Efficacy of Homeopathic Higher Dilutions in management of Sleep Disorders: A Review

Parth Aphale1*, Dharmendra Sharma2, Himanshu Shekhar3

1-Professor & HOD, Department of Homeopathic Pharmacy, Dr. D.Y. Patil Homoeopathic Medical College & Research Centre, Dr. D.Y. Patil Vidyaapeeth (Deemed to be University), Pimpri, Pune, Maharashtra, India
2-Principal, Professor & HOD, Department of Forensic Medicine & Toxicology, Dr. D.Y. Patil Homoeopathic Medical College & Research Centre, Dr. D.Y. Patil Vidyaapeeth (Deemed to be University), Pimpri, Pune, Maharashtra, India
3-III BHMS Student, Dr. D.Y. Patil Homoeopathic Medical College & Research Centre, Dr. D.Y. Patil Vidyaapeeth (Deemed to be University), Pimpri, Pune, Maharashtra, India

*parth.aphale@dpu.edu.in – https://orcid.org/0000-0002-1004-2605

Accepted for publication: 2024-03-26
Published: 2024-05-05

ABSTRACT

Background: Sleep disorders, including insomnia, have diverse causes and can significantly impact physical and mental health. Homeopathy is explored as a complementary treatment for these disorders, but its efficacy remains uncertain. Aim/Objective: This study reviews clinical research on the efficacy of homeopathic higher dilutions remedies for sleep disorders. The goal is to provide insights into the progress in clinical and preclinical investigations on homeopathy for sleep disorders. Methodology: We conducted a comprehensive database search for original clinical studies on homeopathy and sleep disorders and its related terminology published until September 2023, applying exclusion criteria to select relevant studies. Results: We identified 11 studies meeting our criteria. These studies explored the use of homeopathic remedies for managing sleep disorders with the help of various assessment tools, like Hamilton Anxiety Rating Scale (HAM-A), STAI questionnaire, Jenkins Sleep Scale (JSS), Insomnia Severity Index (ISI), Sleep Diary (SD), Sleep Impairment Index (SII), Visual Analogic Scale (VAS), and Trait of Anxiety Scale (TAS). Findings included reduced anxiety and improved sleep quality with Passiflora compose, potential benefits of individualized homeopathic treatment for insomnia, and positive outcomes in children and young adults with sleep issues. Homeopathy also showed potential effects on sleep patterns in a rat study. Conclusion: The reviewed studies suggest the potential benefits of homeopathic treatments for sleep-related conditions. Passiflora compose, individualized homeopathic treatment, and homeopathic simillimum demonstrated promise in improving sleep quality and reducing anxiety. More research and larger trials are needed for wider acceptance, but these findings highlight their value for diverse populations.

Keywords: Hamilton Anxiety Rating Scale, Homoeopathic Higher Dilutions, Insomnia Severity Index, Sleep Disorders, Sleep Impairment Index

INTRODUCTION

Sleep is a fundamental biological process observed across all living species, constituting a substantial portion, approximately one-third, of a human's lifespan. Insufficient or poor-quality sleep has been linked to a broad spectrum of
dysfunctions in various physiological systems, encompassing the endocrine system [1], metabolism [2], cognitive abilities [3], and neurological health. Sleep disorders span a broad range of conditions, carrying substantial health implications for individuals and significant economic burdens for society. The most prevalent sleep disorders in the country encompass insomnia, sleep apnoea, restless legs syndrome, and narcolepsy [4].

The 2000 International Classification of Sleep Disorders categorizes sleep disorders into four main groups: dyssomnias (related to sleep initiation and maintenance issues), parasomnias (involving undesirable behaviors during sleep), sleep disorders linked to mental, neurological, or medical conditions, and proposed sleep disorders. Dyssomnias can be intrinsic (originating within the body) or extrinsic (caused by external factors), including circadian rhythm sleep disorders like insomnia and narcolepsy. Common sleep disorders include insomnia, circadian rhythm disorders, shift work sleep disorder, disorders of excessive somnolence (e.g., sleep apnea), Restless Leg Syndrome (RLS), Periodic Limb Movement Disorder (PLMD), and Narcolepsy. Parasomnias encompass behaviors like sleepwalking, sleep terrors, and REM Behavior Disorder (RBD), often requiring a mix of behavioral and medicinal treatments [5].

Sleep encompasses two main phases, each with distinct central nervous system (CNS) activity patterns. Rapid Eye Movement (REM) sleep is linked to dreaming, marked by muscle relaxation, rapid eye movements, and fast brain waves. Non-Rapid Eye Movement (NREM) sleep has four stages, with stage 4 (delta sleep) being the deepest. Sleep disruptions often result from irregularities in REM and NREM patterns, regulated by the body's internal clock, the suprachiasmatic nucleus in the hypothalamus, and involving neurotransmitters like serotonin, norepinephrine, acetylcholine, and dopamine. Imbalances in these systems can disrupt various aspects of sleep [6].

