



Scientific rationality, adoption and perceived effectiveness of ethno medical practices on Anorexia and Psychic disorder in Idukki District Kerala

Dr. M. Sundaramari¹, Dr. R. Priyanka², Dr. Simi Asharaf³, Dr. S. Rajaguru⁴

¹Dean, School of Agriculture and Animal Sciences, The Gandhigram Rural Institute (DTBU), Gandhigram, Dindigul, Tamil Nadu- 624302.

Email id : sundamarigri@gmail.com

²Guest Faculty, School of Agriculture and Animal Sciences, The Gandhigram Rural Institute (DTBU), Gandhigram, Dindigul, Tamil Nadu- 624302. Email id : priyankarajashekaran@gmail.com

³Assistant Professor, Cardamom Research Station, Kerala Agricultural University, Pampadum para, Idukki, Kerala-685620
Email id : simi.asharaf@kau.com

⁴Guest Faculty, School of Agriculture and Animal Sciences, The Gandhigram Rural Institute (DTBU), Gandhigram, Dindigul, Tamil Nadu- 624302, Email id : rajaext20@gmail.com.

Received: 28 Jul 2026; Received in revised form: 23 Aug 2026; Accepted: 28 Aug 2026; Available online: 02 Sep 2026

©2026 The Author(s). Published by AI Publications. This is an open-access article under the CC BY license

(<https://creativecommons.org/licenses/by/4.0/>)

Abstract— Ethnomedicinal practices (EMPs) play a vital role in the primary healthcare systems of tribal communities, particularly in remote regions where access to modern medical facilities is limited. The present study was conducted in the Idukki district of Kerala to document, evaluate, and analyze EMPs used by tribal farmers for the management of anorexia and psychic disorders. The research was carried out in three phases: documentation of practices among nine tribal groups, scientific assessment of selected EMPs through expert evaluation, and analysis of adoption and perceived effectiveness among 452 tribal farmers. A total of nine EMPs involving thirteen medicinal plant species were identified. Scientific rationality assessment revealed that eight practices were rational, supported by the presence of bioactive phytochemicals such as alkaloids, flavonoids, tannins, and glycosides, which possess neuroprotective, antioxidant, and anti-inflammatory properties. Adoption analysis indicated that all EMPs were practiced by more than 70% of respondents, reflecting their widespread acceptance. Furthermore, all practices were perceived as effective, with several showing high effectiveness indices alongside strong scientific properties. The findings highlight a significant alignment between traditional knowledge and scientific evidence, underscoring the potential of EMPs as accessible and sustainable healthcare solutions. The study emphasizes the need for further pharmacological validation and integration of effective traditional practices into formal healthcare systems while preserving indigenous knowledge.

Keywords— Ethnomedicinal practices, adoption, perceived effectiveness

I. INTRODUCTION

Ethnomedicinal practices (EMPs) form an integral part of traditional healthcare systems, particularly among tribal communities who depend heavily on locally

available medicinal plants for the treatment of various ailments. These practices are deeply rooted in indigenous knowledge, passed down through generations based on observation, experience, and

cultural beliefs. In remote regions such as the Idukki district of Kerala, where access to modern healthcare facilities is often limited, EMPs continue to play a crucial role in maintaining community health and well-being. Anorexia and psychic disorders are increasingly recognized as significant health concerns, affecting both physical and mental health. Among tribal populations, these conditions are often managed using herbal formulations and traditional healing methods. Despite their widespread use, many of these practices remain scientifically undocumented and lack validation in terms of their therapeutic efficacy and safety.

In recent years, there has been growing interest in exploring traditional knowledge systems through scientific approaches to identify effective, safe, and affordable healthcare alternatives. The phytochemical constituents present in medicinal plants such as alkaloids, flavonoids, tannins, and glycosides have been reported to exhibit various pharmacological activities, including neuroprotective, antioxidant, and anti-inflammatory effects, which may contribute to the treatment of anorexia and psychic disorders.

Against this backdrop, the present study aims to systematically document the ethno medicinal practices used by tribal farmers in Idukki district for managing anorexia and psychic disorders, assess their scientific rationality, and evaluate their adoption and perceived effectiveness within the community. By bridging traditional knowledge with scientific validation, the study seeks to highlight the potential of EMPs in contributing to sustainable and accessible healthcare solutions..

