Indian Council for Cultural Relations
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IRSIKS 2025

3RD INTERNATIONAL RESEARCH SYMPOSIUM
on Multidisciplinary Approaches in Indigenous Knowledge Systems

ABSTRACTS

01st March 2025

"Preserving Heritage for a Better Tomorrow:
The Essential Role of Indigenous Knowledge for a Sustainable Future"

Gampaha Wickramarachchi University of Indigenous Medicine
Yakkala, Sri Lanka

3rd International Research Symposium on Multidisciplinary Approaches in Indigenous Knowledge Systems 2025

"Preserving Heritage for a Better Tomorrow: The Essential Role of Indigenous Knowledge for a Sustainable Future"

ABSTRACTS

01st March 2025

Gampaha Wickramarachchi University of Indigenous Medicine
Yakkala, Sri Lanka
In collaboration with
Swami Vivekananda Cultural Centre, High Commission of India, Colombo
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Message from the Vice Chancellor

Prof. Ranjana Wickrema Seneviratne

Vice-Chancellor

Gampaha Wickramarachchi University of Indigenous Medicine

It is with great pride and pleasure that I extend my heartfelt appreciation to all who have contributed to the success of the 3rd International Research Symposium on Multidisciplinary Approaches in Indigenous Knowledge Systems (3rd IRSIKS). This event marks another significant milestone in the continued journey of academic excellence at our esteemed institution.

Since its establishment, Gampaha Wickramarachchi University of Indigenous Medicine (GWUIM) has strived to foster an environment that celebrates both indigenous and modern knowledge systems. Our mission is to ensure that our academic programs contribute meaningfully to national development, driven by the effective application of innovative ideas. In this regard, IRSIKS has played an integral role in bringing together diverse scholars, researchers, and practitioners from various disciplines, all united by a shared vision of knowledge advancement.

This year's symposium continues to provide an invaluable platform for the exchange of groundbreaking research and innovative practices. It also serves as a reminder of the importance of interdisciplinary collaboration, which remains central to tackling the complex challenges our world faces today.

I would like to express my deepest gratitude to the organizing committee, the distinguished speakers, and all participants for their unwavering dedication and valuable contributions. It is through your collective efforts that this event continues to grow in importance, influencing the academic and research landscape.

I am confident that the discussions and ideas shared during this event will inspire new opportunities for growth and will further establish our university's role in shaping the future of research and knowledge-sharing globally.

Finally, I would like to take this opportunity to thank everyone involved for making the 3rd IRSIKS a resounding success, even under challenging circumstances. Your hard work and commitment to advancing research are truly commendable.

Wishing you all an enriching and thought-provoking symposium.

Message from Swami Vivekananda Cultural Centre, High Commission of India

Prof. Ankuran Dutta
Director
Swami Vivekananda Cultural Centre (SVCC)
High Commission of India, Colombo

Indigenous knowledge systems represent the accumulated wisdom, traditions, and practices of communities that have been passed down through generations. In the Indian context, Ayurveda, Yoga, and Meditation are profound examples of such knowledge, deeply rooted in the country's cultural and spiritual heritage. Ayurveda, one of the world's oldest medical systems, emphasizes a holistic approach to health and well-being, integrating herbal medicine, diet, and lifestyle practices to promote physical and mental balance. The classical texts, such as *Charaka Samhita* and *Sushruta Samhita*, have significantly influenced both traditional and modern medicine, offering insights into disease prevention, longevity, and natural healing methods.

Similarly, Yoga, as documented in the *Yoga Sutras* of Patanjali, extends beyond physical postures (*asanas*) to encompass breath control (*pranayama*), meditation (*dhyana*), and ethical principles aimed at achieving self-awareness and spiritual enlightenment. This practice, which has gained global recognition, is now being extensively researched for its therapeutic benefits in managing stress, anxiety, and chronic illnesses. Meditation (Dhyana), particularly techniques like *Rajayoga, Vipassana* and *Transcendental Meditation*, has been an integral part of Indian philosophical traditions, offering a pathway to mental clarity, emotional stability, and overall well-being.

The integration of these indigenous knowledge systems into modern healthcare and wellness practices highlights their enduring relevance. As global interest in sustainable and holistic healing grows, Ayurveda, Yoga, and Meditation continue to be significant contributors to alternative medicine and integrative healthcare approaches. Preserving and promoting these traditions through scientific validation and interdisciplinary research ensures their applicability in contemporary contexts, bridging the gap between ancient wisdom and modern scientific advancements.

I wish the 3rd International Research Symposium on Multidisciplinary Approaches in Indigenous Knowledge Systems – 2025**,** organised by Gampaha Wickramarachchi University of Indigenous Medicine in collaboration with Swami Vivekananda Cultural Centre (SVCC) of the High Commission of India, Colombo**,** a great success in fostering scholarly discourse and advancing research on indigenous knowledge systems. The symposium's theme, *"Preserving Heritage for a Better Tomorrow: The Essential Role of Indigenous Knowledge for a Sustainable Future,"* underscores the critical need to integrate traditional wisdom with contemporary scientific advancements to address global challenges. This platform will undoubtedly facilitate interdisciplinary collaboration, promote evidence-based policymaking, and contribute to the preservation, documentation, and revitalisation of indigenous knowledge. May the symposium serve as a catalyst for meaningful discussions and innovative solutions, ensuring that traditional knowledge continues to play a vital role in sustainable development and cultural heritage conservation.

Message from the Conference Chair

Prof. (Mrs.) K.P.P. Peiris
Dean
Faculty of Indigenous Medicine

It is with great honour and privilege that I extend my warmest greetings to all participants of the 3rd International Research Symposium on Multidisciplinary Approaches in Indigenous Knowledge Systems (IRSIKS-2025), organized by the Faculty of Indigenous Medicine, Gampaha Wickramarachchi University of Indigenous Medicine (GWUIM), Sri Lanka in collaboration with Swami Vivekananda Cultural Centre (ICCR Branch), High Commission of India, Colombo. This symposium serves as a vital platform for scholars, researchers, and practitioners to engage in a meaningful discussion on the role of Indigenous knowledge systems in shaping a sustainable future.

The theme of this year's symposium, "*Preserving Heritage, Shaping Tomorrow: The Imperative of Indigenous Knowledge for Future Sustainability in Harmony with Nature*," highlights the need to integrate traditional wisdom with contemporary scientific advancements. As the world faces complex challenges in health, environmental sustainability, and social well-being, Indigenous knowledge offers invaluable insights that can contribute to innovate and to provide holistic solutions.

IRSIKS-2025 aims to foster interdisciplinary dialogue, strengthen academic and professional networks, and encourage research that preserves and applies Indigenous knowledge in modern contexts. By facilitating discussions across multiple disciplines, this symposium aspires to bridge the gap between traditional practices and contemporary science, ensuring that the wisdom of our ancestors continues to benefit future generations.

Let me gratefully acknowledge the valuable advice and guidance of the Professor Ranjana Wickrema Seneviratne, Vice-Chancellor, Registrar and all administrative staff of GWUIM, Deans of the faculties and academics of the university. The Keynote Speakers' expertise and insights will leave an indelible mark, setting the stage for the intellectual discourse that has defined this symposium, I am grateful for their dedication and commitment. This symposium represents the culmination of months of hard work, dedication and profound commitment by the IRSIKS 2025 organizing committee, so I am thankful for their continued support and dedication in organizing this event. I also extend my appreciation to the sponsors whose generous support has been instrumental in making this event possible and successful.

I extend my heartfelt appreciation to all researchers, presenters, and attendees for their invaluable contributions to this event. Moreover, my profound thanks also go to the reviewers, the session chairs and the evaluators for diligently maintaining this symposium's scientific integrity and balance.

May this symposium inspire new ideas, collaborations, and initiatives that advance the recognition and application of Indigenous knowledge worldwide.

Message from the Conference Co-Chair

Prof. A.A.J. Pushpakumara
Department of Shalya Shalakya
Faculty of Indigenous Medicine

On the occasion of the 3rd International Research Symposium on Multidisciplinary Approaches in Indigenous Knowledge Systems (IRSIKS 2025), organized by the Faculty of Indigenous Medicine, Gampaha Wickramarachchi University of Indigenous Medicine, it is my great honour and pleasure to extend my heartfelt congratulations and best wishes to all participants, organizers, and stakeholders.

This premier platform brings together a diverse group of researchers, academics, and professionals from across the globe to explore, share, and discuss advancements in indigenous knowledge systems. The symposium's central theme, "*Preserving Heritage for a Better Tomorrow: The Essential Role of Indigenous Knowledge for a Sustainable Future*," reflects the critical importance of traditional knowledge in addressing contemporary challenges in health, environmental sustainability, and social well-being.

The symposium's wide-ranging thematic focus—including Indigenous Medicine and Healthcare, Agriculture and Biodiversity, Environmental Management, Cultural Heritage, Technological Innovations, Yoga, Tourism, Hospitality, and beyond—underscores the multidisciplinary significance of indigenous knowledge. These discussions not only highlight the enduring relevance of traditional practices but also explore innovative ways to integrate them into modern contexts for a sustainable future.

I extend my sincere gratitude to the Faculty of Indigenous Medicine for their unwavering dedication and meticulous efforts in organizing this remarkable event. Your commitment to fostering dialogue, promoting collaboration, and preserving cultural heritage is both commendable and inspiring. I also deeply appreciate the contributions of all stakeholders who have played a vital role in ensuring the success of this symposium.

To all participants, I wish you a fruitful and enriching conference. May the discussions, exchanges, and collaborations that emerge from this forum pave the way for groundbreaking advancements in preserving and applying indigenous knowledge systems for the betterment of society and the environment.

Congratulations on this commendable initiative, and best wishes for an impactful and rewarding event.

Message from the Symposium Secretary

Dr. N.S. Abegunasekara
Lecturer
Department of Ayurveda Basic Principles
Faculty of Indigenous Medicine

It is with great pleasure that we welcome you to the 3rd International Research Symposium on Multidisciplinary Approaches in Indigenous Knowledge Systems (3rd IRSIKS – 2025) (IRSIKS 2025). The event fostered strong collaborations among academics, professionals, and institutions, setting the stage for future research endeavours.

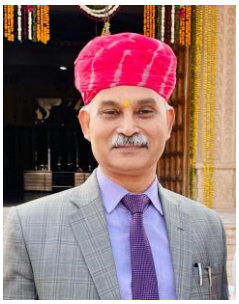
As a young university, it remains a challenge to establish a firm foothold in the international research community. However, with our commitment to academic excellence and high-quality research, we continue to refine our symposium to meet indexing standards and uphold credibility. This year, we strive to broaden our international reach and encourage greater interdisciplinary collaborations. The symposium will once again feature cutting-edge research, diverse academic perspectives, and opportunities to explore multidisciplinary approaches to indigenous knowledge systems.

On behalf of the organizing committee, I extend my sincere gratitude to the main collaborator of the event, Swami Vivekananda Cultural Centre, High Commission of India, Colombo and to all the sponsors, all researchers, reviewers, and participants who have contributed to making this event a success. Your unwavering support and engagement are what make IRSIKS a growing hub of intellectual exchange.

I warmly invite you to stay connected with us and continue this journey of academic excellence. May IRSIKS 2025 inspire new ideas, collaborations, and pathways for advancing indigenous knowledge systems.

Wishing you all success in your research endeavours.

Message from the Guest of Honour



Prof. (Vaidya) Pradeep Kumar Prajapati
Vice Chancellor
Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University

It is with great honour and privilege that I extend my warmest greetings to the organizers, esteemed scholars, researchers, and participants of the 3rd International Research Symposium on Multidisciplinary Approaches in Indigenous Knowledge Systems (IRSIKS 2025), hosted by the Gampaha Wickramarachchi University of Indigenous Medicine, Sri Lanka.

This symposium serves as a significant platform for intellectual discourse, fostering collaboration among experts and researchers dedicated to exploring the rich wisdom of indigenous knowledge systems. The holistic principles embedded in traditional medical sciences, including Ayurveda, Siddha, Unani, and other indigenous healing traditions, hold immense relevance in addressing contemporary health challenges and promoting global wellbeing.

As the custodian of Dr. Sarvepalli Radhakrishnan Rajasthan Ayurveda University, Jodhpur, I firmly believe that strengthening the scientific foundation of traditional knowledge through multidisciplinary approaches is imperative for integrating these time-tested systems with modern advancements. The fusion of ancient wisdom with contemporary research methodologies will not only enhance the credibility of indigenous practices but also pave the way for innovative solutions in healthcare, sustainability, and societal well-being. Dr. Sarvepalli Radhakrishnan Rajasthan Ayurveda University, Jodhpur take various initiatives like *Suvarnaprashana*: An ancient immunity booster was distributed in paediatric population of Jodhpur city last 9 years. Its amazing results such as immunity boosting, improved recurrent RTI infections, enhances growth & development, intelligent quotient and improve neurological conditions proved its significance in today prospective. Till today we, DSRRAU had been given *Suvarnaprashana* to more than 1.1 lakhs children. Beyond this Ayurveda University take other initiatives like Autism & Cerebral Palsy, Unit, Madhumeha Unit and Deaddiction Unit which proving significance contribution in the service of humanity. Lots of case studies has been published by faculties of Ayurveda University which shows effectiveness of indigenous medicines over the disease in today's perspectives.

I commend the Gampaha Wickramarachchi University of Indigenous Medicine for its dedication to advancing indigenous knowledge and organizing this prestigious symposium. May this gathering of scholars inspire meaningful discussions, encourage groundbreaking research, and foster enduring collaborations for the global recognition and integration of traditional knowledge systems.

Wishing IRSIKS 2025 great success and fruitful deliberations.

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Prof. Sameera R. Samarakoon

Institute of Biochemistry, Molecular Biology and Biotechnology

University of Colombo

CURRENT TRENDS IN REVERSE PHARMACOLOGY IN DRUG DISCOVERY

Abstract

Reverse pharmacology has emerged as a transformative approach in modern drug discovery, particularly in the search for safe and effective therapeutics derived from traditional medicine. Unlike conventional drug development, which starts with molecular targets and progresses through preclinical and clinical trials, reverse pharmacology begins with clinically observed efficacy and safety from traditional knowledge and empirical evidence, followed by mechanistic validation and molecular characterization. This approach significantly accelerates drug development by reducing time, cost, and failure rates in early-stage discovery.

Recent advancements in reverse pharmacology are being driven by integrative methodologies, including artificial intelligence (AI)-driven data mining, high-throughput screening, and systems biology. The combination of network pharmacology, metabolomics, and computational modeling enables the identification of active constituents, their mechanisms of action, and potential synergies within complex botanical formulations. Additionally, the application of CRISPR-based gene editing and organ-on-a-chip models is refining target identification and validation.

The approach has gained momentum in fields such as oncology, neurodegenerative disorders, and metabolic diseases, where traditional medicine has long reported therapeutic benefits. Furthermore, regulatory frameworks are evolving to accommodate reverse pharmacology-based drug approvals, fostering global interest in evidence-based validation of natural products. The convergence of ethnopharmacology, omics technologies, and AI-driven analytics is shaping a new era of drug discovery, where traditional knowledge and modern science are harmonized to accelerate the development of innovative therapeutics.

This keynote highlights the latest trends in reverse pharmacology, its impact on natural product drug discovery, and future directions for integrating cutting-edge technologies to enhance its translational potential in modern medicine.

Sessions

Indigenous Medicine and Healthcare

Dr. Prasanna K. Santhekadur, PhD
Professor
Department of Biochemistry
JSS Medical College, JSS AHER, Mysore, Karnataka, India

NUTRACEUTICALS AND NATURAL COMPOUNDS FOR SUSTAINABLE HOLISTIC HEALTH AND WELLNESS

Abstract

Nutraceuticals are essential dietary or food constituents that provide various medicinal benefits other than their basic role of nutritional supplement. The potential benefits of these foods are due to the presence of many Vitamins, Anti-oxidants, Prebiotics and Probiotics, Flavonoids, Carotenoids, Phytonutrients, Dietary enzymes, and Dietary fibers (Short Chain Fatty acids like Butyrate and Propionate) etc. Almost all commercially available pharmaceutical drugs have one or the other types of side effects. The most common over-the-counter drugs including routine paracetamols, aspirin, and Nonsteroidal anti-inflammatory drugs (NSAIDs) can cause minor side effect like nausea, diarrhoea, headache to major side effects like liver damage, gastrointestinal issues, and kidney damage if not used them properly.

Therefore, it is critical to employ dietary nutraceuticals and natural compounds that are both feasible and safe. In recent years, nutraceuticals and natural compounds-based medications with astonishing chemical diversity have been widely studied for their potential health beneficial effects.

Holistic health and wellness involve complementary and natural health, or alternative health which helps in promoting harmony and balance between the individual (health, wellness and longevity), planet, and society. Westernisation and urbanisation have led to the global warming, or climate change. Climate change has a significant harmful impact on human health and wellbeing. Along with climate change, western and sedentary lifestyle can undermine decades of progress in global health. This indirectly threatens and hinders the basic elements of good health, such as clean air, safe drinking water, and nutritious food. These Nutraceuticals and Natural Compounds play a major role in ameliorating metabolic syndrome and also associated cancers and act as major players of sustainable holistic health and wellness.

EVALUATE THE EFFICACY OF *THAMBULADI NASYA*, *KUSHTADI THALAM*, AND *PATHYAKSHADHATHRI KASHAYA* IN THE MANAGEMENT OF MIGRAINE - A CASE STUDY

RLYU Rathnayayaka[1], WMDS Perera [2*] and CSW Yapa[1]

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Abstract

Acharya Sushruta classifies *Ardhavabhedaka* as one of the 11 *Shirorogas* and a *Tridoshaja vyadhi*, which correlates with migraine, as both are marked by sudden, unilateral headaches, vertigo, and episodic occurrences affecting 10-20% of the population globally. This case study evaluates the effectiveness of an Ayurveda treatment approach using *Nasya*, *Thalam*, and a decoction for migraine management. A 25-year-old female, pre-diagnosed with migraine for five years, presented with episodic, right-sided headaches (20-25 episodes/month, each lasting 18 hours with a Visual Analogue Scale (VAS) score of 10/10), photophobia, vertigo, and insomnia without any significant comorbidities. She underwent *Avapeedana Nasya* with *Piper betle*, *Leucas zeylanica*, *Zingiber officinale*, *Allium sativum*, Jaggery, and Bee honey, along with *Thalam* (with *Glycyrrhiza glabra*, *Saussurea lappa*, and Indian Sarsaparilla mixed with Ghee, Sesame oil, and Vinegar) and *Pathyakshadhathri* decoction. The treatment lasted for two weeks, followed by a two-week evaluation period, tracking symptoms via a patient diary, VAS, and Headache Disability Index (HDI). Post-treatment, photophobia, and vertigo were resolved completely, insomnia improved by 80%, and headache frequency was reduced to 1-2 episodes/month, with a VAS score of 1/10. HDI scores dropped from 85% to 5%. The chronicity of migraine, together with remission and relapse and the limited follow-up duration in this study, limits the evaluation of long-term effectiveness. The lack of trigger assessment limits a comprehensive understanding. While Ayurveda shows potential for symptom relief, the findings from this single case are not generalizable. Future studies should include larger cohorts, longer follow-ups, and trigger assessments to validate treatment approaches for *Ardhavabhedaka*.

Keywords: *Ardhavabhedaka*, Migraine, *Nasya*, *Shiroroga*, *Thalam*

A COMPARATIVE STUDY ON UTILIZATIONS OF EDIBLE INDIGENOUS PLANTS IN SRI LANKA: A SURVEY CONDUCTED IN BADULLA DISTRICT

WMK Chamalshi[1*], and SL Wewalwala[1]

[1]Department of Ayurveda Basic Principles, Faculty of Indigenous Medicine, Gampaha Wickramarachchi University of Indigenous Medicine, Sri Lanka.

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Abstract

In Sri Lanka, the ongoing humanitarian crisis accompanying food insecurity is precipitated by high inflation and economic crisis. The current tendency is towards identifying dietary supplementations to counterpart food shortage by utilizing indigenous knowledge. Sri Lankan indigenous medical literature documented in *Dambadeni*, *Kotte* and *Anuradhapura* eras has stockpiled a vast spectrum of edible plant materials which is not sufficiently accessed. This study was designed to document the utilizations of indigenously indicated plant materials with reference to both indigenous and Ayurveda literary sources, along with opinions of the common public to facilitate the concept of evidence-based dietary regimens for ailments. The study consisted of a descriptive literature survey and a community-based survey. A questionnaire was prepared relevant to 40 plant materials, which were recruited based on referred literary sources. The community-based survey was conducted in Badulla District with participation of 60 elderly participants at and above 60 years of age, selected via the snowball method. Collected data, via the documentation of referred literature and participant interviews, were manually tabulated, and the human intervention method was applied in comparative analysis. It was obvious that the relevant knowledge documented in referred literature still prevails among the elderly public based on the findings of community-based ethno-medico-botanical survey. Indications were documented for 40 plants with comparative documentations of indications for 25 plants, and based on the findings, *Patyāpatya* have been documented for 40 ailments. Future research endeavours should be aimed at including aspects of identification, detecting habitats and food preparation methods of documented plants.

Keywords: Medicinal properties, Nutraceuticals, Edible plants

COMPARATIVE REVIEW OF THE BENEFITS OF GOAT MILK OVER COW MILK IN BRONCHIAL ASTHMA (*IYA IRRAIPU NOI*) MANAGEMENT

D Sritharan[1*] and B Mithurendran[1]

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Abstract

In Siddha medicine, *Iya Eraippu noi* (bronchial asthma) is a *Kapha rogam*, comparable to bronchial asthma in modern. There is a tightness and discomfort in the chest and difficulty in breathing. It is often exacerbated by dietary allergens, including cow milk proteins, dust, pollen, etc. These are known triggers for asthma symptoms. The objective of this study is to compare the nutritional composition, allergenic potential, and therapeutic benefits of goat milk in managing asthma symptoms. This comparative study was conducted using Siddha texts, including *Pathartha Guna Sinthamani*, *Gunapadam Thathujeeva Vagupu*, and *Noi Illa Neri*, along with literature from Scopus, PubMed, and Google Scholar. Goat milk contains an abundance of different macro and micro-nutrients. Goat milk differs significantly from cow milk in its composition, featuring smaller fat globules, higher concentrations of short and medium-chain fatty acids. Three fatty acids, caproic, caprylic and capric acid, have great medicinal values for patients suffering from bronchial asthma condition compared with other milk. Goat milk contains a higher amount of Ca, Mg and P than cow milk, but vitamin D, vitamin B_{12}, and folate contents are less. This review examines goat milk as a hypoallergenic and bioactive alternative to cow milk for bronchial asthma management and lower levels of allergenic proteins such as β-lactoglobulin and αs1-casein. According to Siddha texts, goat milk helps to alleviate *Iya Eraippu noi* symptoms by pacifying the *kapha* dosha and balancing vitiated *vata* and *pittha dosha*, thereby reducing the severity of the condition. These characteristics make goat milk easy to digest, immune modulation, and more effective in reducing inflammation. While cow milk proteins are known to exacerbate allergic responses and bronchial asthma symptoms. Clinical evidence and traditional insights support goat milk as a valuable nutritional aid in managing bronchial asthma, offering a superior alternative to cow milk for individuals with sensitivities. Further clinical studies can be conducted to explore the potential benefits and efficacy of goat milk in managing asthma and other related conditions.

Keywords: Inflammation, hypersensitivity, Immune modulation, *kapha dosha*

REVIEW ON THE THERAPEUTIC EFFECTIVENESS OF SELECTED MEAT TYPES IN THE MANAGEMENT OF ANIDRĂ

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Abstract

Insomnia is a condition where a person has trouble falling asleep, staying asleep or waking up too early and not being able to fall back asleep. In Ayurveda, insomnia (known as "*Anidrā*") is believed to be caused by an imbalance in the body's *dosha*, *Vāta*, *Pitta* and *Kapha*, which can affect the mind and nervous system. The objectives of this review were to identify the relationship between dosha pertaining to insomnia and meat, compare the effectiveness of *guruvadi guna* and *pancha padartha* of meat on the management of insomnia and analyse the correlation of chemicals causing sleep and their availability in meat. Information regarding this review was collected after studying journal articles, Ayurvedic texts, literature reviews, web sources and clinical evaluations. Acharya Caraka has mentioned that the meat of *Ānupa*, *Grāmya* and *Jalacara* causes sleep, while Acharya Sushruta has mentioned that the flesh of animals of the *Viṣkira* and *Vilèshaya* class can be used as *nidrānāśana cikitsā.* Ayurveda sees meat as a heavy, hot and *Snigda* food that can induce sleepiness by aggravating *vāta* and *pitta* doshas. This concept is supported by the *Sāmānya-Visèṣa Siddhānta*. Meats containing *madhura rasa* and *uṣṇa vírya* pacify *vāta dosha*, while meats with *śíta vírya* pacify *pitta dosha*. Modern science explains that meat provides sleep-related compounds like tryptophan, melatonin, serotonin, iron and zinc, magnesium, omega-3 fatty acids, vitamin D and vitamin B6. Through the study, it can be concluded that the consumption of certain meat types is good for resolving insomnia, according to Ayurveda and modern views.

Keywords: *Anidrā*, Insomnia, Meat, Ayurveda, Modern Science

HARNESSING MEDICINAL PLANTS FOR DIABETES MANAGEMENT THROUGH FUNCTIONAL FOODS AND NUTRACEUTICALS - LITERATURE SURVEY

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Abstract

Sri Lanka possesses a rich biodiversity of flora and fauna, offering promising therapeutic potential since indigenous plants have been successfully used for centuries in Sri Lankan traditional medicine for diabetes management. Diabetes mellitus; a condition of growing clinical concern with rising incidence worldwide, and Sri Lanka has reported a prevalence of 23% in recent years among those aged 20–79 years. This comprehensive review investigates the potential of incorporating indigenous medicinal plants with antidiabetic properties in functional food development with a focus on diabetes management. The review was conducted based on 35 indexed journal articles published during the past 24 years sourced from Research Gate, PubMed and Google Scholar using keywords such as Antidiabetics, Functional foods, Indigenous plants and ethnobotany. Approximately 150-200 plant species were identified with antidiabetic properties. *Averrhoa carambola* (Star fruit), *Costus speciosus* (Crape ginger), *Salacia reticulata* (*Kothala himbutu*), *Aegle marmelos* (Bael), *Cinnamomum verum* (Cinnamon) and *Coccinia grandis* (Ivy gourd) were reported as medicinal plants frequently used in functional food products developed for diabetes management. The developed functional food products include herbal tea, powders, dehydrated products, soft drinks, and capsules. Future developments include prebiotic smoothie mixes, low-glycaemic snacks, infused oils, and probiotic beverages. These innovations aim to combine traditional knowledge with modern food science, offering culturally relevant and sustainable solutions for diabetes management.

Keywords: Diabetes management, Functional foods, Indigenous medicine, Nutraceuticals

BLENDS OF *Cocos nucifera* AND GLYCOPROTEIN CONJUGATES FOR THE pH RESPONSIVE CONTROLLED DELIVERY OF DESFERRIOXAMINE MESYLATE

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Abstract

Blends of *Cocos nucifera* (CN) and glycoprotein-conjugates are ideal hydrophilic drug carriers which are used in ayurvedic pharmaceutics for the formation of improved drug formulations due to their biocompatibility, biodegradability and high cell permeability. Considering these facts, a hydrophilic drug, desferrioxamine (DFO), the gold standard iron chelator for the treatment of iron overload conditions, was encapsulated in a CN, chitosan (CTS) and β-lactoglobulin (β-Lac) blend (DFO_CN_CTS_β-Lac). The main objective of this study is to prepare a controlled release DFO nanocomposite in order to use it in the orally administered pathway in the future. The synthesized nanocomposite was characterized using a Scanning Electron Microscope, Particle Size Analyzer and Fourier Transform-Infrared Spectrometer. The drug loading capacity (298±8.6 mg/g) and drug entrapment efficiency (89.4±2.6%) were determined using potentiometric titration. The drug release kinetics were analyzed at physiological (7.4) and intestinal pH (5.8) values. The drug release pattern of DFO dissolution evidences a sustained release of DFO. The kinetic model, Peppas– Sahlin, provided the best correlation for the dissolution of DFO at both the pH values and indicated the combined effect of Fickian diffusion and polymer-relaxation mechanism for the release of DFO. According to in vitro blood compatibility assays, the nanocomposite was found to be heamocompatible. These results suggest that the DFO_CN_CTS_ β-Lac nanocomposite is a promising candidate for the formation of pH-responsive, controlled-release DFO modularity.

