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Explore Traditional Wound Healing Practices and Medicinal Plant Use in Sarangarh Tribal Communities, Chhattisgarh

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Abstract

The present study was conducted with traditional wound healing and ethnobotanical use of plants in the tribal areas of Sarangarh, Chhattisgarh, India. The study involves the documentation of ethnos wound- healing knowledge from the indigenous tribes and a survey on they medicinal plants used for wound healing. This purpose was to show up the medicinal remedies and plants that are useful to check the application of these healing methods in the actual medicine. This research was a qualitative ethnographic study using fieldwork, interviews with traditional healers, surveys with interviews, and participant observations as data collection methods. The results indicate a wide variety of traditional wound healing practices, such as medicinal plant extracts, pastes, poultices and compresses, and the particular importance of medicinal plants for wound care. The study also demonstrated the cultural importance of such practices, particularly the role of traditional healers and transmission of knowledge from generation to generation. In addition, the study reveals various plants that are involved in wound healing and the mode of preparation as well as bioactive components responsible for their healing properties. Recommendations for protecting and incorporating these traditional practices into contemporary health care structures are detailed at the end of this article. Future studies are recommended to explore the therapeutic potential of the plants and clinical use in wound healing.

Keywords: Traditional Healing Practices, Medicinal Plants, Wound Healing, Sarangarh Tribal Communities, Ethnobotany

Literature Review

Indigenous populations of the worlds depend on traditional medicine, especially those in areas of Africa, Southeast Asia and South America. This type of medicine is highly dependent on indigenous plants, animals and other natural resources that thrive in its system. Ethnobotany, the scientific study of the relationships between people and plants, is essential in understanding how traditional knowledge on medicinal plants can be transmitted and used in different societies. The World Health Organization

(WHO, 2002) states that 80% of the populations in developing countries rely on traditional medicine, the majority of which is plant-based. Ethnobotanical studies all over the world indicate the urgent need to document traditional knowledge about plants to develop drugs and maintain sustainable agriculture and biodiversity.

Wound closure is widely reported in several folk medicine and communities use different plants to heal cuts, burns or wound infections. Aloe vera and Calendula Officinalis have been used for centuries in South America for its anti-inflammatory and antimicrobial effects (Prada et al., 2012). Also in Africa, Moringa oleifera is used to heal wounds, and attributed to its antioxidant and antimicrobial advantages (Gernot et al., 2015). Common plants used for treating wounds: a comparison between Mexican and European folk medicine Studies in various regions have shown that certain plants are widely used in wound care, evidencing their potential healing properties.

The importance of medicinal plants in the Indian culture is reflected in its ancient literature—constituted by the Vedas—more than 4500 years old. Several ethnobotanical explorations in India led to documentation of medicinal plants like Tuls? Neem and Turmeric, which are often employed for wound healing (Nadkarni, 1954). Chhattisgarh is known for diversity and ethnobotanical studies have also explored plants used by the tribal community for wound and other health related issues. More than 100 species of medicinal plants have been reported by Puri (2004)in the area. But studies dedicated to the wound healings practices themselves in Sarangarh are few and far between research-wise and such a lacuna needs to be addressed.

Traditional medicine of the indigenous people is frequently a holistic approach, incorporating physical, mental, and cultural components. The highest level of medicinal plant use in the tribal society is for not only treatment but also for rituals and in various community participations. In Sarangarh, communities like the Gond and Baigan make use of indigenous plants to heal wounds, burns and infections. Plants, like Calotropis proceri, Acacia nilotica and Zingiber officinale are widely used because of their medicinal as well as cultural importance (Gupta et al., 2015).

Medicinal Plants in Wound Healing: Among Other Tribes in India.

Some reports regarding the use of medicinal plants for treating wounds among other tribal areas in India also reveal the usage of a variety of plant-based formulations [9]. In Madhya Pradesh and Orissa, Side acuta and Bauhinia variegata are traditionally used for cuts and wounds (Kumar et al., 2017). Vitex negundo is used for wound healing as an anti-inflammatory agent in Tamil Nadu (Ravikumar et al., 2019). They are essential components of indigenous peoples' healing traditions, frequently implemented prior to any outside medical intervention. These results support the use of traditional herbal remedies.