Insomnia, a common sleep issue, affects about one-third of the general population intermittently and 10 to 15% chronically, particularly in older individuals and those with medical or psychiatric conditions. Chronic insomnia has a negative impact on daily functioning, quality of life, and healthcare usage. It results from a combination of medical conditions (e.g., cardiac, neurological), psychological factors (e.g., depression, anxiety), and environmental influences (e.g., stress, shift work), all contributing to disruptions in sleep patterns. This complex interplay accounts for the widespread occurrence of insomnia [7].

Individuals struggling with various sleep disorders often seek relief through a wide range of substances, including alcohol, herbal remedies, dietary supplements, and over-the-counter antihistamines. Healthcare providers may suggest various sedating psychotropic medications as primary insomnia treatments, such as antidepressants (e.g., trazodone, doxepin), antipsychotics (e.g., quetiapine), anticonvulsants (e.g., gabapentin, tiagabine), and high-dose antihistamines (e.g., diphenhydramine). However, robust evidence supporting the efficacy of these compounds in treating chronic insomnia as well as various sleep disorders is lacking, and safety concerns are associated with each of these approaches [7].

Numerous homeopaths promote the use of homeopathy to address insomnia. In a recent German observational study, it was found that 13% of elderly patients utilizing homeopathy turned to it for managing sleep disturbances. Additionally, many patients
reported perceiving homeopathy as effective for these issues. It's worth noting that insomnia often exhibits a strong placebo response, so the belief that homeopathy can be effective in this context is somewhat expected [8].

Lately, there has been a significant increase in clinical research dedicated to evaluating the effectiveness of homeopathic remedies for sleep disorders and their associated issues. Consequently, a thorough review of the existing literature concerning these clinical studies was initiated. The primary objective of this review is to offer researchers valuable insights into the progress made in the domain of clinical and preclinical investigations focused on homeopathic treatments for sleep disorders.

**METHODOLOGY**

**Search Strategy**

The literature considered for this review was obtained from electronic databases such as PubMed, SCOPUS, and Google Scholar. A thorough analysis of article references was also conducted to identify further relevant studies. The keywords utilized for this literature review included 'Homeopathy' and 'sleep disorders,' covering conditions like insomnia, sleep apnea, restless leg syndrome, and related terms. This comprehensive search strategy encompassed clinical studies with descriptors published up to September 2023.

**Study Selection:**

Authors independently reviewed all titles, abstracts, and complete articles to eliminate any duplications.

**Inclusion Criteria:**

The criteria for inclusion encompassed clinical studies that explored the application of homeopathic treatments in the context of sleep disorders. Solely publications in the English language were included.

![Prisma Chart](image)

**Figure 1: Prisma Chart**

**Exclusion Criteria:**

This review excluded all case studies. Moreover, it did not consider review articles, letters to the editor, conference proceedings, or comments. Unpublished data, including dissertations, non-peer-reviewed sources, and website content, were likewise not part of the review.

**Data Extraction:**

Authors independently collected information regarding medications, dosages,
positive control groups, study duration, outcomes, and findings in the studies.

RESULTS

A comprehensive database search was executed to pinpoint original clinical studies concerning the use of homeopathic exploration yielded a total of 150 records, and after eliminating duplicate entries, 74 unique records remained. Subsequently, following the pre-established exclusion criteria, 6 review articles, 32 case studies, 4 dissertations, and 4 conference proceedings were excluded. This process led to the retention of 11 pertinent studies, which met the defined inclusion criteria and are presented in Figure 1. The clinical studies investigating the efficacy of homeopathic remedies in managing sleep disorders are summarized in Table 1.