Keywords: Desferrioxamine, controlled release, nanocomposite, Cocos Nucifera, glyco conjugates of protein

INVESTIGATING THE ANTI-DIABETIC POTENTIAL OF SRI LANKAN MEDICINAL PLANTS THROUGH α-AMYLASE INHIBITION AND ANTIOXIDANT ACTIVITY

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Abstract

Diabetes mellitus (DM) is a global health concern and a major cause of mortality. Managing DM often involves inhibiting α-amylase, which breaks down carbohydrates to reduce post-prandial blood glucose levels. Sri Lankan traditional medicine utilizes various medicinal plants with α-amylase inhibitory and antioxidant properties to treat DM. This study evaluated the α-amylase inhibitory and antioxidant potential of twelve medicinal plants: *Osbeckia octandra* (*Heenbovitiya*), *Gymnema sylvestre* (*Masbedda*), *Momordica charantia* (*Karavila*), *Azadirachta indica* (*Kohomba*), *Salacia reticulata* (*Kothala Hibutu*), *Costus speciosus* (*Thebu*), *Passiflora suberosa* (*Wild Passion*), *Scoparia dulcis* (*Wal Koththamalli*), *Cinnamomum zeylanicum* (*Kurundu*), *Coccinia grandis* (*Kowakka*), *Senna auriculata* (Ranawara), and *Momordica dioica* (*Thumba Karavila*). Using the starch-agar diffusion method, plant extracts were screened for α-amylase inhibitory activity, and inhibition was subsequently quantified spectroscopically, with acarbose (IC_{50} = 0.085 mg/mL) as the positive control. The methanolic extract of *Ranawara* flowers showed the highest inhibition in the starch-agar method (57.1%), followed by *Kurundu* bark (33.3%). Only the aqueous extract of *Kothala Hibutu* showed higher inhibition (23.8%) when compared to others. *Ranawara* flowers (60.8%; IC_{50} =3.49mg/ml) and *Kurudu* bark (53.4%; IC_{50} =1.18mg/ml). The aqueous extract of *Ranawara* flowers (32.8%; IC_{50} =0.79mg/ml) and *Wal koththamalli* (72.8%; IC_{50} =19.95mg/ml) demonstrated notable activity. High phenolic content was observed in methanolic extracts of *Heenbovitiya*, *Wal koththamalli* and *Thebu* and aqueous extracts of *Ranawara* flowers, *Kurundu*. Comparison of inhibitory activity with acarbose highlighted the strong inhibitory potential of *Ranawara* flowers (aqueous) and *Kurundu* bark (methanolic). These findings support the therapeutic potential of these plants and suggest further research to identify their active compounds.

Keywords: α-amylase, Diabetes mellitus, Traditional medicine, Medicinal plants, Total phenolic content

STUDIES ON NUTRITIONAL ANALYSIS, PHYTO- CHEMICAL SCREENING AND MEDICINAL USES OF *SHARBAT E GUDHAL*

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Abstract

Sharbat e Gudhal is an Unani nutritive syrup with numerous health benefits. This medicinal syrup is effective as an exhilarant, cardiac tonic, reducing palpitation and tranquilizer. The main ingredient of this medicine is *Gul e Gudhal* (Flower of *Hibiscus rosa sinensis*). This is a horticultural flower, abundantly growing all over the world and used as medicine in various disease conditions. This study aims to explore nutritional analysis and phytochemical screening of *Sharbat e Gudhal* as a nutritive and medicinal syrup. Proximate analysis has been conducted in triplicate samples as described by AOAC 2000. 999.10, 999.11. A phytochemical screen was done with the references of authentic methods. Classical Unani books and scientific publications were reviewed for the culinary and medicinal uses of the *Sharbat e Gudhal*. The syrup contains fibre, protein, fat and carbohydrate in the amounts 0.23 g/100 g, 0.3 g/100 g, 0.07g/100 g, and 62.18 g/100 g, respectively. It consists of Fe, Zn, Ca, P, vitamin C and folates. Phytochemical screening reveals that the syrup is rich in alkaloids, flavonoids, terpenoids and cardiac glycosides and provides health benefits as a remedy to treat common ailments. Ancient literature mentioned that the *Gul e Gudhal* is effective in cardiac ailments, hair growth, fever, anti-fertility, wound healing, etc. The scientific experiments proved that the *Gul e Gudhal* is anti-anaemic, anti-cancer, cardiac tonic and hepatoprotector. *Sharbat e Gudhal* is a nutritive syrup with macro and micronutrients. The various phytochemicals present in it prove its medicinal value. Therefore, this ancient syrup could be promoted as a healthy beverage (functional food) for the management and prevention of diseases.

Keywords: *Sharbat e Gudhal*, *Hibiscus rosa sinensis*, Nutrients, Phytochemicals, Medicinal uses

HERBAL PROBIOTICS AND PREBIOTICS: A SUSTAINABLE APPROACH TO GUT MICROBIOTA MODULATION AND HEALTH ENHANCEMENT IN THE LIGHT OF UNANI MEDICINE

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Abstract

Unani medicine, a holistic system rooted in humoral theory, underscores the significance of digestion (*Hazm*) in maintaining overall health. Gut microbiota plays a crucial role in this balance, and recent research highlights the therapeutic potential of herbal probiotics and prebiotics in modulating gut health. This systematic literature review (SLR) aims to evaluate the prebiotic and probiotic potential of Unani medicinal herbs, including *Badyan* (*Foeniculum vulgare*), *Hulba* (*Trigonella foenum-graecum*), *Basal* (*Allium cepa*), *Seer* (*Allium sativum*), and *Mulathi* (*Glycyrrhiza glabra*), based on their phytochemical composition and pharmacological properties. These plants were selected due to their rich content of inulin, fructooligosaccharides, and polyphenols, which selectively nourish beneficial gut bacteria. A comprehensive literature search was conducted across PubMed, ScienceDirect, and Google Scholar, employing a combination of search terms: ("Unani medicine" OR "traditional medicine") AND ("herbal probiotics" OR "prebiotics" OR "gut microbiota modulation" OR "functional foods"). All original studies published between 2004 and 2024 were considered, with no language restrictions. Inclusion criteria comprised clinical trials, in vivo and in vitro studies, and reviews relevant to Unani medicine and gut health, while studies lacking phytochemical analysis or microbiome impact were excluded. Initially, 150 articles were retrieved, and after applying inclusion and exclusion criteria and removing duplicates, 15 studies were included in this review. The analysis identified evidence supporting the role of *Basal* (*Allium cepa*), praised by Ibn Sina in *Al-Qanoon fi'l Tibb*, in enhancing *Bifidobacteria* and *Lactobacilli* populations. Additionally, traditional Unani formulations, such as *Murabba-e-Halwa*, demonstrated probiotic potential by improving microbial diversity and promoting *Quwwat-e-Mudabbira-e-Badan* (the body's self-regulating capacity), as reported in selected studies. The antimicrobial, anti-inflammatory, and immunomodulatory properties of these herbs were systematically reviewed, highlighting their role in restoring gut microbiota and managing gastrointestinal disorders. The findings suggest that Unani medicine provides a sustainable approach to addressing global health challenges, including antimicrobial resistance and chronic diseases, by integrating time-tested formulations with modern scientific evidence.

Keywords: Unani medicine, gut microbiota, herbal probiotics, prebiotics

COMPARATIVE STUDY OF DISINTEGRATION TIME AND HARDNESS OF SELECTED AYURVEDIC PILLS IN THE SRI LANKAN MARKET

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Abstract

Ayurveda, the traditional system of medicine, utilizes *Dravya* (herbal, animal, and mineral substances) for personalized treatments. Among its pharmaceutical formulations, *Vati* (general pills) and *Guggulu* (resin-based pills) are highly valued for their ease of use. Despite the growing demand for herbal pharmaceuticals, ensuring consistent quality and uniformity in these products remains a challenge in the Sri Lankan Ayurvedic market. This study aimed to evaluate the uniformity of Disintegration Time and Hardness in selected Ayurvedic pills (*Gokshura Guggulu, Chandraprabha Vati, Kaishora Guggulu, Yogaraja Guggulu,* and *Sitharama Vati*). Samples were collected from four brands (A, B, C, and D). Tablet hardness was measured using a Tablet Hardness Tester, and Disintegration Time was assessed using a Tablet Disintegration Test Machine, following Indian Pharmacopoeia standards. The results showed notable variation in both Disintegration Time and Hardness across the brands. Most pills had a Disintegration Time exceeding one hour, with exceptions such as *Sitharama Vati* (35, 32, 26, and 47 minutes for brands A, B, C, and D) and *Kaishora Guggulu* from brand B (48 minutes). Hardness values also varied notably from the standard range of Indian Pharmacopoeia, except for *Gokshura Guggulu* from brand C (8±2.00 kg/cm²) and *Kaishora Guggulu* from brand C (4±0.58 kg/cm²), where all others fell below 3 kg/cm². These variations were attributed to inconsistencies in formulation, manufacturing processes, and raw material quality. The study highlights the need for stringent quality control and standardized manufacturing practices to ensure the efficacy and consistency of Ayurvedic products.

Keywords: Disintegration time, *Guggulu*, Hardness test, *Vati*

STANDARDIZATION OF ROGHAN GUL AKH: AN UNANI HERBAL OIL

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Abstract

Roghan Gul Akh, an Unani herbal oil, is traditionally used for gout, lumbago, and rheumatic pain. It is prepared using dried *Zingiber officinale* (*Zanjabil/Sonth*), *Colchicum autumnale* (*Surinjan Talkh*), fresh *Calotropis gigantea* flowers (*Gul Akh Taza*), and *Sesamum indicum* oil as the base. This study aimed to standardize *Roghan Gul Akh* through parameters such as Peroxide Value, Acid Value, Moisture and Volatile Matter, Refractive Index, Specific Gravity, and Free Fatty Acids. The ingredients were authenticated by the Department of Dravyaguna Vignana, Faculty of Indigenous Medicine, University of Colombo. Following the guidelines of the *Hamdard Pharmacopoeia of Eastern Medicine*, the dried ingredients were ground and soaked overnight in water (four times their weight). A decoction was obtained by reducing the water volume by half. This decoction was gradually added to heated *Sesamum indicum* oil and heated until almost all the water evaporated. The oil was then filtered using cloth. Then, the herbal oil was standardized using the above parameters. The results indicated a specific gravity 0.920, a refractive index 1.470, a peroxide value of less than 10 milliequivalents per kilogram, an acid value of less than 1 milligram KOH per gram, moisture and volatile matter content ranging from 0.1 to 0.2% by mass, and free fatty acid content, expressed as oleic acid 0.8%. These findings establish preliminary standards for *Roghan Gul Akh*, which may serve as a reference for its preparation and standardization. Further research is necessary to isolate its main bioactive compound, elucidate its structural composition, and explore its mechanism of action through in vivo studies.

Keywords: Gul Akh, Unani, Herbal Oil, Standardization and Rheumatism

CRITICAL ANALYSIS OF TYPES OF WATER RECOMMENDED FOR SEASONAL USE FOR HEALTHY LIVING ACCORDING TO AYURVEDA

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Abstract

According to Ayurveda, maintaining homeostasis of the *Tridoṣa (Vāta, Pitta* and *Kapha)* in the human body is important to maintain health. Seasonal variations can affect the quality of water, which, when consumed, leads to the disruption of homeostasis and the deterioration of health. Therefore, Ayurveda, to preserve the health of an individual, has described in detail the types of water recommended for consumption according to the seasons. The objective of this study was to critically analyze the recommendation of consumable water sources according to the seasons, as mentioned in the authentic texts of Ayurveda. The literature was gathered from the Ayurveda authentic texts, *Caraka, Suśruta and Bhāvaprakāśa Saṃhitā* and published journals across the databases Google Scholar, PubMed and Science Direct. According to the *Bhāvaprakāśa*, water is classified as *Divya* and *Bhauma jala*. Among them, lake or pond water is ideal during the *Śiśira* (winter) and *Śarad* (autumn) seasons, while water from wells, large wells, streams, springs, and rain is ideal during the seasons of *Vasanta* (spring) and *Grișma* (summer). Additionally, *Gangā jala* (a subtype of rain water) and *Haṃsodaka* have been mentioned as ideal for consumption as both are collected during the *Agastya Nakṣatra* (Star Canopus), which purifies and improves the qualities of water according to Ayurveda. Physicochemical studies of water collected during the Star Canopus observed reduced levels of pH, total alkalinity, Chlorides, $CaCo_3$, biological oxygen demand and microbiological bacterial count. According to the data gathered, the knowledge can be applied to provide consumable water according to seasonal changes.

Keywords: Ayurveda, *Agastya Nakṣatra*, seasons, water types

Aloe vera AND ITS NOVEL ADVANCEMENTS IN THE FIELD OF COSMETOLOGY: A COMPREHENSIVE REVIEW

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Abstract

Aloe vera (AV), also known as *Aloe barbadensis* Mill., is a succulent plant that has been extensively used in the food, pharmaceutical, and cosmetic industries for ages due to its diverse actions. Recently, it has gained increased attention in the field of cosmetology, ranging from the preparation of cosmetics and skin care products to cosmeceuticals. AV gel has conventionally been used as a natural skin care agent. Nowadays, it is being assessed for its various pharmacological activities on the skin, with several novel technologies being incorporated to enhance its action, delivery, and stability. This review aimed to gather information on the uses of AV in skin care and to collect details on the novel technologies applied in the field of cosmetology to improve its utility. Data were collected from databases such as ScienceDirect, PubMed, and ResearchGate using key terms including *Aloe vera* and skin care, Aloe and cosmetology, and Aloe and recent advances from 32 articles. It has been proven that AV has a promising effect on skin care due to its properties, including moisturizing, skin-soothing, anti-wrinkling, antioxidant, anti-aging, UV-protecting, antimicrobial, anti-acne, anti-inflammatory, wound-healing, and immune-modulating activities. Recent advances indicate that the fermentation of AV gel and its byproducts enhances the activity of the biocomponents in AV. Nanotechnology has been employed in AV products to improve bioavailability, while microencapsulation technology has been utilized to enhance stability and enable controlled release. Despite these benefits, further extensive studies are required to validate the efficacy of these advancements, elucidate underlying mechanisms, and assess long-term safety for better therapeutic and commercial applications.

Keywords: *Aloe vera*, anti-wrinkling, moisturizing, skin care, cosmeceuticals

MEDICINAL APPLICATION OF WEEDY PLANTS: A COMPREHENSIVE REVIEW

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Abstract

Weeds, often perceived as undesirable and harmful plants in agriculture systems, hold significant medicinal potential that has been overlooked. Among these, several weedy plants are utilized for treating a wide range of ailments, highlighting their importance in healthcare. This study was carried out to give an overview of selected fifteen weeds such as *Amukkara, Anoda, Aswenna, Beheth endaru, Gas bebila, Hulanthala, Katu karandu, Katu nerenchi, Kowakka, Kuppamenia, Lunuwila, Maduruthala, Mukunuwenna, Neeramulliya,* and *Welpenela* to explore the medicinal applications, focusing on their therapeutic actions and traditional uses. A comprehensive search was conducted by reviewing the recent scientific evidence across various databases, including PubMed and Google Scholar, for articles published from 2004 to 2024 and traditional texts to identify relevant studies. Farmers and the agricultural sector frequently eradicate weeds due to their invasive nature, overlooking their medicinal values. Various weedy plant parts, including leaves, roots, aerial parts, shoots, and even plant ashes, are traditionally utilized for treating numerous ailments. And demonstrated various pharmacological activities, including anti-inflammatory, anti-diabetic, anti-bacterial, anti-fungal, wound healing, analgesic, antioxidant, hepatoprotective, and anti-cancer properties. These plants are traditionally used to treat a wide range of conditions, such as renal calculi, fever, rheumatism, epilepsy, respiratory and skin disorders, aphrodisiac purposes, swelling, liver disorders, wounds, snake bites, and chronic diseases like diabetes. The review concluded that promoting the conservation of these plants could enhance their utilization in traditional and modern medicine, offering an affordable and sustainable solution for healthcare. Future research is essential to further explore their bioactive compounds, pharmacological properties, and integration into healthcare systems.

Keywords: Medicinal Weeds, Traditional Medicine, Sri Lanka

EVALUATION OF POSSIBLE HYPOCHOLESTEROLEMIC MECHANISMS OF *Phyllanthus emblica* AND *Phyllanthus maderaspatensis*

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Abstract

The surpassing normal body serum cholesterol levels lead to a condition referred to as hypercholesterolemia. Since the commonly used medication for hypercholesterolemia brings undesirable side effects, there is a growing interest in the use of herbal medicine. The plants *Phyllanthus emblica* and *P. maderaspatensis* (family Euphorbiaceae) have been found to have greater hypocholesterolemic activity using animal models with unidentified hypocholesterolemic mechanisms. The present study assayed the possible hypocholesterolemic mechanisms using HMG-CoA reductase inhibition, squalene synthase inhibition, bile acid binding ability and pancreatic lipase inhibition. The abilities of inhibition of HMG-CoA reductase and squalene synthase enzymes by plant extracts were studied following ELISA assay using blood serum of hypercholesterolemic rats. *In vitro* colourimetric assays were carried out to study the bile acid binding ability and pancreatic lipase inhibition activity of plant extracts. According to the results, both plants could not inhibit HMG-CoA reductase and squalene synthase enzymes. However, plant extracts were effective in binding with both bile acids. Their activity levels were lower for taurocholic and higher for taurodeoxycholic acids when compared with the positive control, cholestyramine. Greater inhibitory activity of pancreatic lipase was showed by *P. emblica* with 89.4% activity followed by *P. maderaspatensis* with 85.9% activity, which is almost closer to orlistat with 93.6% activity. Results of the present study demonstrate that *P. emblica* and *P. maderaspatensis* are capable of cholesterol reduction through the bile acid binding and the inhibition of pancreatic lipase without affecting the steps of *de novo* cholesterol regulation, and both plants could be natural sources for hypocholesterolemic agents.

Keywords: Herbal medicines, family Euphorbiaceae, hypocholesterolaemic mechanisms

Nympahea alba L. (*NILOFAR*) AS A POTENT SUBSTITUTE *(BADAL)* FOR *Viola odorata* L. (*BANAFSHA)*: A REVIEW

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Abstract

The concept of Drug Substitution (*Abdal-e-Advia*) is an important facet of Unani pharmacotherapy. Unani scholars have suggested substitutes based on temperament (*Mizaj)*, actions (*Afal*), and physical properties (*Zahiri khususiyath*). *Viola odorata* L. *(Banafsha*) is known for its specific pharmacological actions; however, its non-native status in Sri Lanka poses a significant obstacle for preparing formulations that incorporate Banafsha. Unani classical texts state *Nympahea alba L. (Nilofer)* as a substitute for *Banafsha*. Hence, this study aimed to compare the botanical description, morphological characteristics, chemical constituents, actions, and uses of both plants based on scientific validation and to evaluate the potential of *Nilofer* as a substitute for *Banafsha*. Unani classical texts, along with peer-reviewed journal articles on both plants published between 2000 and 2024, were filtered using search engines such as PubMed and Science Direct, and 45 articles were critically reviewed. The study proves that *Nilofer* can serve as a substitute for *Banafsha* in Unani formulations due to their similarities in temperament, both being cold and moist, and their shared actions, such as hypnotic (*Munavvim*), quenching thirst (*Daf-e-Atash*), antipyretic (*Daf-e-Humma*), moistening (*Murattib*), and anti-inflammatory (*Muhallil*) properties. Additionally, both exhibit pharmacological properties, including anti-inflammatory, anxiolytic, antidepressant, and hepatoprotective effects. They are generally used to treat conditions such as insomnia, headaches, fever, burning sensations in the eyes, skin conditions, respiratory disorders, and cardiac diseases. This substitution aligns with the principles of Unani pharmacotherapy and supports sustainable formulation development in regions lacking *Banafsha*. Further validation of the concept of *Badal* through phytochemical analysis and pharmacological studies is recommended.

Keywords: *Banafsha, Nilofar*, *Badal,* Hypnotic, Antipyretic

SYSTEMATIC REVIEW OF IMMUNOMODULATORY PROPERTIES OF *Phyllanthus emblica* AS A KEY INGREDIENT IN *CHYAWANAPRASH*

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Abstract

Immunomodulation refers to the alteration of the body's immune response to enhance defence mechanisms against pathogenic antigens through immunostimulatory or immunosuppressive pathways. *Chyawanaprash,* an Ayurvedic health supplement, is widely recognized for its immunomodulatory effects, primarily attributed to its principal ingredient, *Phyllanthus emblica (Amalaki).* This systematic review evaluates the immunomodulatory potential of *P. emblica* and its contribution to the therapeutic efficacy of *Chyawanaprash*. A comprehensive literature search was conducted using Google Scholar, PubMed, and ResearchGate databases, covering studies published between 2011 and 2024. Keywords: *"P. emblica,"* "immunomodulatory activity," and *"Chyawanaprash"* were employed to identify relevant articles. Data extraction adhered to systematic review guidelines, focusing on immune-related outcomes, active compounds, and mechanisms of action. Of the 82 studies screened, 47 met the inclusion criteria, emphasizing *P. emblica*'s pharmacological properties, phytochemical composition, and immunomodulatory mechanisms. The findings highlight *P. emblica* as a rich source of bioactive compounds, including ascorbic acid, gallic acid, phenolic compounds, alkaloids, and phytosterols. These compounds enhance cell-mediated and humoral immunity by stimulating cytokine production (e.g., IL-2, gamma-IFN) and activating natural killer (NK) cells. Mechanisms include lymphocyte proliferation, delayed-type hypersensitivity responses, and chemotaxis. Ascorbic acid supports epithelial barrier integrity and leukocyte function, while gallic acid modulates innate immunity. Additionally, *P. emblica* demonstrates adaptogenic and antioxidant properties, mitigating stress-induced immunosuppression. These findings underscore *P. emblica*'s significant contribution to *Chyawanaprash*'s immunomodulatory effects, suggesting potential benefits in conditions such as asthma, bronchitis, and viral infections. However, further clinical trials are essential to validate these therapeutic claims in human populations.

Keywords: *Chyawanaprash*, immunomodulation, *Phyllanthus emblica*, adaptogenic, ascorbic acid

Tribulus terrestris SYNERGISTICALLY INTERACTS WITH STANDARD ALLOPATHIC DIURETICS – A PRECLINICAL PHARMACODYNAMIC INTERACTION STUDY IN NORMAL RATS

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Abstract

Traditional physicians use *Tribulus terrestris* seed crude aqueous extract (TT) as a diuretic herb in various conditions. During many instances, the same patient may also receive standard allopathic diuretics simultaneously. This study was aimed to evaluate the pharmacodynamic interaction between TT with allopathic diuretics in normal rats. For the drug interaction study, rats were divided into eight groups. Group 1 received normal water, 2 received hydrochlorothiazide, 3 received furosemide, 4 received spironolactone, 5 received TT, and 6,7,8 received the combination of TT with hydrochlorothiazide, furosemide, and spironolactone, respectively. The animals were placed in individual metabolic cages for 24 hours. At the end of 24 hours, urine samples were collected for biochemical analysis. Comparison of mean scores using One-way ANOVA followed by Tukey's post-hoc test. TT significantly increased the urinary excretion of urea, creatinine, uric acid, sodium, potassium and chloride compared to normal, and its effect is equivalent to standard diuretics. The combination of TT enhanced all the above parameters by 1.2 to 1.5 times after combining with standard diuretics. The excretion of calcium, magnesium and potassium levels has been reduced after combining TT. The study showed that there is a significant pharmacodynamic interaction between standard diuretic drugs and *Tribulus terrestris*, which is synergistic or additive in nature. Patients receiving both herbal and standard diuretics may get higher diuretic effects, but they should be monitored carefully for any adverse effects.

Keywords: Siddha, Ayurveda, diuretic herbals, renal stone, oedema, drug interaction

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ADVANCING *RASAUSHADHI* MANUFACTURING

Abstract

The need and necessity for obtaining authentic Ayurved medicinal products is on rise owing to global healthcare burdens. The patient welfare (*Rugna Hita*) is impossible without the coherent efforts of the tetrad of treatment (*Chikitsa Chatushpad*), where the physician and medicines are at crux. There is escalating need to scale up manufacturing, to meet the increasing medicine demand. In this progression, traditional manufacturing processes can be complemented with modern techniques supported by contemporary quality evaluation parameters for a quantitative as well as qualitative superiority. However, utmost care is warranted to ensure that 'Authenticity' is not lost in the quest of modernisation and scaling up manufacturing. 'Standardization' of drugs is a confirmation of its identity and determination of its quality and purity. Shree Dhootapapeshwar Limited (SDL) has developed in-house standards (SDS) based Ayurvedic & as well as modern parameters to assure quality of our products. 'Evidence' is the key to demonstrate quality 'safety' and 'efficacy' in the today's times. SDL has carried out extensive pioneering work whereby various research methods for validation of complete Ayurved processing, physico-chemical characterisation of herbo-mineral medicines, establishing safety and efficacy, probable mode of action of *Rasaushadhis* are utilized. Since its inception, aim of SDL has been to serve humanity through Quality Standardised, Safe & Efficacious Authentic Ayurved *Rasaushadhis* with a continued legacy of over 152 years.

AN *IN-VITRO* ANTI-UROLITHIATIC ACTIVITY OF A BI-HERBAL FORMULATION: *Amaranthus caudatus* L. AND *Piper nigrum* L.

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Abstract

Urolithiasis, characterized by the formation of kidney stones predominantly composed of calcium oxalate (CaC_2O_4), is a significant health concern due to high recurrence rates and limitations in conventional treatments. Current modern therapies are effective; however often associated with side effects and recurrence. This study aims to evaluate the *In-Vitro* antiurolithiatic activity of a bi-herbal formulation consisting of *Amaranthus caudatus* L. (*A. caudatus*) and *Piper nigrum* L. (*P. nigrum*), individually and in combination, as a natural alternative treatment. The experimental design involved titrimetric analysis using potassium permanganate to measure the dissolution of CaC_2O_4 stones. Plant materials and stones were collected and authenticated. Plant materials were prepared into decoctions. CaC_2O_4 stones were suspended in various test solutions, including individual herbal extracts of *A. caudatus* and *P. nigrum*, as well as ½, ¼, and 1/8 dilutions of the combined formulation and the standard drug Cystone. Statistical analysis was performed using One-Way ANOVA followed by Turkey's test. The results revealed that *A. caudatus* and *P. nigrum* individually exhibited mean dissolution rates of 42.17% and 35.75%, respectively, while their combination exhibited the significantly highest mean dissolution rate of 78.74%. Additionally, an increase in mean dissolution was observed when the decoction was diluted. The combined extract's 0.125 dilution had the significantly highest mean dissolution rate, 88.86%, ($F_{6,7}$=49.22, P<0.001), compared with the standard (61.03%) and other test drugs. The findings suggest that the combined bi-herbal formulation holds as a natural, effective alternative to conventional treatments for urolithiasis. Further *In-Vivo* studies and clinical trials are recommended to validate these results and develop standardized dosing protocols.

Keywords: Anti-urolithiatic activity, *Amaranthus caudatus* L., *Piper nigrum* L.

EVALUATE THE ROLE OF AYURVEDA MANAGEMENT IN *AVABAHUKA* W.S.R TO FROZEN SHOULDER - A CASE STUDY

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Abstract

Avabahuka is a type of *Vata Vyadhi* caused by vitiated *Vata Dosha* with *Anubhandha* of *Kapha Dosha*. It can be correlated with the symptoms of frozen shoulder. The main signs and symptoms are severe pain and stiffness in the affected shoulder joint and progressive restriction of motion in the affected upper limb. The study was conducted to evaluate the effectiveness of an *Ayurvedic* treatment protocol for managing *Avabahuka*. A 65 years old male patient with severe pain and stiffness in his left shoulder joint with restricted movements in left upper limb presented at the IPD, Provincial Ayurveda Hospital Pallekele, Sri Lanka was enrolled in the case study. So before the commencement of the treatment, consent was taken and all the clinical signs and symptoms were recorded. The treatment regimen includes *Anu Thaila Nasya* followed by the application of *Kubja Prasarini* and *Shulahara Taila Stanika Abyanga, Nadi Sweda* and *Rath Hadun* Plaster as *Upanaha Sweda* on externally for 28 days along with internal medicines. It was observed that, 100% relief was found in pain and stiffness in his left shoulder joint and 80% relief was found in its restricted movements in his left upper limb.This indicates that the treatment procedure effectively improved the patient's condition across various aspects within a short duration. Hence it can be concluded, the treatment protocol significantly improved the condition of the patient and *Ayurvedic* interventions showed promising potential in alleviating signs and symptoms of frozen shoulder without causing any adverse event. In further studies with larger sample sizes are recommended to generalize to these findings and establish standardized treatment protocols.

Keywords: *Avabahuka, Ayurveda*, Frozen Shoulder, *Nasya, Upanaha Sweda*

PATIENT KNOWLEDGE, ATTITUDES, AND SATISFACTION WITH AYURVEDA TREATMENT FOR CHRONIC KIDNEY DISEASE: AN OBSERVATIONAL STUDY IN MAHIYANGANA, SRI LANKA

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Abstract

Chronic Kidney Disease (CKD) is a significant public health challenge globally and in Sri Lanka, where limited healthcare access intensifies the disease burden. This observational study aims to evaluate the knowledge, attitudes, and satisfaction levels of CKD patients using Ayurveda treatment at the Ayurveda Hospital for Prevention of Kidney Diseases in Bathalayaya, Mahiyangana. Data were collected from 191 patients attending the Ayurveda clinic and 191 patients from a general hospital clinic. Surveys assessed demographic characteristics, reasons for choosing Ayurveda, perceived treatment efficacy (on a Likert scale of 1-5), and willingness to integrate Ayurveda with conventional medicine. Statistical analyses, including chi-square tests and logistic regression, were employed to identify associations. Results indicate that 57.6% of Ayurveda patients perceived Ayurveda as "much more effective" than conventional treatments, while 10.5% found it moderately effective. In the control group, 62.8% reported a lack of awareness about Ayurveda for CKD, though 85% of these patients continued Ayurveda upon introduction, with high satisfaction levels. Among Ayurveda patients, 91.6% were open to an integrated medical approach. Higher education was linked to favorable views on Ayurveda efficacy (OR = 2.787, p = 0.012), and economic status correlated with willingness to integrate treatments (OR = 3.267, p = 0.004). This study underscores a preference for Ayurveda among CKD patients, influenced by perceived efficacy and dissatisfaction with conventional care. The findings suggest potential for integrated treatment models, which could enhance patient-centered care and outcomes.

Keywords: Chronic Kidney Disease, Ayurveda, Patient Satisfaction, Integrated Medicine, Sri Lanka.

