



The Psycho-Nutritional Intervention Approach (PNIA) for Mood Swings and Depression in Menopausal Women: A Holistic Lifestyle Framework

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Abstract

Menopause is often described as a natural stage of ageing, yet many women know it less as a milestone and more as a time of unpredictable mood swings, irritability, and persistent sadness. In India and elsewhere, these problems are frequently left unnamed or dismissed as “normal.” Medication is available—hormone replacement or antidepressants—but side effects, uneven access, and reluctance to use long-term drugs leave a large gap in care.

The Psycho-Nutritional Intervention Approach (PNIA) was designed as a practical response. It combines five elements that are already familiar in daily life but rarely brought together in a structured way: a plant-forward diet, gentle yoga and breathing, group-based cognitive and mindfulness practices, guided use of music, and simple counselling on sleep and lifestyle.

To test this model, we carried out a 12-week randomised trial among peri- and postmenopausal women reporting mood instability or mild depression. Women were placed either in the PNIA program or in a comparison group that received information leaflets and monthly calls. Change was tracked through depression scores (PHQ-9), the psychological subscale of the Menopause Rating Scale, and secondary measures of stress, sleep, and quality of life.

The PNIA group showed meaningful improvements: lower depression scores, reduced stress, better sleep, and stronger self-reported well-being. Some participants spoke of “feeling like myself again.” PNIA does not replace medical care but adds a culturally rooted, low-cost layer of support that many women found both acceptable and sustaining.

Keywords: Menopause, Depression, Psycho-Nutritional Intervention Approach (PNIA), Mood Swings, Holistic Lifestyle Framework.

Introduction

Menopause is universal, but the way it is experienced is anything but uniform. Some women pass through it with only a few bodily changes—occasional hot flashes, lighter or irregular bleeding, maybe a shift in sleep. For others it feels like an upheaval: moods swing sharply, irritability becomes difficult to control, and feelings of sadness or emptiness linger far longer than expected. Depression, in particular, is not uncommon at this stage, though it is often disguised as fatigue, forgetfulness, or simply “age catching up.”

The numbers tell us something important, even if they are not always in perfect agreement. Global studies suggest that nearly a third of women show clinically significant depressive symptoms during the menopausal transition. In India, the figures sometimes come out even higher—forty percent or more in certain community samples. The exact percentages vary with the scale used, the setting, and the cultural willingness to name distress as depression. Yet, whether the number is one in three or two in five, the point remains: mood disturbance in menopause is widespread and deserves careful attention.

The difficulty is that care tends to focus elsewhere. In many

clinics, the spotlight still falls on vasomotor symptoms, osteoporosis prevention, or hormone replacement. Emotional and psychological changes are frequently brushed aside as a natural part of ageing. Family members too often tell women to “adjust” or “be patient.” That leaves many women carrying an invisible burden. The silence around midlife mental health makes the suffering heavier.

Treatment choices are available, but they are not always acceptable or sufficient. Hormone replacement therapy (HRT) does help with hot flashes and sometimes with sleep, but its impact on mood and depression is mixed. Safety concerns also remain, which discourages long-term use. Antidepressants—SSRIs or SNRIs—have been trialled with some success, and guidelines do support them for menopausal depression. Still, many women hesitate. They do not want to be labelled as psychiatric patients, and they worry about side effects. Others start medication but stop within months, either because they feel little improvement or because the adverse effects outweigh the benefits. This leaves a large group of women living with untreated or under-treated mood problems. For this reason, non-pharmacological interventions have gained attention. Cognitive behavioural therapy (CBT) has

been adapted for menopause, and the results are encouraging. Several studies show that CBT reduces the distress caused by hot flushes and improves mood stability. Mindfulness-based practices, though newer in this field, have been associated with reductions in anxiety and better coping. Lifestyle advice—better sleep, more exercise, dietary adjustments—is often given, but it usually comes in fragments. Rarely is it brought together into a single structured model.

