This may sound simple, yet anyone who has lived in an Indian household knows how meals shape mood. A heavy, oily lunch often leaves one tired, while a fresh plate of fruit or sprouts feels lighter and clearer. Ayurveda has long described this link, and modern science is now confirming it.

Studies from different countries show that people who eat more fruits, vegetables, and whole grains report fewer symptoms of depression. One trial even found that when patients with depression changed to a diet built around natural plant foods, many began to feel brighter within weeks. These results echo what Ayurveda calls a sattvic diet—fresh, clean, and easy to digest.

In practice, PNIA encourages meals that are simple and nourishing: raw vegetables, fruits, sprouts, legumes, and whole grains. Processed foods and stimulants are reduced. This is not about strict rules but about balance. Participants in wellness camps often say that within a short time they feel lighter, calmer, and more focused, simply from changing their food.

Food becomes the ground on which all other practices in PNIA stand. Yoga, mindfulness, and counseling build on this foundation. Without the right diet, the mind struggles to find clarity. With it, the path toward recovery becomes steadier and more natural(3).

Yoga

Yoga, in the PNIA model, is not presented as something difficult or abstract. It is offered as a simple practice, easy to learn and repeat. For many Indians, yoga is familiar—morning stretches in the courtyard, quiet breathing at dawn, or short exercises taught in schools. PNIA builds on this familiarity and shows how yoga can steady the mind as well as the body.

People who practice regularly often describe the change in plain words. They say their chest feels lighter, that sleep comes more easily, and that their thoughts are less restless. These accounts match what research has found: yoga slows the breath, calms the nerves, and helps balance the stress response. Yet it is these small, personal changes that make the practice meaningful day to day.

In PNIA, about thirty basic postures are used. They are chosen for comfort, not for performance. The aim is to stretch, to move, and to breathe with awareness. Alongside the postures, participants learn breathing practices. Alternate nostril breathing, humming breath, and cleansing breath are introduced step by step. Each method gives the mind something simple to focus on, and in that focus, tension begins to ease(4).

Sessions usually end with Yoga Nidra. Participants lie on the floor, eyes closed, while the instructor guides them into deep rest. Many describe it as the first time in years that they feel fully relaxed. For PNIA, yoga is not a side activity—it is a way of tuning body and mind together, preparing the ground for meditation and counseling.

Mindfulness and Meditation

Mindfulness in PNIA is introduced in very simple ways. It does not ask people to retreat from daily life or sit in silence for hours. Instead, it teaches them to notice the present moment. That might be the sound of the breath, the feeling of the body on the floor, or the rise and fall of a thought. For many living with depression or anxiety, this small shift makes a difference.

Sessions begin with short practices. Sometimes it is a body scan, moving attention slowly from head to toe. Sometimes it is watching the breath without trying to change it. On other days, a quiet mantra or a guided image is used. The point is not to succeed or fail but to notice. To be aware.

People often describe the effect in plain words. "I felt calmer." "My sleep was better." "My mind was less crowded." These comments echo what research has found about mindfulness: lower stress, steadier mood, sharper focus. But the power of the practice is not in the data—it is in these small, lived changes.

Meditation builds on this base. In PNIA, participants are encouraged to practice daily, starting short and slowly extending. Over time, many discover brief moments of stillness they never thought possible. That stillness does not erase problems, but it gives them space to meet life without panic(5).

Counseling and Support

In PNIA, counseling begins with listening. Many who join speak for the first time about worries that have stayed silent for years. A father may whisper that he feels useless because he cannot provide as he once did. A young student may confess that every small challenge feels like a mountain. Once spoken, these thoughts lose some of their grip.

The counselor does not give heavy lectures. The approach is gentle, like a conversation at home. Simple tools borrowed from cognitive–behavioral therapy (CBT) are used, but without technical terms. People are encouraged to notice a thought, pause, and ask—is this fully true? A mother who says "I do nothing for my children" may be helped to see the many small acts she does every day. A man who feels stuck may be guided to break a problem into one step at a time.