PRELIMINARY OBSERVATIONS ON THE EFFECTS OF AYURVEDA REMEDIES IN MANAGING RENAL FUNCTION AND SYMPTOMS IN CKD STAGE 3A PATIENTS: A CASE SERIES

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Abstract

Chronic kidney disease (CKD) Stage 3a of unknown etiology is a growing concern, particularly in rural populations. This study evaluates the efficacy of an Ayurveda regimen in managing CKD Stage 3a in five male patients aged 45–50, all farmers consuming filtered water prior to disease onset. Patients presented with baseline creatinine levels of 1.8, 1.9, 1.8, 1.9, and 2.0 mg/dL, along with dysuria, lower back pain, and constipation. The treatment involved administering *Gokshuradi Guggulu* (500 mg, twice daily), *Thruna Panchamoola Kashaya* (120 mL, twice daily), and *Triphala Choorna* (5 g, nightly) for four weeks. Post-treatment creatinine levels reduced to 1.3, 1.2, 1.3, 1.0, and 1.3 mg/dL, respectively. Patients reported significant symptom relief, including the resolution of dysuria, reduced back pain, and alleviation of constipation. The therapeutic effects can be attributed to the diuretic, anti-inflammatory, and detoxifying properties of *Gokshuradi Guggulu and Thruna Panchamoola Kashaya*, complemented by the bowel-regulating and antioxidant effects of *Triphala Choorna*. These findings suggest the potential of this Ayurveda regimen in improving renal function and associated symptoms in CKD of unknown etiology. Further studies with larger sample sizes and controlled designs are recommended to validate these observations and elucidate pharmacological mechanisms. This study underscores the potential role of Ayurveda medicine in integrative CKD management, particularly in underserved rural settings.

Keywords: CKD Stage 3a, *Thruna Panchamoola Kashaya*, Nephroprotection, Rural health.

WOUND HEALING ACTIVITY OF *KUNGILIYA KALIMBU* - AN EXPERIMENTAL ANIMAL STUDY

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Abstract

Siddha system of medicine has described several plant sources used for treating numerous types of wounds. *Kungiliya kalimbu* is one of the Siddha external preparations used as a remedy for wound treatment in individuals. It contains *kungiliyam* (resin of *Shorea robusta Gaertn. f.*), beeswax and gingelly oil. Still, pharmacological investigations have not been performed to substantiate activity of the *kungiliya kalimbu* in wound healing. Hence, in this study, aimed to evaluate the effect of *kungiliya kalimbu* on the active wound contraction on excisional wound in wistar albino rats. Both sex of rats were grouped as test, control and standard (n=6) were housed in standard condition (T 22±2° C, RH 60±5%, 12h light/dark cycle, fed with standard pellet diet and water ad labium). Animals were anesthetized by giving ketamine hydrochloride (50 mg/kg, IP) and all groups' excisional wounds cleaned with 0.9% normal saline. Betadine (Povidone iodine USP 5% w/w) ointment and *kungiliya kalimbu* was topically applied in the wound surface every day (morning 8.00 am) to till complete wound contraction respectively for standard and test groups. Data was collected once in 2 days and recorded. The direct observation was scored by converted into Bates-Jensen wound assessment tool and circumference of the wound was measured and calculated the wound contraction and period of epithelialization. Statistical comparison was performed using one-way anova of variance and obtained the $p<0.001$. The result showed that *kungiliya kalimbu* for two (2) weeks resulted in a significant wound healing activity ($p<0.001$) in the epithelialization and complete contraction of the wound.

Keywords: Excision wound model, Siddha Medicine, Topical application

AYURVEDIC MANAGEMENT OF MANDALIDAMSAVISHAJANYA DUSHTAVRANA (PUTRIFIED WOUNDS) DUE TO VIPER SNAKEBITE - A CASE STUDY

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Abstract

Snake bites, especially from Russell's viper, are a significant public health concern in many developing countries, including India, with a high mortality rate due to complications like musculoskeletal damage, tissue necrosis, and non-healing wounds. The challenges in treatment include limited access to healthcare facilities, delayed treatment, and the adverse effects of allopathic approaches. This study explores the potential of Ayurvedic treatments as a cost-effective, holistic alternative for managing chronic snake bite wounds. A 45-year-old male patient with a chronic, non-healing ulcer following Russell's viper bite was treated using a stage-wise Ayurvedic approach. The patient was treated with various treatment procedures along with Ayurvedic internal medicine over a 60-day period in three schedules with periodic assessments using the Bates-Jensen Wound Assessment Tool and photographic documentation to track healing progress. The patient's wound showed significant improvement after three treatment schedules. The total score on the Bates-Jensen Wound Assessment Tool decreased from 54 (before treatment) to 13 (after treatment), reflecting a complete recovery without complications such as infection or deformity. No recurrence of symptoms was observed during a three-month follow-up. This study highlights Ayurvedic treatments, emphasizing *Vishahara* (Anti- poisonous) and *Dushta vranahara* (Putrefied wound pacifying) and *Dushivishahara chikitsa*. (Weak poison pacifying treatment). were effective in managing chronic snake bite wounds. The findings suggest that a customized Ayurvedic treatment regimen can effectively manage chronic snake bite wounds, promoting healing and preventing complications like deformities and amputations. This study supports the potential of Ayurveda as a sustainable and cost-effective alternative for treating chronic snakebite envenomation.

Keywords: *Mandalidamsavrana*, *Dushtavrana,* , Putrefied wound, Viper bite poison, *Dushivishari Agadha*

COMPARATIVE STUDY ON THERAPEUTIC EFFECTS OF *BALĀSAHACHARĀDI KASHĀYA* AND *DASHĀNGALĒPAYA* IN THE MANAGEMENT OF KNEE OSTEOARTHRITIS – A CLINICAL STUDY

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Abstract

Knee osteoarthritis (KOA), a prevalent degenerative joint disease, significantly impacts millions globally by causing pain, stiffness, reduced range of motion (ROM), and diminished quality of life. This study aimed to evaluate the efficacy of two Ayurvedic treatment protocols in managing KOA. Treatment Protocol 1 combined *Balāsahacharādi kashāya* (BS) and *Dashāngalēpaya* (DL), while Treatment Protocol 2 included *Dashamul kvātha* and *Shūlahara thailaya*. A randomized clinical trial was conducted at the Rural Ayurveda Hospital, Kesbewa, Sri Lanka, involving 60 female patients equally divided into test and control groups. Key parameters assessed included pain (measured via Visual Analog Scale), ROM (measured using a Goniometer), swelling, tenderness, and crepitus, evaluated before and after a 2-week treatment period. Additionally, the pharmacological properties antioxidant, anti-inflammatory, analgesic, and anti-oedema effects of herbal ingredients such as *Ricinus communis* L., *Zingiber officinale* Roscoe., *Albizia lebbeck* L., and *Curcuma longa* L. were analyzed. Data analysis using paired t-tests and non-parametric tests (Wilcoxon-signed rank test, $p = 0.05$) revealed significant clinical improvements with Treatment Protocol 1. Participants experienced marked pain reduction, improved ROM, and decreased swelling, tenderness, and crepitus compared to Protocol 2, which showed moderate but less pronounced efficacy. However, crepitus demonstrated minimal change, possibly due to advanced joint degeneration. This study highlights the therapeutic potential of Ayurvedic treatments for KOA, with Protocol 1 proving superior in alleviating symptoms and improving joint function. Limitations include the short treatment duration and lack of long-term follow-up. Further studies with larger samples, extended durations, and follow-up assessments are recommended to validate findings and explore preventive benefits.

Keywords: Ayurveda, Knee Osteoarthritis, Herbal Formulations, Pain Management, Anti-inflammatory

THE MANAGEMENT OF *THUSTA VIRANAM* (CHRONIC DIABETES MELLITUS ASSOCIATED VENOUS LEG ULCER) BY TRADITIONAL INTERNAL MEDICINE AND DRESSING WI*TH* PUNSUDAR THAILAM - A SINGLE CASE STUDY

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Abstract

Chronic wounds, such as venous leg ulcers, are common and often persist for weeks or months. One type, *Thusta Viranam*, described in Traditional and Siddha literature, is characterized by deep, purulent, foul-smelling wounds with severe pain, swelling, and itching. Traditional and Siddha medicine recommends various topical and oral treatments to promote healing. *Punsudar Thailam*, mentioned in *Anuboga Vaithiya Navaneedha Thirattu*, is used for wound healing and contains purified sulphur (*Ganthagam*) and castor oil. This case study investigates the efficacy of *Punsudar Thailam* in treating a *Thusta Viranam* (Chronic diabetes mellitus associated venous leg ulcer). A 52-year-old female with a 3 months' history of a painful, swollen, foul-smelling wound due to varicose veins, located above the lateral malleolus of her left leg, was admitted to the Siddha teaching hospital in Kaithady. The patient also had a history of diabetes, hypertension, dyslipidemia, and fatty liver disease. She was diagnosed with *Thusta Viranam* (chronic diabetes mellitus associated venous leg ulcer) and treated with wound cleaning with *Panjathuvarpi kudineer*, followed by *Punsudar Thailam* application and oral internal medicines such as *Neermulli Kudineer, Pattolathy Peerkku Kudineer, Sudarsana Chooranam, Chandraprabha Vati,* and *Vallari Chooranam.* The treatment was weekly evaluated by the measurement and pictures of wounds (PWAT). Over 29 days, weekly evaluations showed a reduction in wound size from 5cm x 5cm to 3cm x 3.5cm with near complete closure (<0.1 cm). The PWAT score decreased from 17 to 7, indicating partial wound closure. The results suggest that *Punsudar Thailam*, combined with internal medicines, effectively aids in healing *Thusta Viranam* (chronic diabetes mellitus associated venous leg ulcer).

Keywords: Traditional medicine, *Punasudhar Thailam*, chronic diabetes mellitus associated venous leg ulcer, *Thusta viranam, Panjathuvarpi kudineer*

LITERATURE REVIEW ON PHARMACOLOGICAL EFFECT OF "*PĀṢĀṆABHIḤ VARUNĀDĪ DECOCTION*" IN THE MANAGEMENT OF URINARY CALCULI

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Abstract

Urinary calculi represent a significant global health issue characterised by the formation of painful, mineral-based masses within the urinary tract. Urinary calculi are a common, often recurrent disease that can have a negative impact on patients' health-related quality of life (HRQoL). Whether there are new treatment methods and surgeries available, the urinary calculi recurrence rate is high. The general objective of the research is to review on pharmacological effect of "*pāṣāṇabhiḥ varunādī decoction*" in the management of urinary calculi. The pharmacological review comprises two main sections: a narrative literature review and a systematic literature review. The narrative review offers a brief overview of the "*pashana bhedi*" plants as referenced in Ayurvedic texts. Meanwhile, the systematic literature review was meticulously conducted using the PubMed database, adhering to PRISMA guidelines. This review focused on research published in the PubMed database from 2000 to 2023. This research takes a thorough look at the existing literature, bringing together evidence on the antiurolithiatic benefits of herbal ingredients found in Ayurvedic medicine. It evaluates how these compounds work, focusing on their diuretic, antioxidant, and anti-inflammatory effects. The findings indicate that plant-based therapies may offer a holistic approach to preventing calculi formation and reducing associated complications, establishing a foundation for further exploration of traditional remedies in the context of modern medical challenges. This study not only aims to fill the gap in qualitative research within the Ayurvedic sector but also advocates for the integration of herbal treatments in contemporary urolithiasis management.

Keywords: Urinary calculi, Health-related quality of life (hrqol), *Pāṣāṇabhiḥ varunādī decoction Pashana bhedi***,** Antiurolithiatic, Diuretic, Antioxidant, Anti-inflammatory

A LITERATURE REVIEW ON HYPOLIPIDEMIC AND ANTIOXIDANT ACTIVITY OF *Cuminum cyminum* SEEDS IN THE MANAGEMENT OF HYPERLIPIDEMIA

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Abstract

Hyperlipidemia is a metabolic disorder marked by high levels of lipoproteins in the blood, increasing the risk of cardiovascular diseases like atherosclerosis and stroke. Common complications include atherosclerosis, coronary artery disease, and myocardial infarction, with risk factors such as poor diet, lack of exercise, obesity, and genetic factors. The prevalence of hyperlipidemia is significant globally, impacting both developed and developing countries. Management strategies include medication, diet control, and physical exercise, with statins being a widely used oral medication. Herbal ingredients like *Cuminum cyminum* (cumin seeds), are also popular due to their traditional use in various medical practices. The main objective of this study was to do a thorough literature review on the lipid-lowering activity and antioxidant activity of *Cuminum cyinum* seeds in the management of hyperlipidemia. In this Study literature review was done according to the PRISMA model by using the PubMed central database for the past 20 years of time period. According to the results found, *Cuminum cyminum* has shown hypolipidemic and antioxidant effects, with studies reporting lipid-lowering, antioxidant, and anti-inflammatory properties. The essential oil of cumin seeds contains compounds with antioxidants and radical-scavenging properties, comparable to synthetic antioxidants like Trolox and BHT. Research on lipid-lowering activity highlights reductions in cholesterol, triglycerides, and free fatty acids, along with protective effects against hyperlipidemia-induced tissue damage. The bioactive components of cumin seeds, such as terpenoids and flavonoids, contribute to these beneficial effects, making *Cuminum cyminum* a promising candidate for managing hyperlipidemia and associated complications.

Keywords: Hyperlipidemia, *Cuminum cyminum*, lipid-lowering activity, Antioxidant activity

A LITERATURE REVIEW ON ANTIOXIDANT ACTIVITY OF ŚUṆṬHYĀDĪ DECOCTION IN THE MANAGEMENT OF OSTEOARTHRITIS OF KNEE JOINTS

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Abstract

Osteoarthritis is the most common form of arthritis worldwide. It is the 8th leading cause of disability in the world. Knee osteoarthritis is a chronic degenerative joint disease characterized by the loss or injury of articular cartilage, subchondral thickening, hypertrophy of bone and alterations of the synovial membrane and joint capsule. Knee osteoarthritis disturbs the normal lifestyle of the worldwide human population. Disability makes people isolated not only physically but also socially, and they lose their jobs and get early retirement. To overcome this burden, there was no satisfactory management was introduced. Traditional medicine gains the trust of people it reduces the cost of expenditures for future medical requirements and improves quality of life. This study aims to do a literature review on the antioxidant activity of *Shuntyadee* decoction. In this study literature review is done according to the PRISMA model by using the PubMed central database for the past ten years of time period. According to the results found *Zingiber officinale* exhibits antioxidant activity via the nuclear factor erythroid 2 – related factor 2 (Nrf2) signaling pathway. Ricinus communis acts as an antioxidant through significant free radical scavenging activity, inhibiting lipid peroxidation, nitric oxide, and hydroxyl radicals *Ficus benghalensis* showed antioxidant action through a free radical neutralization effect. Reducing reactive oxygen species *Cedrus deodara* express antioxidant action. *Thinospora cordifolia* expresses antioxidation through free radical scavenging activity. Reducing reactive oxygen species and oxidative stress. *Barleria prionitis* expresses antioxidant action. The significant antioxidant properties of *Shuntyadee's* decoction help manage osteoarthritis in knee joints.

Keywords: Knee osteoarthritis, Shuntyadee decoction, Antioxidant activity

A COMPREHENSIVE REVIEW OF TRADITIONAL REMEDIES FOR ALOPECIA WITH A FOCUS ON IBN SINA'S CANON OF MEDICINE

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Abstract

Alopecia, characterized by partial or complete hair loss, profoundly affects individuals' quality of life. Modern treatments, such as minoxidil and finasteride, offer limited efficacy and are frequently accompanied by adverse effects, necessitating alternative approaches. Traditional systems of medicine, including the Unani system, offer natural remedies with a holistic perspective on managing alopecia. This review delves into the remedies for alopecia documented in *The Canon of Medicine* by Ibn Sina (Avicenna), emphasizing their scientific relevance and therapeutic potential. Key treatments include topical applications such as onion juice and olive oil mixtures, black seed oil, and mustard seed infusions, alongside internal remedies like black seed powder and dietary interventions aimed at balancing humours. These remedies focus on stimulating hair growth, fortifying hair follicles, and restoring scalp health by addressing underlying issues such as dryness, inflammation, and nutritional deficiencies. The pharmacological properties of Ibn Sina's remedies are systematically analysed, correlating them with contemporary scientific findings to validate their efficacy. Additionally, the review explores the humoral principles underpinning these treatments, providing a comprehensive understanding of their holistic approach to hair health. By integrating historical knowledge with modern dermatological insights, this review underscores the potential of traditional Unani remedies as sustainable and cost-effective alternatives for alopecia management. Further research and clinical trials are essential to establish evidence-based interventions and optimize their therapeutic applications for hair loss.

Keywords: Alopecia, Ibn Sina, *Canon of Medicine*, Unani Medicine, Natural Remedies, Hair Loss Treatment

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ROLE OF AYURVEDA IN ENHANCING PAEDIATRIC COGNITIVE DEVELOPMENT AND HEALTH

Abstract

21st-century children face unique challenges: increased screen time, processed foods, and academic pressures. These factors can impact cognitive development, leading to concerns like attention deficits, anxiety, and learning difficulties. Ayurveda, an ancient Indian system of medicine, emphasises holistic well-being, considering the child's physical, mental, and emotional aspects. *Kaumarabhritya*, the Ayurvedic branch of paediatrics, offers a personalised approach to child health. Cognitive development encompasses various mental processes, including attention, memory, language, problem-solving, and creativity. Ayurveda recognises these facets and emphasises nurturing "*Medha*" (intellect) for optimal brain function. Cognitive issues like attention deficit hyperactivity disorder (ADHD), learning disabilities, and anxiety can significantly impact a child's academic performance and overall well-being. Standardised assessments, such as neuropsychological tests and cognitive development scales are used to evaluate a child's cognitive abilities. Ayurvedic assessment considers the child's unique constitution (*Prakriti*) and current state of balance (*Vikruti*). While modern research explores the neurobiological mechanisms of Ayurvedic therapies, classical Ayurvedic texts provide a rich foundation for understanding child development and addressing cognitive concerns. A rejuvenative therapy involving gold and herbal preparations, recommended for infants to enhance immunity and cognitive function. Daily routines like *Abhyanga* (oil massage) and regular exercise promote overall health and balance. *Medhya Rasayana*, *Panchakarma* therapies like *Shirodhara* (oil pouring on the forehead) can calm the nervous system and improve focus along with a balanced diet rich in fresh fruits, vegetables, and whole grains is crucial for brain development. Ayurveda offers a valuable complementary approach to supporting paediatric cognitive development. By integrating Ayurvedic principles with modern medical practices and rigorous research, we can empower children to reach their full potential.

A LITERATURE REVIEW ON SPONTANEOUS ABORTION AND ITS AYURVEDIC PERSPECTIVE

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Abstract

Pregnancy loss, often termed spontaneous abortion (SA) or miscarriage, is a common obstetric complication, affecting around 15-45% of pregnancies, especially in the first trimester. SA is defined as the loss of pregnancy before 20-28 weeks of gestation or when the fetal weight is below 500g. This study conducted a literature review using the PubMed Central database, along with authentic Ayurvedic texts and web-published articles, to explore the Ayurvedic perspective on SA. Pregnancy loss can be classified as early or late, threatened or inevitable, and recurrent. Early pregnancy loss is mainly associated with chromosomal abnormalities, maternal age, anatomical irregularities, autoimmune conditions, hormonal imbalances, and lifestyle factors such as smoking and alcohol consumption. Modern insights highlight mechanisms like tissue necrosis, inflammation, thrombosis, and genetic or epigenetic changes. The Ayurvedic framework classifies pregnancy loss as *Garbhasrava* and *Garbhapata*, correlating with fetal development stages. Conditions like *Puthraghni Yonivyapath* and *Garbhasravi Vandhyatva* emphasize dietary, lifestyle, and psychological factors that aggravate *Vata* and *Pitta doshas*, leading to *Rakta-pitta dushti* (blood vitiation) and *Kshetra dushti* (uterine dysfunction). Ayurvedic etiologies align with modern risk factors like endometrial insufficiency, inflammatory responses, and chromosomal abnormalities. The Ayurvedic focus on *Ritu* (timing), *Kshetra* (uterine health), *Ambu* (nutrition), and *Beeja* (genetic quality) parallels modern reproductive health concepts such as preconception care and uterine receptivity. Integrating these insights from Ayurveda and modern medicine offers a holistic approach to SA prevention and management, highlighting the potential for complementary therapies to improve maternal and fetal health outcomes.

Keywords: spontaneous abortion, *garbhasravi vandhyatva*, *putraghni yonivyapath*, pathophysiology

EFFECTS OF *JĪWANĪYA GHANA KASHAYA* IN THE MANAGEMENT OF SPONTANEOUS ABORTION DUE TO REDUCED PROGESTERONE

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Abstract

Progesterone plays a crucial role in supporting pregnancy through a variety of endocrinological and immunomodulatory functions. It promotes vascular growth in the endometrium, supports nutrient secretion for embryo development, and prepares the uterine lining for implantation. As pregnancy progresses, progesterone, by activating its receptor B, aids in mammary gland development and strengthens the pelvis for labor. Additionally, pro-inflammatory cytokines like TNF-α and IFN-γ hinder trophoblast cell growth and induce apoptosis. A literature review was conducted in this study using PubMed Central database and other web-published articles from 2000-2023 on spontaneous abortion, progesterone and commonly used 7 herbal medicines of *Jīwanīya ghana kashaya* (JGK); *jiwanthi* (*Leptadenia reticulata*), *ashwagandha* (*Withania somnifera*), *shatavari* (*Asparagus racemosus*), *mudgaparni* (*Phaseolus trilobus*), *mashaparni* (*Teramnus labialis*), *vidari* (*Pueraria tuberosa*) and *madhuka* (*Glycyrrhiza glabra*). The study revealed progesterone's immunomodulatory properties are vital for preventing immune rejection of the fetus, as it suppresses the activation of immune cells and cytokine production, maintaining a suitable immune environment for pregnancy. The selected herbs exhibit pharmacological effects that help prevent miscarriage. *Leptadenia reticulata* inhibits prostaglandins and reduces inflammation by regulating cytokines like IL-2 and TNF-α. *Withania somnifera* suppresses NF-kB activity and reduces NO production, while *Asparagus racemosus* boosts antioxidant enzymes and modulates the immune system. *Pueraria tuberosa* and *Glycyrrhiza glabra* further reduce inflammation and oxidative stress by inhibiting pro-inflammatory cytokines and enhancing antioxidant activity. Notably JGK target multiple signalling pathways like TNF, TLR4, and MAPK, contributing to its potential in mitigating the effects of spontaneous abortion.

Keywords: Spontaneous abortion, *Jīwanīya ghana kashaya*, immunomodulator, progesterone

THE NEUROPROTECTIVE AND COGNITIVE-ENHANCING POTENTIAL OF *Acorus calamus* FOCUSING ON ITS THERAPEUTIC ROLE IN AUTISM SPECTRUM DISORDER: A SYSTEMATIC REVIEW

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Abstract

Autism spectrum disorder (ASD) is a neurodevelopmental disorder that affects behavioral, social, and thinking skills. Due to its high prevalence rate, there is an increased interest in natural therapies. *Acorus calamus* has shown potential as a promising therapeutic agent for managing ASD. The following systematic review aims at the current shreds of evidence concerning the *Acorus calamus* as an intervention for ASD with its neuroprotective and cognitive enhancement potentials. A total of 12 studies were identified from the literature search conducted through PubMed and Google Scholar from 2010 to 2024. For the study, only the effect of *Acorus calamus* on ASD was considered, excluding its impact on other neurological diseases. The keywords were *Acorus* calamus, autism, and cognitive function. The findings suggest that *Acorus calamus* is rich in bioactive principles of α- and β-asarone, and exhibits acetylcholinesterase inhibition supportive of cognitive function. It also supports higher acetylcholine levels, crucial for memory and learning processes often impaired in ASD. Upon administration to ASD-induced Wistar rat models, it has been proven to reduce oxidative stress in the brain, thus protecting neurons from damage by its antioxidant properties. Apart from it reduces neuroinflammation and protects neuronal integrity. Histopathological studies showed a decrease in structural anomalies in them. The consistent findings underscore the *Acorus calamus*'s role as a cognitive enhancer, neuroprotectant anti-oxidant, and anti-inflammatory agent, suggesting it could be an effective complementary therapy for managing ASD symptoms including sensory processing challenges, repetitive behaviors, and social-communication deficits. Further research including clinical studies is vital to confirm the safety, effectiveness, and practical benefits.

Keywords: *Acorus calamus*, autism, cognitive function.

AYURVEDIC APPROACH TO MANAGE INFERTILITY-RELATED FOLLICULAR IMMATURITY-A CASE STUDY

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Abstract

Infertility (*Vandyathva*) has become a major issue in society recently and follicular immaturity is the most frequently reported factor for infertility. According to Ayurveda *Beeja* (Ovum and sperm) is one of the important factors of *Garbha*. *Abeejatava or Beeja dushti* are the Ayurvedic correlations for follicular immaturity. The appropriate size of the follicle to become ovum is important for fertility. Ayurveda describes it as a *Kapha* dominant disease and indicates *Ambhu Vishamyatha* in the body. The objective of the research was to assess the efficacy of selected Ayurveda treatment protocols for follicular immaturity-related infertility. A patient presented with scanty menstruation, irregular periods, excessive hair growth, acanthosis nigricans, acne, and infertility, also her BMI is 29.9 kg/m^2. An investigation was done on Endometrial Thickness (ET), follicular size, and volume of the ovary by using USS abdomen on the 12th day of the menstrual cycle and the results showed evidence of ET less than 5 mm, no mature follicles and ovary volume 11cm3. This can be identified in conditions such as *Vandhyatva*, *Abeejathva,* or *Beejadushti* which can be correlated with the modern condition of PCOS. Treatments were started aimed at balancing *Kapha Dosha* and *Aambhu Vishamayatha* including a follow-up period of 4 months. After treatment TVS taken on the 12th day revealed a mature follicle on the right ovary, The follicle's average size was 2.18cm, and on the left ovary follicle size was 1.26cm furthermore ET was 10cm and the volume of ovary has decreased. According to the treatment protocol, the ET and follicular maturity has increased. Therefore, the Ayurveda treatment protocol shows a positive response to problems relating to *Abeejathva* or *Beeja Dushti* infertility.

Keywords: Follicular immaturity, infertility, *Abeejathva, Beeja Dushti, Vandhathva,*

ETHNOBOTANICAL STUDY OF MEDICINAL PLANTS USED BY TRADITIONAL PRACTITIONERS FOR REPRODUCTIVE HEALTH TREATMENTS IN THE BIODIVERSITY ECOSYSTEM OF MADAMPA LAKE, SRI LANKA

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Abstract

The Madampa Lake: the sanctuary is a coastal, brackish water lagoon in Ambalangoda divisional secretariat in Sri Lanka. This study was carried out to identify and catalogue the medicinal plants from the Madampa lake ecosystem used by traditional practitioners to treat reproductive health issues and to highlight the significance of preserving the biodiversity of the lake. The study further employed a comprehensive literature review spanning from 2007 to 2024 on Lake Madampa and Ayurveda pharmacopoeia.A number of 12 field surveys (2024 June -November) were done to identify the species and to assess the species diversity and population densities in the area. The plant identification was done by AI supported plant identification apps (flora incognita, plant Net, Google Lens) and a team of naturalists assessing morphological characteristics of plants. A structured questionnaire was distributed among 134 individuals aged 15-80 years considering several variables such as the demographic background, occupation, and interaction with the sanctuary to gather local perceptions about traditional medical practices and utilization of resources for medical purposes. Only 43 individuals had used the resources from Madampa Lake for reproductive health at least once. A total of 46 medicinal plant species were documented revealing their therapeutic potential. The study revealed that *Munamal, Yakawanassa, Binkohomba, Gurulla*, *Kabarasa, Madan*, *Ollu, Iramusu* and *Ahu* were commonly used by the local communities for reproductive health. Further research and scientific validation were needed to assess the therapeutic properties of the documented plants. Study concludes the need for biodiversity conservation and sustainable resource use while integrating traditional knowledge with modern science.

Keywords: Madampa lake, reproductive health, traditional practitioners, biodiversity, Plant identification apps

A REVIEW OF*ADATHODAI NEI* FOR THE MANAGEMENT OF *LASUNATHAABITHAM* (TONSILLITIS) IN CHILDREN

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Abstract

Adathodai Nei is a poly herbo-mineral ghee. It is used for Tonsillitis (*Lasunathaabitham*). It is the inflammation of the tonsils and is more prevalent in children of low socioeconomic status. Based on references, the preparation method *Adathodai Nei* mentioned in the Siddha Book of *Bharathathin Siddha Marundhu Seimurai Kurippu Nool*. The aim of the study was to identify the effectiveness of the *Adathodai Nei* for the management of Tonsillitis in children. Therefore, this preliminary step was taken to provide documentary evidence for the therapeutic effects of the ingredients which are used in the preparation of *Adathodai Nei.* Data for the review of ten ingredients were collected from relevant research sources from August to October 2024. Data entry form was arranged according to the characteristics of the ingredients such as morphology; parts used; siddha properties; pharmacological actions: families and phytochemical contents. Among these ingredients, 5 (50%) herbs, 3 (30%) animal base and 2 (20%) minerals. These herbal ingredients belong to different families. Based on habitat, these plant materials were classified as 3; (60%) climbers, 20% herbs and 20% shrubs. Among ingredients, siddha properties such as each pungent, salt and sweet taste (30%) pungent division (70%) and 70% ingredients have hot potency. Anti-inflammatory, antimicrobial and stimulant action was mostly found. Most of the ingredients (80%) had alkaloids. Although this study provides clear information for the therapeutic effects, further scientific studies for *Adathodai Nei* and each medicinal ingredient should be performed in future.

Keywords: Tonsillitis, *Lasunathaabitham*, *Adathodai Nei*, Siddha properties.