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Author Name</th>
<th>Title</th>
<th>Methodology</th>
<th>Observation/Result</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Villet et al</td>
<td>Open-label observational study of the homeopathic medicine Passiflora Compose for anxiety and sleep disorders</td>
<td>This study was an open-label observation where a group of randomly chosen general practitioners who prescribe homeopathic medicines enrolled consecutive adult patients receiving these medicines for anxiety. The GPs recorded patient demographics and anxiety levels (measured with HAM-A), while patients reported their anxiety (using STAI Spielberger) and sleep quality (Jenkins sleep scale or JSS). After 4 weeks of treatment, anxiety and sleep quality were reevaluated using the same scales.</td>
<td>In the study, 639 patients, primarily female and with a mean age of 46.3, were recruited by 98 GPs. Initially, a high percentage had anxiety and sleep issues. After 4 weeks of treatment, anxiety scores significantly decreased by more than 7 points (HAM-A) and 12 points (Spielberger State), and sleep disturbance scores dropped by more than 4 points (JSS).</td>
<td>Anxiety and sleep disturbance significantly improved in patients in this study. The findings suggest that homeopathic treatment (PC) could be considered as a potential alternative to using psychotropic drugs as the initial treatment for anxiety and sleep disturbance.</td>
</tr>
<tr>
<td>2</td>
<td>James et al</td>
<td>Efficacy of individualized homeopathic treatment of insomnia: Double-blind, randomized, placebo-controlled clinical trial</td>
<td>In a double-blind, randomized, placebo-controlled trial, 60 patients were divided equally into two groups: IH and control/placebo. Primary outcomes were assessed using a patient-administered sleep diary with six parameters and the secondary outcome was the</td>
<td>Five patients dropped out of the study (2 from the verum group and 3 from the control group). The analysis included the intention-to-treat sample of 60 participants. Both trial arms were similar at the beginning. In the verum group, all outcomes</td>
<td>It appears that IH had a significantly stronger impact compared to the placebo.</td>
</tr>
<tr>
<td>Page</td>
<td>Authors</td>
<td>Title</td>
<td>Abstract</td>
<td>Conclusion</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
<td>-------</td>
<td>----------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>David Francis Naudé et al</td>
<td>Chronic primary insomnia: efficacy of homeopathic simillimum</td>
<td>30 participants meeting DSM-IV TR (2000) criteria for Primary Insomnia were randomly assigned to treatment and placebo groups. They received homeopathic medication during three consultations over a 2-week period. The Sleep Impairment Index (SII) was used, and participants began using a Sleep Diary (SD) after the first consultation.</td>
<td>The Sleep Diary (SD) data showed that the verum treatment significantly increased sleep duration throughout the study, while the placebo treatment had no such effect. Additionally, the verum group exhibited a significant improvement in Sleep Impairment Index (SII) summary scores and individual question responses, with all 11 questions showing significant improvement by the study's end. In contrast, the placebo group initially improved but couldn't sustain it. A statistical difference was observed when comparing the results between the two groups. The homeopathic simillimum treatment was effective for primary insomnia compared to the placebo.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Jong et al</td>
<td>A Comparative Randomized Controlled Clinical Trial on the Effectiveness, A prospective, multicenter, randomized, open-label, controlled clinical trial was conducted to assess the effectiveness and safety of the homeopathic product</td>
<td>Both treatment groups demonstrated a reduction in total sleep disorder-related complaint severity scores. The median</td>
<td>The clinical trial demonstrated that the homeopathic product ZinCyp-3-02 is both safe and superior to glycine in the</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Anmol Arora</td>
<td>A study to compare the efficacy of <em>Eschscholzia californica</em> MT and <em>Passiflora incarnata</em> MT in insomnia</td>
<td>In a randomized controlled trial, a sample of 30 patients attending the outpatient department with insomnia complaints (aged 25 to 45 years) was studied. Patients with diabetes mellitus, hypertension, hypothyroidism, or medication use were excluded. Data collection involved structured questionnaires, and the analysis was conducted using SPSS Version 21.</td>
<td>The Levene's test resulted in a p-value of 0.037, which is less than the significance level of 0.05. Furthermore, the negative t-value suggests that the mean sleep duration of Group 1 (<em>Passiflora incarnata</em>) is significantly lower than the mean of Group 2 (<em>E. californica</em>). Since the p-value is less than 0.05 (the chosen significance level), The study's findings suggest that when it comes to treating insomnia, <em>Eschscholzia californica</em> is more effective than <em>Passiflora incarnata</em>.</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Harrison et al</td>
<td>The effect of a homeopathic complex on psychophysiological onset insomnia in males: a randomized pilot study.</td>
<td>The research team conducted a 4-week randomized, double-blind, placebo-controlled pilot study using matched pairs. The study was held at the Homeopathy Health Clinic at the University of Johannesburg, South Africa, involving 46 males aged 18-40 with chronic PI. 28 participants completed the study, with 14 in the placebo group and 14 in the experimental group. They used a homeopathic complex in 20% alcohol for the experimental group, while the placebo was an unmedicated vehicle. Outcome measures included the Pre-sleep Arousal Scale (PSAS) and the Sleep Diary (SD) assessing sleep-onset latency. Over the 4-week study, the experimental group displayed significant improvements in pre-sleep arousal and sleep onset latency. The Wilcoxon signed-rank test indicated that these improvements happened gradually. When comparing the two groups, the experimental group outperformed the placebo group by day 28 of the study in both the PSAS and the SD assessments.</td>
<td>The results imply that daily use of the homeopathic complex has a notable impact over a 4-week period on physiological and cognitive arousal at bedtime and sleep onset latency in individuals with PI.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Cláudia Tavares Silva et al</td>
<td>Homeopathic medicine of <em>Melissa</em></td>
<td>The study involved 52 patients, with an average age of 6.62 ± 1.79 years, selected</td>
<td>The study revealed a significant reduction in SB on the VAS scale</td>
<td>MO demonstrated promising results in treating potential</td>
</tr>
<tr>
<td>8</td>
<td>Bell et al</td>
<td>Effects of homeopathic medicines on polysomnographic sleep of young adults with histories of coffee-related insomnia</td>
<td>The study involved young adults aged 18-31, divided by personality traits (cynical hostility or anxiety sensitivity) and a history of coffee-induced insomnia. They underwent a month-long study with at-home polysomnographic recordings on eight pairs of successive nights (nights 1, 2, 8, 9, 15, 16, 22, 23). Among the 54 participants, they received placebo pellets on night 8 (single-blind) and verum pellets on night 22 (double-blind). The pellets contained 30c doses of one of two homeopathic remedies, Nux vomica or Coffea cruda. Subjects also maintained daily sleep diaries, weekly Pittsburgh sleep quality scores, and self-rated scales. The verum remedies led to significant increases in PSG (polysomnography) total sleep time and non-rapid eye movement (NREM) sleep, while also causing more awakenings and stage changes. However, there were no significant changes in actigraphic measurements and self-rated scales. The study showed that conducting all-night sleep recordings at home is a feasible approach to study the effects of homeopathic remedies.</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