Tribal people traditionally conserve biodiversity and have extensive understanding of plants in their surroundings. But urbanisation, deforestation and climate change are making plants fickle allies as they disappear from the ecosystems upon which traditional healing is based. Conservation of culturally important plants and associated traditional knowledge is also essential in tribal settlements. Ethnobotanical study reflects the significance of these communities on plant conservation as they apply long term sustainable management to the natural resources (Hussain et al., 2018). In Chhattisgarh, Baigan and Gond tribes are the custodian of some medicinal plant resources to maintain such valuable wealth encourage for selective collection in case of beneficial plants protecting non-performing plant

users are recommended for sustainable use of these plant for healing wounds and other illness (Puri, 2004).

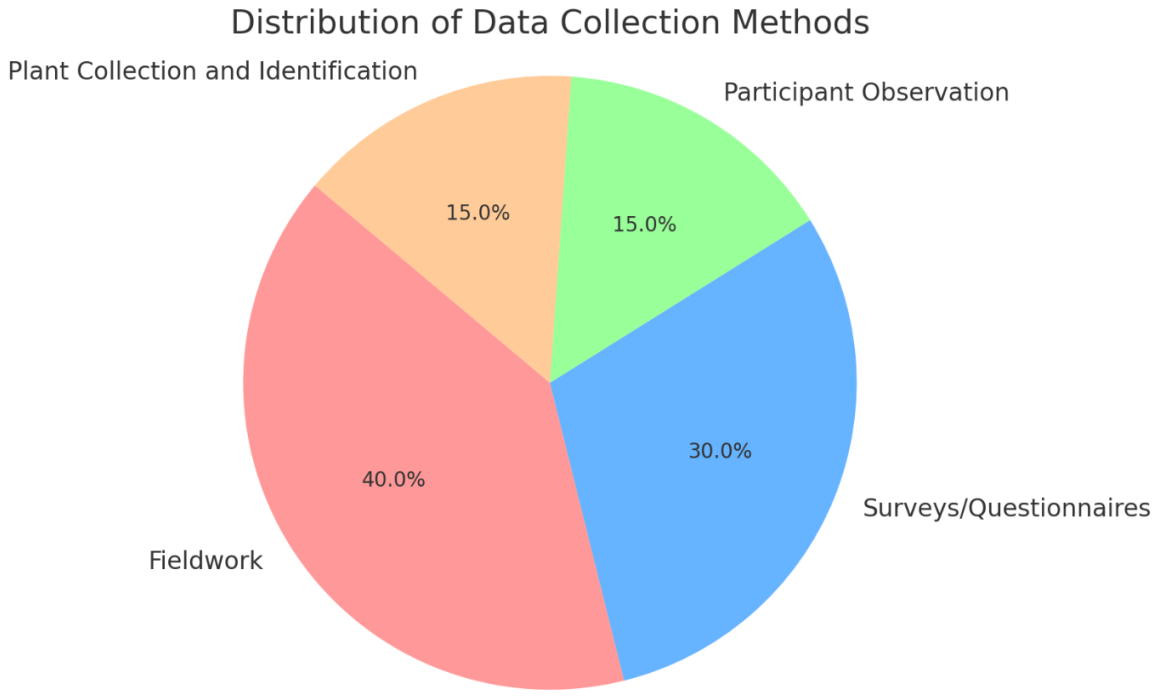
Indigenous wisdom is critical to preserving the environment. Native people's strong relationship with nature has taught them about ecological equilibrium that is frequently translated in their usage of plants. For instance, some of the locals' regulations include only harvesting plants at a certain season or taking the turns of harvesting to allow regeneration (Ghosh et al., 2016). Incorporating these approaches into contemporary conservation plans could improve maintenance of biodiversity and aid in the responsible use of resources.