REVIEW OF DIFFERENT STAGES OF KUZHANTHAI PARUVANGAL (GROWTH AND DEVELOPMENTS) IN CHILDREN WHICH ARE MENTIONED IN VARIOUS LITERATURES

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Abstract

The Siddha and linguistic literatures estimate the growth and development of children based on different stages of Paruvangal. Ideal maternal care during a child's development from infancy to maturity is described in the Tamil poetic tradition known as *"Pillai Thamizh."* This systematic review aims to identify the various *Pillai Paruvangal* and their associated developmental milestones. Among the 14 literatures reviewed, many highlighted ten *Paruvangal* from birth to five years of age, including *Kappu, Senkeerai, Thaalaattu, Sappani, Muththam, Varugai, Ambuli, Sirtril, Siruparai,* and *Siruthaer*. Some texts mentioned *Ammanai, Neeraadal,* and *Oosal Paruvam* specifically for female children. Additionally, *Kazhanku Paruvam* is described as a substitute for *Neeradal Paruvam*. The first seven stages apply to both sexes, while the last three stages pertain specifically to male children. A majority of the literature (50%) described common *Paruvangal* while differentiating between male and female *Paruvangal;* 42% covered both common and male *Paruvangal*, and 7% discussed all 14 *Paruvangal. Kappu Paruvam* begins at birth and lasts until the third month, while the others commence every other month thereafter. *Kappu Paruvam* (protective) correlates with the *Kangaroo* position. Motor development was noted in *Kappu, Senkeerai, Thaalaattu, Sappani, Muththam, Varugai, Sirtril, Siruparai, Siruthaer, Ammanai,* and *Oosal Paruvam.* Communication and language milestones were also identified. Social development was found in *Mutha Paruvam, Kazhanku Paruvam, Ammanai Paruvam, Oosal Paruvam,* and *Neeradal Paruvam.* Ultimately, this review estimates the growth and development of children based on the various stages of *Paruvangal*.

Keywords: *Paruvangal*, Growth, Development, *Pillai Thamizh,* Milestones.

SYSTEMATIC REVIEW OF THE ANTIFERTILITY EFFECTS OF CASTOR SEEDS *(Ricinus communis)* IN MALES AND FEMALES

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Abstract

Antifertility refers to the ability to reduce or inhibit fertility or prevent pregnancy. Synonyms include contraceptive and prophylactic. Castor, *Ricinus communis* (family Euphorbiaceae), has been traditionally used as a contraceptive agent. This study aimed to investigate the antifertility properties of *R. communis* seeds. A comprehensive literature search was conducted using PubMed, Google Scholar, and ResearchGate databases for articles published between 2004 and 2024. The keywords *"Ricinus communis,"* "antifertility activity," "castor seeds," and "contraceptive agent" were used to identify relevant studies. A total of 93 articles were screened, of which 51 met the inclusion criteria, focusing on the phytochemical properties and contraceptive actions of *R.communis* on males and females. The analysis revealed that de-coated castor seed extract exhibits reversible, long-term contraceptive properties in both sexes. Phytosterols present in castor seeds are primarily responsible for these effects. In males, the extract suppressed spermatogenesis, reduced epididymal sperm count, impaired sperm motility, and altered sperm morphology. In females, it inhibited ovarian follicular development, prevented ovulation, and demonstrated anti-implantation properties. Additionally, it induced abortion in cases of conception. Importantly, common side effects associated with hormonal contraceptives, such as nausea, vomiting, weight gain, irregular bleeding, abdominal pain, and dysmenorrhea, were not reported with castor seed use. This study concludes that castor seeds exhibit significant antifertility effects in both males and females. Given their minimal side effects and low cost, herbal contraceptives such as castor seeds could be recommended as a safer alternative to conventional hormonal methods.

Keywords: Antifertility, castor seeds, contraception, phytochemicals, *Ricinus communis*

STATISTICAL ANALYSIS OF DYSMENORRHOEA (W.S.R. KASHTARTAVA) PATIENTS IN STREEROGA CLINIC AT NATIONAL AYURVEDA HOSPITAL (NAH), BORELLA AND GAMPAHA WICKRAMARACHCHI AYURVEDA TEACHING HOSPITAL (GWATH), YAKKALA

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Abstract

Dysmenorrhea is the painful menstruation experienced by females in the reproductive age group. It can be divided into two broad categories, i.e. primary and secondary dysmenorrhea. The presence of crampy, recurrent pain in the lower abdomen during menses in the absence of underlying pathology is primary dysmenorrhea. Adolescents and young women are more likely to be diagnosed with primary dysmenorrhea. Women suffer from pain-related symptoms in secondary dysmenorrhea with an underlying disorder like endometriosis, uterine fibroids or adenomyosis. The severity of dysmenorrhea ranges from mild to severe whereas associated with depressed mood, anger, nausea, dizziness, headache, fatigue, diarrhoea or constipation. For many women, the symptoms of dysmenorrhoea have a significant impact on the quality of life for at least a portion of each month. Fifty percent (50%) of females missed school or work at least once due to pain associated with menstruation. To attain targeted intervention and timely prevalence, it is significant to understand the disease burden among the population. This retrospective study showed 16.6% dysmenorrhea among 6784 patients who visited the *Stree roga* clinic at NAH and GWATH from November 2023 to November 2024. The highest number of dysmenorrhea patients falls under the 26 to 35 years category. This emphasized to promotion of awareness strategies as timely intervention for the specific age bracket.

Keywords: Dysmenorrhea, *Kashtartava*, Prevalence, *Ritu chakra*

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SWARNA PRASHANA – SCOPE AND FACTS FOR PAEDIATRIC HEALTHCARE

Abstract

Swarna Prashana is an age-old child health care practice inscribed in the classical literature of Ayurveda. It is indicated from birth till adulthood which should be practised as per specific indications and contraindications for optimum results. *Swarna Bhasma* (Ash of Gold) majorly consisting of gold oxide is the popular form of gold used in *Swarna Prashana*. It is to be mixed with honey and ghee in the specific proportion as required for the pharmaceutical form. Herbal drugs such as *Vacha* (*Acorus calamus* Linn.), *Shankhapushpi* (*Convolvulus pluricaulis* Choisy) and *Kushtha* (Saussurea lapa Clarke) are recommended to be mixed with gold for special benefits on intelligence and general health. The preferred dosage form in paediatric beneficiaries are drops and electuary for better palatability and ease of consumption in all age groups. Dosage of *Swarna Bhasma* should be initiated with $1/8^{th}$ ratti i.e. 15 mg and the maximum dosage should be 30 mg as per the guidelines in Ayurveda literature. Ayurveda also give guidelines to use only pure gold for internal use. The scientific reports prove that gold in pharmacological studies act as modulating both cellular and humoral immunity whereas in preliminary clinical studies in infants it is found as equivalent as a mixture of honey and ghee. The stability of the prepared formulation is reported to be good in room temperature whereas humidity is said to influence microbial growth. For better efficacy it is recommended to freshly prepare it and administer as per weight of the child considering even the health status of the child and quality standards of the ingredients. Thus, *Swarna Prashana* can be named as a positive health care program in children with specific action as immunomodulator and nootropic.

IN-VITRO SYNERGISTIC ANTIBACTERIAL ACTIVITY BETWEEN *Aerva lanata* FOUND IN SRI LANKA AND COMMERCIALLY AVAILABLE ANTIBIOTICS AGAINST URINARY TRACT INFECTION CAUSING PATHOGENS

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Abstract

Antibiotics are commonly used to treat urinary tract infections (UTIs), but their misuse and overuse contribute to the development of antibiotic resistance. Medicinal plants which have complex chemical compositions and diverse secondary metabolites offer a potential solution to combat antibiotic resistance. The general objective of this study is to investigate the antibacterial and synergistic antibacterial effect of *A. lanata* aqueous plant extract with commercially available antibiotics (Gentamicin, Ciprofloxacin, Norfloxacin and Co-amoxiclav) against UTI-causing pathogens. Aqueous extract of *A. lanata* was prepared by meeting the method of decoction preparation. The synergistic effects of *A. lanata* were assessed using disk and well-diffusion methods against *Escherichia coli* (ATCC 25922), *Staphylococcus aureus* (ATCC 25923), *Pseudomonas aeruginosa* (ATCC 27853), *Klebsiella pneumoniae*, Multi Drug Resistant (MDR) *E. coli* and MDR *Pseudomonas*. Control organisms were sourced from MRI ATCC cultures, while MDR organisms were isolated from urine samples at UHKDU Microbiology Laboratory. Results indicated the highest antibacterial activity of *A. lanata* decoction extract against *S. aureus* with a 14.33±0.58 mm inhibition zone. The most synergistic interaction was shown by *A. lanata* for Norfloxacin against *E. coli* (33.33±3.05 mm). Amoxicillin/Clavulanic Acid showed a synergistic zone of 12.67 mm against *P. aeruginosa.* Co-amoxiclav showed a zone of inhibition of 14.67±0.58 mm, while Ciprofloxacin showed 10.33 ± 0.58 mm against MDR *Pseudomonas* when combined with *A. lanata* extract, indicating an additive effect of the plant extract. This study highlights *A. lanata*'s antibacterial potential, necessitating further exploration of its active compounds and mechanisms for effective therapeutic applications against resistant pathogens.

Keywords: *Aerva lanata* (Polpala, Ciru-Pulai Ulinai, Mountain knotgrass), Urinary tract infection, synergistic effect, decoction

ANTIMICROBIAL ACTIVITY OF LATICES OF THE *Plumeria obtusa* AND *Tabernaemontana dichotoma*

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Abstract

Massive microbial colonization maintains chronicity of wounds. *Plumeria obtusa* (Apocynaceae, *Araliya*/ Temple tree/ *Perunkalli*) and *Tabernaemontana dichotoma* (Apocynaceae, *Divi Kaduru*/ Eve's apple/ *Kandalaippalai*) are herbal plants that can be used in treating wounds. The present study was undertaken to examine the antibacterial and antifungal effects of latices of these plants against bacterial strains of *Staphylococcus aureus, Pseudomonas aeruginosa, Escherichia coli, Streptococcus pyogenes* and fungal strain of *Candida albicans*. The fresh latices of *Plumeria obtusa* and *Tabernaemontana dichotoma* were used to test the activity and the reference drugs ciprofloxacin 2mg/ml and fluconazole 2mg/ml were used as positive controls. The antibacterial screening study was conducted by performing agar well diffusion method (Kirby-Bauer method). The mean diameter of zone of inhibition (ZOI) of latex of *P. obtusa* was 8.67±0.27mm for *P. aeruginosa*. The mean diameter of ZOI of the latex of *T. dichotoma* was 10±0.47mm and 11.67±0.27mm for *P. aeruginosa* and *C. albicans* respectively. There was no ZOI of latices of both plants against other bacterial strains. The study concluded that the latex of *P. obtusa* had an activity against *P.aeruginosa* and no activity against *S. aureus*, *E.coli* and *S. pyogenes*. No activity reported against *C. albicans. T. dichotoma* had an antibacterial activity against *P. aeruginosa* and had an antifungal effect against *C. albicans.* No activity showed against *S. aureus*, *E. coli* and *S. pyogenes*. The antimicrobial activity of the latex of *T. dichotoma* is comparably higher than the latex of *P. obtusa.* However, further studies will be warranted with increased number of organisms.

Keywords: *Plumeria obtusa, Tabernaemontana dichotoma,* antimicrobial

THE ANTIMICROBIAL ACTIVITY OF DIFFERENT TYPES OF VINEGAR AGAINST THE MICROORGANISMS CAUSING DIABETIC FOOT INFECTIONS

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Abstract

Foot ulcers are a common complication of diabetes mellitus, and colonisation by bacterial and fungal species leads to poor healing, leading to dire consequences. *Candida albicans* and *Staphylococcus aureus* are the predominant fungal and bacterial species found in diabetic foot ulcers and skin infections. Apple cider vinegar (ACV) is proven to inhibit the growth of both *C. albicans* and *S. aureus* and can potentially be used as a decolonising agent; however, ACV is not an economically feasible option in Sri Lanka. This study aimed to determine the activity of coconut vinegar against *C. albicans* and *S. aureus.* Three commercially available samples of ACV, coconut water vinegar (CWV), coconut toddy vinegar (CTV), and 1% acetic acid were tested against *S. aureus* (ATCC 25923) and *C. albicans* (ATCC 90028). Amoxicillin (for *S. aureus*) and fluconazole (for *C. albicans*) were used as positive controls. The acidity of the different vinegar samples was determined by titration with 0.1M NaOH. Agar well-diffusion test and MIC assay were performed to determine the antimicrobial activities of the vinegar samples. The zone diameters were compared against a zone diameter interpretive standard chart. Acidity was highest in ACV (0.984 mol/L), followed by CWV (0.952 mol/L) and CTV (0.924 mol/L). ACV and CWV inhibited the growth of *S. aureus* with mean inhibition zone diameters of 19.4mm and 18.6mm, respectively ($p>0.05$). CTV showed moderate sensitivity, and acetic acid was ineffective. Additionally, the minimum inhibitory concentration (MIC) of coconut water vinegar was 2.5% (v/v). *C. albicans* was resistant to all vinegar types. Based on these results, we concluded that coconut water vinegar effectively inhibits the growth of *S. aureus* and can be used as a substitute for apple cider vinegar.

Keywords: Foot infections, Coconut vinegar, Apple cider vinegar, Diabetes mellitus

AWARENESS AND UTILIZATION OF AYURVEDIC BEVERAGES FOR SKIN HEALTH AMONG GENERATION Z FEMALES IN SRI LANKA

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Abstract

Ayurveda is a science and art associated with the livelihood of the Sri Lankans for over many centuries. However, the awareness of its worthwhile utilities is diminishing among modern consumer generations. This research focused on the limited understanding of Generation Z women's awareness, consumption patterns, and attitudes towards consuming Ayurvedic beverages, especially concerning their health benefits for youthful skin and societal and lifestyle barriers hindering their adoption. The selected herbal beverages for the study were Aloe Vera (*Aloe barbaddensis* Miller) beverage, Gotukola (*Centella asiatica*) Porridge, Honey, Butterfly Blue Pea Flower (*Clitoria ternatea*) beverage, Nellie (*Phyllanthus emblica*) beverage and Hibiscus (*Hibiscus rosa-sinensis*) Beverage. The data were collected from 279 respondents selected through the snowball sampling technique using the online questionnaire survey design. Descriptive statistics was used for the data analyses. The findings revealed that the awareness regarding the health benefits of selected beverages: Aloe Vera (94.3%), Gotukola Porridge (83.5%), Drinking Nellie (85.3%), and Honey (92.5%), where hydration, immune support, and anti-inflammatory properties were identified as top health benefits. Conversely, Butterfly Blue Pea Flower beverage was the most accepted beverage able to monitor the hormonal balance (65.2%), whereas Hibiscus exhibited a comparatively lower level of awareness for medicinal properties. The respondents' attitudes toward Ayurvedic beverages were positive, citing the natural health benefits of the products. Taste was also an important determinant of preference (72.3%). The barriers to their continuous consumption included sourcing, preservation, and buying difficulties. Consumption patterns suggest that Gotukola Porridge is consumed weekly by the highest number of respondents (38%), while other beverages are consumed less frequently. Daily consumption of Ayurvedic beverages remains uncommon, indicating limited integration into daily routines, although respondents were comparatively aware of their benefits. These findings have implications for addressing the barriers to accessibility and convenience in promoting the adoption of Ayurvedic beverages in modern lifestyles among novel consumer generations.

Keywords: Awareness, Ayurvedic beverages, barriers to consumption, health, youthful skin.

ANTIMICROBIAL POTENTIAL OF METHANOL AND AQUEOUS LEAF EXTRACTS OF *Dovyalis hebecarpa* (CEYLON GOOSEBERRY)

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Abstract

Antimicrobial resistance is a global health crisis, with drug-resistant bacterial and fungal pathogens posing significant healthcare challenges. It is crucial to explore alternative solutions to combat the emergence of resistance in pathogenic microorganisms towards existing antimicrobial agents. This study investigates the antimicrobial activity of methanol, and freeze-dried aqueous extracts of *Dovyalis hebecarpa* leaves against *Candida albicans*, *Aspergillus* spp., *Staphylococcus* spp., and *Bacillus* spp. using the agar well diffusion method. The inhibition zone diameters were measured to assess the extracts' antimicrobial potential. Methanol extracts were prepared from air-dried leaves, while aqueous extracts were lyophilised. Positive controls (Clotrimazole, Terbinafine, Vancomycin) showed significantly higher activity than the extracts ($p < 0.05$), with DMSO (5%) as a negative control. The extracts showed no significant differences between 80 mg and 100 mg concentrations for *Candida*, *Staphylococcus*, and *Bacillus*. For *Aspergillus*, methanol extract showed a 40 mm inhibition zone at 100 mg, while freeze-dried extract produced 30 mm at both concentrations. Positive controls demonstrated inhibition zone values of 10 mm for *Candida*, 35 mm for Aspergillus, and 12 mm for both *Staphylococcus* and *Bacillus*. The results suggest that *D. hebecarpa* extracts have lower antimicrobial activity than standard agents, with methanol extracts showing higher effectiveness than freeze-dried aqueous extracts. These findings indicate the potential for *D. hebecarpa* as a natural antimicrobial source, though further research is needed to confirm and enhance its efficacy.

Keywords: Antimicrobial resistance, Ceylon Gooseberry, *Dovyalis hebecarpa*, natural products

IMPACT OF LIFESTYLE RECOMMENDATIONS IN UNANI MEDICINE ON PUBLIC HEALTH: A SYSTEMATIC REVIEW

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Abstract

Unani Medicine emphasises holistic health through lifestyle modifications, particularly guided by the *Asbab-e-Sitta Zarooriyah* (six essential factors): *Hawa-e-Muhit* (Atmospheric air), *Makool-wa-Mashroob* (food and drink), *Naum-wa-Yaqzah* (sleep and wakefulness), *Harkat-wa-Sakoon-e-Jismani* (physical activity and rest), *Harkat-wa-Sakoon-e- Nafsani* (Psychological activity and rest), and *Istifragh-wa-Ihtibas* (elimination and retention of waste products). As the name implies, lifestyle diseases are conditions that result from lifestyle choices such as diet, smoking, alcohol and drug use, exercise, etc. This systematic review evaluates the impact of these recommendations on public health outcomes, focusing on the prevention and management of non-communicable diseases, mental well-being, and overall quality of life. To identify relevant studies, a comprehensive search was conducted across various databases, including PubMed, Google Scholar, and traditional Unani texts. Search terms such as '*Asbab-e-Sitta Zarooriyah'*, 'holistic health', 'lifestyle' combined with 'Public health' and 'Unani Medicine' were used for articles published from 2014 to 2024. A total of 28 articles were filtered and scrutinised. The findings indicate that adherence to Unani lifestyle guidelines significantly reduces the risk of lifestyle-related disorders, including diabetes, hypertension, obesity, and depression. Further findings underscore the relevance of Unani lifestyle principles in addressing contemporary public health challenges. By promoting preventive strategies rooted in everyday practices, Unani Medicine offers a cost-effective approach to health promotion. The review also highlights gaps in evidence, particularly in large-scale and longitudinal studies, and underscores the need for integrating Unani lifestyle principles into modern public health programs. This review concludes that Unani Medicine's lifestyle recommendations have substantial potential to address global health challenges, emphasizing the need for further research and policy-level integration.

Keywords: *Asbab-e-Sitta Zarooriya*, Holistic health, Lifestyle, Public health, Unani medicine

COMPARISON OF *HAMMAM* (TURKISH BATH) THERAPY WITH SAUNA (FINNISH BATH) THERAPY- A REVIEW

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Abstract

Hammam (Turkish bath) is one of the important *Ilaj bil tadbeer* (Regimental therapy) used to prevent and cure several bodily ailments in the Unani system of medicine. A mixture of moist and dry heat is employed in classical *Hammam* to treat diseases. The Sauna (Finnish bath) is a relaxing and health-promoting hot-air bath in which overheating and cooling alternate. The aim of the study was to discuss the similarities, differences and therapeutic advantages of each therapy. Data were collected from authentic textbooks, books, peer-reviewed indexed scientific journals and research papers. Literature searches followed up using the terms '*Hammam*' and 'Sauna'. Data were collected using electric databases such as PubMed and Google Scholar from 2014 to 2024. Selection criteria included research articles in the English language, peer-reviewed indexed journals, survey studies and clinical studies excluding duplicate publications. A total of 40 articles were filtered and scrutinised**.** *Hammam* (Turkish bath) therapy and Sauna (Finnish bath) therapy are two traditional heat-based therapies with distinct cultural and therapeutic practices. Both therapies are widely recognised for their health benefits, but they differ in their mechanisms and physiological impacts. *Hammam* therapy, characterised by humid heat (40-50°C) and humidity reaching up to 100%, promotes respiratory health, skin rejuvenation, and relaxation through steam and exfoliation. It particularly benefits individuals seeking gentle, restorative effects in a social and ritualistic setting. On the other hand, Sauna therapy, utilising dry heat (70-100°C), induces intense sweating, which facilitates detoxification, enhances cardiovascular health, and relieves muscle tension. The high temperatures of the sauna provide more immediate physiological stress, promoting increased heart rate and circulation. While both therapies offer psychological benefits, such as stress reduction and mental clarity, the *Hammam* is known for its calming social experience. At the same time, the Sauna provides a more solitary, meditative environment. This review highlights the unique therapeutic applications of each method. Both *Hammam* (Turkish Bath) and Sauna (Finnish Bath) therapies offer distinct yet complementary health benefits. *Hammam* therapy, emphasising steam, exfoliation, and relaxation, provides a unique skincare and stress relief approach. In contrast, Sauna therapy, which utilises dry heat, is particularly effective for promoting cardiovascular health, detoxification, and muscle relaxation. Although both therapies share similarities in promoting overall wellness, their methods and physiological effects differ. The comparison offers valuable insights into their complementary roles in health and wellness, with recommendations for their use based on individual health needs and preferences. Further comparative research is needed to understand better the long-term health benefits and optimal therapeutic applications of each treatment, offering a more comprehensive understanding of their roles in holistic health practices.

Keywords: *Hammam*, Turkish bath, *Ilaj bil tadbeer,* Sauna, Finnish bath

A SURVEY ON RISK FACTORS AND PATTERNS OF OBESITY AMONG SELECTED UNDERGRADUATES

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Abstract

Obesity is a global health crisis and a significant risk worldwide, with university students increasingly vulnerable. Despite well-established risk factors, no studies have examined these among students at the Faculty of Indigenous Medicine, University of Colombo. This study aimed to address this gap by identifying key risk factors and lifestyle patterns to guide culturally relevant obesity prevention and university-based health interventions. A cross-sectional survey was conducted among 60 obese undergraduates (BMI >30 kg/m²) selected through convenience sampling. The survey focused on dietary, physical, psychological, and genetic predisposition factors, utilised a pretested questionnaire and was analysed using descriptive statistics. Results indicated that 33.3% of participants consumed fast food multiple times daily, and 46.7% consumed sweetened beverages weekly. Regarding physical activity, 63.3% of respondents did not exercise regularly, with only 5% exercising weekly. This sedentary behaviour accentuates the imperative for university-based exercise initiatives and the introduction of healthier canteen offerings to mitigate sedentary lifestyles and promote metabolic well-being. 60% of participants reported high mental strain, leading to overeating. Family history analysis revealed a genetic predisposition, with 44.1% citing maternal obesity and frequent diabetes and hypertension in relatives. The identified risk factors and lifestyle patterns—characterised by poor dietary habits, physical inactivity, mental strain, and genetic predisposition—underscore the heightened vulnerability of this cohort to further obesity and its associated comorbidities. Addressing these issues through targeted university-based interventions that promote physical activity, healthier dietary choices, and mental health support is essential. Future studies should explore the long-term effectiveness of these strategies in preventing obesity and improving overall health outcomes among this population.

Keywords: Obesity, Risk Factors, University Students, Dietary Habits, Genetic Predisposition

NUTRITIONAL STATUS OF ADOLESCENTS FROM THELLIPALAI MEDICAL OFFICER HEALTH AREA OF JAFFNA DISTRICT CLASSIFIED BASED ON SERUM ALBUMIN LEVELS

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Abstract

Serum albumin serves as a vital biomarker for nutritional status. Protein requirement is higher during adolescence than in adults, as it is the critical period of growth and development. The majority of adolescents do not give importance to nutrition. The cutoff range for serum albumin in adolescents is 3.2-4.5 g/dl. This study aimed to assess the nutritional status of adolescents (from 17 to 19 years old) in the Thellipalai Medical Officer of Health (MOH) area of Jaffna District based on serum albumin levels. Ethics Review Committee, Faculty of Medicine, University of Jaffna granted ethical approval for the study. Sociodemographic information was collected with an interviewer-administrated questionnaire from 63 adolescents during house visits. Blood samples were collected by venipuncture for the analysis of serum albumin concentration using the calorimetric Bromocresol Green method. Among the adolescents, 52.4% were females with a mean age of 18.25 (±0.8) years, and 47.6 % were males with a mean age of 18.14 (±0.2) years. The mean serum albumin levels in adolescent males and females were 4.16 (±0.2) g/dl and 4.06 (±0.8) g/dl, respectively. Even though the average serum albumin levels in both male and female adolescents were above the threshold level for protein deficiency (3.2 g/dl), 10% (n=4) males and 13.6% (n=6) females had protein deficiency. The findings highlighted the prevalence of protein deficiency in among adolescents (from 17 to 19 years old) in the Thellipali MOH area of Jaffna District and the underlying factors contributing to the deficiency should be studied in detail.

Keywords: adolescents, protein, nutritional status, serum albumin, Thellipalai

MEDICATION KNOWLEDGE AND ADHERENCE AMONG PATIENTS WITH ANTIDIABETIC MEDICATION ATTENDING MEDICAL CLINIC CONDUCTED BY PRIMARY CARE HOSPITAL IN KALUTARA DISTRICT

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Abstract

This study assessed medication knowledge and adherence among patients with antidiabetic medication attending medical clinics conducted by a primary care hospital in Kalutara District. This was a hospital-based cross-sectional study of patients with either type 1 or type 2 diabetes, aged 18 years and above, systematically selected randomly from a waiting queue in a pharmacy. Data was collected using a validated questionnaire developed by the principal investigator. A Pearson correlation was used to test the association between the demographic variables and medication knowledge and medication adherence as well as between medication knowledge and medication adherence with a significant value of <0.01. A total of 341 participants were interviewed. The mean ±SD medication knowledge score was 5.96 (SD = 1.569). It was discovered that (4, 1.2%) of the sample had high knowledge, the majority of the participants (316, 92.7%) had moderate knowledge, and (21, 6.1%) were identified as having low knowledge. The mean ±SD medication adherence score was 8.94±0.983. It was discovered that (111, 32.6%) of the sample had high adherence, the majority of the participants (229, 67.2%) had moderate adherence, and (1, 0.3%) was identified as having non-adherence. A moderate positive correlation was observed between medication knowledge and adherence. The patient's age and education level significantly influenced both medication knowledge and adherence among these study participants. These results offer valuable insights into future improvements in the care of individuals with diabetes in Kalutara district to improve their overall well-being ultimately.

Keywords: Diabetes mellitus, medication knowledge, medication adherence

CATEGORIZATION OF WORK-RELATED OCCUPATIONAL HAZARDS AMONG APPAREL WORKERS

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Abstract

The apparel industry is labour intensive, and the workers use different postures to perform routine jobs. When performing manual tasks, workers use upper extremity (arms, hands, fingers) and/or lower extremity (legs and feet) body regions. In fabric inspection, quality checkers are often required to handle fabric in awkward postures throughout the day due to its limpness or drape. Similarly, jobs like fabric-cutting and sewing are performed manually in awkward postures, resulting in work-related musculoskeletal disorders (WRMSDs) among workers. Mild symptoms are generally ignored by the workers thus, the situation becomes severe with time, resulting in poor well-being and compensation costs. Therefore, this study aimed to determine occupational ergonomic hazards among apparel workers. The objectives were to identify the occupational ergonomic hazards and then categorize them. A questionnaire was prepared to collect demographic data from apparel workers, number and duration of rest breaks, views about physical comfort and awareness on ergonomics and support devices. Diagrams of numerous work postures available in the apparel industry were also added for easy comprehension of the content in the questionnaire. The questionnaire was administered among workers in the apparel industry. Seventy-eight shop floor apparel workers between the age 18-55 years participated in the study. Postures related to four job categories, i.e. cutting room workers, sewing machine operators, ironers and quality checkers were identified. Out of 78 respondents, 24 workers had noticed that they have some difficulties: all four categories suffered mild neck and wrist pain; cutting room workers and ironers had prolonged back pain. In addition sewing machine operators had back pain and ironers had pains in the elbow and leg; quality checkers had neck pain. 41% of the study participants had neck pain, 21% had back pain %, 17% had wrist pain, 13% had knee pain, and 8% had shoulder pain. The outcome of the study promotes good work practices among apparel workers. Further research needs to be carried out with experts such as industrial engineers and orthopaedic surgeons to propose practices based on ergonomics-related principles to establish appropriate work postures and ensure the well-being of workers.

Keywords: Ergonomic hazards, Apparel industry, Occupational hazards

THE EVALUATION OF QUALITATIVE AND QUANTITATIVE ANALYSIS OF *CÌRAKA CŪRAṆAM* - A SIDDHA HERBAL FORMULATION

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Abstract

Siddha Medicine emanates from Lord *Shiva* to *Siddhas* and is based on the *tridosha* principle. Single herbal, mineral, animal, herbal-mineral, or polyherbal compositions are all safe and commonly used in Siddha medicine. *Siddha Vaidhya Thirattu* prescribes *Cìraka cūraṇam*, a single formulation, for *Pitha Rogam* (Hypertension). Siddha medications must be standardised to prove their effectiveness. This study aimed to assess the qualitative and quantitative analysis of the trial drug *Cìraka cūraṇam*. This study was conducted in the Department of Biochemistry, Government Siddha Medical College & Hospital, Palayamkottai, Tamil Nadu, India, and the Siddha Regional Research Institute, Trivandrum, Kerala. The raw materials were acquired from a reputable country store, and fresh plant material was gathered from the surrounding area. The botanist from the Department of Medicinal Botany at Govt. Siddha Medical College & Hospital, Palayamkottai, verified the authenticity of the raw materials, purified the plant materials, soaked the cumin seeds in the juices mentioned above separately, ground them into powder, stored them, and sent samples for physicochemical and phytochemical analysis. *Cìraka cūraṇam* possesses and determined the presence of tannin, phenol, steroids, glycosides and alkaloids, which reduce blood pressure and serum lipid levels. Drug standardisation allows for formula or dose modifications based on patient needs. In addition to establishing and standardising the medication, a standard Siddha Pharmacopeia will aid in describing the effectiveness of Siddha medicine. The present study reveals from the phytochemical and physicochemical analysis that *Cìraka cūraṇam* has bioactive constituents which promote good health.