The Psycho-Nutritional Intervention Approach (PNIA) was created to fill this gap. The idea is simple yet ambitious: address the psychological, nutritional, and lifestyle needs of menopausal women in one coherent framework. PNIA combines five parts that may each seem modest on their own but, when woven together, aim to create a stronger protective effect. These are:

- i). A plant-based, sattvic style of nutrition, including foods rich in phytoestrogens such as soy and flaxseed.
- ii). Gentle yoga postures and breathing practices that are suitable for women in midlife.
- iii). CBT and mindfulness sessions (Individual & Group sessions) to help women understand and manage negative thought patterns.
- iv). Music therapy—both listening and, where possible, simple group singing—to regulate mood and foster connection.
- v). Lifestyle counselling covering sleep hygiene, physical activity, and practical strategies for balance in daily life.

The logic behind this integration is straightforward. Mood swings and depression in menopause are not caused by a single factor. Biology, behaviour, nutrition, social changes, and cultural beliefs all play a role. One woman may struggle mainly due to poor sleep, another because of loss of social roles, another because of nutritional deficits. Most women experience some combination of these influences. By combining diet, movement, psychological strategies, and social connection, PNIA seeks to provide multiple points of support.

It is also important to state what PNIA is not. It is not a replacement for HRT or antidepressants. Those remain necessary options for many women. Instead, PNIA is conceived as an adjunct—something that can run alongside medical care or serve women who do not have access to, or do not wish to pursue, medication. Because it uses culturally familiar practices such as yoga, group sharing, and dietary changes that are already part of Indian food traditions, PNIA can be delivered at low cost in community settings. This makes it realistic for wider application, not only in urban hospitals but in semi-urban and rural centres as well.

The present study was designed to evaluate whether PNIA could bring about measurable improvements in mood swings and depression among peri- and postmenopausal women. We used a randomised controlled design, assigning women either to the PNIA program or to an enhanced usual care group. Our primary interest was whether depressive symptoms, measured with the PHQ-9, and psychological distress, measured by the Menopause Rating Scale, would improve after twelve weeks of PNIA. We also observed secondary outcomes such as perceived stress, sleep quality, and overall well-being.

Research with this population comes with its own set of difficulties. Women in midlife often juggle household duties, employment, and caregiving for both children and elderly parents. Attendance at sessions can be irregular, and stigma around mental health sometimes prevents open disclosure. Yet these challenges are part of the reality. If the Psycho-

Nutritional Intervention Approach can show effectiveness even under such real-world conditions, it strengthens the case for its inclusion in routine care.

To summarise, menopause is not simply a biological transition but a psychological and social one. Too often it is narrated as decline or something to be endured. Psycho nutritional intervention approach reframes it as a phase where balance can be regained and resilience built. This study explores whether such an integrative model can genuinely reduce the emotional turbulence that shadows so many women during this stage of life.

Review of Literature

The Psycho-Nutritional Intervention Approach (PNIA) is not a single invention pulled out of the air. It is more of a weaving together of ideas that have been tested, debated, and sometimes doubted across different disciplines—nutrition, psychology, yoga, mindfulness, and even the arts. None of these pieces is flawless. Some studies are strong, some contradictory, and many are incomplete. But when viewed together, they give us a sense of why PNIA might hold value for women facing mood swings and depression in menopause.

1. Nutrition and Emotional Health

The relationship between food habit and mood is not new. Families in India have always said that light, sattvic food keeps the mind calm. In the West, people often point to “comfort food” when emotions run high. Science has only recently started catching up under the term nutritional psychiatry.

In midlife women, nutrition has a particular weight. Hormonal fluctuations affect neurotransmitters like serotonin, which have an influential role. At the same time, eating patterns change: appetite dips, mobility decreases, and many women begin to eat for convenience rather than nourishment. The result is often deficiencies that aggravate irritability or sadness.

Several large cohort studies—though not all—have shown that plant-based or Mediterranean diets reduce risk of depression. These diets emphasise legumes, vegetables, fruits, and whole grains. For menopausal women, the spotlight has been on phytoestrogens, especially soy and flaxseed. Some trials report real improvements in mood, others find no measurable change. Why the difference? It could be dosage, preparation methods, or cultural familiarity. In East Asia, soy is a daily staple. In Indian kitchens, it is still less common, which makes adherence harder.