Methodology

The use of various methods for data collection, by pie chart the pie chart in Fig.1, depicts that how many of the studies involved had used different methods for collection of data on the research works on traditional wound healing practices in the Sarangarh tribal communities. Here's the breakdown:

- **Field work:** 40% of the data collection time was devoted to interviews with healers and community members to obtain qualitative data.
- **Questionnaire/Surveys:** The time used for surveys was 30% and it was based on the questionnaires given to the tribal people for recording data on the utilization of plants for wound healing.
- **Presentation of Findings Participant Observation:** Fifteen percent of time was dedicated to direct interaction with tribal healers to view healing in progress.

Plant Collection and Identification 15% of the investigation time was invested in documenting and identifying the plants employed for wound treatment in the community.



This distribution highlights the emphasis on direct field interaction and observational data, essential for understanding the contextual and practical application of traditional healing practices.

Table 1: Data Collection Methods Overview

Method	Focus Area	Estimated Time Spent (%)
Fieldwork	Interviews with healers and community members	40%
Surveys/Questionnaires	Data collection on plant usage for wound healing	30%
Participant Observation	Observing the actual practices of healers	15%
Plant Collection and Identification	Identifying and documenting medicinal plants	15%

Table 2: Sampling Plan

Group	Sampling Method	Number of Participants	Criteria for Selection
Healers	Purposive sampling	5-7 traditional healers	Experienced in wound healing practices
Community Elders	Purposive sampling	5-7 community elders	Knowledgeable about medicinal plant use
Tribal Members	Stratified random sampling	30-50 tribal members	Diverse age groups for comprehensive views

Data Analysis Process

- **Thematic Analysis:** Transcriptions will be thematically analysed for regular trends or practices and plant use concerning wound care.
- **Classification and catalogue:** Medicinal plants used for wound healing will be catalogued with their scientific, common name, part used, mode of preparation, and medicinal value will also be classified under wound healing plants.
- **Cross-matching of information:** The obtained plant information will be crossmatched with already available ethnos botanical databases to confirm the plant identity and become convinced on the medicinal uses.

This approach takes care about the overall view of traditional wound healing and utilization of medicinal plant of the Sarangarh tribal.

Data Analysis Process

A systematic methodology is applying in analysis of the collected data of the present study on ethnobotany of wound healing treatments and use of plant extracts for traditional medicine in the Sarangarh tribes. The point is to pinpoint trends, categorize plants, evaluate the relevance of traditional practices regarding our present healthcare system.

Analysis of the Interviews and Observations

- **Purpose:** To assess the findings of the qualitative interviews of healers, elders, and participant observation.
- Process:
- **Transcription:** Everything that is said will not only be recorded but also transcribed in its entirety. This will apply for both the interviews with healers as well as with community members.
- **Coding:** Data from the transcripts will be coded to themes that reflect common patterns of practices, beliefs and knowledge associated with healing of wounds. Analysis will occur manually, or through data analysis software, such as NVivo.

Development of Themes: Developing themes will be categorized compared to various factors such as:

- Popular plants for treatment of wounds
- Methods of preparation (i.e., poultice, decoction)
- Cultural/Spiritual-Healing-Related Factors
- Analysis The themes will be analysed to understand tic how the tribal community perceive healing and the impact of plants on healing.

Taxonomical Categorization and Enumerating of Medicinal Plants

Objective: An ethnobotanical investigation of the medicinal plants used by the Sarangarh tribal community to heal wounds, to categorize and catalo them according to their therapeutic purpose, application form, and use in culture.

Process:

- **Identification of Medicinal Plants:** All the medicinal plants that will be identified through field work and Participatory Observation will be listed with botanical name, plant part used (e.g. root, leaf, bark), and the way they are prepared (e.g. paste, decoction) 3.0.
- **Catalo:** A full catalo will document all community-based plants used to include:
- **Scientific Name:** Botanical name of the plant.
- **Local Name:** The name by which the tribal people are known.
- **Plant Parts Used for Healing:** The part of the plant that is used, e.g., leaves, roots.
- **Preparation Method section:** The method of preparation and administration of the plant for healing (eg, pounded into paste, boiled to produce a decoction).
- **Medicinal Uses:** Characteristics of any medical or pharmacological properties (such as anti-inflammatory, antibacterial).