The study assessed the impact of treatments on reducing SB using the Visual Analogic Scale (VAS) as the primary outcome measure, both at the start and after each treatment phase. Additional outcome measures included a children's sleep diary based on parent/guardian observations of sleep quality, the trait of anxiety scale (TAS) for changes in children's anxiety, and side effect reports. Data analysis involved ANOVA with repeated measures, followed by the Post Hoc LSD test. Following the use of Placebo (-1.72 ± 0.29), MO (-2.36 ± 0.36), PD (-1.44 ± 0.28), and MO + PD (-2.21 ± 0.30) when compared to the baseline (4.91 ± 1.87). MO showed superior results compared to PD (p = 0.018) and Placebo (p = 0.050), with similar results to MO+PD (p = 0.724). However, the results of the sleep diary and TAS were not affected by any of the treatments, and no side effects were observed after the treatments. Sleep bruxism in children. However, the addition of PD did not enhance the effectiveness of MO.
| 9  | Gitanjali et al | Effect of homoeopathic drugs used in insomnia on serum melatonin and cortisol levels in healthy volunteers. | Five groups comprising 10 healthy adult male volunteers each were assembled and randomly distributed into four drug treatment groups and one placebo group. The participants were unaware of the study’s specifics. Serum cortisol and melatonin levels were measured before and after drug administration using radio-immunoassay techniques. Additionally, an array of eleven psychomotor tests was conducted to assess morning alertness. Responders were identified among the volunteers who exhibited alterations in sleep-related symptoms, serum cortisol or melatonin levels, and psychomotor test results, while non-responders displayed no such changes. | The study revealed that 38.1% of participants responded to Nux vomica, and 23.1% responded to Coffea cruda in terms of reporting sleep-related symptoms when taking the drugs. None of the participants responded to Passiflora incarnata, Kali phosphoricum, or the placebo. In the group of responders to Nux vomica, there was a significant decrease in mean serum cortisol levels (38.9 ng/ml) compared to non-responders (101.3 ng/ml), with a p-value below 0.05. Furthermore, the responders to Nux vomica, but not Coffea cruda, exhibited significantly lower morning and evening serum cortisol levels. Serum melatonin levels remained unchanged in both groups. There were no significant alterations in psychomotor test results among the responders. | Among the four drugs investigated in the study, only Nux vomica induced symptoms and exhibited a reduction in serum cortisol levels in the subjects who responded to the drug. However, since only 38% of the subjects exhibited a response, the sample size is too limited to draw conclusions regarding the clinical efficacy of this drug. It’s important to consider that in Homeopathy, drug selection is tailored to the individual patient’s characteristics. Therefore, the absence of effects in this study may be attributed to its design, which did not consider this personalized approach. |
| 10 | Hejazi et al | The effects of herbal medicine and homeopathic remedy on insomnia | This single-blind clinical trial involved 90 students experiencing insomnia. They were selected through volunteer sampling and randomly divided into two groups. One group received the homeopathic remedy Coffea cruda drops and a placebo capsule, while the other group used the allopathic medicine Valeriana officinalis. Before using the treatments, the Valeriana officinalis group had an average sleep quality and severity of 11.78 and 15.14, which improved to 7.56 and 8.6 after one month. In the Coffea cruda group, the initial values were 11.51 and 14.53, which improved to 5.51 and 6.05 after a month. | The study’s results indicate that Coffea cruda is a more effective and less side-effect-prone approach compared to herbal medicine. | 17 |
| 11 | Ruiz-Vega et al | Comparative effect of Coffea cruda potencies on rats. | The study investigated the effects of Coffea cruda 30 and 200c, as well as caffeine, on the sleep patterns of rats. These treatments were administered orally at the beginning of the sleep period, and EEG recordings were taken from the parietal region. The study focused on delta (0.5–2.5 Hz) and slow (<1 Hz) waves, two major types of oscillations in neocortical electrical activity. The analysis, conducted blindly, looked at the spectral power in these bands and the power ratio between 0.32–0.48 Hz and the delta band (slow/delta power ratio) for both control and treatment groups. Notably, the power in the delta band was significantly higher than the baseline for Coffea 30c and caffeine (15.5 mg/kg). | A rise in the slow/delta power ratio was observed when comparing the control group to the treatment groups using Coffea cruda 30 and 200c. Coffea 30c and caffeine produced similar effects on sleep patterns, increasing delta power. However, Coffea cruda 200c seemed to primarily impact synchronization. | 19 |
1. **Open-label observational study of the homeopathic medicine Passiflora Compose for anxiety and sleep disorders**

   In the conducted study, an open-label, observational approach was employed. General practitioners (GPs) who were known to prescribe homeopathic medicines selected patients at random, all of whom were aged 18 years or older and were prescribed homeopathic medicine known as Passiflora Compose (PC). The GPs collected initial data at the time of inclusion, including socio-demographic information, anxiety severity assessed using the Hamilton Anxiety Rating Scale (HAM-A), and self-reported anxiety levels measured with the STAI Spielberger self-assessment questionnaire. Additionally, the Jenkins Sleep Scale (JSS) was used to record the level of sleep disturbance (SDS). The same scales were used to reassess anxiety and SDS after a 4-week treatment period.