Keywords: *Cìraka cūraṇam,* physicochemical, phytochemical, Siddha formulation, standardization.

AN OBSERVATIONAL STUDY ON *AGASTHIYAR SOODAAMANI KAYIRU SOOTHIRAM* (ASKS) IN *SALAMEGAM* (DIABETES MELLITUS TYPE 2)

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Abstract

Agasthiyar Soodaamani Kayaru Soothiram (ASKS) (*Manikkadai nool*) is a Siddha diagnostic and prognostic tool used to assess an individual's health condition, as documented in the Siddha literature *Pathinensiddhargal Thiruvaimalarntharuliya Naadisasthiram. Salamegam*, a disease described in Siddha Medicine, is correlated with diabetes mellitus in allopathic medicine. There has been limited documentation of the association of the ASKS with *salamegam* across different fasting plasma glucose (FPG) concentrations. Hence, the study was designed to investigate the correlation between FPG concentrations and ASKS. The observational pilot study involved 41 *salamegam* patients, comprising 31.7% males and 68.3% females, recruited from the Siddha Ayurvedic Base Hospital in Puthukudiyiruppu, Batticaloa. Patients aged between 18 and 85 were randomly selected based on inclusion and exclusion criteria. The forearm circumference was measured in fingerbreadths using *Panchavarnanool* at a point four fingerbreadths above the wrist crease on the palmar surface of the forearm. Perpendicular measurements were taken along the palmar surface, starting from the index finger to the little finger. Both FPG concentrations and ASKS values were recorded. The results showed a moderate positive correlation between ASKS and FPG concentrations., but the relationship was not statistically significant (r=0.269, P = 0.088). A significant difference was observed between ASKS and mean FPG concentrations ($F_{8,32}$ =2.5, P = 0.031). Notably, the lowest and highest FPG concentrations were recorded below and above an ASKS value of 8.25 fingerbreadths, respectively. However, these findings were not statistically significant ($F_{2,38}$ =1.2, P = 0.312), likely due to the small sample size in each group. Further research with a larger sample is recommended to better understand the relationship between ASKS and FPG concentrations.

Keywords: *Agasthiyar soodamani kayaru soothiram, Manikkadai nool,* Siddha Medicine, *Salamegam,* Diabetes mellitus

SIDDHA HERBAL FORMULATION: *POOVARASAM PADDAI* OIL

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Abstract

Siddha medicine is a traditional system of healing practiced in India and Sri Lanka. Skin diseases are often viewed through a holistic lens, emphasising the balance between the body's internal energies (*Vata*, *Pitta*, and *Kapha*) and the external environment. The drug *Poovarasam Paddai* Oil (PPO) is a herbal Siddha Formulation. It is mentioned in Siddha authentic text, *Chikitcha Rathna Theepa* Part II. It is included in external medicine in Siddha Medicine. PPO is used for *karappan* (eczema), *Sori* (itching) and *Siranku* (scabies). It contains 13 ingredients. The aim of this study was to develop documentary evidence for the efficacy of PPO. Nine ingredients have bitter taste; twelve ingredients have hot potency, and twelve ingredients of PPO have Pungent bioavailability. Commonly, these ingredients possess antibacterial and anti-inflammatory activity. One of the ingredients of PPO has anti-psoriatic activity. According to the study, PPO acts as an antiseptic, anti-psoriatic and healing properties. Further clinical study is important to confirm the PPO's efficacy in treating skin diseases.

Keywords: Skin diseases, *Poovarasam Paddai* Oil, Siddha Medicine

PRELIMINARY PHYTOCHEMICAL ANALYSIS OF LEAVES FROM *Vernonia zeylanica, Mimosa pudica* AND *Tamarindus indica* USED IN SIDDHA MEDICINE FOR TREATING SKIN DISEASES

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Abstract

Skin is the largest organ in the human body, and it is the protective barrier. Allergies, irritants, genetic makeup, certain diseases, and problems in the immune system can cause skin disease. Leaves of three commonly used plants, namely *Vernonia zeylanica(*VZ*), Mimosa pudica(*MP*) and Tamirindus indica(*TI*),* are used in Siddha Medicine for skin disease. The objective of the present study was to analyse the phytochemicals present in VZ, MP and TI and to compare the phytochemicals present in three types of leaves qualitatively. The leaves were collected from Kaithady, Jaffna District. Then, the leaves were crushed separately using mortar and pestle following the traditional Siddha method. The extract was then separated and sent to the Department of Chemistry, University of Jaffna, for qualitative phytochemical analysis. Three types of extract were tested separately for phytochemicals like alkaloids, flavonoids, phenolic compounds, tannin, glucoside, saponins, terpenoids, protein and steroids using different test methods for qualitative analysis. This result shows that all three types of extract have no glycoside, which does not affect skin conditions. Alkaloids, Flavanoids, Phenolic compounds, Tannin, Saponin and Terpenoids were present in all three extracts. Proteins and steroids were present only in MP and TI. From the present study, it can be concluded that all three types of extract contain bioactive phytochemicals that can be useful in treating skin conditions. Comparatively, the TI leaf extract had more phytochemicals than the other two leaf extracts. This study justifies the presence of phytochemicals in the leaf extract of VZ, MP, and TI used in the treatment of skin disease.

Keywords: Phytochemical analysis, Skin disease, leaves, Siddha Medicine.

A LITERATURE REVIEW OF *MAATHULAI OADDU CHOORNA* FOR *KALICHAL* IN SIDDHA MEDICINE

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Abstract

Four traditional medicine systems are practised in Sri Lanka: Ayurveda, Siddha, Unani and Deshiya Chikitsa. The Siddha system of medicine is a traditional medical system that uses a scientific and holistic approach to provide preventive, promotive, curative, rejuvenating and rehabilitative healthcare. *'Maathulai laddu Choorna'* (MC) is internal medicine, which is the polyherbal formulation. *Maathulai oaddu Choorna is one of the most important drugs in Siddha Ayurvedha Government hospitals in Sri Lanka. Therefore, we selected this drug for literature review regarding its ingredients for 'Kalichal'.* Data for this review on 14 ingredients from 8 families were collected from relevant books, peer-reviewed journals and websites from October to December 2024. The characteristics of the ingredients that were identified for the review were plant morphology, parts used, Principal properties of each ingredient such as taste, potency and biotransformation, pharmacological actions, phytochemicals and medicinal uses. Among these ingredients, all were identified as herbal materials and 2 (14%) of species were found in the Poaceae, Zingiberaceae, Lauraceae and Umbelliferae families. Based on the plant morphology, 5 (35%) and 4 (28%) plants were herbs and trees, respectively.5 (35%) species were used as dry fruits. Among these ingredients, 10 (71.4%) were pungent in taste, 8 (57.14%) were hot potency, and 11 (78.5%) were pungent vipaka. Pharmacological actions such as stomachic 10 (71.42%), carminative 9 (64.28%) and stimulant 8 (57.14%); Phytochemicals such as tannin 9 (64.28%) and volatile oil 8 (57.14%) were highly found in these ingredients. This literature review provides useful documentary evidence related to its ingredients for kalichal. There is a need for further extensive scientific studies to be carried out to justify this in future.

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Keywords: *Maathulai oaddu choorna*, Siddha medicine, Poly herbal formulation.

REVIEW ON CHUNTAIVATRAL CHOORANAM IN SIDDHA MEDICINE

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Abstract

Chuntaivatral Chooranam is a polyherbal preparation used to treat various diseases, such as diarrhea, dysentery, indigestion, and haemorrhoids. It is mentioned in *Siddha Vaitya Thirattu* and contains 7 ingredients. This review study is focused on developing scientific documentary evidence for the medicinal ingredients of *Chuntaivatral Chooranam.* This study presents an organised compilation and analysis of data sourced from traditional Siddha Medicine textbooks and research publications on the website. The data, drawn from a variety of ancient and contemporary texts, were systematically collected and categorised from October to November 2024. The collected data were processed and analysed using MS Excel spreadsheets. All ingredients of *Chuntaivatral Chooranam* are herbs from seven different families. According to the data, the parts used in the plants are seven different sources: dried fruit, leaf, dried pericarp, kernel, fruit rind, fruit, and seed; each represents 14.28%.

Out of 7 ingredients, 42.85% have an astringent taste, 57.14% have cold potency, and 85.71% have pungent efficacy. Based on phytochemical analysis of the ingredients, 100% of the ingredients constitute flavonoids, tannin, phenol, saponin, volatile oil, alkaloid, and ascorbic acid, while 42.85% of them are carbohydrates and protein (42.85%). All the ingredients show astringent, antimicrobial and antioxidant activity; 85.71% exhibit antidiarrheal, while 57.14% each show stomachic, anthelmintic and antidiabetic activity. Therefore, this review provides useful documentation of *Chuntaivatral Chooranam*. However, further scientific studies regarding chemical and toxicity analysis should be performed in the future.

Keywords: *Chuntaivatral Chooranam*, Siddha Medicine, Astringent, Polyherbal, Indigestion, Tannin

IMPACT OF SIDDHA MEDICINE IN THE SPORTS MEDICINE

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Abstract

Traditional fracture management and native orthopaedic preparations have the potency of increased fracture healing activity and antimicrobial properties. Hence, once applied on the immobilised strain site and compressed with traditional Siddha medicinal preparations, it enhances the healing of the strain. Sprains are common (80%) in public health problems among children and adolescents worldwide. Sprains are the most common sports-related injuries, accounting for over 25% of cases. Sulukka is also called as ulukku. Bones in the joints and fixtures getting dislocated a little or more, muscles and ligaments in those joints getting elasticised or twisted a little or more, and vital points in the body getting affected are the causes for Sulukku if suddenly a firm grip occurs in the joints if in a situation a person unable to stretch out or bend The patients were treated with Phase wise protocol consisting of three phase's, i.e. Inflammatory (1-5 days), Stabilization and recovery (6-10 days), Muscle strengthening (11-17 days). Assessments were done through various variables like pain, tenderness, swelling, local temperature, manual muscle testing (MMT) and range of motion (ROM) at different time points. The study showed that an integrated treatment approach has given significant results in parameters like pain, loss of function, tenderness, local temperature, MMT and ROM.

Keywords: Sulukku, Sprain, Common sports injuries, Integrated treatment protocol, Physiotherapy, Varmam

A SYSTEMATIC REVIEW OF *NAVACHARA AAKRAANAM* FOR SYNCOPE MANAGEMENT IN SIDDHA MEDICINE

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Abstract

Navachara Aakraanam, a Siddha medical formulation, holds promise for managing syncope, a condition characterised by transient loss of consciousness due to cerebral hypoperfusion. Syncope poses significant diagnostic and therapeutic challenges, particularly in resource-limited settings, due to its diverse causes. Rooted in principles of Siddha medicine, *Navachara Aakraanam* addresses imbalances in *Vatham, Pitham* and *Kabam* humours, offering a Siddha approach to treatment. This systematic review examines the composition, pharmacological actions and therapeutic potential of *Navachara Aakraanam*. Following PRISMA guidelines, a comprehensive search of databases and Siddha texts was conducted to gather insights into its preparation, properties and applications.

Its action involves stimulating respiratory and cardiovascular reflexes, improving cerebral perfusion, and addressing humoral imbalances to stabilise health in syncope. The formulation alleviates symptoms associated with syncope, such as dizziness and blackouts, while restoring energy flow and metabolic balance. Findings suggest that *Navachara Aakraanam* provides immediate relief and long-term stability through its integrative approach. The study underscores its potential for pre-hospital care and its alignment with modern integrative treatment protocols. However, further research, including standardisation, clinical trials, and advanced delivery mechanisms, is essential to validate its role and optimise its use. *Navachara Aakraanam* represents a promising, natural solution for addressing a critical gap in syncope management, bridging Siddha practices with contemporary medical science.

Keywords: Ammonium Carbonate, *Navachara Aakraanam*, Reflex Stimulation, Syncope

THE EFFECTIVENESS OF THE POLYHERBAL FORMULA OF THE *CHATHAKUPPAI CHOORNAM* AND *THIRIPALA CHOORNAM* IN SIDDHA MEDICINE FOR TREATING *SINAIPPAI NEERKADDI* (PCOS) – OBSERVATIONAL CASE SERIES

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Abstract

Sinaippai Neerkaddi is defined as the reduced action of the *Appanavayu* and deranged *Pitta Dosha*, which inhibits the development of the ovum. Symptoms of *Sinaippai Neerkaddi* include irregular menstruation or absence of menstruation, increased weight, abnormal hair growth, pigmentation around the neck, and pimples. From a modern perspective, it is correlated with polycystic ovarian syndrome (PCOS). *Chathakuppai Choornam* (C.K.C) is a polyherbal formulation consisting of three ingredients in equal quantities: *Chathakuppai (Anethum graveolens), Karuncheerakam (Nigella sativa), and Maramanjal (Coscinium fenestratum). Thiripala Choornam* (T.P.C) is also a polyherbal formulation, which contains three ingredients in equal quantities: *Kadukai (Terminalia chebula), Nellikai (Phyllanthus emblica),* and *Thandrikai(Terminalia bellirica). Chathakuppai Choornam* and *Thiripala Choornam* are used for the treatment of *Sinaippai Neerkaddi* (PCOS) Five unmarried patients, aged between 15 - 25 years, who had symptoms of irregular menstruation, weight gain, pigmentation around the neck, acne, and Hirsutism were selected for the study. Their detailed medical history and routine physical examination were recorded before treatment, and continuous treatments were given for three months. Every two weeks, signs and symptoms were noted. After three months of treatment, menstruation was regulated in 75% of patients, pigmentation was reduced by 100%, weight was reduced by 75%, acne was completely reduced by 100%, and hirsutism was reduced by 25%. Even though after three months of treatment, 75% of patients completely reduced polycystic ovarian syndrome. As a result of research, the poly herbal formula of the *Chathakuppai choornam and Thiripala choornam a*re more effective for *Sinaippai neer kaddi* (PCOS).

Keywords: *Sinaippai neerkaddi*, Polycystic Ovarian Syndrome, *Chathakuppai choornam, Thiripala choornam.*

DRUG REVIEW OF *ILINGATHI THAILAM,* WHICH IS MENTIONED IN *SEKARASA SEKARA VAITHYAM*

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Abstract

Siddha Medicine, one of the world's ancient traditional medical systems, has deep roots in Tamil culture and is primarily practised among Tamil-speaking communities. Originating from the teachings of *Siddhars* (ancient Tamil sages), Siddha Medicine has been an integral part of healthcare in Sri Lanka for centuries, particularly in the Jaffna region. During the reigns of Kings *Pararasa Sekaran* and *Sekarasa Sekaran*, Siddha texts were significantly enriched with contributions from traditional practitioners. *Nenchu Vatham,* a condition classified under *Vatha* diseases in Siddha texts, is described in *Sekarasa Sekara Vaithyam. Ilingathi Thailam*, a medicinal oil formulation prescribed for treating *Nenchu Vatham,* comprises 28 ingredients, including 27 plant-based materials and one animal-based component. This study provides a comprehensive review of the pharmacological activities, phytochemical properties, and organoleptic characteristics of the ingredients in *Ilingathi Thailam*, as mentioned in *Sekarasa Sekara Vaithyam*, and evaluates their alignment with traditional indications for *Nenchu Vatham*. The analysis reveals that the majority of ingredients exhibit a combination of pungent, sweet, and bitter tastes. Approximately 75% of the components possess hot potency and pungent bioavailability. The most prominent pharmacological activities observed in the ingredients are anti-inflammatory and anti-oxidant properties. These properties support the traditional use of these ingredients in alleviating inflammatory conditions and oxidative damage. Based on this review, the pharmacological actions, phytochemical constituents, and organoleptic properties of *Ilingathi Thailam*'s ingredients align remarkably well with its traditional use in addressing the symptoms of *Nenchu Vatham*, as described in the Siddha medicine text.

Keywords: *Ilingathi thailam,Nenchu vatham,Sekarasa sekara vaithyam,*Tastes

A SYSTEMATIC REVIEW ON THE PHARMACOLOGICAL PROPERTIES OF TRADITIONALLY PRACTISED FORMULA *SANNIUNDAI ADHATODAI SUVADHA KULISSAI*

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Abstract

Sanniundai Adhatodai Suvadha Kulissai is a traditional herbomineral formula composed of *Centratherum anthelminticum* (*Kattuchirakam*), *Borax* (Sodium tetraborate decahydrate), *Piper longum* (*Thipilli*), *Gardenia resinifera* (*Veluthal pisin*), *Acorus calamus* (*Vasambu*), *Allium sativum* (*Ulli*), and *Justicia adhatoda* (*Adhatodai*). Traditional practitioners commonly use this formula to manage various disorders like dysmenorrhea, dizziness, and burning sensation. The current study aims to systematically review the phytochemicals and pharmacological actions of the ingredients of the above traditional formula and identify their therapeutic applications, particularly in the management of specific ailments. Data were collected from authoritative textbooks and peer-reviewed scientific journals, using electronic databases such as PubMed and Google Scholar for articles published between 2012 and 2024 using keywords including "*pitta", "suvadham"*, "*Centratherum anthelmintic",* and "antioxidant" were used in the search. Articles including the phytochemical and pharmacological properties of the intended plants were included, while incomplete research articles and articles unavailable in full form were excluded. A total of 138 potentially relevant studies were found by searching the databases Google Scholar and PubMed. Consequently, 54 reports were eligible, and 42 were excluded due to duplication. Therefore, finally, 31studies were reviewed and analysed. According to the study, all the above components of *Sanniundai Adhatodai Suvadha Kulissai* included phytochemicals that exhibit anti-inflammatory, analgesic, antioxidant, cooling properties, astringent, antimicrobial, and nervine tonic. The summarised information validates the use of the traditional formula *Sanniundai Adhatodai Suvadha Kulissai* in managing dysmenorrhea, dizziness, burning sensation, etc. Further scientific validation through pharmacological actions and clinical trials is necessary to substantiate its therapeutic potential.

Keywords: *pittam, suvadham*, borax, Traditional formula

AN IN-VITRO EVALUATION OF THE POTENTIAL NEUROPROTECTIVE EFFECTS OF SIDDHA HERBO-MINERAL FORMULATION *KUKKILATHI CHOORANAM* (KC), USING NEUROBLASTOMA CELL LINE

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Abstract

According to the Siddha textbooks *Pararasasekarm* ***(****Vatharoga Nithanam)* and *Sekarasasekara vaiththiya thiravukol*, "*Nadukku Vatham*" can be correlated with Parkinson's disease in allopathy medicine. Many drugs are mentioned in the manuscripts for the management of Parkinson's disease. Among them, *Kukkilathi Chooranam* (*KC*) is mentioned *in* "*Anuboga vaithiya navaneetham*". So far, there are no scientific studies regarding the KC. So, considering the purview, the study is selected. The present study was to provide *In-vitro* evidence for the Neuroprotective effect of *Kukkilathi Chooranam (KC)*. Investigated for their neuroprotective potential in 6-hydroxydopamine-induced neurotoxicity in SH-SY5Y neuroblastoma cells. Cell viability was determined using the 3-(4,5-dimethyithiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assays and cell morphology was analysed using light microscopy. All experiments were done in triplicates, representing the results as Mean+/- SE. One-way ANOVA and Dunnets test were performed to analyse data. ***p< 0.001 compared to dopamine exposed group, **p< 0.01 compared to dopamine exposed group. The sample was added at concentrations ranging from 6.25 µg/mL to 100 µg/mL, and a significant increase in cell viability was observed. Notably, the concentration of 12.5 µg/mL caused a very significant improvement in viability. The study demonstrated significant neuroprotection against 6-hydroxydopamine-induced toxicity, leading to a marked improvement in cell viability. Further studies are necessary to characterise the pharmacological properties of *Kukkilathi Chooranam* and assess its potential as a clinically viable treatment for neurodegenerative diseases.

Keywords: *Nadukku Vatham*, Parkinson's disease, *Kukkilathi Chooranam*, Neuroprotective effect

TRADITIONAL MANAGEMENT FOR KALANJAGAPADAI (PSORIASIS) – A CASE STUDY

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Abstract

Siddha Medicine is an ancient holistic healing system that aims to restore the balance between the body's energies. *Vaatham, Pitham, and Kapam* promote overall health and well-being through natural remedies and lifestyle practices. This system integrates herbal mineral therapies and regimens, offering effective management of chronic conditions. Psoriasis is an autoimmune skin disorder characterised by scaly rashes and erythematous plaques. In Siddha Medicine, Psoriasis, referred to as *Kalanjagapadai*, is understood through the lens of the *Tridosha* theory (*Vatham*, *Pitham*, and *Kapham*) and reflects an imbalance in these three senses of humour. This case study focuses on a 40-year-old male patient who presented with hyperpigmented patches, thick silvery scales, cracked skin, and intense itching for 10 years. This condition was diagnosed as *Kalanjagapadai* based on the diagnostic methods of the Siddha system. The patient underwent a combination of internal and external Siddha treatments, resulting in substantial clinical improvements. The Psoriasis Area Severity Index (PASI) score was reduced significantly from 18.3 to 7.3 by Day 48, reflecting a 60% improvement. ANOVA analysis confirmed statistically significant reductions over time (p = 0.001). Visual graphs depicting PASI scores and percentage improvements demonstrated a steady and progressive response to treatment. Further, the patient's *Envakaithervu* (skin condition) improved from a score of 5 to 8, demonstrating significant recovery. *Naadi* (pulse) assessment transitioned from "Imbalanced" to "Balanced," Statistical analyses using linear regression and repeated measures ANOVA demonstrated trends in improvement. However, statistical significance was not achieved due to the limited sample size. This case study underscores the potential of Siddha Ayurveda Management in managing psoriasis, providing substantial symptom relief and promoting overall health. Further research with larger sample sizes is necessary to validate these findings and explore the broader applicability of Siddha Ayurveda treatments for chronic skin conditions.

Keywords: Case Study, *Kalanjagapadai*, PASI Score, Psoriasis, Traditional Medicine.

Technological innovations in Preserving Indigenous Knowledge

Computer Science, Statistics and Data Science

Engineering Technology

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Food Safety Consultant, Ex-Manager,
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A SUSTAINABLE NUTRICEREAL - RAGI

Abstract

Finger millet is an important crop among the small millets and third among millets in the area and production after sorghum and pearl millet in India. It is cultivated as a rainfed crop for its valued food grains and adaptability to a wide range of geographical areas and agro-ecological diversity in India.

Finger millet more commonly known as Ragi or Nachni in Hindi, holds immense significance as a subsistence crop in Eastern Africa and Asia. The word Ragi is derived from Sanskrit word “Rajika” means red. Finger millet is important millet grown extensively in various regions of India.Once considered as staple food Ragi along with other millets has lost its prominence due to the widespread cultivation and use of rice and wheat, driven by urbanization and industrialization. Ragi, being nutritiously rich is considered as superfood and widely contributes towards sustainability. Cultivation of Ragi is possible in diverse agro-climatic conditions, withstanding significant levels of salinity, small harvesting season, quiet resistant to water logging and drought tolerant. The drought tolerance of finger millet may be attributed to an efficient antioxidant potential and increased signal perception.

Finger millet (Eleusinecoracana) is known for its numerous health benefits including anti-diabetic, anti-tumorigenic, atherosclerogenic effects, as well as antioxidant and antimicrobial properties. It contains high calcium content at 0.38%, a well-balanced composition of dietary fiber at 18%, and a significant presence of phenolic compounds ranging from 0.3% to 3%.

Finger millet stands out for its considerable richness in minerals, and its micronutrient density surpasses that of major cereal grains worldwide, such as rice and wheat. Finger millet is composed of approximately 5–8% protein, 1–2% ether extractives, 65–75% carbohydrates, 15–20% dietary fiber, and 2.5–3.5% minerals. The seed coat of millet is an edible component of the kernel and serves as a rich source of phytochemicals, including dietary fiber and polyphenols, with concentrations ranging from 0.2% to 3.0%. It is now recognized that the presence of phytates, polyphenols, and tannins in millet foods can contribute significantly to their antioxidant activity which is an important factor in health, aging and metabolic diseases.

In the current strained ecological conditions with irregularly changing climatic conditions Ragi cultivation can supply a consistent source of food. The nutritious grain is rich in protein of high biological value, micronutrients like iron and calcium, and vitamins of B complex – Thiamine, Riboflavin and Niacin. Ragi cultivation can promote economic growth and self-reliance, especially for women-led FPOs in rural areas to promote sustainability and entrepreneurship.

DEVELOPMENT OF A ROTATABLE CAR SEAT ADJUSTMENTS TO SUPPORT DISABLED INDIVIDUALS

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Abstract

The transportation sector is greatly aided by the automobile industry. Additionally, it has supported the mobility of those with disabilities. A rotating vehicle seat frame with a handle and sliding mechanism has been developed as an effort. This research aims to assist disabled individuals, enhancing their ability to use them with maximum functionality while ensuring the safety. The study focuses on two ways of functioning. While the motor-assisted approach draws power from the vehicle's batteries to spin under overloaded situations, the manual method uses a handle and a locking mechanism. Functionality, safety, and accessibility were all considered in the design's construction. The concept utilizes the application of rack and pinion mechanisms, which can anticipate the integration of motorized rotation. The created model has been applied to three distinct car models in three distinct interior areas. A survey conducted with the involvement of 75 participants focussing on Northern Region of Sri Lanka where, the majority of them with leg and spinal cord disabilities found the rotating seat beneficial for vehicle entry and exit, with 60% expressing positive feedback. However, 64% felt that a 40° rotation was insufficient and recommended extending the angle by 5-10 degrees. This implies that the seat's rotation angle has to be optimized for improved accessibility. Height and comfort were analyzed in the study. In conclusion, this product is particularly beneficial to those with mobility limitations, such as leg and spinal cord impairments, by enabling greater independence and ease of use in various vehicle types. A motorized system can alter the limitations on design and production.

Keywords: Comfortability, Handicapped, Height adjustment, Rotatable seat, Motor-assisted

FOURTH ORDER PERTURBED HEISENBERG HAMILTONIAN MODELLING OF ENERGY AND MAGNETIZATION IN FACE CENTRED CUBIC FERROMAGNETIC FILMS

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Abstract

Ferromagnetic films play a critical role in magnetic memory and microwave devices, where the magnetization direction significantly influences their performance. This study explores the magnetic properties of ferromagnetic thin films, with a particular focus on energy variations due to spin exchange interactions and magnetic anisotropy constants. The classical Heisenberg Hamiltonian is employed to model the total energy of ferromagnetic films, considering magnetic energy, spin dipole interaction, spin exchange interaction, and second- and fourth-order magnetic anisotropies. The study presents a detailed analysis of the fourth-order perturbed Heisenberg Hamiltonian with seven magnetic energy parameters for face-centred cubic (fcc) structures, specifically examining films with three spin layers. MATLAB simulations are used to generate 3D and 2D plots illustrating the relationship between energy, spin exchange interactions, and the azimuthal angle of spin. These simulations reveal significant differences in the energy maxima corresponding to specific values of the spin exchange parameter J/ω, with major maxima observed at approximately $J/\omega = 50$, 25, and 67 for various anisotropy configurations. The energy values observed range from 10^{13} to 10^{17}. Additionally, the study highlights the impact of interchanging spin layers on the total energy, particularly when the bottom and middle spin layers are interchanged. These findings provide deeper insights into the role of magnetic anisotropies in the energy behaviour of ferromagnetic films, offering valuable information for the design and optimization of magnetic materials in technological applications.

Keywords: Fourth order perturbed Heisenberg Hamiltonian, Magnetic anisotropy constant, Magnetic thin films, Spin exchange interaction, Spin layers.

TENDERIZING EFFECT OF WOOD APPLE (*Limonia acidissima* L) ON GOAT MEAT

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Abstract

Goat meat is a popular alternative to traditional red meats due to its impressive protein profile and low-fat content However, its inherent toughness presents a significant barrier to consumer acceptance. This study investigated the potential of wood apple (*Limonia acidissima L*), a fruit rooted in indigenous agricultural practices, as a natural tenderizing agent for goat meat. Three experiments were conducted to evaluate the effects of wood apple ripeness (ripe vs. unripe), extract concentration (0%, 25%, 33%, 50%), and marination duration (1, 2, and 24 hours) on goat meat hardness, cooking loss, colour, pH, and sensory attributes. Goat meat marinated with ripe wood apple extract for 2 hours significantly reduced ($P < 0.05$) meat hardness compared to meat marinated with unripe wood apple extract. Increasing the concentration of ripe wood apple extract significantly decreased the ($p < 0.05$) goat meat hardness when marinated for 2 hours. Moreover, marinating goat meat with 50% ripe wood apple extract for 2 hours resulted in significantly lower ($p < 0.05$) hardness compared to marinating for 1 or 24 hours. Finally, goat meat marinated under conditions that produced the greatest tenderness in the previous experiments (50% ripe wood apple extract for 2 hours) was significantly more ($p < 0.05$) tender and highly preferred by a sensory panel of 30 untrained participants compared to unmarinated samples. These findings demonstrate that ripe wood apple extract is an effective natural tenderizer for goat meat and highlight its potential as a natural tenderizer in food processing applications.