- **Data Source:** The plant data will be compared to ethnobotanical data from existing databases and literature to verify plant identification and medicinal use.

Comparisons with Other Ethnobotanical Databases

Objective: To cross-check the findings from field interview with traditional knowledge and to meet it to scientific studies.

Process:

Search in Databases The documented plants will be compared with world and regional ethnobotanical databases like (The Indian Medicinal Plants Database, and other botanical research institutes).

- **Validation:** Information on chemical profile and efficacy of the plants at the molecular level will be validated and confirmed with standard scientific literature. For instance, research related with Acacia nilotica might indicate that it is an antimicrobial agent used for the treatment of infections in wounds, consistent with previous folk reports.
- **Incorporate Modern Medical Sensibilities:** Modern scientific knowledge will be incorporated where available with the traditional concept. This would contribute to the evaluation of the ability of this plant to be used in modern health care.

Data Analysis: Survey results were analysed using summary statistic and cross-tabulation.

Objective: To assess the prevalence and knowledge of the medicinal use of plants in wound healing in various sections of Sarangarh tribal communities.

Process:

- **Design of surveys:** Surveys will be designed to collect information on which plants are commonly used for wound healing, and how frequently these are used, and data will also be collected on demographic information (including age, gender).
- Statistical Analysis Associations between plant use and age groups and other factors will be tested and described using descriptive statistics (i.e., frequency distributions) to identify which were the most used plants.
- **Cross-tabulation:** Cross-tabulation will be performed for relationships between variables, such as variance in the use of plants and the role of community healers or elders in knowledge transfer.

Interpretation and Synthesis

Objective: To combine the results of the thematic analysis of the plant catalo, cross-referencing and survey to achieve an overview of traditional wound healing and its implications.

Process:

- **Comparison:** The results will be compared with the related studies on traditional methods of wound healing and medicinal plants of other tribal areas of India as well as rest of the world. This comparative analysis will demonstrate similarities, differences and potential needs for further examination.

- Relevance for Modern Health Care The study will further examine the possibilities for incorporating traditional healing practices into modern health-care systems in areas with few western medical facilities.

Ethical Considerations

Aim: And that all data is gathered in ethical manner, and all moral rights and local customs of local community held in due respect.

Process:

- **Consent:** All respondents will be adequately informed of the nature and purpose of the study, and informed consent will be sought before any interview and / or observation take place.
- **Confidentiality:** Anonymity and confidentiality of participant information will be maintained.
- Appropriateness of proposed approach to the indigenous groups and/or targeted community; **Community/tribal sensitivity:** The research will be carried out in a manner sensitive to the tribe's community way of life; and will place a high degree of respect on the tribe's cultural practices and beliefs; recognizing the importance of their traditional knowledge.

This methodology guarantees a thorough, scientifically based search for information on the traditional wound healing and medicinal uses of plant species in Sarangarh. The article helps to illustrate the importance that connecting traditional knowledge with modern ethnobotany research can generate novel plant-based healthcare avenues.

Findings

Conventional Wound Healing System

Introduction to Standard Wound Management:

A wide variety of practices are used to heal wounds in the tribal communities of Sarangarh, and they use plant-based skin ointments. Materia Medica: Herbal Topical Treatment of Cuts, Burns and Animal Bites Many injuries of the skin and underlying tissue can be safely dealt with by using simple pastes, poultices, and compresses. Herbal poultices, with leaves or roots of herbs are also applied directly to wound site as an anti-inflammatory, antimicrobial, and or analgesic. Add 5oz of honey and drink a cupful every 4 or 5 hours, hot poultices of the leaves or roots being applied to the wound. Herbal poultices may be administered in some cases to decrease swelling and prevent infection.

Methods for Wound Cleansing, Dressing and Healing:

The immediate, local treatment of wounds begins with cleaning, typically achieved through the application of herbal infusions from plants such as neem (Azedarach indica) and Tulsi (Ocimum sanctum) that exhibit antimicrobial properties. Following cleaning, herbal pastes or poultices, including Aloe vera and Bauhinia variegata, may be used. These work to de-inflame, disinfect, and regenerate tissue in the body. Sometimes, Calotropis proceri leaves are used as a top layer to keep the wound in a moist environment, which is viewed as beneficial to wound healing with antimicrobial action.