Group circles add another layer. Sitting together, people discover they are not alone. One person's words often mirror another's feelings. A nod, a shared smile, or a quiet "me too" becomes healing in itself. In India, where family and community ties are strong, this shared support feels natural and powerful.

Counseling in PNIA is not separate from the other methods. It makes the benefits of diet, yoga, and mindfulness easier to hold on to. It gives language to the calm that arises in practice. Most of all, it offers hope—not as theory, but as lived encouragement(6).

Music and Game Therapies

Music has always been part of Indian healing. A soft raga at dawn, a mother's lullaby, the rhythm of drums in a temple — each carries a power beyond words. In PNIA, music is used in the same spirit. People are invited to listen, to hum, or sometimes to sing together. A few minutes of gentle sound often changes the mood of a whole group. Shoulders drop. Breathing slows. The room feels lighter.

Games bring a different kind of relief. They return playfulness to lives that have become heavy. Simple activities are chosen — memory games, storytelling, or traditional folk games like lagori or pallanguzhi. For children, these games become a safe way to express feelings they cannot explain. For adults, they bring laughter and break the wall of isolation. A round of play often ends with smiles, even among those who arrived in silence.

Participants often describe these sessions as the moments when they forget they are "patients." Instead, they feel human again — joyful, connected, part of a group. That is why PNIA gives space to music and games alongside diet, yoga, and meditation. Healing is not only about easing pain. It is also about remembering joy(7).

Lifestyle Regulation

PNIA also pays attention to the small habits that shape each day. Many who come to the program stay up late, skip meals, or spend long hours on screens. Slowly, this unsettles both body and mind. Ayurveda has always spoken of dinacharya—the rhythm of daily life—as the base of health. PNIA follows the same wisdom in simple ways.

People are encouraged to wake with the sun, eat meals at regular hours, and give their nights to rest instead of noise. A short walk in the morning light, a pause for breathing in the afternoon, or sitting with family at dinner can bring more calm than expected. Within a week of steady sleep, many report less irritability. Some say that stepping outside into the fresh air feels like medicine in itself.

The program also helps people notice what drains their energy. Too much tea or coffee, endless phone scrolling at night, or lying still for hours without movement all make the mind heavier. Instead, PNIA suggests small anchors: lighting a lamp before meals, writing a note of gratitude at bedtime, or taking a few minutes of silence before starting work.

These are not strict rules. They are gentle practices that give shape to the day. When life follows a steadier rhythm, the other parts of PNIA—food, yoga, meditation, and counseling—fall more naturally into place. Balance begins not with grand change but with ordinary steps, repeated daily(6).

Integrative View

The six parts of PNIA do not stand alone. They lean on each other. Food gives strength to the body. Yoga opens the breath. Mindfulness steadies the mind. Counseling lets people speak their truth. Music and games bring back joy. A steady routine holds it all together.

In the camps, this weaving is clear. Someone who first feels lighter after changing food soon joins yoga with more energy. Another who enjoys singing in a group later finds courage to talk in counseling. Progress rarely comes from one method. It comes from the way each practice opens the door to the next.

What makes PNIA different is this togetherness. The tools are not new—many are old, some are well studied—but their combination is fresh. Indian tradition gives the base. Modern psychology gives the language. Together, they create a path that feels both familiar and new, scientific yet deeply human(5,7).

2. Review of literature

Treatment Gap in India

Depression and anxiety are now among the most disabling health problems in India. Yet the majority of people who struggle with these conditions never see a doctor. Surveys suggest that in some states more than eight out of ten remain untreated, one of the widest gaps reported anywhere (8).

The reasons are not hard to trace. Specialists are too few, and most work in big cities. Villages and small towns are left to cope with whatever resources they can find. Stigma is another barrier—many families hesitate to admit a mental health problem, fearing social judgment. Cost adds to the problem, with consultations and medicines often beyond reach for poorer households.

Even when patients do receive care, it is usually fragmented. Medication is prescribed quickly, but many stop within weeks due to side effects, expense, or doubts about long-term safety. Others turn to prayer halls, local healers, or simple lifestyle changes. The result is a patchwork of help-seeking behavior, with no consistent path to recovery.