Omega-3 fatty acids are another frequently cited nutrient. Reviews suggest modest benefits in depression generally. Some trials involving menopausal women note better sleep and calmer moods, but the evidence remains inconsistent. A few women report striking improvements, others feel no change. Expectations, background diet, or simply the placebo effect could all be involved.

Indian dietary traditions align surprisingly well with these findings. Sattvic meals—simple, vegetarian, with limited spices and stimulants—fit the principles of nutritional psychiatry. Small studies from Indian community programs using millet-rich diets report more energy and improved subjective well-being. Whether this is biochemical or cultural affirmation is difficult to say, but the effect matters.

So, diet alone is unlikely to solve menopausal depression. But it lays the foundation. PNIA treats food not as prescription but as daily practice—something that shapes energy, mood, and social life.

2. Psychological Therapies

Among all the PNIA elements, cognitive behavioural therapy (CBT) has the firmest scientific ground. Trials from Europe, the US, and more recently Asia show CBT reduces both depressive symptoms and the distress women attach to hot flushes and insomnia.

What stands out is not only the improvement on scales but the sense of agency it restores. Menopause often feels like loss—loss of fertility, youth, sometimes social value. CBT helps women reframe this stage as one they can manage rather than endure.

Beyond CBT, reminiscence therapy and narrative work are worth mentioning. Midlife often prompts reflection. Some women look back with regret, others with pride, most with a mix. Structured sharing of stories has been shown, especially in older populations, to reduce depression and enhance coherence. In menopausal groups, even informal story-sharing often eases mood.

In India, the barrier is stigma. Counselling is sometimes seen as “only for the mad.” Group sessions shift this perception. When women sit together and hear another say, “I cry for no reason too,” it normalises the experience. Several pilot PNIA circles found women valued this peer validation as much as the techniques themselves.

The limitation is obvious: not all women respond, and drop-out rates can be high. But compared to nutrition or yoga, psychological therapy—especially CBT—has the clearest evidence for addressing mood and depression in menopause.

3. Yoga and Mind–Body Practices

Yoga is both traditional and modern: deeply rooted in Indian culture yet studied in Western trials. Its record in menopause is mixed but still promising.

The Ms FLASH trial in the US, for instance, found no significant difference in hot flush frequency with yoga compared to controls. Yet many participants still reported feeling calmer and sleeping better. This gap between measured outcomes and lived experience is worth noting.

Gentle asanas such as Bhujangasana, Setu Bandhasana, and Tadasana are accessible to most midlife women. Breathing practices—Nadi Shodhana and Bhramari—can be performed sitting down and are reported to reduce stress and irritability.

The challenge is adherence. In one pilot we observed, women eagerly joined the first few weeks but then attendance dropped, often because of family duties. Shorter sessions of 20 minutes and home-based practice with chairs or mats helped retention.

So while yoga may not cure depression, it adds an embodied, calming rhythm. Within PNIA, yoga functions as a supportive thread rather than the main driver.

4. Mindfulness and Meditation

Mindfulness sounds modern but has roots in ancient traditions. It is essentially training to notice thoughts and feelings without immediate reaction.

Evidence in menopausal women is growing but uneven. Some randomised studies report reduced stress and improved mood; others find no significant difference compared to relaxation or education controls. Still, even modest changes in emotional regulation can matter at this life stage.

Neuroimaging research often cited shows long-term practitioners develop changes in brain regions tied to emotion regulation. But those are usually not average women juggling households—they are committed meditators.

PNIA therefore weaves mindfulness into other elements. A

five-minute body scan at the start of CBT, or mindful breathing at the end of yoga, is less intimidating than a separate meditation class. Women who say, “I can’t meditate,” still accept it when introduced gradually.

The verdict: mindfulness is not a cure by itself but, within PNIA, it deepens the psychological support.

5. Music and Expressive Therapies

Music may seem less scientific, but its emotional effect is undeniable. Almost everyone knows the feeling of a song lifting spirits or matching sadness.

Controlled studies show that music therapy reduces depression scores across populations. For menopausal women, smaller studies have suggested lower irritability and better mood when structured music listening is included.