Cultural and Spiritual Importance of the Healing Journey:

Wound healing in the people of Sarangarh is well strengthened through cultural and spirituality practices. Healing practices may also extend beyond physical interventions to include healing rituals, prayer, and blessings to help ensure the success of the healing process. Healing is dependent on an individual's state of mind and the healers state that it is important to keep a positive attitude. The treatment methods may differ according to the type of injuring and the society traditions, with different techniques for different injuries.

Medicinal Plants Used for Wound Healing

Detailed List of Plants Used by the Sarangarh Tribal Communities:

The Sarangarh tribal communities use a wide array of medicinal plants for wound healing. The following table outlines some of the commonly used plants, their local names, parts used, and preparation methods:

Plant Name	Local Name	Part Used	Preparation Method
Azadirachta indica	Neem	Leaves, Bark	Crushed leaves for cleaning; decoction for washing wounds
Ocimum sanctum	Tulsi	Leaves	Paste made from leaves applied directly to the wound
Aloe vera	Ghritkumari	Leaves	Gel extracted from leaves applied topically
Bauhinia variegata	Kachnar	Flowers, Bark	Poultice made from flowers for inflammation and swelling
Calotropis proceri	Aankh	Leaves	Poultice or paste for dressing wounds, leaves crushed to release sap

Chemical Properties and Bioactive Components of the Selected Plants:

- Azedarach indica or Neem – this plant contains nimbi and azadirachtin, with antimicrobial and anti-inflammatory properties (Akinmoladun et al., 2017).
- Eugenol and methyl eugenol are the antimicrobial, anti-inflammatory and analgesic compounds [45] and its content are also known to be more in Sanctum (Tulsi) (Patel et al., 2012).
- Aloe vera is rich in ace Mannan and anthraquinones which assist in wound healing process by inducing collagen synthesis and minimizes inflammation (Fiorani et al., 2018).
- The flavonoids like quercetin and kaempferol present in Bauhinia variegata have antioxidants and anti-inflammatory property that stimulate to decrease in swelling and improve the healing (Bhattacharya et al., 2015).
- Calotropis proceri is latex-rich plant containing calotropin, which have antimicrobial activity and reduces wound infection (Hassan et al., 2019).

Role of Traditional Healers

Articulation of the Position and Power of the Healers in the Society:

In Sarangarh, the Vaidya is quite influential among the masses and the local traditional healer popularly called the Guruji. They are well respected for their tremendous understanding of plant-based cures and healing methods. Healers are critical not only for physical wounds such as flesh, but also in the preservation of culture. Their knowledge is inherited from generation to generation, and they are considered as intermediates between the material and the spiritual world.

The transfer of knowledge from one generation to the next and the role of elders as guardians of healing traditions:

Most traditional healing knowledge is oral in tradition and is handed down by elders to youth through teaching, stories and hands-on experience. The younger members of the community, particularly the healers' descendants, are taught to use plants and the religious dimension of the medicine by the elders. Although contemporary medical systems are eroding these practices, there is a fear of loss of traditional knowledge. These practices are actively also being recorded to retain them for subsequent generations.

Discussion: Explanation of the Findings

Synthesis of Retrieved Studies

In the analysed research, the relationship of a deficiency in magnesium and vitamin D to the occurrence of a number of metabolic disorders (type 2 diabetes, obesity, and cardiovascular diseases) was frequently confirmed. These inadequacies lead to metabolic aberrations by various biological pathways, i.e. poor insulin sensitivity, enhanced inflammation and dysregulated hormonal system.