II. OBJECTIVES

1. To identify and document ethno medicinal practices (EMPs) used for Anorexia and Psychic disorder among tribal farmers in Idukki.
2. To scientifically assess the therapeutic potential and rationality of selected EMPs.
3. To analyze the extent of adoption and perceived effectiveness of these selected EMPs within the community

III. RESEARCH METHODOLOGY

The study was carried out in three distinct phases.

Phase I: Documentation of Ethno-Medicinal Practices (EMPs)

In the first phase, nine major tribal groups of the Idukki district, Muthuvan, Mannan, Malayaraya, Ullada, Hill Pulayan or Mala Pulayan, Paliyan, Malavedan, and Malapandaram were selected for the study. The local health care system of these tribes primarily relies on Ethno-Medicinal Practices (EMPs). To ensure comprehensive representation, all eight blocks of the district were purposively chosen based on the high concentration and scattered population of tribal communities, after consultations with officers from the Integrated Tribal Development Project (ITDP), Thodupuzha. The inference is in line with the findings of [7].

Ten traditional healers or elderly farmers aged above sixty years and possessing thirty to forty years of experience were selected from each tribal group through a judgment sampling method, with assistance from tribal promoter workers of the respective village panchayat offices. This resulted in a total of ninety respondents. Data regarding EMPs related to the treatment of Anorexia and Psychic disorder were collected through participatory informal interviews. To validate and refine the gathered information, nine focus group discussions (one for each tribal group) were conducted, in which a total of one hundred and eleven healers and farmers participated.

Phase II: Rationality Assessment of EMPs

In the second phase, after excluding tribe- and block-specific EMPs, a rationality analysis was conducted on the remaining six EMPs. The rationality of these EMPs was assessed by experts in Agadathanthra (Toxicology) from various Ayurveda and Siddha medical colleges across Kerala and Tamil Nadu. A structured questionnaire was used, following a four-point continuum suggested by [3], wherein the experts were asked to rate each EMP as rational based on scientific evidence, rational based on experience, irrational based on experience, or irrational based on scientific evidence, and corresponding scores of 4, 3, 2, and 1 were assigned respectively.

Out of sixty-four experts approached, fifty-two responded by returning the filled-in questionnaires. The mean score for each EMP was calculated, and EMPs with a mean score of 2.5 and above were considered rational, while those below 2.5 were classified as

irrational. With the guidance of experts, the underlying principles of the rational EMPs were further explored through open-ended questions. For validation purposes, forty-three additional experts from the Dravyaguna (Ayurvedic Pharmacology) departments were also consulted.

Phase III: Adoption and Perceived Effectiveness of EMPs

In the third phase, the extent of adoption and perceived effectiveness of the EMPs among tribal farmers were assessed using a structured interview schedule. Two or more villages were selected from each of the eight blocks, namely Adimali, Devikulam, Nedumkandam, Elamdesam, Idukki, Kattappana, Thodupuzha, and Azhutha, making a total of forty village panchayats. A total of four hundred and fifty-two tribal farmers were selected through a proportionate random sampling technique. The inference is in line with the findings of [8].

Adoption was operationalized as the extent to which an individual respondent had ever practiced the selected EMPs. Each EMP was described in detail to the respondents, and they were asked whether they had ever followed that practice. A score of one was given for a "Yes" response and zero for a "No." The scores were then summed up and the Adoption Index (AI) was calculated using the formula:

$$\text{Adoption index of EMPs} = \frac{\text{Number of farmers adopted}}{\text{Number of farmers having applicability}} \times 100$$

The perceived effectiveness of the EMPs, defined as the degree of usefulness perceived by the farmers in addressing Anorexia and Psychic disorder, was measured using the Perceived Effectiveness Index (PEI) methodology developed by [3]. An EMP with a mean perceived effectiveness index (MPEI) of three was considered most effective, an EMP with an MPEI of two was considered moderately effective, and an EMP with an MPEI of one was considered least effective. EMPs having an MPEI greater than two were classified as effective based on the farmers' perception, whereas those below this value were considered less effective. Only EMPs adopted by at least fifty percent of the farmers were included for the assessment of perceived effectiveness.