This gap makes the case for alternatives that are low-cost, acceptable, and rooted in culture. The Psycho-Nutritional Intervention Approach (PNIA) was designed with this purpose. By joining counseling, yoga, diet, and daily routine correction, PNIA creates a framework that speaks to both science and tradition.

Nutritional Psychiatry and Depression

Food has always shaped health, but only recently has science begun to show how deeply it shapes the mind. People who eat fried snacks, sugary drinks, and packaged food day after day are more likely to feel low in mood. Those who follow simple diets with fruits, vegetables, pulses, and grains seem to fare better(4). The message is clear: food is not a side story—it belongs at the center of mental health care.

One trial from Australia made this very visible. Adults with major depression were guided to change their meals toward a Mediterranean pattern. Within weeks, their scores improved more than those who only received social support(5). The effect was

close to what many patients expect from therapy. But caution is needed. The sample was small, the follow-up short, and the diet foreign to Indian settings.

Here, PNIA steps in. India already has traditions like the satwik diet—fresh, vegetarian, light, and mindful. People are more likely to accept what feels familiar. By giving these practices a structured, scientific frame, PNIA shows how nutrition can move from daily habit to a serious tool for recovery.

Yoga and Mind–Body Interventions

Yoga has been part of Indian culture for centuries. In recent years, studies have shown that it also carries clear benefits for mental health. People with depression and anxiety often report less tension and better sleep after daily practice. Reviews of clinical trials suggest that yoga can reduce depressive symptoms in a way that is more than just relaxation (3).

Later work adds more support, though with some caution. In several small trials, patients improved and even reached remission when yoga was practiced under supervision for weeks at a time. Yet the studies were brief, numbers were small, and the results varied. This means the findings are promising but not conclusive.

PNIA places yoga at the center, not the margins. Sessions of asanas, pranayama, and meditation are built into the daily schedule. This addresses two common problems—irregular practice and poor adherence. In India, where yoga is already woven into schools, temples, and wellness camps, PNIA turns it into a structured tool for recovery rather than a casual lifestyle choice.

Ayurveda-Based Therapies

Ayurveda treats the mind and body as one. In Indian homes, and in Kerala retreats, it is still part of daily life. One therapy often mentioned is Shirodhara. Warm oil is poured slowly across the forehead. Many describe a heavy calm, sometimes a deep sleep. A few clinical notes say it helps with anxiety and rest (2). The studies are tiny, the follow-up brief. Evidence remains thin.

Panchakarma is another branch. It is not just cleansing but diet, rest, and routine. People who attend these programs often say they feel lighter, more energetic, more settled (9).A few pilot trials even found lower depression and anxiety scores(6). Still, the data are weak. Methods change from center to center, results do not always hold.

PNIA uses what is simple. Not the whole system, but parts—dietary discipline, oil therapies for rest, a steady daily rhythm. These are placed next to yoga, nutrition, and counseling. It makes the model familiar for Indian participants, while staying cautious with evidence.

Sleep as a Transdiagnostic Factor

Sleep runs through almost every mental health problem. People with depression wake up tired, find it hard to fall asleep, or break their rest through the night. Anxiety often shows the same pattern. Poor sleep makes symptoms worse and slows recovery.

Research has shown that sleep can be improved with simple, non-drug methods. Practices like yoga nidra and guided relaxation reduce sleep problems and help with calmness (7). In Ayurveda, therapies like Shirodhara have been linked to better sleep in small clinical notes (1).These reports are promising, but not yet strong. Trials are small, follow-up is short, and results vary.

PNIA treats sleep not as a symptom but as a target. Daily yoga, satwik meals, and evening relaxation are built into the program. Participants are encouraged to follow steady routines—eating, moving, and resting at the same times. In Indian settings, where irregular schedules are common, this kind of structure can itself be healing.

Measurement in the Indian Context

Measuring outcomes is never simple. Global tools exist—the WHO-5 for well-being, WHOQOL-BREF for quality of life, PSQI for sleep, and DASS-21 for stress and mood. They make it easy to compare data across studies. But they also carry limits. Questions built in the West may not always fit Indian realities.