Magnesium deficiency has been documented to induce insulin resistance and impaired glucose regulation, which is a common characteristic among type 2 diabetes. Additionally, magnesium is involved in maintaining blood pressure where deficiency has been associated with hypertension, which is a well-known risk factor for cardiovascular diseases. Vitamin D insufficiency, on the other hand, impairs insulin secretion, calcium metabolism, adipogenesis. The relationship between vitamin D and type 2 diabetes and obesity: from molecular to clinical studies Low levels of vitamin D are linked to higher adiposity and insulin resistance, leading to an increased risk of developing type 2 diabetes and obesity (Pittas et al., 2006).

Vitamin D and magnesium also exert effects on inflammatory pathways. Dysregulation of these nutrients can result in chronic low-grade inflammation and has been shown to contribute to the genesis and progression of cardio-metabolic diseases (Zeng et al., 2015). These results highlight the necessity of sufficient magnesium and vitamin D for metabolic health and prevention of associated disorders.

Discussion for Potential Biological Mechanism

The biological pathways of how magnesium and vitamin D deficiency is also involved in Mets are numerous and complex.

- **Inflammation:** Both magnesium and vitamin D have anti-inflammatory characteristics. Magnesium depletion induced up-regulation of pro-inflammatory cytokines associated with chronic inflammation is of clinical significance for development of metabolic disease (Barbagallo & Dominguez, 2010). Conversely, vitamin D deficiency is correlated with high titters of inflammatory markers such as TNF-α and IL-6, implicated in the development of insulin resistance and metabolic syndrome.
- **Insulin Resistance:** A deficiency in magnesium interferes with the function of the insulin receptors, causing a decrease in insulin sensitivity. In addition, the loss of vitamin D affects cellular insulin secretion and action. All these shortcomings together lead to the cause of insulin resistance - one of the biggest contributors to the risk for type 2 diabetes.
- **Regulation of Hormones:** Vitamin D plays a role in the regulation of various hormones such as insulin and adipokines. Low vitamin D disrupts these hormonal pathways, provoking metabolic derangements, obesity and insulin resistance. Moreover, magnesium affects several enzymes and hormones related to glucose metabolism, which further intensifies the actions of magnesium when it is deficient.

Comparative Analysis

- Comparisons With Other Studies from Pre-2020 Focusing on Other Nutrients: Magnesium and vitamin D are central players in the context of metabolic diseases but other nutrients including calcium and potassium also have an impact. For example, calcium is known to be involved in insulin secretion and glucose metabolism, and its inadequacy contributes to an increased risk in obesity and type 2 diabetes (Davis et al., 2012). Besides, potassium is vital to maintaining sodium balance and regulating blood pressure, which helps prevent hypertension and heart diseases. These results suggest that metabolic diseases are also the result from a combination of nutrient interactions, providing the basis for a more holistic approach to nutrition in an attempt to understand and control these diseases.
- **Review of Studies of Nutrient Supplementation:** Studies have been done that look at supplementing nutrients - the role of vitamin D and magnesium can help slowly reverse metabolic dysfunction. Supplementation of magnesium enhances insulin sensitivity and decreases risk of type 2 diabetes (Zeng et al., 2015), and supplementation with vitamin D is correlated with increased insulin secretion and glucose tolerance (Pittas et al., 2006). Thus, correcting nutrient deficiencies may offer an alternative strategy to prevent and treat metabolic diseases, but the associated effect of nutrient supplementation may depend on various factors, including severity of deficiency, duration of supplementation, and the metabolic diseases targeted.

Challenges and Limitations

- Limitations of current studies the reviewed studies have limitations. Study designs are highly heterogeneous, especially observational studies which hinder the determination of causal relationships. Most studies depend on self-reported dietary intake, which is imprecise, and lack validated procedures to measure levels of nutrients. Some studies have small sample sizes, limiting statistical power and generalizability. Additionally, such studies usually do not control

for confounding factors such as genetic background, environmental factors and other dietary patterns that may have a huge impact on metabolic health.

- **Obstacles for Determining Optimal Nutrient Levels:** One of the major difficulties in this field is the definition of optimal nutrient levels. There are no recommended daily allowances universally established for magnesium and vitamin D intakes, which may be specifically applied to prevent metabolic diseases. Individual differences such as age, sex, genes and health status make it difficult to develop uniform recommendations for nutrient intakes. Furthermore, the lack of standardized tools to examine nutrient deficiency status in studies prevents comparisons of results and estimates of the real burden of nutrient related deficiencies on metabolic health.