IV. RESULTS AND DISCUSSION

Scientific rationale behind the rational EMPs on Anorexia and Psychic disorder

It is evident from Table 1 that almost all the plants used in the rational EMPs were found to contain various phytochemicals such as alkaloids, glycosides, terpenes, tannins, resins, steroids, saponins, flavonoids, catechins etc., in different combinations as indicated against each medicinal practice in the below table. These phytochemicals are indicated to improve blood circulation, antioxidant, central nerve system depressant and anti-inflammatory activities that would cure anorexia and psychic disorders. This inference is in line with the findings of [5], who reported that the compounds mentioned above contain therapeutic properties that could explain the use of medicinal plants to treat neurological disease. Eight EMPs (2, 3, 4, 5, 6, 7, 8, and 9) were rated as rational and one EMP-1 was rated as irrational. It is interesting to note that all the EMPs were adopted by more than 70 percent of the respondents. In general, all the EMPs were adopted by more than 70 percent of the respondents. It is evident from the table that all the practices were perceived as effective by the farmers.

Four EMPs viz., 2, 3, 4, and 9 had rationality score more than three and were perceived as effective by the tribal farmers. EMP 2 was adopted by 77.65 percent of the respondents with MPEI of 2.55. *Bacopa monniera* was used as a brain tonic to enhance memory development and learning and provide relief to patients with anxiety or epileptic disorders. The constituents are responsible for *B. monniera's* cognitive effects are bacosides A and B which aid in repairing damaged neurons by enhancing kinase activity and ultimately nerve impulse transmission [4]. This might be the reason for the adoption of this practice. EMP 3 was adopted by 73.67 percent of the respondents with MPEI of 2.36. The antioxidant-rich *Celastrus paniculatus* seed oil was efficient against immobilization stress [6]. Hence the high adoption.

EMP 4 was adopted by 83.40 percent of the respondents with MPEI of 2.30. The *Clitoria ternatea* extract was found to possess neurotropic, anxiolytic, anti-depressant and anti-stress activities. It also shows significant neuro pharmacological activity [2]. Hence, it has been rated as rational and adopted by many of the farmers.

EMP 9 was adopted by 98.45 percent of the respondents with MPEI of 2.46. *Tragia involucrata* extract has significant central nervous system depressant action [1]. Hence the EMP is widely adopted and perceived as effective.

Out of the nine EMPs selected in anorexia and psychic disorder, eight practices were judged as rational by the scientists. All the nine practices were adopted by more than fifty percent of the respondents and perceived as effective.

V. CONCLUSION

The present study provides strong evidence supporting the scientific validity and community relevance of ethnomedicinal practices (EMPs) used for the treatment of anorexia and psychic disorders among tribal populations. The majority of the documented practices were found to be rational, as they are based on plant species rich in bioactive phytochemicals with proven pharmacological properties such as antioxidant, anti-inflammatory, and central nervous system-modulating effects.

The high adoption rates of all EMPs, along with their positive perceived effectiveness, reflect the deep-rooted trust and continued reliance of tribal farmers on traditional healthcare systems. Particularly, several practices demonstrated both high rationality scores and effectiveness indices, indicating a meaningful alignment between indigenous knowledge and scientific understanding. Although one practice was identified as irrational, its continued adoption suggests the influence of cultural beliefs and experiential learning, highlighting the need for awareness and scientific validation. Overall, the study emphasizes the importance of preserving and validating traditional knowledge while promoting further pharmacological and clinical

research. Such efforts would facilitate the safe integration of effective ethnomedicinal practices into broader healthcare systems, especially in underserved regions.