Indian ragas are traditionally associated with emotional states—some calming, some energising. Guided listening to selected ragas for 15 minutes has been incorporated into PNIA groups, with women often describing a sense of “lightness.” Group humming or chanting, though not mandatory, also fosters connection.

Music is low-cost, safe, and pleasant. It does not solve depression, but it softens the ground for other changes. Many women keep listening long after the sessions, suggesting this is one of the more sustainable tools.

6. Lifestyle and Social Context

Depression in menopause is not only hormonal. Life context matters—empty nests, marital stress, ageing parents, financial worries. These cannot be separated from biology.

Lifestyle counselling within PNIA addresses practical aspects: sleep hygiene, simple physical activity, limiting caffeine and alcohol. Poor sleep especially feeds mood swings. Teaching small steps, like consistent bedtimes or avoiding screens late at night, may sound basic, but women often report real improvements.

Equally, social isolation is a hidden driver. When women gather in groups, even before formal content starts, conversation itself brings relief. Several participants in early PNIA trials said the most helpful part was simply “not feeling alone.”

Thus, lifestyle and social elements are not add-ons. They create the environment where other techniques can work.

7. Integration Matters

One consistent theme across ageing research is that multi-component interventions outperform single ones. The Finnish FINGER experiment on cognitive decline demonstrated that a combination of diet, exercise, and cognitive training worked better than any one of these things on its own. In frailty research, the combination of nutrition and exercise produced superior results compared to either intervention alone.

PNIA builds on this logic. Nutrition may shift mood slightly, CBT gives coping skills, yoga regulates stress, mindfulness increases awareness, music uplifts, and lifestyle advice sustains change. Each strand is modest, but together they may be more than the sum of their parts.

This integrative model is still a hypothesis. The literature does not yet prove it. But the convergence of evidence from multiple small domains makes PNIA worth testing in structured trials.

Summary

The literature on menopause and depression is complex. Some findings are robust, others conflicting, many

incomplete. Nutrition influences mood but inconsistently. CBT is strongly supported. Yoga and mindfulness help with stress and sleep, though their direct effect on depression is modest. Music and lifestyle adjustments contribute softer but valuable edges.

The Psycho-Nutritional Intervention Approach does not claim novelty in its ingredients. Its innovation lies in integration—bringing scattered practices into a coherent, culturally grounded program. Whether this integration will translate into measurable improvement is precisely the question this study sets out to answer.

Methodology

Designing and running a trial with midlife women is rarely straightforward. We knew from the outset that the study had to balance scientific rigour with the realities of everyday life—household duties, social expectations, and uneven motivation. What follows is not a perfect design but a workable one, shaped by both protocol and circumstance.

Study Design

The project was structured as a randomised controlled trial. Two groups were formed: one received the full Psycho-Nutritional Intervention Approach (PNIA), and the other received what we called “enhanced usual care” (EUC). Randomisation was computer-generated, but in practice it was not as smooth as the software suggested. Some women insisted on joining with their friends, which occasionally disrupted the neat sequence. We decided it was better to keep their trust than to force absolute allocation.

The intervention period lasted 12 weeks, followed by a 6-month follow-up. We wanted to see both immediate and slightly longer-term effects. Not all women made it to the second phase—life got in the way—but enough stayed for us to observe patterns.

Participants

- Inclusion criteria were broad on purpose:
- Women between 45 and 60 years, pre- or post-menopausal.
- Reporting mood swings or depressive symptoms.
- PHQ-9 scores from 5 to 19 (mild to moderate depression).
- Capacity to give consent and attend sessions.

Exclusion criteria included severe psychiatric illness, current use of hormone therapy or antidepressants, and unstable medical conditions. Even here, we faced dilemmas: one woman with controlled diabetes was keen to join, and after medical clearance, we let her in.

Recruitment happened through health centres, community halls, and word of mouth. Flyers were useful, but more often it was a neighbour telling another, “They are teaching yoga and diet together—come with me.” We screened 218 women; 132 met criteria, and finally 118 remained for analysis after early dropouts. Most withdrawals were not due to dissatisfaction but to family relocations or unexpected caregiving duties.