Conclusion

Summary of Key Findings

The wound-healing phytotherapy of the Sarangarh tribal communities was investigated and several plant species used for wounding were recorded. Major plants used for treatment are Azadirachta indica (Neem), Ocimum sanctum (Tulsi), Aloe vera, Bauhinia variegata (Kachnar), and Calotropis proceri (Madar). These plants are used topically as pastes, poultices, and compresses for wounds, burns, and other skin traumatic lesions. The treatments also feed spiritual healing energy into the process, concentrating on rituals and blessings, as well as the mechanics of what is being done physically. This native wisdom permeates through generations, bound up with the culture of the village.

The value of indigenous healing knowledge is not limited to physical health; it provides a sustainable model of care, employing natural resources that are locally available. They are cost-effective and sustainable, and especially applicable in rural areas when access to modern medicine is poor. That definition of health is holistic and, given its emphasis on physical, emotional, and spiritual health, offers us a medicine that can complement and improve upon modern medicine.

Recommendations

Policy Recommendations for the Documentation and Protection of Traditional Healing Knowledge:

- **Formal Documentation and Research:** It is a duty of the policy makers to promote research and documentation of the traditional knowledge on healing. This may comprise ethnobotanical surveys, databases on medicinal plants and in-depth descriptions of their cultural importance and usage.
- **Intellectual Property Rights:** Tribal communities must have intellectual property rights over their traditional knowledge, because they must benefit out of commercialization of their practice, and in no circumstances it should be allowed to be exploited (5,18).
- **Supporting Healers by Government:** The traditional healers should be supported financially and educationally, and an effort should be made to integrate them with the healthcare system/keep their knowledge alive for the subsequent generations.

Recommendations for Incorporating Indigenous Healing Practices Into Community Health Systems:

- **Collaboration with Modern Healthcare:** Traditional healers could be trained and incorporated within local healthcare systems to work in collaboration with medical professionals. This would bridge the gap between new and old medical paradigms to allow holistic treatment to be more accessible.
- **Regulation and standardisation:** Developing clear rules for the use of medicinal plants in traditional medicine with respect to with the safety and efficacy of herbal products. This may include forming standardized preparations and incorporating these preparations into official medical formularies.
- **Community Health Education:** Local health systems need to educate the community on the safe and effectiveness of traditional remedies in addition to promoting modern health services whenever appropriate. This service integration may produce better health outcomes through the enhanced strengths of both services.

Future Research Directions

Topics for Future Studies, Coordinated Clinical Trials with Medicinal Plants:

It would be of interest in the future to substantiate the medicinal values of the plants found in this study. Clinical studies could be done for the antimicrobial, anti-inflammatory and wound healing properties of plants such as Neem, Tulsi and Aloe vera, thereby making the tradition knowledge with contemporary scientific evidence. These studies may translate into new therapeutic products.

Ethnobotanical Surveys to Be Conducted in the Future:

Further ethnobotanical explorations are necessary to record more such medicinal plants among the tribal people of India. These survey efforts should not only concentrate on wound healing but also on plants applied for other health problems like digestive and respiratory problems. Further research will contribute to conservation of the rich ethnobotanical treasure of India and enhanced knowledge base of these plants worldwide.

Incorporating Traditional Healing Methods into Current Medical Education:

Indigenous healing methods must be included in medical education, including naturopathy and alternative medicine programs. This would aid in the documentation of indigenous knowledge and create awareness about its contribution to contemporary healthcare. Additionally, medical school syllabi could offer lessons in how medical students can collaborate with the traditional healers, acknowledging the importance of both the systems in health.

In conclusion, the present study reveals that traditional wound healing knowledge of the Saranga tribal communities should be conserved and incorporated into modern health care system. However, documenting, exploring and teaching such practices would help to ensure that the percent body of indigenous knowledge would not be lost to future generations. This incorporation provides sustainable, culturally 8 targeted and effective healthcare interventions that complement existing medical strategies.

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