REFERENCES

- [1] Dhara, A.K., Pal, S. and Nag Chaudhuri, A.K. 2002. Psychopharmacological studies on *Tragia involucrata* root extract. *Phytotherapy Research*, 16(4):326-330.
- [2] Chuahan, N., Rajvaidhya, S. and Dubey, B.K. 2012. Pharmacognostical, phytochemical and pharmacological review on *Clitoria ternatea* for antiasthmatic activity. *International Journal of Pharmaceutical Sciences and Research*, 3(2): 398.
- [3] Husain, A.S., and Sundaramari, M. (2011). Scientific rationality and perceived effectiveness of indigenous technical knowledge on coconut (*Cocos nucifera* L.) cultivation in Kerala. *Journal of Tropical Agriculture*, 49, 78-87.
- [4] Kumar, G.P. and Khanum, F. 2012. Neuroprotective potential of phytochemical. *Pharmacognosy reviews*, 6(12): 81.
- [5] Kinsou, L.D.C., Assogba, M.F., Zinsou, M.D.C., Goudjo, A.I.M., Sezan, A. and Gbenou, J.D. 2019. Review of literature and phytochemistry screening of medicinal plants used in traditional treatment of brain diseases in Africa. *International Journal of Phytopharmacy*, 9(6): e5285.
- [6] Lekha, G., Mohan, K. and Samy, I.A. 2010. Effect of *Celastrus paniculatus* seed oil (jyothismathi oil) on acute and chronic immobilization stress induced in swiss albino mice. *Pharmacognosy Research*, 2(3): 169.
- [7] Sundaramari M., Priyanka R, Simi Asharaf and Rajaguru S. 2025. Scientific rationality, adoption and perceived effectiveness of ethno medical practices on hypotension in Idukki district Kerala. *International Journal of Agriculture and Food Science* 2025; 7(12): 65-67.
- [8] Sundaramari M, Priyanka R, Simi Asharaf, and Rajaguru S. 2025. "Scientific Rationality, Adoption and Perceived Effectiveness of Ethno Medical Practices on Cancer in Idukki District, Kerala, India". *European Journal of Medicinal Plants* 36 (5):107-114.

Table 1. Practice wise rationality, adoption and perceived effectiveness of EMPs on Anorexia and Psychic disorder

Sl.No	Ethno medicinal Practices	Rationality	Adoption		MPEI
			Number	%	
1	EMP-209. Bael (<i>Aegle marmelos</i> (L.) Correa) Paste prepared by grinding 3 gm leaves, 5 gm flower, 3 gm fruit, 1 gm root bark, and 7 gm stem bark from the same plant with a shelf life of 1 day, taken twice a day before sunrise and after sunset to cure madness.	2.35 IR	369	81.63	-

2	EMP-210. Herb of grace (<i>Bacopa monniera</i> (L.) Pennel) 13 ml whole plant extract applied on head and toes for 30 minutes to cure sleeplessness.	3.40 R	351	77.65	2.55 E
3	EMP-211. Intellect tree (<i>Celastrus paniculatus</i>) 130 ml decoction prepared by boiling 3 gm seeds (already soaked overnight) in 500 ml water with a shelf life of 1 hour, taken before bed to cure sleeplessness.	3.65 IR	333	73.67	2.36 E
4	EMP-212. Asian pigeon wings (<i>Clitoria ternatea</i> L.) The whole plant extract mixed with goat milk with a shelf life of 1 day, applied on the forehead, back portion of the head, and underfoot with 1-inch thickness, twice a day for seven days to cure madness.	3.07 R	377	83.40	2.30 E
5	EMP-213. Devils trumpet (<i>Datura metel</i>) The formulation was prepared by mixing fruit paste with 100 ml boiled cow's milk with a shelf life of 1 day, taken once in an empty stomach for seven days to cure madness.	2.77 R	387	85.61	2.43 E
6	EMP-214. Sugar cane (<i>Saccharum officinarum</i> L.) 700 ml stem extract mixed with few drops of lemon juice and a pinch of cardamom seed powder with a shelf life of 1 hour, taken once in an empty stomach to cure madness.	2.87 R	384	84.95	2.35 E
7	EMP-215. Gajapippali (<i>Scindapsus officinalis</i>) Powder prepared by grinding dried fruit and stem, mixed with honey and taken once daily. 5 gm powder mixed in 45 ml tender coconut water with a shelf life of 2 hours, taken in an empty stomach to cure anorexia.	2.65 R	350	73.00	2.26 E
8	EMP-216. Myrobalan (<i>Terminalia chebula</i>) Formulation prepared by grinding tender fruit powder mixed in 200 ml boiled milk and 10 gm palm candy with a shelf life of 2 hours, taken twice a day for 33 days to cure madness.	2.85 R	357	78.98	2.21 E
9	EMP-217. Indian stinging nettle (<i>Tragia involucrata</i> L.) 120 ml decoction prepared by boiling 15 gm root in 350 ml water with a shelf life of 1 day, taken once in an empty stomach for 31 days to cure madness.	3.22 R	445	98.45	2.46 E