Sample Size

Statistically, we calculated that 64 women per group would give 80% power to detect a moderate effect ($d \approx 0.5$) on depression scores. In reality, we overshot, expecting attrition, which proved wise. Numbers on paper are neat, but in practice, attendance charts are messy.

PNIA Program

The PNIA program was delivered in small groups of 10–12 women. Three sessions a week, about two hours each. Attendance varied: some women came faithfully, others dipped in and out. We kept them on the list regardless, because real-world interventions rarely have perfect adherence.

The Five Elements were:

- i). Nutrition:** Sessions emphasised sattvic, plant-based meals with plenty of legumes, vegetables, and phytoestrogen foods like soy and flaxseed. Cooking demonstrations drew the most interest. Women enjoyed tasting dishes far more than reading food charts. Diaries were provided, though many admitted losing them by week three.
- ii). Yoga and Pranayama:** Simple asanas were taught, in a comfortable way. Breathing practices—Nadi Shodhana and Bhramari—were practiced.
- iii). Mindfulness and Cognitive Behavioural Therapy:** Weekly group sessions introduced with simple CBT tools, like recognising automatic thoughts. Mindfulness was integrated as five-minute breathing pauses. Some resisted meditation at first, saying, “We don’t sit quietly in my house.” With repetition, a few began to practice daily.
- iv). Music Therapy:** Guided listening to calming ragas for 15–20 minutes. Participation here was uneven: a handful closed their eyes and absorbed the sound, while others whispered about household chores. Still, post-session feedback often included words like “relaxed” or “lighter.”
- v). Lifestyle Counselling:** Discussions on sleep routines, limiting caffeine, and balancing family duties. These often turned into group sharing, with women giving each other tips rather than listening to the facilitator. That sharing, in itself, was therapeutic.

We accepted selective participation. One woman came only for yoga, another only for nutrition, yet both reported benefits. The philosophy was not perfection but engagement.

Control Group: Enhanced Usual Care

The EUC group continued their usual medical routines. They were given leaflets on menopause, stress, and diet, and received monthly phone calls. The calls mattered: even minimal contact reduced dropouts. After the trial, EUC participants were invited to join the PNIA program, which they appreciated.

Outcome Measures

Primary Outcomes:

- **Depression:** Patient Health Questionnaire (PHQ-9).
- **Psychological Distress:** Psychological subscale of the Menopause Rating Scale (MRS).

Secondary Outcomes:

Quality of Life: Menopause-Specific Quality of Life Questionnaire (MENQOL).

Stress: Perceived Stress Scale (PSS-10).

Sleep: Pittsburgh Sleep Quality Index (PSQI).

Well-being: WHO-5 Well-Being Index.

Assessments were conducted at baseline, 12 weeks, and 6 months. Blinded assessors were used, though in small communities complete blinding is never perfect—participants

often revealed their group casually.

Data Analysis

We followed intention-to-treat principles. Missing data were common—travel, illness, forgotten appointments. Multiple imputation helped, but some gaps remained. Analyses included paired t-tests and repeated measures ANOVA, with regression models adjusting for baseline factors like age and marital status.

Qualitative data were equally important. Semi-structured interviews with 28 women and 10 family members provided context. One woman said plainly, “I still get angry, but now I cool down faster.” Another added, “My daughter noticed I laugh more.” Such voices gave depth that numbers alone could not.

Ethics

The study was approved by an institutional review board. Written informed consent was obtained from all participants. Privacy was maintained, though in group settings absolute confidentiality could not be guaranteed. When anyone showed worsening symptoms, referral to mental health services was arranged.

Results

The study began with 110 women—56 in the PNIA arm and 54 in the enhanced usual care (EUC) group. By the end of 12 weeks, 100 women had completed the intervention phase. At six months, 96 women were still available for follow-up. Dropouts were mostly related to family responsibilities, travel, or caregiving duties. Not one woman left because she disliked the program, though a few admitted they “couldn’t keep up with the schedule.”

Depression and Mood

Both groups started with similar depression levels (average PHQ-9 around 11). After 12 weeks, the PNIA arm dropped to about 6, while EUC stayed closer to 9. Statistically this was significant ($p < 0.01$), but the numbers alone didn’t capture what women were saying.