Keywords: goat meat, marination, natural tenderizer, wood apple, *Limonia acidissima* L

ENHANCING DIGITAL SECURITY THROUGH SINHALA LINGUISTIC FEATURES: AN INDIGENOUS KNOWLEDGE APPROACH

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Abstract

This study explores a novel method for generating passwords using Sinhala language features, based on Indigenous Knowledge systems. Traditional password systems predominantly based on Western languages are often predictable and vulnerable to brute-force attacks. By leveraging Sinhala linguistic structures, this study aims to develop secure password systems resistant to brute-force attacks. The research examines how to integrate Indigenous Knowledge into cybersecurity frameworks, presenting a culturally adaptive and decentralized approach to password security. This research uses Sinhala phonetics and Jataka proverbs to develop secure and memorable password strings. The process involves stripping down the words from Malalasekera's English-Sinhala Dictionary (2018), the phonetics of the Sinhala language, and the morphological decomposition of the word and in fixation adding to it with traditionally important proverbs, words, and phrases from the Jataka stories and Sandesha Kavyas. Password strength is assessed using Shannon entropy, comparing the resistance of Sinhala and English-based passwords to brute-force attacks. Hypothesis one states that passwords containing Sinhala characters are more secure than passwords containing only English Characters. Findings indicate that passwords utilizing Sinhala characters exhibit higher entropy (53.36) than English-character passwords (52.56), suggesting enhanced security and unpredictability. To illustrate practical applications, the study examines coupled passwords such as "අඳුරු2024@" (anduru) and "අතෝ_අත_මුවේ_මුව" (Ath the, mu e mue), demonstrating phonemic variation and linguistic interconnection within Sri Lankan Indigenous Knowledge systems. The study further estimates that Sinhala-based passwords offer greater resistance to brute-force attacks, with a projected cracking time three years longer than conventional English passwords, assuming one billion password attempts per second. This research proposes the integration of Indigenous linguistic knowledge into contemporary cybersecurity frameworks, positioning Sinhala-based password systems as a culturally adaptive and decentralized alternative for strengthening global cybersecurity resilience.

Keywords: Cultural Cryptography, Indigenous Cybersecurity, Indigenous Knowledge Systems, Linguistic Authentication, Phonetic Passwords.

MAPPING THE ROLE OF INDIGENOUS KNOWLEDGE IN BIODIVERSITY CONSERVATION: TRADITIONAL PRACTICES AND ECOLOGICAL IMPACTS: A SPATIAL REFERENCE TO ANURADHAPURA DISTRICT

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Abstract

This research investigates the integration of geospatial technologies with indigenous knowledge to enhance sustainable land management and biological variety in the Anuradhapura District of Sri Lanka. Despite the crucial role of local populations in sustaining environmental equilibrium, this aspect is frequently overlooked in modern agricultural management. This has resulted in the overall deterioration of such practices mostly due to the absence of systematic documentation and mapping. This project seeks to address this gap by mapping indigenous land management and biodiversity in Anuradhapura utilizing GIS technology. The primary objective is to assess the geographical scope of indigenous knowledge and its effectiveness in safeguarding biological variety. The study aims to evaluate the hypothesis that biodiversity indicators positively correlate with habitat quality and to provide explanatory evidence comparing areas that utilize indigenous knowledge with those that do not, in order to promote the integration of traditional indigenous knowledge into contemporary conservation practices. The study employs remote sensing data of GIS to map SC sites, agricultural land use and TEK related Anuradhapura utilizing QGIS and SPSS software. Descriptive statistics utilized here indicated a co-efficient of correlation of $r = 0.75$, $p < 0.01$ between traditional behaviors and biodiversity. Analysis by ANOVA showed that lands owned and controlled by indigenous people contain more intact and possess stronger ecological connectivity. The study addresses the utilization of indigenous knowledge as a new and effective paradigm for the management of the environment and natural resources in the Anuradhapura District.

Keywords: Geospatial technologies, Indigenous knowledge, Biodiversity conservation, Land management, GIS.

EDIBLE ACTIVE COATING USING DRIED POWDER OF *LAVULU* FRUIT (*Pouteria campechinana*) FOR NATURAL CHEESE

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Abstract

Lavulu (*Pouteria campechiana*) is a fruit rich in starch and bioactive compounds such as vitamin C and carotenoids, making it a promising ingredient for functional food and packaging applications. Despite its potential, *Lavulu*'s applications in food product development remain underexplored. This study aimed to address challenges in natural cheese coatings by developing an edible, active coating incorporating dehydrated *Lavulu* pulp. The objectives were to optimize formulations, evaluate shelf-life, and assess the sensory properties of coated cheese. Three formulations were tested: 50% *Lavulu* pulp with 50% sodium alginate, 75% *Lavulu* pulp with 25% sodium alginate, and 100% *Lavulu* pulp. These were compared to uncoated and paraffin-coated cheese. All five treatments were analysed for physicochemical properties, microbial stability, and sensory attributes over 28 days of storage at 10 °C. Cheese coated with *Lavulu*-based formulations exhibited a more stable pH during storage compared to uncoated and paraffin-coated samples. Weight loss in *Lavulu*-coated cheese was comparable to paraffin-coated samples by day 28. *Lavulu*-coated cheese showed enhanced yellowish colouration with reduced lightness. Among the formulations, cheese coated with 75% *Lavulu* pulp demonstrated the lowest microbial spreadability and the highest sensory acceptability, excelling in texture, aroma, colour, and overall quality. These findings underscore *Lavulu*'s potential as an innovative and effective ingredient for edible cheese coatings, enhancing preservation and sensory quality.

Keywords: Coatings, carotenoids, starch, active packaging, underutilized fruits

DEVELOPMENT OF NOVEL VEGETABLE BEVERAGE USING CARROT (*Daucus carota*), TOMATO (*Solanum lycopersicum*), & GINGER (*Zingiber officinale*)

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Abstract

This study aimed to develop an innovative vegetable-based beverage using carrot, tomato, and ginger to create a nutritious, sensory-appealing, and functional product that aligns with consumer preferences. Carrot and tomato were selected for their rich content of vitamins, minerals, and antioxidants, while ginger was incorporated to enhance flavor and provide additional health benefits due to its bioactive compounds. The research involved formulating three juice blends with varying proportions of carrot, tomato, and ginger. These formulations were subjected to sensory evaluations, nutritional analyses, and microbial safety testing to identify the most suitable combination. Among the tested formulations, the tomato-dominant blend (T1: 64% tomato, 16% carrot, and 20% ginger) emerged as the most preferred, based on taste and overall acceptability. Physicochemical analysis of the T1 blend revealed a pH of 4.00, a titratable acidity of 0.46%, and a Brix value of 4.13, indicating a well-balanced sweetness and acidity. The product was low in calories, providing only 16 kcal/100 g, and contained significant levels of essential nutrients, including 11.1 mg/kg of vitamin C. Microbial safety testing confirmed the absence of harmful contaminants such as coliforms and E. coli, ensuring the beverage's safety for consumption. This study highlights the potential of vegetable-based beverages as nutritious and healthy alternatives to traditional fruit juices. The findings suggest that such beverages can cater to the growing consumer demand for functional and health-focused products. Future research should focus on enhancing texture stability, extending shelf life, and exploring market potential through a deeper understanding of consumer preferences and broader-scale testing.

Keywords: Sensory evaluation, nutritional composition, microbial analysis, healthy beverages.

LEVERAGING GLOBAL DIGITAL ARCHIVING TECHNOLOGIES FOR THE PRESERVATION OF INDIGENOUS KNOWLEDGE IN SRI LANKA

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Abstract

The UNESCO Constitution underscores the significance of safeguarding and disseminating knowledge by protecting global cultural and scientific heritage. Initiatives like the "Information for All" and "Memory of the World" programs promote information policies and the conservation of recorded knowledge. This study explores the feasibility of digital archiving for preserving Indigenous Knowledge in Sri Lanka, where such practices remain largely unadopted. It evaluates effective models from Australia, Canada, and the United States, including Mukurtu and Living Archives, to assess how Indigenous peoples can manage the storage and accessibility of their information for dissemination. A review of over 25 research studies from Google Scholar, IEEE Xplore, and ScienceDirect highlights the applicability of these models to Sri Lanka. The study emphasises systems such as DSpace, Archivematica, and Preservica, along with database solutions like MySQL and PostgreSQL, which are widely used for digital preservation. Metadata management tools such as Dublin Core and MODS facilitate the organisation and retrieval of preserved information. Emerging technologies such as blockchain are also being explored for their potential to ensure authenticity and ownership. Findings indicate that tailoring global strategies to Sri Lanka's cultural framework—through community-driven initiatives and a culturally oriented methodology—can enhance cultural stewardship, safeguard Indigenous Knowledge, and prevent distortion. By adopting established digital archiving techniques, Sri Lanka can align with UNESCO's objective of preserving the global documentary legacy, ensuring that Indigenous Knowledge systems remain accessible, protected, and transmitted to future generations.

Keywords: Indigenous knowledge, Digital archiving, Cultural heritage, Digital preservation

DEVELOPMENT OF SPICY SESSILE JOYWEED BISCUITS

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Abstract

Nutritional supplementation is gaining attention as consumers become increasingly aware of their dietary needs. A healthy diet can significantly reduce the burden of illness. Sessile joyweed (*Alternanthera sessilis*), known for its antioxidant properties, anti-inflammatory effects, and high vitamin content, is a leafy vegetable commonly referred to as ponnankani or mukunuwenna in Sri Lanka. This study aimed to develop healthy biscuits using this green leafy vegetable. To achieve this, green sessile joyweed was dried at 65°C for 3 hours and then ground into a fine powder. This powder was incorporated with wheat flour and rice flour to create biscuit dough. The biscuits were prepared using different ratios of sessile joyweed powder (1%, 2%, and 3%). Subsequent physical, nutritional, and sensory analyses were conducted to evaluate the quality of the biscuits. The sensory evaluation revealed that the optimal formulation retained desirable color, taste and texture characteristics. Among the different formulations, the biscuits with 3% sessile joyweed powder were highly accepted by the panelists. The study concluded that incorporating sessile joyweed powder at this concentration improved both the sensory qualities and the nutritional profile of the biscuits. Biscuits with 3% added sessile joyweed powder contain 3.85% moisture, 1.29% ash, 9.10% protein, and 25.95% calcium. The findings indicate that sessile joyweed powder is a valuable ingredient for biscuit production, providing health benefits without compromising taste. This innovative approach to incorporating green leafy vegetables into baked foods promotes healthier dietary choices and encourages the consumption of nutritious, plant-based ingredients.

Keywords: Biscuit, Dehydrated Powder, Nutrition, Sessile joyweed, Sensory

DEVELOPMENT OF AN AUTOMATED BEARING GREASE FILLING MACHINE

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Abstract

Bearings are vital components of mechanical systems because they assist rotating shafts and lessen friction. In particular, the bearings help the support turn smoothly. Nevertheless, as the conventional manual greasing activities consume a lot of time, require much labour and are prone to errors, the effect is the inferior performance of bearings, the variability of lubrication, and the increase of grease waste. This research introduces the Automated Bearing Grease Filling Machine (ABGFM), a system that guarantees a significant level of lubrication by delivering precise, uniform, and efficient grease application on various types of bearings. When compared to manual methods, the ABGFM reduces greasing time by 910.8%(Average) by integrating linear actuators, Hall effect sensors, and an Arduino Mega microprocessor. A syringe-based pumping cylinder meets the need for precise lubrication by ensuring precise and economical grease delivery. Furthermore, integrated safety measures like automated cutoffs and temperature sensors improve operating safety and dependability. The ABGFM successfully addresses key issues in industrial maintenance procedures by guaranteeing precise lubrication, reducing grease waste, and prolonging the life of bearings. The innovation mentioned introduces an approach for bearing grease filling that lacks standardization, with a robust design that guarantees precise lubrication, reduces waste and extends bearing life. Conversely to the existing machines that work with only a single bearing, this machine can fill various bearings having different types and sizes, thus functioning as a prescription for industrial applications, which is versatile and efficient.

Keywords: *Bearings, Automated Grease Filling, Lubrication Efficiency, Industrial, Maintenance, Safety Features*

PRAKRITI PROFILER: RADIAL ARTERY PULSE ANALYSIS DEVICE FOR ASSESSING PRAKRITI LEVELS

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Abstract

Ayurveda, emphasises the fundamentals of *Tridosha* and *Prakriti* as the basic concepts of that health science. The *Tridosha* theory explains that the human body is controlled by the combinations of *Vata*, *Pitta* and *Kapha*, which controls the physical and mental functions: *Vata* controls movement, *Pitta* governs metabolism and transformation, and *Kapha* maintains structure and stability. The intrinsic nature of the individual, or *Prakriti*, is defined by the balance of *Tridosha* in the body. Analysing the *Prakriti* level based on one's understanding of their physical, mental and emotional characteristics will play a crucial role in personalized treatment and disease prevention. However, traditional *Prakriti* assessment is a very subjective process. The results may be biased, and precision and accuracy may depend on the experts assessing individual *Prakriti*. Due to the challenges of qualitative analysing methods, there is a requirement for more robust methods as alternatives to those traditional methods. The proposed supportive tool called "*Prakriti Profiler*" suggests both personalized medicine and treatment methods for particular disease prevention. This tool is based on a supervised machine learning model of support vector machine (SVM) and it quantifies *Prakriti* level accurately. Signals are gathered from the radial artery pulses using an optic sensor, and converted into analogy signals over time. To improve data quality for the quantitative study, several pre-processing steps are applied before the above-mentioned conversion process. The recognition and final results of the SVM-trained model are measured by several statistical metrics, with an accuracy of 85.00%.

Keywords: Ayurveda, Prakriti, Nadi Pariksha, Machine Learning, Support Vector Machine (SVM).

EFFECTS OF THE WOOD TYPE USED FOR SMOKING ON QUALITY PARAMETERS OF BEEF SAUSAGE

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Abstract

Smoking is a preservation and cooking technique that exposes food to smoke that is generated from burning wood. Organic compounds in smoke, such as phenols, aldehydes, and ketones, impart flavour, colour, and aroma to smoked products like sausages. This study evaluated the effects of smoke generated locally available from wood types on the sensory, chemical, and microbial qualities of beef sausages. Five groups of sausages were processed: control (without smoking) and groups smoked with coconut shells, citrus wood, cinnamon wood, and sawdust. Principal component analysis of sensory parameters evaluated by thirty untrained panelists revealed significant differences among the five sausage groups. Compared to the control, all smoked groups received the highest ($p < 0.05$) scores for sensory attributes, particularly smoky flavor and aroma. These two attributes were the primary contributors to Principal Component 1 (PC1), which accounted for 56.3% of the total variance. This aligns with expectations, as different wood types are known to impart unique sensory characteristics. Sausages smoked with wood types had significantly higher ($p < 0.05$) total phenolic contents than the control, which correlated negatively with pH. However, no significant differences ($p > 0.05$) in microbial loads were observed across groups after 7 and 28 days of frozen storage. This suggests that while smoking influences sensory and chemical properties, it does not significantly affect microbial stability under frozen conditions.

Keywords: Total phenolic content, smoking, smoked beef sausages, wood type

INTEGRATING TECHNOLOGY AND LEGAL FRAMEWORKS FOR THE PRESERVATION AND PROTECTION OF INDIGENOUS KNOWLEDGE: A SRI LANKAN PERSPECTIVE

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Abstract

Indigenous knowledge encompasses the preservation of indigenous knowledge in Sri Lanka, which encompasses traditional practices such as Ayurvedic medicine, agricultural techniques, and folklore deeply rooted in cultural heritage. Modernization, globalization, and insufficient legal protection have led to the erosion and exploitation of this valuable knowledge. The research identifies inadequate technological integration and legal frameworks as critical challenges, highlighting the potential of advanced technologies such as artificial intelligence (AI), blockchain, and virtual archives. AI facilitates the digitization and categorization of oral traditions, while blockchain ensures secure ownership and benefit-sharing mechanisms. However, technological initiatives in Sri Lanka remain limited in scale and community involvement. The study evaluates the existing Intellectual Property Act, which lacks provisions for communal ownership and benefit-sharing, and advocates for tailored legal reforms drawing insights from international frameworks such as the Nagoya Protocol and India's TKDL. Methodologically, the research includes a review of technological applications and legal frameworks, along with case studies of global best practices. Results emphasize the need for a balanced approach that integrates technology and legal safeguards while involving indigenous communities in preservation efforts. Key recommendations include introducing a sui generis legal framework, expanding the Intellectual Property Act, and promoting public-private partnerships to scale technology-driven initiatives. By integrating innovation with legal protections and community participation, Sri Lanka can preserve its rich indigenous heritage and empower communities for a sustainable future. The study underscores the importance of combining technology, legal reforms, and collaborative strategies to protect and promote traditional knowledge in the digital age.

Keywords: Indigenous Knowledge, Preservation, Technological Innovation, Legal Frameworks

THE DIGITAL TRANSFORMATION OF FOLKTALE NARRATIVES IN SRI LANKA: A COMPARATIVE STUDY ACROSS URBAN AND RURAL COMMUNITIES IN WESTERN PROVINCE

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Abstract

The advancement of Information and Communication Technology (ICT) has significantly impacted various sectors, including the preservation and dissemination of Indigenous Knowledge (IK). In Sri Lanka, folktales, which are an integral part of the cultural heritage, have traditionally been passed down orally. However, with the increasing use of digital platforms, these stories are now shared across generations in new and innovative ways. The research problem of the study addresses how ICT influences the preservation and dissemination of Sri Lankan folktales in contemporary society, exploring its impact on cultural heritage and knowledge transmission. This study aimed to explore the role of ICT in the dissemination of Sri Lankan folktales, examining how digital tools such as e-books, online platforms, and social media are enhancing accessibility and engagement. The research was conducted in the Western province with a focus on the Colombo, Gampaha and Kalutara districts using a purposive sample of 18 respondents through a Google form-based survey and interview schedule. Data collected from the respondents were analysed thematically. The findings suggest that ICT has a positive influence on making folktales more accessible, but challenges such as lack of awareness, technical skills, and resistance to change remain. The study emphasizes the need for strategic interventions to overcome these barriers and improve the effectiveness of ICT in preserving and sharing cultural knowledge. ICT serves as a bridge between traditional oral storytelling and modern methods of cultural transmission, ensuring that Sri Lankan folktales are preserved for future generations.

Keywords: ICT, folktales, Sri Lanka, Indigenous Knowledge, digital transformation.

FORMULATION AND EVALUATION OF HERBAL LIPSTICKS USING PLANT BASED PIGMENTS FOR ENHANCED SAFETY AND EFFICACY

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Abstract

The origins of lipstick trace back to ancient civilizations, where it was common practice to use natural colour pigments and natural ingredients to enhance the elegant appearance of the lips and overall women's personalities. As lipsticks became more popular as a basic and daily-use cosmetics product, manufacturers started experimenting with new synthetic alternatives; however, many of those products presented unforeseen hazards. Due to growing public awareness about the ill effects of synthetic, highly toxic chemical-based cosmetics, herbal lipsticks are regaining attention, with increasing consumer demand for products free from synthetic ingredients. Today's herbal cosmetics market is booming, with formulations that are healthy, safe, and effective. In this context, the aim of this study was to formulate and evaluate herbal lipstick using natural pigments that derived from *Moringa oleifera*, *Tagetes erecta*, *Bouganvilla glabra*, *Beta vulgaris*, *Camellia sinensis*, *Clitoria ternatea*, *Rosa rubiginosa* and *Hibiscus rosa senensis* specifically to minimize potential side effects associated with synthetic alternatives. Other than the natural plant pigments to formulate the herbal lipsticks various natural ingredients, such as beeswax, castor oil, vanilla essence, and lemon juice also were utilized. A total of eight herbal lipstick formulations were prepared using pigments extracted through maceration, with solvent removal carried out using a rotary evaporator. Finally, prepared lipsticks were subjected to various tests such as melting point, spreadibility, perfume stability, surface anomalies, pH, and long-lasting wear quality. All formulations demonstrated favourable results, with formulations *Tagetes erecta* pigments and *Bouganvilla glabra* pigments incorporated formulations exhibiting the best characteristics, including high skin compatibility (no irritation), long-lasting wear, stable fragrance, and absence of surface anomalies.

Keywords: Cosmetics, Herbal Lipstick, Natural Ingredients, *Tagetes erecta*, *Bouganvilla glabra*

COLLABORATIVE DEVELOPMENT OF HERBAL ANTI-OBESITY CAPSULES: ETHNOBOTANICAL INSIGHTS AND PRECLINICAL VALIDATION

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Abstract

The global prevalence of non-communicable diseases such as obesity and cardiovascular diseases (CVDs) necessitates innovative therapeutic approaches. Cardio-metabolic syndrome, characterized by risk factors like diabetes, obesity, and dyslipidaemia, is on the rise globally and in Sri Lanka. This study investigated the anti-obesity potential of *Erythrina indica* (Indian Coral Tree) leaves, integrating traditional ethnobotanical knowledge with modern scientific validation. Ethnobotanical data from 27 traditional healers in Tamil Nadu, India, identified medicinal plants used for obesity management. Methanolic extracts of *Erythrina indica* leaves were tested on high-fat diet-fed Wistar rats, demonstrating significant reductions in total cholesterol, triglycerides, and SGPT levels, comparable to Fenofibrate. Based on these findings, standardized herbal capsules were developed using *Erythrina indica* leaf powder encapsulated in HPMC capsules, adhering to Ayurveda pharmacopoeial standards. Preliminary testing confirmed the capsules' quality and efficacy. This research validates traditional claims about *Erythrina indica* and offers a natural, modernized solution for obesity management. Future plans include obtaining Ayurveda registration in Sri Lanka, conducting human clinical trials, and commercializing the capsules as a safe and effective therapeutic.

Keywords: *Erythrina indica*, cardio-metabolic syndrome, obesity management, herbal capsule, ethnobotany

EXPLORING *Nigella sativa* OIL AS A SUSTAINABLE AND MULTIFUNCTIONAL TEXTILE FINISH

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Abstract

Nigella sativa L. is an annual herb of the Ranunculaceae family native to Southwest Asia, North Africa and Southern Europe with seeds called black cumin seed or black seed. *Nigella sativa* seeds and oil have been widely used for nutritional and medicinal purposes. In response to growing environmental and health concerns associated with synthetic textile finishes, this study explores the potential of Nigella sativa oil (NSO) as a natural, sustainable alternative by analyzing its chemical composition, application techniques, and functional properties. However, its effectiveness as a textile finishing agent, particularly in terms of its application on a large scale, remains a key knowledge gap. With increasing interest in eco-friendly innovations, NSO emerges as a multifunctional textile finishing agent, aligning with the shift of many textile brands towards sustainability. NSO is a natural product, so it is biodegradable, non-toxic, and safe for human use, which makes it an attractive option for textile finishing. Studies have shown its potential as anticancer, antiradical, analgesic, antimicrobial, anti-inflammatory, and hepatoprotective, with potential wellness applications for skin health. NSO, rich in essential fatty acids, tocopherols, phytosterols, polyphenols, and thymoquinone, offers antibacterial properties that aid wound healing and protect skin cells from UV damage by reducing inflammation and oxidative stress. It can be incorporated into fabrics for wound care, personal hygiene, and healthcare applications through pad-dry-cure or spray coating techniques. NSO is considered safe for human skin and can even have moisturizing and soothing effects, it is a suitable option for finishing textiles that come into direct contact with the skin, such as clothing and bedding. The results of this study will provide valuable information on the potential of *Nigella sativa* Oil as a sustainable and multifunctional textile finish. This information can be used to develop new and innovative textile products that are both functional and environmentally friendly.

Key words: *Nigella sativa*, Textile, Oil Finishing, Antibacterial, Thymoquinone

INNOVATIVE METHODS FOR PRAKRITI CLASSIFICATION: INTEGRATING MACHINE LEARNING WITH AYURVEDIC PRINCIPLES

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Abstract

According to *Ayurveda*, the constitution of an individual is determined by the concept of the balance of three *doshas*: *Pitta*, *Kapha*, and *Vata*. *Doshas* are believed to influence the mental and emotional characteristics of an individual, besides physical characteristics, and thus form a basis for individualized treatment. Traditionally, *Prakriti* classification has depended upon subjective assessments by Ayurvedic experts, which mostly lead to variability. To address these challenges, this study proposes an automated method for *Prakriti* classification using pulse signal data from optical sensors. For further processing, the pulse signals obtained from digital arteries are transformed into Gramian Angular Field (GAF) images with the help of machine learning algorithms and clustering techniques. Specifically, this study compares several clustering techniques, including K-means, Density-Based Spatial Clustering of Applications with Noise (DBSCAN), Agglomerative Clustering, Self-Organizing Maps (SOM), and Gaussian Mixture Models (GMM), which are employed for the classification of *Prakriti* categories. Based on the most effective clustering approach, k-Nearest Neighbors (k-NN) is subsequently applied for model training and classification. The results revealed that all three *Prakriti* types yielded distinctive and well-marked clusters after coupling k-NN with clustering algorithms. The K-Means model was able to establish that pulse signal analysis could be employed in the automation of the classification process of Ayurveda *Prakriti* at a clinical level, yielding a remarkable model accuracy of 0.9667.

Keywords: Ayurveda, Prakriti, Pulse Signal, Gramian Angular Field, K-Means model.

DEVELOPMENT OF AN ENERGY BAR USING SWEET POTATO (*Ipomoea batatas*), BANANAS (GENUS *MUSA*) AND APPLES (*Malus domestica*)

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Abstract

Energy bars are a popular, convenient, and easily consumed source of nutrition, offering a variety of flavors and vitamins to meet the nutritional needs of busy individuals. This research aimed to develop an energy bar using commonly available ingredients. Sweet potatoes, apples and bananas were used as main ingredients due to their high nutritional properties. Three energy bar samples were prepared for sensory evaluation by changing the concentration of dehydrated bananas and apples. They were baked at 180^{o}C for 25 minutes. Shelf life and qualitative properties of the selected formulation were evaluated 0, 2 and 4 and 8 weeks after production at room temperature. Developed energy bar contains 1.6% of ash, 4.8% of total fat, 3.4% of crude fibre, 10% of crude protein, 30% of carbohydrates and 225 calories (kcal). Proximate analysis was agreed with the values given in AOAC standards. Two months after storage at room temperature, microbial properties were less than the maximum count recommended in SLS standards (acceptable maximum Years & Mold count is 1000 CFU/g, and Total plate count is 10000CFU/g). Peroxide value increased gradually from an initial value of 0.046 meq/kg to 0.644 meq/kg up to one month of storage without Coliform nor Fecal Coliforms. Shelf life and qualitative properties remain acceptable.

Keywords: Shelf life, qualitative properties

Indigenous Knowledge in Environmental management

Cultural heritage and Indigenous Knowledge

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IMPORTANCE OF INDIGENOUS KNOWLEDGE SYSTEM FOR SUSTAINABLE DEVELOPMENT

Abstract

Indigenous knowledge is the unique knowledge confined to a particular culture or society. This knowledge is generated and transmitted by communities, over time, to cope with their own agro-ecological and socio-economic environments. According to the World Commission on Environment and Development, sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own basic needs. When talking about sustainable development, our focus should be on the sustainability of the environment and how to achieve sustainable development in economy. Our focus should be how indigenous knowledge has been used as an alternative knowledge system for sustainable development. We can illustrate this with a simple example. Our ancestors had a good sense of how to consume natural resources without harming the natural resource base of the area to feed future generations. Although it is not possible to use the knowledge of resource planning in the same way today, there is a possibility to use the principles based on those environmental management methods for environmental management in rural areas in a way that is suitable for today. Therefore, we should safeguard the knowledge of our ancestors, and it should be blended with modern technology to achieve sustainable development. Sustainable development is not about creating many problems to solve one problem. Accordingly, sustainable development is environmentally friendly and humane development. The reason for the natural calamities and climate changes in the current world is that people do not believe in environmentally friendly development. Our ancestors use such favorable development.

A COMPARATIVE STUDY OF THE GOLDEN RATIO AND THE ANCIENT BUDDHIST HOSPITALS IN SRI LANKA

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Abstract

Few studies have been performed on the architectural proportions of ancient hospitals in the Buddhist ritual space. None of them have been done in humans' mental and physical balance using the six senses, structural balance of the ancient hospitals in the Sri Lankan Buddhist ritual space. These were highly formal architectural arrangements. The objective of this study was to determine the mental and physical balance of indoor patients in ancient hospitals in Sri Lankan Buddhist ritual space. An adapted mixed research methodology was used for the study. The Golden ratio was used in design in ancient Egyptian architecture and is commonly found in nature. Divine proportion was introduced by Fibonacci, who was an Italian mathematician, after studying Indian culture in the 11th century. The ancient hospital procedures (curative care and palliative care *(Pirith* chanting)) are restored for the mental and physical balance of patients. Major results are that nearly similar ratios can be seen in the ancient hospital architectures in Sri Lanka (Anuradhapura, Mihinthale, and Madirigiriya) as well as the Golden ratio. This study concludes that the use of space for curative and palliative procedures follows architectural proportions in ancient hospitals to achieve healthy living for humans.

Keywords: Architectural proportions, Golden ratio, Indoor patients, Mental and physical balance, Sri Lankan ancient Buddhist hospitals.