   The study involved a total of 639 patients, with an average age of 46.3 years (standard deviation: 17.5), of which 78.6% were female. At the outset, anxiety was identified in 85.4% of patients based on HAM-A scores and in 93.3% based on Spielberger State scores, with mean scores of 17.8 ± 8.91 and 54.59 ± 11.69, respectively. Sleep disturbance (SDS) was present in 74.0% of the patients, with a mean score of 15.24 ± 5.28. Out of the total patients, 62.7% received PC treatment alone, while 26.1% were prescribed PC in combination with psychotropic medications. After 4 weeks of treatment, there was a significant reduction in mean anxiety scores, with decreases of more than 7 points for HAM-A, 12 points for Spielberger State, and 6 points for Spielberger Trait. The SDS score also improved, decreasing by more than 4 points based on JSS.

   This study demonstrated significant improvements in anxiety and/or sleep disturbance in the patients who were included. The findings suggest that PC treatment could be a viable alternative to the use of psychotropic medications as a first-line treatment for anxiety and sleep disturbance.

2. **Efficacy of individualized homeopathic treatment of insomnia: Double-blind, randomized, placebo-controlled clinical trial**

   In this study, a double-blind, randomized, and placebo-controlled trial with two parallel arms was conducted, involving a total of 60 participants. These individuals were randomly divided into two groups, IH, and control/placebo, with a 1:1 ratio. The study's primary and secondary outcomes were assessed using sleep diaries maintained by the patients, consisting of six items related to various aspects of sleep (such as the time it takes to fall asleep and the total sleep time), and the Insomnia Severity Index (ISI). These measurements were taken both at the beginning of the study (baseline) and after a 3-month intervention period.

   The results revealed that five participants dropped out during the study, with two from the verum group and three from the control group. The analysis, which included all initially assigned participants (intention-to-treat sample), showed that the two trial arms were comparable at the beginning of the study.

   In the IH group, significant improvements were observed in all outcomes, except for sleep diary item 3, where the improvement did not reach statistical significance (P = 0.371). For all the other outcomes, the improvements were statistically significant, with p-values less than 0.01.
In the control group, significant improvements were seen in sleep diary item 6 and ISI score (P < 0.01), and there was a significant improvement in item 5 (P = 0.018). Group differences were significant for items 4, 5, and 6 (P < 0.01), and just significant for the ISI score (P = 0.014). These group differences had moderate to large effect sizes. However, the group differences were non-significant for the remaining outcomes (P > 0.01).

In conclusion, the study found that the IH group had a significantly better effect compared to the placebo group. The results indicate the potential effectiveness of IH in treating sleep issues. Nevertheless, the study emphasizes the need for further rigorous trials and independent replications to confirm and extend these findings.

3. **Chronic primary insomnia: efficacy of homeopathic simillimum**

This study was undertaken with the primary aim of investigating the potential efficacy of homeopathic simillimum in the treatment of chronic primary insomnia, employing a rigorous and well-established research approach, namely a randomized, double-blind, placebo-controlled study. A total of 30 participants were carefully selected based on the diagnostic criteria of primary insomnia outlined in the DSM-IV TR (2000). Following this selection, participants were randomly divided into two groups – one receiving the homeopathic treatment and the other the placebo. The study utilized two key evaluation tools, a Sleep Diary (SD) and the Sleep Impairment Index (SII), to assess the outcomes of the interventions. The study design included an initial consultation, followed by two subsequent follow-up sessions, spaced two weeks apart, during which homeopathic medication was administered. Additionally, participants were instructed to initiate the maintenance of a Sleep Diary during the first consultation.

The results of this study revealed significant and consistent improvements in the duration of sleep for the group receiving the homeopathic treatment, as recorded in the Sleep Diary. In contrast, the placebo group did not exhibit a noteworthy increase in sleep duration. Furthermore, the homeopathic treatment group demonstrated significant enhancements in the summary scores of the Sleep Impairment Index (SII), alongside marked improvements in all 11 individual questions measuring various aspects of sleep. On the other hand, the placebo group showed initial improvements, but these gains were not sustained over time. Comparing the results between the two groups, a clear and statistically significant difference emerged, indicating the superior efficacy of the homeopathic simillimum treatment.

In conclusion, this study provides compelling evidence that homeopathic simillimum is an effective treatment option for primary insomnia, especially when contrasted with a placebo.

4. **A Comparative Randomized Controlled Clinical Trial on the Effectiveness, Safety, and Tolerability of a Homeopathic Medicinal Product in Children with Sleep Disorders and Restlessness**

In a prospective, multicenter, randomized, open-label, controlled clinical trial, the effectiveness and safety of the homeopathic product ZinCyp-3-02 in children with sleep disorders lasting for at least one month were evaluated, and this was compared to the use of glycine. The study involved children who were six years old or younger, with 89 of them receiving ZinCyp-3-02 and 90 receiving the comparator glycine treatment.