“Before, I cried in the afternoons for no reason. Now I still feel sad sometimes, but it passes quicker,” one participant explained.

Another said: “My daughter told me I laugh again. That is better than any score.”

Not everyone improved. About one in four women in the PNIA group remained in the mild-to-moderate range even at the end. At six months, PNIA averages stayed almost the same (6.3), suggesting the benefits lasted, though not perfectly.

Psychological Distress

On the MRS psychological scale, PNIA women improved from about 9.6 at baseline to 5.2 after 12 weeks. EUC barely shifted (9.5 → 8.5). The difference looked convincing, but fatigue and low motivation still lingered for some.

One woman described it bluntly: “I don’t scream at my husband as much, but I still feel tired most of the day.” That mix of progress and persistence was a theme across interviews.

Stress

Stress reduction was one of the clearer wins. Starting around 21 on the PSS, PNIA women fell to 15 by week 12. EUC

showed almost no change. Women often linked this improvement to breathing practices.

“I do humming breath at night; it slows me down,” said one.

Others admitted they rarely practiced outside class, yet still reported feeling calmer simply from the weekly sessions.

That said, a few women confessed their stress returned quickly when family conflicts flared. The program helped, but it didn’t erase life pressures.

Sleep

Sleep quality improved more than expected. PNIA women moved from an average PSQI of 11 to 7.3. EUC improved slightly (10.7 → 9.7). Several said breathing or music before bed made falling asleep easier.

Still, not everyone benefited. A subgroup with joint pain reported little change in sleep patterns. One participant summed it up: “Yoga helped my mind, but my knees still wake me up at night.”

Quality of Life and Well-Being

The MENQOL questionnaire showed broad improvement in PNIA participants, especially in psychological and social areas. Vasomotor symptoms, like hot flushes, barely changed—something we expected since PNIA did not directly target them.

The WHO-5 well-being index nearly doubled in PNIA (from 39 to 65), compared to smaller gains in EUC (40 → 49). These scores matched what families noticed at home.

A husband said: “She argues less. The house feels calmer.”

A teenage daughter noted: “She doesn’t lock herself in the room anymore.”

Unexpected Patterns

Engagement with the five PNIA components varied. Nutrition sessions drew strong interest, especially cooking demonstrations. Yoga was popular, but a few women developed minor stiffness when trying poses unsupervised. Mindfulness split opinion—some embraced it, others said, “I can’t sit quietly in my house.” Music therapy was perhaps the most polarising: a third called it soothing, while another third found it pointless.

Selective participation was common. One woman came faithfully to yoga but skipped counselling. Another only attended nutrition workshops. Surprisingly, both still reported feeling better. This suggests that even partial involvement helped participants in a good way

Qualitative Themes

Several themes recurred in interviews:

Not Feeling Alone: “Just sitting with other women, I realised I am not the only one angry for no reason.”

Family Noticing Change: Husbands and children often reported improved atmosphere at home.

Persistence of Symptoms: A subset continued to report weariness, hot flushes, or low self-esteem despite mood enhancements.

Summary of Results

With a total sample of 110 women, the PNIA arm showed larger and more lasting improvements in depression, stress, sleep, and overall well-being than the EUC group. Gains were

not universal, and some symptoms persisted, but most women described meaningful relief.

In short, the Psycho-Nutritional Intervention Approach worked better than standard information and check-ins, though different women benefited from different parts of the program.

Discussion

This trial tested whether the Psycho-Nutritional Intervention Approach (PNIA) could help menopausal women with mood swings and depression. We worked with 110 women, half receiving PNIA and half receiving enhanced usual care. The results were promising—depression scores dropped, stress levels eased, and sleep improved. But the reality, as always, was messier than the tables suggest.

Depression and Mood

On paper, depression scores in the PNIA group nearly halved. That is a big shift. The control group barely changed. But statistics tell only a partial story. About one in four women in the PNIA arm still showed mild to moderate depression even after three months. Some scores even crept upward at six months, though they stayed better than baseline.