TRADITIONAL METHODS OF HERITAGE PRESERVATION IN SRI LANKA AND THE ROLE OF NATURAL MATERIALS IN SUSTAINABILITY

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Abstract

Sri Lanka's cultural heritage, enriched by over 2,500 years of history, faces challenges from environmental degradation, urbanization, and inadequate conservation policies. This study examines the efficacy of traditional preservation methods and natural materials—such as lime, clay, timber, and stone—in safeguarding the country's cultural landmarks. It focuses on their environmental sustainability, cultural relevance, and socio-economic benefits, using case studies from prominent heritage sites like Anuradhapura, Sigiriya, and Galle Fort. The research highlights that natural materials reduce carbon emissions, enhance compatibility with original architectural styles, and provide durability in tropical climates. Ritualistic cleaning practices and community-led maintenance initiatives further strengthen the connection between heritage sites and local communities, fostering cultural continuity and active engagement. For example, the use of lime and clay in temple restorations ensures both structural integrity and historical authenticity. Qualitative and quantitative analyses reveal that traditional practices significantly enhance the longevity and adaptability of heritage structures. However, challenges such as diminishing skilled artisans, inconsistent policy implementation, and modern development pressures were identified. The study advocates for hybrid conservation approaches that integrate traditional techniques with modern innovations, alongside policy frameworks that prioritize training programs for artisans and sustainable resource utilization. By emphasizing the ecological, cultural, and economic importance of traditional methods, this study offers actionable insights for sustainable heritage management, ensuring the preservation of Sri Lanka's cultural legacy for future generations.

Keywords: Conservation, Cultural Heritage, Sustainability, Traditional Methods

NATURE-CENTRIC RECREATION ACTIVITIES INSPIRED BY THE VEDDA INDIGENOUS GROUP OF SRI LANKA

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Abstract

This study explores integrating the Vedda people's traditional ecological knowledge into nature-centric recreation programs in Sri Lanka. This study will question how the Vedda people's traditional ecological knowledge and cultural practices can be effectively integrated into nature-centric recreation programs that promote cultural preservation, ecological stewardship, and sustainable tourism while ensuring the empowerment and active participation of the Vedda community. Thus, the study aims to bridge cultural conservation and ecological education with four objectives: (1) document Vedda practices relevant to recreation, (2) co-create recreational activities with community involvement, (3) analyze their perceived impacts, and (4) provide recommendations for replicating the model. Using an ethnographic approach and participatory action research (PAR), data will be gathered through interviews, observations, and collaboration with Vedda community members, cultural historians, and environmental experts. The study expects to produce a catalogue of Vedda-inspired activities, a framework for sustainable recreation, and recommendations to empower the Vedda community. By preserving Vedda traditions in a modern context, the research will contribute to cultural heritage preservation, ecological stewardship, and sustainable tourism.

Keywords: Cultural Heritage, Sport Programme Development, Wanniyalaeto

CLASSIC SOCIOLOGICAL THEORETICAL ANALYSIS OF THE CONTEMPORARY SOCIAL ISSUE OF CLIMATE CHANGE AND ENVIRONMENTAL JUSTICE

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Abstract

Climate change and environmental injustice are intricately related issues that impact society. This study merges the classical sociological theories of Emile Durkheim and Karl Marx, drawing on existing literature, to explain the social origins of environmental injustice. It examines how Durkheim's focus on social solidarity and the role of strong institutions applies to environmental management, contending that the breakdown of these factors, as articulated in deforestation and marginalization of vulnerable populations, lead to environmental degradation and disproportionately affects marginalized groups. In addition, the paper describes how Marxist theory's focus on social inequality and capitalism accounts for the exploitative nature of the relationship with nature and the marginalization of vulnerable groups that ensues. Moreover, it analyses how capitalist drive for profit, as outlined by Marx, generates the overexploitation of nature and environmental degradation at the expense of marginalized groups that are excluded from nature and the decision-making process. This dense theoretical context, which takes into account the disintegration of Durkheim's social solidarity theory alongside the exploitative nature of Marx's capitalism, provides a more textured explanation of environmental injustice than monolithic theoretical approaches. It underscores the interplay between social structures, power dynamics, and environmental outcomes. The study concludes that a combined understanding of such interconnected social variables, together with the role played by anomie and the need for strong environmental institutions, is required to enact effective climate change as well as environmental justice policies.

Keywords: Climate Change, Environmental Justice, Sociological Theories, Social Inequality

THE SIGNIFICANCE OF THE RECIPROCAL RELATIONSHIP BETWEEN NATURE AND CULTURE IN DEVELOPING INNER MASTERY: AN ECOCULTURAL PERSPECTIVE IN INNER MASTERY

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Abstract

Nature and culture play a significant role in human behavior. "Ecoculture" emphasizes the importance of the positive and reciprocal relationship between nature and culture. The Eco culturalist perspective recognizes that ecocultural identities are shaped by indigenous knowledge and recollections of the dynamic relationship between the non-human element of landscapes and human culture. A sense of inner mastery is considered as an important dimension of psychological well-being across the lifespan. The way individuals identify themselves within their ecocultural systems, the influence of reciprocal relationship between nature and culture, and indigenous knowledge related to culture may influence their emotionality, cognition and behavior. The objective of this paper is to present a conceptual framework to explore the significance of reciprocal relationship between nature and culture in developing a sense of inner mastery. It also intends to examine the influence of this reciprocal relationship in enhancing well-being and development. In addition to indigenous knowledge and observations in three historical sites: Sigiriya, Pidurangala, and Ritigala, autoethnography, the use of researching personal experiences that provide unique insights into social, cultural and historical contexts, was used as data sources. It seems landscapes offer the physical space for people to interact with nature and resources. Individuals acquire knowledge from certain sites in the landscape of spiritual significance like sacred trees, forests and mountains. Indigenous knowledge related to these sites and the reciprocal relationship, and cultural beliefs and practices may influence individuals' emotionality and cognition thereby enhancing a sense of inner mastery that contributes to psychological well-being and development.

Keywords: Inner mastery, ecoculture, indigenous knowledge, psychological well-being

POST EVENT ANALYSIS: A CASE STUDY OF THE CULTURAL EVENT "VANI VIZHA" AT NAITA

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Abstract

This post-event analysis of the cultural event "Vani Vizha" at the NAITA Institute evaluates participant engagement and satisfaction and provides actionable insights for future event improvements. Data was collected from 22 participants using structured questionnaires and analyzed quantitatively. The findings revealed that 86% of participants agreed or strongly agreed that the event content aligned with their goals, reflecting its relevance. Engagement scores were identified as the most reliable metric for measuring participation, with 41% of respondents favoring this approach. Sound quality and stage setup were identified as key logistical challenges. Communication strategies during the event were generally effective, with 68% of participants expressing positive feedback, though neutral responses indicated room for enhancement. Survey feedback emerged as the most effective tool for measuring satisfaction, preferred by 55% of participants, followed by social media mentions at 23%. The analysis underscores the importance of participant-centric planning, resource optimization, and continuous feedback integration. By addressing logistical shortcomings and enhancing engagement strategies, future events can achieve higher satisfaction levels and greater impact. This study contributes to event management practices by providing a structured framework for evaluating and improving cultural events, balancing technical efficiency with participant satisfaction to deliver successful experiences. Through this project, valuable experience was gained in analyzing participant behavior, assessing logistical effectiveness, and applying data-driven evaluation methods. The process provided hands-on learning in survey implementation, real-time feedback management, and strategic planning for cultural event optimization.

Keywords: Post-event analysis, Participant engagement, Event satisfaction, Feedback integration, Cultural event evaluation.

Agriculture and biodiversity

CORAL BLEACHING TRENDS IN THE NORTH INDIAN OCEAN: THE IMPACT OF RISING SEA TEMPERATURES (1992–2024)

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Abstract

This study examines coral bleaching patterns in the North Indian Ocean, focusing on the impact of rising sea surface temperatures (SST) on coral stress. Data from the UK Met Office (1985–2002), NOAA's Geo-Polar Blended SST reanalysis (2002–2016), and real-time data (2016–present) were analysed to assess SST trends and coral bleaching alerts, using Degree Heating Weeks and Coral Bleaching Hotspot values to assign bleaching alert levels based on temperature anomalies. Elevated SSTs are typically observed during March and April. In 1992, SST anomalies in regions from 60°E to 80°E and 5°S to 20°N ranged from -2°C to 0°C, with anomalies of 0°C to 1°C in the 80°E to 100°E and 5°S to 10°N regions. Around Sri Lanka, only the northwestern and southern coasts exhibited warming anomalies (0°C to 1°C), while other regions showed anomalies from 0°C to -1°C. During this period, coral bleaching warnings were issued for areas between 5°S and 5°N, with warning-level alerts extending from 88°E to 103°E, but Sri Lanka had no alerts. By April 2024, SST anomalies across the study region had increased from 0.2°C to 2.5°C, leading to a rise in coral bleaching warnings. Areas between 5°S and 2°S and parts of Indonesia reached Warning Level 1, and regions from 55°E to 98°E below 5°N were under warning alerts, with parts of southwestern Sri Lanka also entering warning levels. Between 1992 and 2004, Sri Lanka's coral reefs, especially in Hikkaduwa and Bar Reef, suffered severe bleaching, with over 90% coral loss in 1998 due to elevated sea temperatures.

Keywords: Coral bleaching, North Indian Ocean, sea surface temperature, NOAA, Climate change, Conservation, Coral ecosystems.

LAND USE CHANGES OF BANDARAWELA DIVISIONAL SECRETARIATE DIVISION 1999-2017 BASED ON GIS

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Abstract

The land is dynamic, both spatially and temporally. Due to various socioeconomic and physical factors, it has become a scarce and degraded natural resource. Therefore, land use change is a major problem facing the entire world. This research mainly focuses on land use change in the Bandarawela Divisional Secretariate Division area between the period of 1999-2017. A qualitative approach was used for this research. Secondary data was collected from the Survey Department, the Land Use and Policy Planning Department, and ArcGIS. Supervised classification, Excel were used for this study. After analysing the data, it was possible to identify the changes in this area. When comparing the periods of 1999 and 2017, it was observed that the built-up area had increased by 1092.08 hectares. One notable change was the increase in the home garden area by 156.08 hectares. The increase in built-up areas was attributed to a decrease in building and road distribution during this period. Therefore, anthropogenic activities mainly contributed to the changing land use patterns in the Bandarawela DSD Area.

Keywords: land use changes, Spatial and temporal, Bandarawela, Geographic information system.

ASSESSMENT OF THE PRESENT STATUS OF FISH DIVERSITY IN RELATION TO WATER VELOCITY: A CASE STUDY AT SELECTED AREAS IN WATAWALA ELLA FALLS, RATNAPURA DISTRICT, SRI LANKA

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Abstract

The conservation of fish diversity is crucial for protecting endemic species, maintaining ecosystem balance, and preserving habitats. As bioindicators, their diversity reflects the health of aquatic ecosystems. The study, conducted at three sampling sites of Watawala Ella Falls, Ratnapura District, Sri Lanka, in November 2024 over 15 days, aimed to determine the fish diversity at varying water velocities. The study assessed how water current variations affect the species' composition and habitat preference. Sites were selected based on water current velocities: high (Site 01), mid (Site 03), and low (Site 02). Cast nets with 10.00 mm mesh size and hand nets were used to catch fish. The study revealed 15 distinct fish species, including 11 endemic species, with the Cyprinidae family being the most abundant. Diversity indices, including Shannon Wiener and Simpson, were calculated. Data were statistically analysed utilising One-way ANOVA and Tukey's test in MINITAB 17.0. The results depict the Shannon-Weiner index of site 02 (2.55 ± 0.08, $p<0.05$) is significantly higher than site 01 and 03, dominated by numerous *Puntius* species, including Redside barb (*Puntius bimaculatus*), Blacklined barb (*Puntius pleurotaenia*), and Cuming's barb (*Puntius cumingii*) where the water velocity (0.016 m/s) is at its lowest compared to the other sites. Site 01 exhibited the highest velocity of water current (0.25 m/S) exhibiting significantly low species richness (2.13 ± 0.05, $p<0.05$) compared to sites 02 and 03 with Stone Sucker (*Garra ceylonens*is) being the predominant species. This study concludes that the reduced water flow of site 2 has provided favourable conditions, including habitats, food sources, and low energy expenditure for swimming.

Keywords: Aquatic, Bioindicators, Cast net, Stone sucker.

ENHANCING CUCUMBER (*Cucumis sativus* L.) YIELD BY A POLLINATOR HABITAT

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Abstract

Wild and managed bees are well-documented as effective pollinators of crops, and their potential to contribute to crop production is well-documented. Successful pollination is critical to the quality and yield of cucumber. Complete pollination ensures uniform and perfectly formed fruits with even maturity, while improper pollination results in the formation of misshapen and small-sized fruits, thus leading to a low yield of marketable fruits. In this background, the current study investigated the effect of pollinator habitat on the yield of cucumbers. Two cucumber plots were established, with one encompassed by a pollinator habitat. The yield and other yield-related parameters were measured, and yield data were analysed by using two-sample t-tests. The data analysis was done using R Studio software. The cucumber plot associated with the pollinator habitat attracted a higher number of bees compared to other plots. It also recorded higher average yield parameters, *viz*., fruit weight, yield per plant, and number of seeds and consistent yield quality parameters, *viz*., fruit length, fruit girths and fewer misshaped fruits. Though differences were not statistically significant ($p > 0.05$), consistent quality parameters of the yield could fetch premium pricing in the market. Studies conducted with Okra using a pollinator habitat recorded significantly high yielded parameters. Hence, further research is recommended to confirm these trends and to explore the benefits of pollinator habitats, potentially providing valuable insights for sustainable agricultural practices.

Keywords: Cucumber, Pollinator habitat, Pollinators, Yield parameters

EXPLORING THE POSITIVE IMPACT OF INDOOR PLANTS ON YOUTH MENTAL WELL-BEING

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Abstract

Young people in modern societies spend most of their time indoors. The overall emotional, psychological, and social health of young individuals encompasses their ability to manage stress, navigate life's challenges, maintain positive relationships, and make meaningful contributions to their communities. Hence, this study was conducted with the intention of examining the perception of keeping indoor plants among youth and to see how it affects their mental well-being. The study employed a combination of quantitative and qualitative elements. The data was collected by surveying 270 urban residents, and the collected data was descriptively analysed using R Studio software (version 4.1.0). Among the respondents, 49.44 % were involved in indoor gardening. The majority of the respondents were females (69%). A significant proportion of the respondents (65%) were graduates, indicating a correlation between higher education levels and the likelihood of engaging in indoor gardening. Nearly half (49.4%) own indoor plants and prefer to locate them in the living room, emphasizing the desire for natural authenticity in their living spaces. Key factors in plant selection included aesthetics, ease of care, size, and availability. According to the perception of the respondents, cleaning indoor air (MS=3.54), reducing stress (MS= 2.74), self-enjoyment (MS=2.64), reducing loneliness/solitude (MS=2.48) and adding beauty (MS= 2.23) were ranked as the top five important aspects of indoor plants in the daily living environment. Notably, 59% reported increased satisfaction, emphasizing the psychological and health benefits of indoor gardening. This study confirms that houseplant care behaviours are linked to improved mental well-being, supporting the promotion of indoor gardening among youth.

Keywords: Indoor plants, Metal well-being, Youth

SURVIVAL ANALYSIS OF MICH HY3 CHILI SEED GERMINATION AND IDENTIFICATION OF INFLUENTIAL FACTORS

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Abstract

This study investigates the germination potential of MICH HY3 chili seeds, a hybrid variety recently developed in Sri Lanka with significant export potential. The research aims to analyse the effects of treatment temperature, growth media, treatment duration, and storage conditions on seed germination using controlled experiments and survival analysis techniques. Data from 767 observations were analysed using Kaplan-Meier survival curves and Cox Proportional Hazards models to evaluate the influence of these factors. This study fills a knowledge gap in the survival pattern of MICH HY3 chili seeds and provides actionable insights for improving germination practices. While the findings are based on controlled conditions, they have practical implications for optimizing agricultural production and storage strategies. Results indicate that temperature is critical, with an optimal range of 25–30°C maximizing germination rates and minimizing germination time. Shorter treatment durations (1 minute, 1 hour) resulted in slower germination rates, whereas longer durations (24 hours, 5 hours) achieved faster and higher germination success. Growth media with low osmotic potential and appropriate storage conditions also significantly enhanced germination outcomes. The interaction model (Correlation Coefficient= 0.97) demonstrated the synergistic effects of multiple factors, highlighting the importance of comprehensive treatment strategies. Future research should explore additional environmental variables and field-based applications to further enhance germination efficiency and seedling development.

Keywords: Germination, Chili, Temperature, Duration, Survival

INVESTIGATION OF *IN VITRO* PROPAGATION TECHNIQUES FOR MEDICINALLY IMPORTANT *SCHEFFLERA* SPECIES IN SRI LANKA

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Abstract

The genus *Schefflera*, with over 900 species of trees, shrubs, and climbers, is widely distributed in tropical and subtropical regions. Among these, *S. heterobotrya* ("Ittha") and *S. stellata* ("Itta-wel") are highly regarded for their ethnomedicinal value. This study aimed to optimize *in vitro* propagation protocols for these species to ensure a sustainable supply of disease-free, high-quality plant material. Nodal and petiole explants of *S. stellata* were treated with 0.5 %, 1%, and 1.5% Clorox™ for 10–20 minutes in phase I, followed by 70% ethanol for 2 minutes. Persistent contamination required increasing Clorox™ concentrations to 2%, 3%, and 4% in phase II, with 4% Clorox™ for 10 minutes achieving 100% survival for nodal explants, while petiole disinfection was unsuccessful under the tested regime. Further, the nodal explants transferred to MS medium supplemented with a combination of BAP (5 mg/L), Kinetin (1 mg/L) and 2,4-D (1 mg/L) successfully induced shoots. Due to the limited availability of juvenile *S. heterobotrya* material, indirect organogenesis was investigated using callus induction from leaf explants. Leaf segments treated with 5% Clorox™ for 10 minutes achieved only a 49.98% survival rate, and further refinement is required to optimize its surface disinfection while minimizing tissue browning and necrosis. *S. stellata* can be successfully propagated by treating nodal explants with 4% Clorox™ for 10 minutes, followed by 70% ethanol for 2 minutes and culturing on MS medium supplemented with BAP (5 mg/L), Kinetin (1 mg/L) and 2,4-D (1 mg/L). Further investigations into the use of growth regulators will be required for the multiplication of the propagules.

Keywords: *Schefflera heterobotrya*, *Schefflera stellata*, surface disinfection, direct organogenesis, indirect organogenesis

PRESENT STATUS OF GREEN BIOMASS INCORPORATION AS A FARMING PRACTICE IN JAFFNA PENINSULA, SRI LANKA

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Abstract

Green biomass incorporation is widely used by the farmers in Jaffna as a suitable soil ameliorating practice, which plays a positive role in crop production. In this regard, a field survey was carried out in the Jaffna district, Sri Lanka from March to June 2023 to determine the current status of green biomass incorporation during the cultivation of crops. Using random sample approaches, 100 farmers with prior experience of green biomass incorporation were chosen. The data were analysed by using descriptive statistics. The study showed that the farmers have a fair experience in *in-situ* (92%) and *ex-situ* (74%) production of green biomass and incorporating them into the soil. *Crotalaria juncea* was the most frequently used green manure crop. Other green manure crops used were *Vigna radiata*, *Vigna mungo, Vigna unguiculata* and *Cyamopsis tetragonoloba*. The leaves of *Azadirachta indica*, *Thespesia populnea*, *Gliricidia sepium, Borassus sp, Artocarpus heterophyllus*, *Senna auriculata and Leucaena leucocephala* were also commonly used in the form of green leaves for soil incorporation. However, the findings also revealed that the farmers did not follow the recommended guidelines in green biomass incorporation. The practices such as frequency of incorporation, time for incorporation, decomposition period, seed rate for planting and amount of leaf biomass for incorporation were based on the availability of planting material, extent of land, financial status of the farmer, and soil and climatic conditions. It can be concluded that although the farmers in Jaffna have good experience with green biomass incorporation, there is a need to make them aware of appropriate cultivation and incorporation practices of green manure.

Keywords: Green biomass incorporation, *In-situ*, *Ex-situ*, Eco-friendly, Jaffna District

PHYTOCHEMICAL ANALYSIS OF *Bacopa monnieri* (L.) WETTST. GROWN IN GLOBAL WARMING MIMIC HIGH TEMPERATURE WITH ORGANIC MANURE

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Abstract

Medicinal plants are very important in modern civilization to obtain natural active substances known as secondary metabolites. Recognizing the growth responses of the *Lunuwila (Bacopa monnieri)* plant to temperature stress and its reactions to organic manure is crucial. The study was conducted in the Open University of Sri Lanka, inside a temperature-regulated poly tunnel and ambient temperature plant house. The experiment was conducted based on a complete randomized design with three replications. Two factors considered as temperature and organic manure with two temperature levels were ambient temperature 27 °C - 32°C and temperature stress 35°C -36 °C. The three organic manure types were 100% compost,50% compost with 50% cow dung and 100% cow dung. *Lunuwila* grown with 100% compost under temperature stress showed the significantly highest shoot and root weight. Therefore, GC-MS analysis was done for the dry shoots and roots of the plants grown under ambient temperature and global warming-induced temperature stress to compare the secondary metabolites and their effect on biological activities. From the analysis of GC-MS for samples under ambient temperature, there were 56 compounds, and among these, 39 important compounds were found as secondary metabolites. GC-MS Analysis for sample extraction under temperature stress, sixty-six photochemical constituents were identified, but among these 66 compounds the 15 new important compounds were found in the sample. Among the 39 compounds identified in the ambient temperature sample, only 9 compounds were present in the sample subjected to temperature stress. Comparing the two analysis reports, the plant extraction sample under ambient temperature includes many more important biologically active compounds than the plant extraction sample under temperature stress. This suggests that while *Lunuwila* can adapt to higher temperatures, the production of essential medicinal compounds is more robust under ambient conditions.

Keywords: GC-MS analysis, *Lunuwila*, secondary metabolites, temperature stress.

IMPACT OF GLOBAL WARMING-INDUCED TEMPERATURE STRESS AND ORGANIC MANURE ON YIELD OF *LUNUWILA* (*Bacopa monnieri* (L.) WETTST.)

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Abstract

Lunuwila (Bacopa monnieri), a vital Ayurvedic herb, is used to treat nerves, mental disorders, and various ailments, including rheumatism, blood diseases, heart failure, infections, hepatitis, and high blood pressure. The annual demand for ayurvedic drug cooperation for *Lunuwila* has been estimated to be over 1700 kg. However, due to environmental degradation and global warming, the natural habitats for *Lunuwila* are shrinking, which is affecting its availability for medicinal use. Therefore, this study is designed to identify suitable organic manure to mitigate the impact of global warming-induced temperature stress on the yield of *Lunuwila (Bacopa monnieri).* The study was conducted in the Open University of Sri Lanka, Nawala inside a temperature-regulated polytunnel to mimic global warming and ambient temperature plant house. The experiment was conducted based on a complete randomized design (CRD) with three replications. Two factors considered as temperature and organic manure with two temperature levels were ambient temperature 27 °C - 32°C (T1) and temperature stress 35°C -36 °C (T2). The three organic manure types were 100% compost (M1), 50% compost with 50% cow dung (M2) and 100% cow dung (M3). All the measured data were analysed by using the R studio software version 4.21. According to the results, fresh shoot weight, dry shoot weight, fresh root weight, and dry root weight were significantly higher in increased temperature with 100% compost. Also, the lowest yield of fresh shoot weight, Dry shoot weight and Fresh root weight was recorded in the compost and cow dung integrated treatment at Ambient temperature. Therefore, even in a global warming situation, 100% compost (1kg) with soil (9 Kg) is favourable for the sustainable cultivation of *Lunuwila (Bacopa monnieri).* By adopting this method, farmers and Ayurvedic drug manufacturers can secure a consistent supply of this valuable medicinal plant amidst global warming challenges.

Keywords: *Bacopa monnieri,* Global warming, Organic manure, Temperature stress

UNRAVELING THE MYCOSPHERE BACTERIOME OF *Pleurotus cystidiosus*: A PHENOMICS AND MOLECULAR PERSPECTIVE

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Abstract

Mushrooms are in high demand in Sri Lanka; however, their market availability remains limited due to specific environmental conditions, particularly within the mushroom substrate. Mushroom substrates host a complex microbiome, with over 90% of the microbial biomass consisting of bacterial and fungal species. Understanding the beneficial and antagonistic dynamics within these microbial communities presents innovative opportunities to enhance Bacterial-Fungal Interactions (BFI) to promote mushroom growth. This study used culture-dependent methods to isolate, identify, and characterize bacterial species from *Pleurotus cystidiosus'* mycosphere, assessing their potential to enhance host growth. A range of selective and general media, including King's B, Tryptone Soy Agar, and Reasoner's Two Agar, was used to isolate bacteria. Additionally, the physicochemical parameters of the substrates were analysed to assess quality and composition. Morphological characterization yielded a total of eleven bacterial isolates across the media, and five bacterial species were identified through dereplication using morphological characteristics observed under stereo and upright microscopy, Gram staining and colony imaging. Molecular identification via amplification of V3 and V4 regions of 16S rRNA revealed the presence of *Bacillus tequilensis* and *Niallia nealsonii* as well as facultative anaerobes *Franconibacter helveticus* and *Staphylococcus pasteuri*. This study provides evidence of growth-promoting bacterial communities within the native mycosphere of *P. cystidiosus* and their potential role in enhancing mushroom cultivation by increasing biomass without disrupting the natural ecosystem. Future research will focus on analysing the functional roles of these bacteria and developing bioinoculants to optimize beneficial bacteria-fungi interactions for sustainable mushroom farming.

Keywords: Bacterial-Fungal Interactions (BFI), Mycosphere, Microbiomes, Mushroom growth, Bioinoculants

INTEGRATING INDIGENOUS KNOWLEDGE FOR POLLINATOR CONSERVATION IN SRI LANKA: A COMPREHENSIVE REVIEW

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Abstract

Pollinators, including bees, butterflies and birds, are essential for the pollination of most of the crop species worldwide. In Sri Lanka, indigenous agricultural practices emphasize ecological harmony through native flora that fosters diverse pollinator habitats. Some native plants provide nectar-rich habitats essential for pollinators, ensuring ecological balance and promoting resilience. Native tree species, such as *Madhuca longifolia*, *Syzygium cumini*, *Aegle marmelos*, *Tetradenia riparia*, *Terminalia arjuna*, *Mimusops elengi*, *Cassia auriculata*, and *Calotropis gigantea*, provide essential resources for pollinators. Butterflies hold significant ecological and cultural importance in Sri Lanka, serve as indicators of ecosystem health. The dense flowering patterns provide abundant nectar, essential for larger butterflies with high metabolic rates. For examples *Bambusa vulgaris*, *Abrus precatorius*, *Actinodaphne stenophylla*, *Albizia lebbeck*, *Anacardium occidentale*, *Atalantia ceylanica*, *Albizia odoratissima*, *Bridelia retusa*, *Caryota urens*, *Chamaecrista kleinii*, *Dragia volubilis*, *Entada rheedii*, *Ficus religiosa*, *Hygrophila schulli*, *Murraya koenigii*, *Neolitsea cassia*, *Passiflora foetida*, *Senna tora*, *Senna auriculata*, *Tephrosia purpurea*, *Ziziphus oenoplia*, *Ziziphus rugose*, *Urena lobate*, *Sida cordata*, *Dipteracanthus prostrates*, *Mussaenda frndosa* etc can be considered as larval food plants of butterflies in Sri Lanka. However, the spread of invasive species disrupts these ecosystems by crowding out native plants and reducing available resources for pollinators. In Sri Lanka, indigenous agricultural practices that emphasize ecological balance through native flora offer significant support for pollinator conservation. These practices foster biodiversity by providing nectar-rich habitats for pollinators, thus enhancing agricultural productivity.

Keywords: Biodiversity, Indigenous knowledge, Native flora, Pollinators

ISOLATION AND IDENTIFICATION OF ENDOPHYTIC FUNGI FROM LATEX-PRODUCING PLANTS

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Abstract

Latex-producing plants provide a unique environment within their tissues for microbial colonization, which contains latex, a complex mixture of proteins, alkaloids, and other metabolites. The diversity of endophytic fungi in latex-producing plants in Sri Lanka has not been investigated. This study aimed to isolate and identify endophytic fungi from four selected latex-producing plants: *Artocarpus heterophyllus*, *Ficus benghalensis*, *F. hispida*, and *F. macrocarpa*. Healthy leaf samples were collected from the premises of Rajarata University of Sri Lanka. Leaf samples were surface sterilized using 70% ethanol, 4% sodium hypochlorite, and sterilized distilled water, then inoculated on Potato Dextrose Agar (PDA) medium with tetracycline and incubated at 25^0C. Emerging fungal colonies were subcultured to obtain pure cultures. Isolated taxa were identified based on both morpho-molecular analyses. DNA extraction was carried out by the CTAB method, and PCR was carried out for the ITS region using ITS1F and ITS4 primers. Eight morphologically different endophytic isolates based on culture characters and conidial morphology were obtained from individual plants of four host species. *Curvularia* sp. and *Aspergillus* sp. were isolated from *F. hispida*, while *Diaporthe* sp. and *Phyllosticta* sp. were isolated from *F. benghalensis*. *Colletotrichum* sp.) and *Colletotrichum* sp., *Nigrospora* sp., and *Pestalotiopsis* sp. were reported from *A. heterophyllus* and *F. macrocarpa*, respectively. This study will continue to isolate and identify more endophytic fungi based on multi-loci phylogeny and aim to explore their antagonistic properties.