ZinCyp-3-02, marketed under the name Dormikind and produced by Deutsche Homopathicie-Union, DHU-Arzneimittel
GmbH & Co. KG, is a complex homeopathic medicinal product. It comprises three active ingredients, namely Cypripedium pubescens D4, Magnesium carbonicum D10, and Zincum valerianicum D12. These ingredients collectively form the basis of ZinCyp-3-02 and are used in its homeopathic formulation.

After 28 days of treatment, both groups exhibited a reduction in the severity scores of sleep disorder-related complaints, decreasing from a median of 7.0 (out of a maximum of 11.0) points to 2.0 in the ZinCyp-3-02 group and 4.0 in the glycine group. However, the odds of improvement were significantly higher for the ZinCyp-3-02 group (odds ratio: 4.45, 95% CI: 2.77-7.14, p < 0.0001). The absence of individual complaints, such as time to sleep onset, difficulties maintaining sleep, sleep duration, troubled sleep (somniloquism), physical inactivity after awakening, restlessness for unknown reasons, and sleep disorder frequency, at the end of the study were significantly more common in the ZinCyp-3-02 group (all p-values < 0.05). Moreover, a greater number of children in the ZinCyp-3-02 group were completely free of complaints (p = 0.0258). Assessments of treatment effectiveness (p < 0.0001) and satisfaction (p < 0.0001) were also more favorable for ZinCyp-3-02. There were few reports of non-serious adverse drug reactions, with 2 cases in the ZinCyp-3-02 group and 1 in the glycine group, and both treatments were well-tolerated. In conclusion, the use of the homeopathic product ZinCyp-3-02 was found to be safe and more effective than glycine in the treatment of sleep disorders in children.

5. A study to compare the efficacy of Eschscholzia californica MT and Passiflora incarnata MT in insomnia

The aim of this study was to assess and compare the effectiveness of two homeopathic remedies, E. californica MT and P. incarnata MT, in the treatment of insomnia. The research followed a randomized controlled trial design and enrolled patients who presented at the outpatient department with complaints of insomnia. The study included a sample size of 30 patients who met the inclusion criteria, which specified patients with insomnia complaints aged between 25 to 45 years. Patients with underlying medical conditions such as diabetes mellitus, hypertension, hypothyroidism, or those currently taking medication were excluded from the study.

Data collection was conducted using a structured questionnaire, and the gathered data was subsequently analyzed using SPSS Version 21. The statistical analysis findings of the study provide valuable insights. The p-value obtained from Levene’s test, which is 0.037, is less than the significance level of 0.05. Consequently, they rejected the null hypothesis of Levene's test, signifying that there was a significant difference in the variance of sleep duration between Group 2 (E. californica) and Group 1 (P. incarnata).

The negative t-value indicated that the mean sleep duration of Group 1 (P. incarnata) was significantly less than the mean of Group 2 (E. californica). With a p-value less than 0.05, the chosen significance level, they confidently concluded that a significant difference exists between the mean sleep durations for Group 1 (P. incarnata) and Group 2 (E. californica).

In light of these findings, it was stated that, on average, the sleep duration for individuals treated with E. californica MT was approximately 59 minutes longer than for those treated with P. incarnata MT in cases of insomnia. This led to the conclusion that E. californica (E. californica) demonstrated greater effectiveness in addressing insomnia.
when compared to *Passiflora incarnata* (*Passiflora*). This suggests that *E. californica* may be a more promising treatment option for individuals experiencing insomnia.

6. **The effect of a homeopathic complex on psychophysiological onset insomnia in males: a randomized pilot study.**

The Psychophysiological onset insomnia (PI), which is characterized by difficulty falling asleep due to learned sleep-preventing behaviors and heightened arousal at bedtime, was a common and challenging condition. Its impact on the health, work performance, and relationships of those affected was significant, and conventional treatments involving hypnotic drugs had their limitations. In response, there was a growing interest in exploring alternative treatments, such as homeopathic medication, to address this condition.

With this objective in mind, a research team undertook a pilot study to evaluate the potential effects of a homeopathic complex on PI. The study was carefully designed as a randomized, double-blind, and placebo-controlled investigation that spanned over four weeks, employing matched pairs to ensure the robustness of the findings.

This research was carried out at the Homeopathy Health Clinic, situated within the University of Johannesburg in Johannesburg, South Africa. To conduct the study, 46 male participants aged between 18 and 40, all experiencing chronic PI, were recruited. Of these, 28 successfully completed the study, forming two groups: the placebo group with 14 participants and the experimental group with another 14.

During the study, the homeopathic complex, formulated in a 20% alcohol solution, was administered as the experimental treatment, while the placebo group received an unmedicated vehicle only.

To assess the impact of these interventions, two key outcome measures were employed: the Pre-sleep Arousal Scale (PSAS) and the Sleep Diary (SD), which specifically measured sleep-onset latency.

The results of the study revealed that the experimental group experienced a statistically significant improvement in pre-sleep arousal and sleep-onset latency over the course of the four weeks. This improvement was found to be gradual and consistent, as demonstrated by the Wilcoxon signed-rank test. Further analysis showed that, based on both the PSAS and the SD, the experimental group had outperformed the placebo group by the end of the 28-day study period.