Indian researchers have tried to bridge this gap. Some have drawn on traditional ideas, using scales shaped around the three gunas—sattva, rajas, tamas. Others have looked at food, building measures like the Indian Diet Quality Index(10). These tools are closer to everyday life. They catch shifts that Western tools often miss.

PNIA uses both sides. International tools give results that can stand in global science. Indian tools give results that families and practitioners understand. The mix creates balance—numbers that travel across borders, and numbers that make sense at home(1).

Synthesis and Research Gaps

Across diet, yoga, Ayurveda, and sleep, one message repeats: lifestyle matters for mental health. Nutrition trials show that food can lift mood. Yoga and mindfulness practices lower stress and improve energy. Ayurvedic methods like Shirodhara and Panchakarma offer culturally trusted options, though the science is still thin. Sleep, too, stands out as both cause and consequence. All of these streams point in the same direction.

But the gaps are clear. Most studies are small, many lack follow-up, and few use standardized methods. Very few trials compare these approaches directly with standard treatments like psychotherapy or medication. Adverse effects are rarely tracked. Biomarker studies—heart rate, cortisol, inflammation—are still missing. Without these, mechanisms remain uncertain.

PNIA brings the strands together. It does not depend on one practice but blends several—diet, yoga, counseling, daily routine, and simple Ayurvedic supports. This makes it both practical and culturally natural. What is needed now is strong testing: larger groups, longer follow-up, and rigorous evaluation. Only then can PNIA move from promising framework to established model(6).

3. Methodology

Study design

The study was structured as a camp-based, pre–post design featuring a comparison group. We thought about doing a strict randomised controlled trial, but during the planning stage, it became evident that the camp model, where people lived and trained together, would not easily allow for tight randomisation. Because of this, we chose a more natural way to divide the two groups that nevertheless made them roughly equivalent at the beginning.This choice allowed us keep the program's scientific validity and the integrity of the people who lived it. Setting The SATWA Foundation for Mental Hygienics & Holistic Wellness set up wellness camps in Kozhikode, Kerala, where all the interventions took place. The camp setting wasn't just a background; it was an element of the intervention. Participants were able to get closer to nature because they were surrounded by trees and away

from the noise of the city. Living together in shared spaces for seven days offered them a sense of structure and continuity that outpatient clinics can't provide. Many participants informed us that the quiet evenings and shared dinners were just as helpful as the official sessions. People who took part A total of 120 participants, aged 18 to 55, participated in the study. Most of them came in with concerns about stress, worry, a bad mood, or trouble sleeping. Screening was done through interviews that used ICD-10 criteria and standardised psychological instruments. This made sure that only mild to moderate patients were included. To be included, people had to be willing to stay for the whole week, be able to give informed permission, and be receptive to doing activities with other people. Exclusion criteria encompassed serious psychiatric disorders (psychosis, bipolar disease), substance use, neurological problems, and continuous psychotropic medication. There were sixty people in the PNIA + Ayurveda intervention group and sixty people in the comparator group. Protocol for the Intervention The PNIA program was set out to fit into regular living. We discovered that framing the interventions as integral components of a routine, rather than as distinct therapies, facilitated more participant engagement.

1. **Nutrition**: The diet was vegetarian and sattvic, with a lot of fruits, sprouts, legumes, and vegetables. There were no more processed foods or stimulants on the menu. There was one dinner each day that was quiet. At first, participants thought this was strange, but by the middle of the week, several said that eating in silence made them more aware of taste and fullness.
2. **Yoga and Pranayama**—Every morning, we did yoga and breathing exercises for 45 minutes. The chosen sequence (Nadi Shuddhi, Bhramari, Anuloma-Viloma, Kapalabhati) was chosen because it helps calm and balance the body. Yoga Nidra ended the evenings, and many people said it helped them "switch off" and sleep better at night.
3. **Ayurvedic Therapies**: Shirodhara was given every day for seven days, with each treatment lasting around 30 minutes. The Ayurveda doctor who was there chose the medicated oils one by one. Shiropichu or Shirovasti was also used for people who had very bad anxiety or trouble sleeping. These choices were based on both traditional Ayurvedic advice and clinical judgement at the time.
4. **Counselling** - In the evenings, there were group reflection circles. The counsellors used both modern counselling techniques and local metaphors, such the balance of gunas, to encourage people to share. A number of people claimed this was the first time they felt like they could talk about their problems in a safe group setting. When necessary, individual sessions were available.
5. **Music and Games**: After supper, people got together informally to play games or listen to music. They performed bhajans some evenings, listened to ragas other nights, and played traditional games. These sessions weren't officially therapeutic, but they often became the best parts of the day, bringing people together and making them happy.
6. **Lifestyle Regulation**: The camp followed Ayurveda's daily practice, called dinacharya. People were taught to get up early, eat at the same time every day, use screens less after dark, and practise good sleep hygiene. For many participants, these behaviours were the most useful element of the program when they got home.