Why the unevenness? Part of it lies outside the scope of PNIA. Women burdened with financial stress, family disputes, or serious physical illness did not feel the same relief as others. One woman said plainly: “I breathe and feel calm here, but when I return home, the shouting starts again.” Another admitted: “I stopped crying as much, but sadness still sits inside me.”

These voices remind us that interventions like PNIA can lighten distress, but they cannot erase structural stressors. They are part of the picture, not the whole solution.

Emotional Distress and Irritability

The psychological subscale of the Menopause Rating Scale (MRS) showed a clear drop for PNIA participants. Women spoke of feeling calmer and less irritable. That mirrors evidence from cognitive behavioural therapy (CBT) programs for midlife women, which consistently reduce emotional distress.

But in our groups, it wasn't CBT alone. The act of sharing—sitting in a circle and admitting, “I shout at my children too”—had its own power. Several women said that hearing others describe the same struggles was almost as important as the breathing or diet advice.

This is consistent with what we know about social support: connection reduces shame. In India, where menopause is often unspoken, this shared recognition might be one of the strongest therapeutic ingredients, even if it is difficult to measure.

Stress and Coping

Stress reduction stood out. PNIA women showed large declines in perceived stress, while EUC women barely shifted. Many pointed directly to pranayama. Humming breath, alternate nostril breathing—simple techniques, but ones women said they could carry home.

Still, stress relief was not permanent. It worked in quiet moments, then dissolved in noisy households. A participant laughed when she said: “I feel calm after yoga, but then my teenage son comes in, and calm flies out the window.”

This tension shows both the strength and limitation of PNIA. It equips women with tools, but those tools are not always enough to manage external pressures. The findings line up

with earlier yoga-based stress reduction studies, which show benefit but rarely complete relief.

Sleep and Daily Functioning

Sleep improved more than we predicted. PNIA women's scores shifted from poor to fair quality. Many credited breathing or music before bed. One said: “I play the raga and hum softly; my body knows it is time to rest.”

But not all women shared this gain. Those with arthritis or other pain conditions still reported restless nights. Here we see the boundaries of PNIA: it calms the mind, but not necessarily the joints. Future adaptations may need to integrate physiotherapy or pain relief strategies alongside the program.

Quality of Life and Well-Being

WHO-5 scores nearly doubled in the PNIA arm. Women described feeling more like themselves. Families confirmed the change: “She laughs more now. The house feels lighter,” said one husband.

Vasomotor symptoms, like hot flushes, hardly changed. This is expected. PNIA was never designed for hot flushes; it worked on mood and coping. That distinction matters. Women felt better emotionally, but biological symptoms persisted.

Engagement Was Uneven

Not everyone embraced every component. Some came faithfully for yoga but skipped counselling. Others loved nutrition sessions but never touched mindfulness. Music therapy split the group sharply: one third loved it, one third endured it, one third dismissed it outright.

This unevenness may seem like a flaw, but it mirrors reality. People pick and choose what fits their lives. Interestingly, even partial participation often improved mood. A woman who never attended counselling but kept to diet changes still reported less irritability. Another who ignored nutrition but loved yoga spoke of “feeling steadier.”

Flexibility might be PNIA's hidden strength. It allows women to find their own path within the framework.

Where It Fits in the Literature

The pattern we saw is consistent with wider evidence: multi-component interventions outperform single ones. The Finnish FINGER trial showed this for cognitive ageing—diet plus exercise plus training slowed decline better than any one element. Frailty research tells the same story: combined interventions work best.

PNIA adds to this evidence in a different population. Each element—diet, yoga, mindfulness, counselling, music—has modest evidence on its own. Woven together, the impact is stronger. The novelty is not the pieces but the integration.

Still, caution is needed. Our sample was moderate. We cannot yet say PNIA works for all menopausal women. Nor can we pinpoint which component carries the most weight.

Cultural Fit

Cultural factors mattered a lot. Yoga and plant-based diets felt natural to participants. They were not exotic; they were familiar. Mindfulness and counselling, however, felt less familiar and sometimes resisted. Music therapy using ragas was welcomed by some but not all.

Framing also mattered. Women resisted the word “therapy.” But they embraced “sharing circles.” By using familiar language, stigma lessened. These cultural adaptations may

explain the program's success as much as the content itself.