In conclusion, these findings indicated that the daily use of the homeopathic complex had a notable impact on physiological and cognitive arousal at bedtime, as well as on sleep-onset latency in individuals with PI over the four-week study duration.

7. **Homeopathic medicine of Melissa officinalis combined or not with Phytolacca decandra in the treatment of possible sleep bruxism in children: A crossover randomized triple-blinded controlled clinical trial**

This study was conducted to explore the efficacy of homeopathic remedies, specifically *Melissa officinalis* (MO) and *Phytolacca decandra* (PD), either separately or in combination, as potential treatments for possible sleep bruxism (SB) in children. Sleep bruxism, characterized by the grinding or clenching of teeth during sleep, can have a significant impact on children's well-being. Given the limitations of traditional treatments, the study aimed to investigate alternative approaches such as homeopathy.
The study involved 52 participants, with an average age of 6.62 years, selected based on parental reports of their children’s SB. It employed a crossover design, consisting of four phases, each spanning 30 days. These phases included the administration of a Placebo, MO 12c, PD 12c, and a combination of MO 12c + PD 12c, with a 15-day wash-out period between each treatment.

To assess the effectiveness of the treatments, the primary outcome measure used was the Visual Analogic Scale (VAS), which gauged the reduction in SB. Supplementary measures included a children’s sleep diary, providing insights into parental perceptions of sleep quality, the trait of anxiety scale (TAS) to monitor potential changes in the children’s anxiety profiles, and the reporting of any side effects.

The study revealed significant reductions in SB, as indicated by VAS scores after each treatment phase when compared to baseline measurements. Notably, Melissa officinalis (MO) demonstrated more favorable results compared to Phytolacca decandra (PD) and the Placebo, while achieving outcomes similar to the combination of MO + PD. Encouragingly, the treatments did not appear to influence the results from the sleep diary and TAS, and no adverse side effects were reported following any of the treatments.

In conclusion, the study suggests that Melissa officinalis (MO) holds promise as an effective treatment for possible sleep bruxism in children, offering potential new avenues for treatment in this population.

8. Effects of homeopathic medicines on polysomnographic sleep of young adults with histories of coffee-related insomnia

A study was conducted involving young adults aged 18 to 31, both males and females, who displayed above-average scores on standardized personality scales indicating either cynical hostility or anxiety sensitivity, but not both, and had a history of insomnia triggered by coffee consumption. This month-long study involved at-home polysomnographic recordings conducted on successive pairs of nights, once per week, for a total of eight recordings. Participants, totalling 54, received placebo pellets on night 8 in a single-blind fashion and Homoeopathic pellets on night 22 in a double-blind manner. These Homoeopathic pellets contained 30c doses of one of two homeopathic remedies, Nux vomica or Coffea cruda. Throughout the study, participants diligently maintained daily morning sleep diaries and completed weekly Pittsburgh sleep quality index scales. Profile of mood states scales were also completed at bedtime on nights when polysomnography was performed.

The results of this study showed that the administration of verum remedies had a significant impact on polysomnography measures. Notably, they led to a substantial increase in total sleep time and non-rapid eye movement (NREM) sleep, along with an increased number of awakenings and stage changes during sleep. However, no statistically significant changes were observed in actigraphic measurements and self-rated scale effects. This study effectively demonstrated the feasibility of using in-home, all-night sleep recordings to explore the effects of homeopathic remedies.
9. **Effect of homoeopathic drugs used in insomnia on serum melatonin and cortisol levels in healthy volunteers**

The primary objectives of this study were to analyze the effects of four homeopathic drugs, namely Coffea cruda, Passiflora incarnata, Nux vomica, and Kali phosphoricum on the serum melatonin and cortisol levels of healthy volunteers and to evaluate their impact on daytime psychomotor skills. Five groups of healthy adult male volunteers, each comprising 10 individuals, were recruited, and randomly assigned to five groups: four for the homeopathic drugs and one for a placebo. The subjects remained blinded to the study protocol. Serum cortisol and melatonin levels were measured using radio-immunoassay methods both before and after the administration of the drugs. A battery of eleven psychomotor tests was conducted to assess morning alertness. Responders were defined as those volunteers who exhibited changes in sleep-related symptoms, serum cortisol and/or melatonin levels, or psychomotor test results, while non-responders did not show any such changes.

The study revealed that 38.1% of the participants responded to Nux vomica, and 23.1% responded to Coffea cruda, reporting sleep-related symptoms when these drugs were administered. No responses were observed with Passiflora incarnata, Kali phosphoricum, or the placebo. Responders to Nux vomica exhibited significantly lower levels of serum cortisol in the morning and evening, with a mean difference of 38.9 ng/ml, compared to non-responders (101.3 ng/ml) (p<0.05). However, serum melatonin levels did not display any significant changes. No noteworthy alterations were observed in the psychomotor test results among the responders.

Among the four drugs investigated in this study, only Nux vomica induced symptoms and reduced serum cortisol levels in those participants who responded to the drug. However, given that only 38% of the subjects responded, it remained challenging to draw definitive conclusions regarding the clinical effectiveness of this drug. It is essential to consider that homeopathic treatments are typically tailored to individual patient characteristics, and the lack of effects in some cases may be attributed to the study design.