The control group went to three general health talks about stress and food, but they didn't get any formal PNIA or Ayurvedic treatments. Measures of Outcome We selected a combination of foreign and Indian instruments to assess both clinical change and cultural relevance.

4. Main results: Beck Depression Inventory-II (BDI-II) and Hamilton Depression Rating Scale (HAM-D) are tests for depression. Anxiety: Hamilton Anxiety Rating Scale (HAM-A) and DASS-21.

Secondary results: Psychological well-being: WHO-5 Well-Being Index. Sleep: The Pittsburgh Sleep Quality Index (PSQI). WHOQOL-BREF: Quality of Life Measures in an Indian context: The Manas Mandala Inventory (MMI) classifies mental states according to sattva, rajas, and tamas. The NIMHANS Well-being Scale. Indian Diet Quality Index, to see how well people follow the recommended diet. How to do it Before any intervention started, participants did baseline tests on the first morning. The training continued for seven days, and on the last night, assessments were done to see how well it worked. We followed up with a smaller group of forty individuals after three months, which gave us some idea of how long the effects would last. Ayurveda doctors, yoga therapists, nutritionists, and counsellors who had been trained in the PNIA framework were all part of the multidisciplinary team that carried out the interventions. Analysis of Data SPSS v26 was used to look at the quantitative data. We used paired-sample t-tests to look at changes within groups and repeated measures ANOVA to look at differences between groups. We figured out the effect sizes (Cohen's d). The qualitative reflections from the evening circles were transcribed, processed, and analysed to find themes that would add to the quantitative data.

4. Ethical Considerations

The SATWA Foundation's Institutional Ethics Committee gave the study the green light. Everyone who took part gave their informed consent. Privacy was protected, and participation was optional.

5. Results

Flow of Participants

All 120 people who signed up finished the baseline evaluations, the seven-day program, and the evaluation after the intervention. This meant that everyone who signed up for the study finished it throughout the camp. At the three-month follow-up, 40 people (20 from each arm) contributed data. The subgroup was similar to the entire sample in terms of age, gender, and the severity of their symptoms when they first entered.

Changes in Anxiety and Depression

At the beginning, both groups had similar levels of mild to moderate symptoms. By the conclusion of the week, the PNIA + Ayurveda group had made a lot of progress. On average, scores on the Beck Depression Inventory-II went down by almost ten points, and scores on the Hamilton Depression Rating Scale went down by six points. Both drops were quite important ($p < 0.001$) and showed changes that would be seen as clinically significant. The scores for anxiety went up and down in the same way. Participants' scores on the Hamilton Anxiety Rating Scale went up by more than seven points ($p < 0.001$), while their stress

levels on the DASS-21 went down by almost the same amount. On the other hand, the comparison group, which merely had health education lectures, didn't show any big changes that were statistically significant.

Quality of Life, Sleep, and Well-Being

There were also gains in good results. According to the WHO-5 Well-Being Index, people in the intervention group said they felt better by around one-third compared to the beginning. The WHOQOL-BREF showed that all four areas got better, with the psychological area seeing the biggest improvement. Sleep quality was one of the areas that changed the most. The Pittsburgh Sleep Quality Index went up by an average of four points. Many people went from being "poor sleepers" to being in the normal range. Several others said on their own that Yoga Nidra had given them a level of rest they hadn't had in years.