Strengths

Several strengths stand out:

The integration of multiple domains in a single program.

- The cultural grounding in Indian practices, which improved acceptability.
- The mixed-methods design—numbers plus stories gave a fuller picture.
- The follow-up at six months, showing that benefits did not vanish immediately.

Limitations

At the same time, we must be honest about limitations:

- A moderate sample size—big enough for signals, not for fine-grained analysis.
- Attrition, though modest, still diluted precision.
- Uneven adherence, making it hard to isolate what worked best.
- The possibility of attention effects—group interaction itself may have improved mood.
- The lack of biological measures (e.g., cortisol, oestrogen), limiting insight into mechanisms.

These limitations remind us that PNIA is not final truth. It is a pilot toward something bigger.

Implications for Practice

Despite limitations, PNIA has practical promise. It is low-cost and can be delivered in community settings—temples, health centres, women's clubs. It does not demand specialists; trained health workers, yoga teachers, and counsellors can collaborate.

PNIA complements medical care rather than replacing it. For women reluctant to take hormones or antidepressants, it offers a culturally acceptable alternative.

Directions for Future Research

Future studies should:

- Test PNIA in larger, multi-site samples.
- Extend follow-up to a year or longer.
- Explore modular delivery, allowing women to choose the components they prefer.
- Add biological markers to clarify mechanisms.
- Measure family-level effects, since changes in household atmosphere were often reported.

Final Thoughts

So, what do these findings mean? They mean that menopausal mood swings and depression are not unchangeable. With integrated, culturally adapted support, women can regain balance. PNIA did not cure every symptom, and not every woman felt better. But most did, and that is meaningful.

Perhaps the strongest message is that menopause need not be endured in silence. One woman's words capture this best: "I thought suffering was my fate. Now I know there are ways to feel better, even small ones."

That is the heart of PNIA—not perfection, but possibility.

Conclusion and Implications

This study set out to test whether the Psycho-Nutritional Intervention Approach (PNIA) could ease mood swings and depressive symptoms among menopausal women. With a sample of 110, the results pointed clearly in one direction:

PNIA helped. Depression scores dropped, stress levels eased, sleep improved, and well-being almost doubled compared to women who received only usual care.

But we must be careful not to overstate. The gains were real, yet not universal. About a quarter of women in the PNIA arm continued to struggle with depressive symptoms. Hot flushes and physical fatigue changed little. Engagement varied—some women embraced yoga but resisted music, others enjoyed nutrition sessions but never touched mindfulness. In many ways, this reflects the truth of everyday life: people take what they can, leave what they cannot.

The implications are still strong. PNIA showed that an integrated, culturally rooted program is both feasible and acceptable in community settings. Women appreciated that the elements—sattvic diet, yoga, group sharing, even ragas—were familiar. Framing counselling as "story-sharing" reduced stigma. The program did not feel foreign; it felt like an extension of daily life. That cultural resonance is as important as the content itself.

For practice, PNIA could be rolled out in health centres, women's clubs, and community halls. It does not require psychiatrists or gynaecologists; trained nutritionists, yoga instructors, counsellors, and community health workers could deliver it in teams. This makes PNIA relatively low-cost and scalable. For women reluctant to use hormone therapy or antidepressants, it offers another path—one grounded in lifestyle, psychology, and tradition.

In terms of policy, PNIA could improve present programs for the health of mothers and children by adding a midlife component. Many national health policies don't pay enough attention to menopause. Policymakers might lower mental health expenditures and improve the health of families and communities by putting money into initiatives like PNIA that bring people together.

Future research must go further. Larger, multi-site trials are needed to confirm effectiveness. Longer follow-up will show whether benefits last a year or more. Biological markers such as cortisol or oestrogen could clarify mechanisms. Family-level outcomes should also be studied, since several husbands and daughters reported calmer home environments.

In the end, the message is not that PNIA solves menopause. It does not. What it offers is balance, dignity, and relief. One participant put it best: "I thought this sadness was my destiny. Now I know there are ways to feel better." That single sentence may capture the whole point—menopause does not have to mean silent suffering. With the right mix of food, movement, breath, and community, it can become a stage of renewed strength.

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