10. **The effects of herbal medicine and homeopathic remedy on insomnia**

The objective of this study was to investigate the effects of two different remedies, herbal medicine (Valeriana officinalis) and homeopathic remedy (Coffea cruda), on the alleviation of insomnia symptoms.

In this single-blind clinical trial, a total of 90 students suffering from insomnia were selected through voluntary sampling and randomly divided into two groups. One group received the homeopathic remedy Coffea cruda drops and a placebo capsule, while the other group was administered the allopathic medicine Valeriana officinalis capsules along with a placebo drop. Both groups took one capsule one hour before bedtime every night, as well as one drop every 8 hours for a duration of one month. The study received approval from the university’s ethical committee. Data collection involved three questionnaires: Demographic, Petersburg sleep quality index, and Standard Insomnia Severity Index (ISI), with validity and reliability ensured through content validity and test-retest methods. Data analysis was performed using descriptive and inferential statistics.

Prior to the treatment, the average sleep quality and severity in the Valeriana officinalis group were 11.78 and 15.14, which reduced to 7.56 and 8.6 after one
month of usage. In contrast, the *Coffea cruda* group had initial sleep quality and severity averages of 11.51 and 14.53, which decreased to 5.51 and 6.05 after one month. A significant difference was observed between the two groups one month after starting the treatment ($P < 0.05$).

In conclusion, the findings of this study indicate that *Coffea cruda* is a more effective and lower side-effect approach compared to herbal medicine in the treatment of insomnia.

11. **Comparative effect of *Coffea cruda* potencies on rats**

The study aimed to explore the impact of *Coffea cruda* 30c and 200c, as well as caffeine, on the sleep patterns of rats. The treatments were administered orally at the onset of the sleep cycle, and electroencephalography (EEG) recordings were made from the parietal region. Two significant oscillation types characterizing neocortical electrical activity were considered: delta (0.5-2.5 Hz) and slow (< 1 Hz) waves. Spectral power within these frequency bands and the power ratio between 0.32-0.48 Hz and the delta band (referred to as the slow/delta power ratio) were analyzed for both control and treatment groups in a blinded manner.

The results indicated that the power within the delta band was notably higher than the baseline for both *Coffea* 30c and caffeine (at a dose of 15.5 mg/kg). Furthermore, there was an increase in the slow/delta power ratio when comparing the control group to those treated with *Coffea cruda* 30c and 200c. Notably, *Coffea* 30c and caffeine appeared to produce similar effects on sleep patterns by enhancing delta power. In contrast, *Coffea cruda* 200c seemed to influence the synchronization of these brainwave patterns.

**CONCLUSION**

The open-label observational study with *Passiflora Compose* demonstrated significant reductions in anxiety and sleep disturbance, suggesting its potential as an alternative to conventional psychotropic medications. Similarly, the double-blind, randomized, placebo-controlled trial on individualized homeopathic treatment showcased improvements in various sleep parameters, reinforcing the idea that homeopathy may be an effective approach to treating insomnia.

The study focused on homeopathic ultra high dilutions provided consistent evidence that homeopathy can effectively improve sleep duration and quality in individuals with chronic primary insomnia. Furthermore, in a clinical trial involving children with sleep disorders, the homeopathic product ZinCyp-3-02 proved to be more effective than glycine, with no reported serious adverse effects, offering a safe and viable option for children with sleep issues.

Comparative studies between homeopathic remedies, such as *Eschscholzia californica* and *Passiflora incarnata*, revealed differential effectiveness, with *Eschscholzia californica* demonstrating promise in improving sleep duration. In addition, a study on males with psychophysiological onset insomnia highlighted the potential of a homeopathic complex in reducing pre-sleep arousal and sleep-onset latency.

The investigation into children with sleep bruxism revealed that *Melissa officinalis* could effectively alleviate the condition, with combining it with *Phytolacca decandra* showing no significant enhancement in effects.

Studies on young adults with coffee-related insomnia indicated that homeopathic remedies, namely *Nux vomica* and *Coffea cruda*, increased total sleep time.
and non-rapid eye movement sleep. Additionally, research involving healthy volunteers found that *Nux vomica* could reduce cortisol levels and improve sleep-related symptoms.

Finally, a clinical trial comparing herbal medicine *Valeriana officinalis* and homeopathic remedy *Coffea cruda* for insomnia leaned in favor of *Coffea cruda*, suggesting its greater effectiveness in enhancing sleep quality.

An intriguing additional aspect of these studies was the investigation into homoeopathic ultra high dilutions effects on sleep patterns, as seen in the study with rats. These findings provide valuable insights into the physiological changes induced by homeopathic treatments.

Overall, while these studies offer promising results for the efficacy of homeopathic treatment in management of various sleep-related conditions, further research and larger-scale clinical trials are needed to establish homeopathy as a more widely accepted and validated treatment option for anxiety and sleep disorders. Nonetheless, the collective evidence underscores the potential value of homeopathy in improving sleep quality and reducing anxiety in a range of populations.

**Conflict of interest**
None declared.

**Financial support and sponsorship**
Author(s) declare(s) that this study received no funding.

**References**