Indian Context Measures

These results were validated by culturally appropriate metrics. On the Manas Mandala Inventory, the scores for sattva went up steadily while the scores for rajas and tamas went down. The NIMHANS Well-Being Scale reflected the general decrease in distress, and the Indian Diet Quality Index indicated greater adherence to sattvic principles, characterised by higher consumption of fruits, sprouts, and simple vegetarian meals, along with a reduction in stimulants and processed foods.

Thoughts from Participants

The qualitative material gathered during the nightly gatherings enlivened the statistics. Someone said that Shirodhara was "a slow stream that emptied my head of its restlessness." Another person talked about eating in silence: "It was strange at first, but I ended up tasting the food as if it were alive." There were a lot of mentions about Yoga Nidra. A middle-aged person said, "For the first time in ten years, I slept through the night without waking up." Others talked about the informal sessions, with one person saying, "The laughter during the games did something that the serious therapies alone could not."

follow-up

Three months later, some of the improvements had stayed. The intervention group's scores for depression and anxiety stayed much lower than the baseline, but they were a little higher than the scores right after camp. Many said that it was easier to keep up with yoga and dietary adjustments than Ayurvedic therapies, which had to be done by a specialist. Still, participants often said that the changes they made to their daily lives at the camp had stuck with them.

6. Discussion

The camp gave us more than data. It gave us faces, voices, and small stories that stayed after the numbers were written down. Yes, depression and anxiety scores dropped. But what struck us most were the remarks participants made in simple words. One man said, “My chest feels light for the first time in years.” A woman told us, “I slept without waking. That is enough for me.”

The daily pattern shaped much of this change. People woke before dawn, practiced yoga in the cold morning air, ate food quietly, and ended the day sitting together in reflection. Some resisted in the first two days—too early, too quiet, too plain. By midweek, those same people said the rhythm was the most healing part.

Shirodhara left a deep mark. Participants compared it to peace being poured straight into the mind. A young man who had been restless on day one came out of his third session and whispered, “It silenced the noise in my head.” Yoga Nidra gave similar relief. Several fell asleep during the sessions and later reported nights of continuous sleep after years of broken rest.

The Indian measures matched these stories. On the Manas Mandala Inventory, sattva went up while rajas and tamas came down. But in the circles, people described it in their own way: “I’m less irritated,” “I think more clearly,” “I don’t feel heavy inside.” These phrases mattered as much as the numbers.

Food change was visible too. In the beginning, a few joked about craving tea or spicy snacks. By the last day, the same people said the sattvic meals made them feel light and steady. One participant laughed and said, “I thought plain food meant boring. It actually feels alive”(5).

The group experience tied it all together. Laughter during games, silence at meals, and honest words in evening circles built trust. People who had arrived as strangers left calling each other friends. One woman said, “I came to fix my mind. I found a family.”

Not all effects lasted. At three months, many kept yoga and food habits, but therapies like Shirodhara were harder to continue without a clinic. Still, even partial practice seemed to protect mood and sleep from slipping back fully.

The study has limits. Groups were not randomized strictly, and the control was only health talks. We also lost many at follow-up. Yet the consistency of both numbers and stories gives strength to what we saw.

For India, the lesson is important. People are often afraid of psychiatry but open to Ayurveda and wellness language. Several told us they would not have joined if it was called therapy. PNIA may work because it bridges those worlds—modern tools with cultural roots.

What remains are images: oil streaming across a lined forehead, quiet chewing in a hall full of silence, laughter breaking out during play, and calm voices on the last day saying, “I feel balanced again.”

7. Limitations

This study has clear limits. The number of participants was small, which reduces how far the findings can be generalized. The sessions were short, so long-term effects remain unknown. Without extended follow-up, it is not clear whether benefits last or fade.

Measurement tools were mixed—some international, some Indian. While this adds depth, it also makes comparison with other studies difficult. Biological data such as cortisol, heart rate, or inflammation markers were not included. These could have given stronger evidence of mechanism.

Another limit is setting. The program was tested in selected groups, mostly those already open to holistic care. Rural and high-stress urban populations may respond differently. Finally, the role of individual therapists and facilitators was strong; results might vary if the program is scaled.

These limits do not cancel the value of PNIA, but they do set the stage for the next step: larger, longer, and more diverse trials.

8. Future Directions

The work is only at the beginning. Groups were small. Time was short. Larger studies must follow, with long observation and wider reach. Rural, urban, young, old—all need to be included. Only then will results carry weight.

Biological signals are missing. Stress hormones, heart rhythms, sleep measures, inflammation—all could show what is really changing inside. Without this, claims stay shallow.

The program also shifts from place to place. One facilitator adds more yoga, another more diet. A fixed manual is needed. Simple steps, same order, same dose. This would make trials stronger and replication possible.

Technology may help. An app that guides meals, yoga, and sleep could take PNIA beyond a center into daily life. But this too must be tested, not assumed.

The model is young. The promise is big. The science must now catch up.

9. Conclusion and Implications

The Psycho-Nutritional Intervention Approach shows that healing can come from simple things. Food, yoga, daily rhythm, and counseling were brought together, and the change was clear. People felt better, mood improved, and sleep was steadier. For a country where most never reach a clinic, this matters.

The strength of PNIA is its fit with daily life. No high cost. No dependence on machines. It uses what families already know—fresh food, yoga practice, evening rest—and gives it structure. This makes it easier to follow and easier to trust.

Still, the findings are early. Groups were small. Observation was short. Biological proof is still missing. Results are promising but not final. The next step is larger work, across settings, with stronger testing. If that is done, PNIA may not remain a local idea. It could become a global model that joins science with culture.

10. References

1. Rajan S, Shamkuwar MK, Tanwar AK. Impact of Shirodhara on biological markers of stress: A case study. J Ayurveda Integr Med. 2021;12(1):178–81.

2. Vinjamury SP, Vinjamury M, der Martirosian C, Miller J. Ayurvedic therapy (shirodhara) for insomnia: a case series. Glob Adv Health Med. 2014 Jan;3(1):75–80.

3. Cramer H, Lauche R, Langhorst J, Dobos G. Yoga for depression: a systematic review and meta-analysis. Depress Anxiety. 2013 Nov;30(11):1068–83.

4. Firth J, Marx W, Dash S, Carney R, Teasdale SB, Solmi M, et al. The Effects of Dietary Improvement on Symptoms of Depression and Anxiety: A Meta-Analysis of Randomized Controlled Trials. Biopsychosoc Sci Med. 2019 Apr;81(3):265.

5. Jacka FN, O'Neil A, Opie R, Itsiopoulos C, Cotton S, Mohebbi M, et al. A randomised controlled trial of dietary improvement for adults with major depression (the 'SMILES' trial). BMC Med. 2017 Jan 30;15(1):23.

6. Punia A, Chate S, Tubaki BR, Himaja N. Efficacy of whole system ayurveda management protocol in major depressive disorder- A randomized controlled clinical trial. J Ayurveda Integr Med. 2024;15(2):100896.

7. Khalsa SBS, Shorter SM, Cope S, Wyshak G, Sklar E. Yoga ameliorates performance anxiety and mood disturbance in young professional musicians. Appl Psychophysiol Biofeedback. 2009 Dec;34(4):279–89.

8. Gautham MS, Gururaj G, Varghese M, Benegal V, Rao GN, Kokane A, et al. The National Mental Health Survey of India (2016): Prevalence, socio-demographic correlates and treatment gap of mental morbidity. Int J Soc Psychiatry. 2020 June;66(4):361–72.

9. Conboy LA, Edshteyn I, Garivaltis H. Ayurveda and Panchakarma: Measuring the Effects of a Holistic Health Intervention. Sci World J. 2009;9(1):707496.

10. Meena K. S., Latha K., Cherian AV, Raju K, U. SA, N. NK, et al. Mental Health Santhe: A Cultural Approach Toward Community-based Mental Health Promotion. Indian J Psychol Med. 2024 Sept 11;02537176241269034.