Keywords: Antagonistic properties, fungal diversity, ITS region, morpho-molecular analysis

Yoga and Hospitality

Management related disciplines

SOCIAL MEDIA SHORT VIDEO MARKETING IMPACT ON FASHION BRAND ATTITUDE VIA BRAND PERCEPTION IN SRI LANKA'S WESTERN PROVINCE

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Abstract

Social media short video marketing is rapidly transforming the way fashion brands engage with consumers. However, limited empirical research exists on its impact on consumer brand attitudes in Sri Lanka's Western Province, particularly through the mediating role of brand perception. Addressing this research gap, this study investigates how short-form video content on platforms like TikTok and Instagram influences brand perception and, subsequently, consumer attitudes toward fashion brands. The study adopts a quantitative research design, collecting data from 384 respondents using a structured questionnaire. Key components of short video marketing, such as engaging content, immersive experiences, and user interaction, were analyzed using statistical techniques, including regression and mediation analysis in SPSS 26.0, to understand their impact on brand perception and consumer attitudes. Findings reveal that short video marketing significantly enhances both brand perception and consumer brand attitude, with brand perception serving as a strong mediator in this relationship. Engaging, interactive videos were found to drive higher consumer engagement and positive attitudes, particularly when they create a cohesive and appealing brand image. For marketers, this study highlights the importance of leveraging short-form videos strategically by tailoring content to deliver engaging user experiences. By focusing on platforms like TikTok and Instagram, fashion brands can amplify their brand perception, foster stronger consumer loyalty, and gain a competitive edge in the dynamic social media landscape.

Keywords: TikTok, Instagram, short video marketing, consumer brand attitude, brand perception, fashion industry, Sri Lanka

FACTORS AFFECTING ONLINE PURCHASING INTENTION OF CUSTOMERS IN RETAIL INDUSTRY: WITH SPECIAL REFERENCE TO SUPERMARKETS IN WESTERN PROVINCE

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Abstract

This study aims to examine the factors influencing consumers' intentions to make online purchases in the retail sector, with a specific focus on supermarkets in a selected region of the Western Province. The research problem is centered on understanding what factors affect customers' online purchasing behavior. The objectives of this study are to identify the impact of perceived ease of use, perceived usefulness, trust, and website content on customers' purchasing decisions. The study employs a quantitative research methodology using structured online questionnaires to collect data. A sample of 384 supermarket customers was initially targeted using a convenience sampling approach, with 382 valid responses received. The study applied inferential statistical techniques, including correlation analysis and multiple regression analysis, in addition to descriptive statistics to ensure robust findings. SPSS software was used for data analysis. The use of only descriptive statistics was deemed inadequate for this type of study, and advanced statistical tools were utilized to derive meaningful conclusions. The key findings indicate that perceived usefulness, perceived ease of use, trust, and website content have a significant positive impact on consumers' online purchasing intentions. The analysis revealed that trust and website content play a particularly crucial role in influencing customer behavior. However, given the sample size limitations, the results cannot be generalized to the entire Western Province. Therefore, the title has been adjusted to reflect a more localized focus on specific supermarket customers rather than the entire region. The study contributes to the academic understanding of online shopping behavior in supermarket retailing and offers practical recommendations for businesses to enhance their digital strategies. The findings serve as a foundation for further research and provide actionable insights for policymakers, marketers, and retailers aiming to improve customer satisfaction and online engagement.

Keywords: Online purchasing Intention, Perceived Ease of Use, Perceived Usefulness, Trust, Website Content

BALANCING TOURISM AND CULTURAL HERITAGE: ANALYZING REGULATORY FRAMEWORKS FOR THE PROTECTION OF SACRED SITES IN SRI LANKA

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Abstract

The sacred sites in Sri Lanka play a crucial role in the cultural and spiritual heritage. However, with the increasing pressures of tourism development, these sites face considerable challenges regarding their protection and preservation. This paper examines the regulatory frameworks in place at all these locations that govern tourism activities and further explores how effectively these frameworks perform in terms of both protection and tourism development. The study has adopted a qualitative approach using content analysis and document analysis, supplemented by interviews with key stakeholders from the local community, government, and tourism operators. The results indicated that, although Sri Lanka has taken certain steps toward protection, some problems regarding enforcement and stakeholder involvement persist, creating friction between tourism development and the preservation of culture. It is within this context that discussions about the views of the local community and increasing cooperation among government agencies and indigenous peoples must be included. The study concludes with recommendations on how the regulatory framework should be improved, calling for adaptive, inclusive strategies centred on protecting sacred sites. Sri Lanka will ensure that its rich heritage is bequeathed to future generations while promoting responsible tourism efficiently to balance cultural preservation with sustainable tourism practices. This study adds value to key policymakers, tourism operators, and communities concerned about their sacred sites.

Keywords: Cultural Heritage, Sacred Sites, Stakeholder Collaboration, Tourism Regulation

ASSESSING THE ROLE OF SRI LANKA'S COUNTRY IMAGE AND DESTINATION IMAGE ON MEMORABLE TOURISM EXPERIENCE AND REVISIT INTENTION

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Abstract

Sri Lanka's tourism industry has been hit by the economic crisis, and its reputation as a land and travel destination has been badly hurt. Therefore, the service quality of the tourism sector has been negatively impacted by political instability, violent incidents, fuel shortages, and curbing imported goods. Hence, the purpose of this study is to investigate how Sri Lanka's country image and destination image affect memorable tourism experiences (MTEs) and tourists' intentions to revisit. Country image is the perception, belief, and impression one has of a nation, which is influenced by a country's policies, economy, and diplomacy. Destination image is an individual's thoughts, feelings, and overall impressions of a place backed by attractions, accommodation, food, services, and pricing. MTEs are the ability to remember the experience a tourist had in a destination. The study was conducted using a non-probability sampling technique, and data were collected from a total of 128 tourists. A structured questionnaire was administered, and respondents' demographic characteristics were analyzed using SPSS, and measurement and structural models were assessed using PLS-SEM. The study found that destination image has a positive impact on tourists' revisit intentions, mediated by their MTEs. Conversely, country images do not exert a mediated influence on revisit intentions through MTEs. The study emphasizes the critical role of destination image in enhancing MTEs and fostering tourists' revisit intentions. It identifies destination image as a powerful marketing tool, as positive MTEs encourage tourists to recommend the destination. In contrast, country image has a limited impact on MTEs, highlighting the priority of cultivating a strong destination image.

Keywords: Country Image, destination image, memorable tourism experience (MTEs), revisit intention, Sri Lanka

EFFECT OF JOB SATISFACTION ON MOONLIGHTING INTENTION OF TEACHING PROFESSIONALS (WITH SPECIAL REFERENCE TO THE RATHNAPURA DISTRICT)

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Abstract

According to the American Heritage dictionary, moonlighting refers to doing a job other than one's primary employment. There is generally no pinpoint law that completely prohibits moonlighting practices, and nowadays, people holding two or more jobs at the same time is no longer an oddity. Over the past decade, there has been an increasing moonlighting trend in the Sri Lankan labor market, and in 2014, the Sri Lankan Labor Force Survey (LFS) reported that 8.6% of the employed population was engaged in secondary employment. Financial, heterogeneity, and flexibility motives are the main reasons for these practices, and this has become an endemic practice, especially among teaching professionals. This study aims to investigate the effect of job satisfaction on moonlighting intention of teaching professionals in Sri Lanka. Primary data collected through a self-administered online questionnaire was used for the study, and the sample size was 125 teaching professionals belonging to Ratnapura district. In addition, Snowball sampling was chosen to reach them. The research hypotheses were tested using a regression model generated with SPSS software, considering teaching professionals' intention to moonlight as the dependent variable. Intrinsic job satisfaction and Extrinsic job satisfaction were the independent variables of this study, and seven indicators were considered under these independent variables. The analysis revealed that both variables have a positive and significant effect on being a moonlighter. Moreover, job satisfaction, which was influenced by external factors, had a greater impact on moonlighting practices among these professionals. This research will guide the improvement of understanding of moonlighting practices among teaching professionals. Also, it can assist policy makers in developing strategies by considering employee attitudes.

Keywords: Moonlighting Intention, Intrinsic Job Satisfaction, Extrinsic Job Satisfaction

ENHANCING SRI LANKA'S WELLNESS TOURISM: INTEGRATING YOGA PRACTICES FOR SUSTAINABLE HOSPITALITY DEVELOPMENT

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Abstract

Yoga tourism has emerged as a high-potential segment within the international travel market, with countries like India, Thailand, Indonesia, and the USA reaping significant benefits from its growth. As a global leader in yoga tourism, India underscores the latent opportunities for other countries to integrate yoga practices into their tourism offerings. The present research will talk about how yoga tourism could be induced into the Sri Lankan hospitality industry to support improved tourist Experiences through wellness, cultural appreciation, and environmental sustainability. More specifically, this article probes deeper into the transformative impact that yoga tourism would have on self-development, emotional well-being, and attitudes toward the environment. This qualitative research approach includes semi-structured interviews with yoga instructors and resort managers, as well as focus group discussions with yoga retreat participants. Some of the key yoga retreats include Holistic Yoga Retreat Sri Lanka and Green Peace Inn in Weligama. Thematic analysis of the data uncovers how yoga tourism can support health and well-being while promoting sustainable tourism practices. The finding will deliver implications for Sri Lankan hospitality providers on how to effectively include yoga-based offerings in resonance with emerging global wellness travel trends.

Keywords: Yoga tourism, Wellness tourism, Qualitative research, Cultural evaluation, Sustainable tourism, Sri Lanka

RESILIENCE AND ADAPTATION STRATEGIES OF TEXTILE VENDORS IN PAMUNUWA: SUSTAINING BUSINESS AMIDST SEASONAL RAINFALL CHALLENGES

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Abstract

Maharagama, a town in Sri Lanka governed by the Maharagama Urban Council, is home to several institutions. The Pamunuwa textile trade plays a pivotal role in establishing Maharagama as a hub of commercial activity. With a long-standing history in the textile industry, Pamunuwa serves as a dedicated service center for textile customers across Sri Lanka. This study aims to examine how textile vendors in Pamunuwa sustain their businesses during the rainy season, addressing a research gap on the challenges posed by heavy rainfall. The research adopts a qualitative methodology with an inductive approach. Semi-structured interviews and observations were conducted during the southwest monsoon period to collect data from pavement vendors and semi-structured shop vendors. These two vendor categories were selected using the purposive sampling method. The findings reveal that heavy rainfall adversely affects pavement vendors more significantly than semi-structured vendors. Both groups, however, face merchandise damage, particularly to textiles. To adapt to heavy rainfall and minimize damage, vendors employ various strategies, such as using polythene covers for textiles, reducing business hours, modifying stalls or market floors for better rain resistance, and fostering collective support. Additionally, Pamunuwa trade unions provide loans to help vendors mitigate losses caused by heavy rainfall. Despite the challenges, both groups continue their trade during heavy rains, underscoring the resilience characterising Pamunuwa's unique commercial landscape. To enhance the resilience of Pamunuwa's textile vendors against heavy rainfall, several measures can be implemented, including establishing weather-resistant market structures, introducing affordable waterproof storage solutions, improving drainage systems within the marketplace, expanding access insurance schemes tailored for textile vendors, conducting capacity-building programs on disaster preparedness and adaptive business strategies, and encouraging the use of digital platforms for online sales during extreme weather events.

Keywords: Pamunuwa, Heavy Rainfall, Textile Vendors, Sustaining Business

FACTORS AFFECTING THE ADOPTION OF CLOUD ACCOUNTING AMONG ACCOUNTING PROFESSIONALS: A CROSS-SECTIONAL STUDY

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Abstract

In the context of the rapidly evolving accounting landscape, characterized by digital transformation, Sri Lankan firms are attempting to leverage building cloud-based reporting technologies, while coming across challenges associated with their contextual preparedness. Presently, the era of digitalization, cloud computing technology has appeared as a main factor affecting many business areas, including accounting. Cloud accounting is a famous trend, also called cloud-based accounting, is stores, manages, and processes a company's financial data using a cloud technological infrastructure. Employing a quantitative research approach, data were gathered from 134 accounting professionals through a structured questionnaire. The study focuses on six key independent variables: perceived usefulness, perceived ease of use, job relevance, cloud accounting awareness, computer self-efficacy, and trust. Multiple regression analysis shows that job relevance, trust, and perceived ease of use significantly affect the adoption of cloud accounting, with job relevance being the most dominant factor. Perceived usefulness and computer self-efficacy show moderate impact, while cloud accounting awareness has the least impact. The findings emphasise the need for targeted training programs, enhanced system security, and user-friendly interfaces to promote cloud accounting adoption. Regardless of limitations such as sample size and regional focus, this study contributes to the understanding of cloud accounting adoption in emerging markets and offers practical guidance and direction for stakeholders. Future research should expand the sample size, explore additional factors, and incorporate qualitative methods to provide deeper insights into the cloud accounting adoption process.

Keywords: Cloud Accounting, Accounting Professional, Sri Lanka

INTEGRATING INDIGENOUS KNOWLEDGE TO DEVELOP TOURISM IN SRI LANKA

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Abstract

Sri Lanka owns a rich repository of indigenous knowledge, encompassing traditional medicine, astrology, rituals, folk arts, and culinary practices that form an integral part of its cultural identity. Despite this wealth of heritage, the country has yet to fully integrate indigenous knowledge into its tourism sector in a structured and sustainable manner that enables the impactful utilization of the cultural assets we own. This study explores how indigenous knowledge can be systematically incorporated into tourism initiatives to enhance cultural preservation, economic development, and community participation. Using a qualitative approach, including literature and policy reviews, and global case studies, the study identifies gaps in current tourism frameworks and assesses best practices from other regions. Findings highlight that while Sri Lanka's tourism policies acknowledge cultural heritage, they lack robust strategic mechanisms for community engagement and equitable benefit-sharing. The study advocates for a creative and ethical approach to preserving, documenting, and commercializing indigenous knowledge while ensuring sustainability and authenticity. Recommendations include policy reforms, capacity-building programs, digitization of heritage practices, and enhanced collaboration between policymakers and local communities. By aligning indigenous wisdom with modern tourism strategies, Sri Lanka can create a unique, sustainable model that respects cultural integrity while attracting global interest.

Keywords: Indigenous knowledge, sustainable tourism, cultural heritage, community tourism,

FACTORS AFFECTING PURCHASE INTENTION OF FASHION CLOTHES ADVERTISED ON SOCIAL MEDIA PLATFORMS

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Abstract

Social media has become a widely used platform for fashion marketing and consumer engagement. This study focuses on the factors affecting customers' purchase intentions when shopping online for fashion clothes via social media platforms. The main objective of this study was to identify the influence of several factors, such as price, brand reputation, product quality, variety of designs, brand image, customer reviews, delivery time, return policy, and delivery quality, in determining purchase intention. The data were collected across Sri Lanka using simple random sampling via a questionnaire with a Likert scale ranging from 1 to 5. A total of 203 responses were obtained. The collected data were analyzed using the mean and standard deviation, with MATLAB (R2018a (9.4.0.813654)). The importance of each factor was assessed based on the mean scores derived from the Likert scale responses. Factors with mean scores greater than 4.21 were considered the 'most important': price (4.66), product quality (4.79), delivery quality (4.59), variety of designs (4.23), customer reviews (4.43), delivery time (4.24), and return policy (4.28). Other factors, such as brand reputation (4.01) and brand image (3.63), were within the 'important' range. The overall satisfaction (3.43) with online shopping was also within the 'important' range. In conclusion, the study recommends that clothing businesses should focus on improving their marketing strategies on social media platforms, focusing on the above factors.

Keywords: Social media, Purchase intention, Mean score, Online shopping, Fashion clothes

THE IMPACT OF ELECTRONIC COMMERCE ON FINANCIAL PERFORMANCE IN SMALL & MEDIUM-SIZED SIZE ENTERPRISES: SPECIAL REFERENCE TO NORTH CENTRAL PROVINCE IN SRI LANKA

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Abstract

The rapid advancement of electronic commerce has significantly transformed the operational landscape for small and medium-sized enterprises (SMEs), particularly in developing regions such as the North Central Province of Sri Lanka. This study aims to assess the impact of e-commerce adoption on the financial performance of SMEs by addressing the research problem: What is the Impact of E-Commerce on the Financial Performance of SMEs in the North Central Province of Sri Lanka? Specifically, it investigates the effect of key factors, including technological infrastructure, relative advantage, computer literacy, perceived ease of use, and perceived trust, on financial metrics such as sales revenue growth, profitability, return on assets, return on sales, and market share. The study employs a quantitative methodology, sampling 370 SMEs from a population of approximately 11,477 in the region. Data collection was conducted through a structured online questionnaire, yielding 355 valid responses. The analysis utilized the Statistical Package for Social Sciences (SPSS) version 23.0, incorporating reliability testing, descriptive statistics, correlation analysis, and regression analysis to evaluate the relationships between e-commerce adoption and financial performance. The findings reveal that e-commerce utilization has a significant positive impact on financial performance, particularly through the roles of technological infrastructure, relative advantage, perceived trust, and perceived ease of use. Although computer literacy did not show a statistically significant impact, the overall results underscore the importance of digital readiness and infrastructure in enhancing e-commerce adoption and financial outcomes. The study highlights the necessity for targeted digital literacy initiatives and policy interventions to bolster the integration of e-commerce in SMEs, ultimately fostering economic growth and competitiveness in the region. Recommendations for future research include exploring the integration of e-commerce with supply chains and leveraging data analytics to optimize financial outcomes for SMEs.

Keywords: Electronic Commerce, Financial Performance, Small and Medium Enterprises, North Central Province, Sri Lanka.

INFLUENCE OF SOCIAL MEDIA REVIEWS ON THE RESERVATION DECISIONS OF VISITORS WITHIN SRI LANKA'S HOSPITALITY INDUSTRY

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Abstract

The study examines the influence of social media reviews on hotel reservation decisions of visitors in Sri Lanka's hospitality industry. With tourism playing a critical role in the country's economy, understanding how social media shapes traveller behaviour is essential. While previous studies highlight the impact of social media on destination choices, the specific effect on booking intentions remains underexplored. Addressing this gap, the research evaluates five key factors: social media content, credibility, virality, visuals, and authenticity. Using an online survey, data were collected from 384 tourists visiting prominent hotels in Sri Lanka through a judgmental sampling technique. A self-administered questionnaire facilitated data collection, and SPSS 21 supported statistical analysis through multiple regression tests. Findings revealed that social media reviews significantly affect tourists' hotel booking decisions, highlighting the platform's role as both an e-commerce and advertising tool. Pearson's correlation analysis showed that all five variables positively influenced booking decisions. Generally, social media content had the strongest positive linear relationship with reservation decisions, while the specific visual appeal of the hotel also demonstrated a strong connection. Social media credibility and virality exhibited substantial positive impacts, reinforcing the importance of trust and widespread sharing of information. Lastly, authenticity in social media self-expression showed a moderate but positive influence on reservations. Overall, the study confirms that social media platforms play a pivotal role in shaping customer decision-making, from initial search to post-purchase experience sharing. Recommendations include enhancing social media marketing strategies by focusing on content credibility, engaging visuals, and authentic representation to attract more hotel reservations in Sri Lanka's competitive tourism sector.

Keywords: social media reviews, hotel reservations, hospitality industry, customer decision-making

Education, languages and Multidisciplinary Studies

THE IMPACT OF SOCIAL AND ECONOMIC FACTORS ON SECONDARY EDUCATION IN SRI LANKA (WITH SPECIAL REFERENCE TO HALDUMMULLA DIVISIONAL SECRETARIAT)

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Abstract

This study investigates socio-economic factors affecting secondary education in Sri Lanka's rural Haldummulla Divisional Secretariat, where economic challenges lead to educational disparities. Focusing on students in Grades 12 and 13, this research explores how socio-economic status—such as family income, parental education, and community resources—influences educational access, quality, and outcomes. A case study approach with mixed methods was used, incorporating structured questionnaires from 250 students and secondary data from governmental records. The findings reveal that lower-income families face significant barriers in accessing educational resources, leading to reduced academic performance and increased dropout rates. Family size and peer influence also impact students' engagement, with larger families having fewer resources per child and academic motivation influenced by peers. Statistical analysis through descriptive statistics, chi-square tests, and regression reveals that key subjects like Mathematics and English are particularly affected by economic hardship. The study suggests targeted interventions to close rural education gaps, including enhanced school infrastructure, financial support for low-income families, and improved access to transportation and affordable tuition. Teacher training programs aimed at practical, interactive teaching methods are also recommended to boost student engagement in critical subjects. This research underscores the importance of comprehensive policies to bridge socio-economic barriers, supporting a more equitable education system that promotes better educational outcomes and long-term socio-economic mobility for rural students. In conclusion, this research underscores the complex interplay between socio-economic factors and educational outcomes, emphasizing that educational improvement in rural regions like Haldummulla requires a multi-faceted approach. By addressing both economic and social barriers, there is potential to foster a more equitable education system.

Keywords: Socio-economic impact, Secondary education disparities, Rural Sri Lanka, Educational attainment

JOURNEYING BEYOND THE CLASSROOM: EXPERIENTIAL LEARNING AS A COMPASS FOR INSPIRING LIFELONG DEVELOPMENT IN HOSPITALITY EDUCATION AND SKILLS

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Abstract

This research explores the Sri Lanka Institute of Tourism and Hotel Management's (SLITHM) strategic response to evolving student needs, aiming to equip them more effectively for industry demands and to innovate in order to distinguish itself within a fiercely competitive hospitality landscape. The study highlights an innovative experiential learning initiative, specifically a pop-up restaurant project led by a starred chef at the Koggala Regional Hotel School. This project engaged certificate-level students in hands-on activities that combined discipline-specific training with crucial transferable skills, essential for thriving in the dynamic hospitality sector. Central to the initiative's success was the internal collaboration within SLITHM and its partnership with industry leaders, exemplifying the benefits of integrating real-world experiences into hospitality education. By embracing such innovative approaches, Koggala Regional Hotel School not only enhanced the student learning experience but also strengthened its position as a leader in hospitality education. Working alongside external industry expert inspired students, boosting their confidence, employability, and ignite a deeper passion for the hospitality field. This unique, immersive learning experience showcased how SLITHM is proactively addressing contemporary challenges, enhancing its position as a leader in hospitality education. The pop-up restaurant project provided a model for how experiential learning can empower students with practical skills, adaptability, and a robust professional mind-set. By blending educational innovation with industry involvement, SLITHM effectively prepared students for competitive career pathways in hospitality. This initiative not only supported SLITHM's strategic goals but also significantly enhanced students' readiness for future careers, demonstrating the long-term value of experiential learning in fostering lifelong development.

Keywords: Collaboration, Employability, Experiential Learning, Hospitality Education, Industry

THE ROLE OF NATURE AND CHILDHOOD IN JOHANNA SPYRI'S HEIDI AND ITS INFLUENCE ON 19TH-CENTURY GERMAN LITERATURE

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Abstract

Heidi, written by Johanna Spyri and published in 1880, is more than merely a children's book. It epitomises complex themes of childhood, nature and cultural identity that were central to German literature in the 19th century. Previous research has mainly focused on the novel's pastoral setting and the moral lessons derived from it, although there are still many questions about how these themes of youth and environment relate to larger cultural narratives of the time. This paper adopts a qualitative approach, incorporating close reading and comparative literary techniques, in an attempt to fill this research gap. It goes on to analyse the very evident use of the Swiss Alps in Spyri's work: not only as a kind of curative setting for the book's protagonist, but also as a further underlining of the joy of youthful learning and the healing effect of nature. The results show that Heidi differs from the darker themes of modern works of the Brothers Grimm fairy tales, offering instead a positive portrayal of rural life and emotional strength. Heidi is also contextualised within the socio-political structure of nineteenth-century Europe, highlighting its critique of cultural identity during industrialisation. This highlights the importance of Heidi as a work that was crucial not only to the development of children's literature, but also as an expression of the ideals of its time. The study concludes by presenting Heidi as a work that will stimulate further study in discussions of literature, society and the representation of childhood.

Keywords: Children’s literature, cultural identity, Heidi, nature, 19th-century German literature

A GUIDE TO PREPARING CHINESE MULTILINGUAL PICTURE DICTIONARIES FOR SRI LANKAN NEEDS

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Abstract

Past research shows that the Chinese language learning and teaching process is not much developed and is not a very student-friendly education process in Sri Lanka. This study aimed at developing a multilingual picture dictionary as a medium to support literacy in Chinese language learning for beginners in Sri Lanka. The study used a mixed method to apply the Design and Development Model, which is innovated by the author. The steps were: (1) Analysis, (2) Design, (3) Development, and (4) finalizing. The process of analysis in this study is based on previous research. Among three types of results which carried out in Chinese speaking and non-Chinese speaking countries to formulate the number of most commonly used Chinese words or characters, the chosen concept is called one thousand most used Chinese words or characters to develop as words with pictures in this research. Design is done according to the traditional Sri Lankan and Chinese picture-based vocabularies such as "*Hodi-potha*" and picture dictionaries. The development process basically included following these five categories: (1) Picture (2) Chinese word in character form, (3) Pinyin, (4) Part of Speech (5) Multilingual meaning and (6) Example. The finalizing process is the completion and publication of a Chinese Sinhala Multilingual Picture Dictionary for Chinese language learners in Sri Lanka.

Keywords: Chinese, Sinhala, English, Tamil, Multilingual Picture Dictionaries

A SOCIOLINGUISTIC STUDY OF THE MYTHS ABOUT SRI LANKAN SIGN LANGUAGE (SLSL)

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Abstract

Sri Lankan Sign Language (SLSL), like other sign languages, is a fully developed linguistic system with its own grammar and structure, yet it is often misunderstood in Sri Lankan society. This study aims to investigate the prevalent myths surrounding SLSL and their sociolinguistic impact on the Deaf community. The research will explore common misconceptions such as SLSL being a universal language, merely a series of gestures, or lacking grammatical structure. Through qualitative and quantitative methods, including interviews with Deaf individuals, educators, and the general public, as well as media analysis, this study will examine how these myths shape public perceptions and influence the status of SLSL. By exploring the intersection of these myths with cultural views on disability and language, the study will highlight how such misconceptions affect language acquisition, education, and social inclusion for Deaf individuals. The findings aim to raise awareness about the linguistic legitimacy of SLSL, promote cultural change, and advocate for policies supporting the deaf community in Sri Lanka.

Keywords: Deaf Community, Language Myths, Linguistic Legitimacy, Sociolinguistics, Sri Lankan Sign Language

ASSESSING THE IMPACT OF DIGITAL LEARNING TOOLS ON STUDENT ENGAGEMENT AND ACADEMIC PERFORMANCE AT THE UNIVERSITY OF KELANIYA

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Abstract

The integration of digital learning tools has transformed higher education, significantly impacted teaching and learned dynamics at the University of Kelaniya. This research evaluates the effectiveness of these tools in enhancing student engagement and academic performance using a mixed-methods approach. Quantitative analysis involved reviewing academic performance metrics and engagement metrics from learning management systems, focusing on login frequencies, session durations, and interactive participation. Qualitative insights were obtained through structured interviews and focus groups with students and faculty, which helped understand the subjective benefits and challenges of using digital tools in education. Preliminary findings indicate a strong positive correlation between the utilization of digital tools and increased student engagement, with noticeable improvements in class participation and assignment completion rates. Additionally, a significant enhancement in academic performance was observed, particularly in courses employing adaptive learning technologies and real-time feedback mechanisms. However, challenges such as disparities in digital access and varying levels of digital literacy among students were identified, potentially mitigating the effectiveness of these tools. The study proposes several strategies to maximize the benefits of digital learning tools at the University of Kelaniya. These include implementing comprehensive digital literacy programs to equip students and faculty with essential digital skills and improving access to digital resources to ensure equitable digital opportunities for all students. This research contributes to the understanding of digital education's impact, offering insights for educators and policymakers on optimizing technology use in learning environments.

Keywords: Academic Performance, Digital Learning Tools, Digital Literacy, Equitable Access, Higher Education, Learning Management System

USING CARTOONS AS A SUPPLEMENTARY TOOL FOR TEACHING ENGLISH SPEAKING TO CHILDREN UNDER SIX: A CASE STUDY OF THREE PRESCHOOLS IN MATARA DISTRICT

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Abstract

The urge to get children to speak in English has gained a considerable attention nowadays as all the parents desire their children to speak in English fluently at a very young age. As a result of this parents invest a considerable amount of time and money on tuition classes sometimes gaining them unsatisfactory results. This case study conducted over a period twelve months among three selected preschools attempts to investigate the effectiveness of using cartoons to enhance English speaking skills among children under age six who attend preschools in the Matara district of Sri Lanka. Children were recommended to watch an American nursery cartoon series called "Peppa Pig" everyday for a period of twelve months. Data for the study was drawn from six focused group discussions conducted among sixty parents with the aim to gather their perceptions and insights regarding the effectiveness of the cartoon in second language acquisition. Finding of the study suggests that majority of parents recommend cartoons as an effective mean for fostering language development, particularly the pronunciation, vocabulary development and conversational skills. Insights gained from the focused group discussions further reveal how media like cartoons can be employed as supplementary language learning tools in early childhood educational framework and the role of cartoons as innovative second language learning tools that aims at promoting communicative competence among children.

Keywords: Cartoons, Communicative Competence, Preschool Children, Second Language Acquisition, Supplementary Tool

THE PRESENCE OF DIFFERENT FORMS OF BORROWINGS: A STUDY BASED ON AN ENGLISH TRANSLATION OF SINHALA SHORT STORIES

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Abstract

Morphology is the branch of linguistics concerned with the study of the structure and formation of words in a language, including the ways in which words are built up from smaller units called morphemes. In addition, morphological processes also play a crucial role in the formation of words. A case in point is borrowings and they are prominently featured in the English translations of Sinhala short stories. Hence, this present study investigates the different forms of borrowings and the most predominantly used form of borrowings present in the selected 8 short stories from Manel Eriyagama's Jewels, the Winner of the H. A. I. Goonethileke Prize for Translation. In addition, to collect the necessary data, the study employs a textual analysis while focusing on Myers-Scotton' s classification of borrowings and selecting eight short stories. The findings reveal that "Local-cultural Borrowings", "Regional-cultural borrowings", "Core-borrowings" and "Core- extension Borrowings" are the forms of borrowings which can be identified in the selected short stories. In addition, it is evident that Local-cultural Borrowings can be also represented as the most predominantly used form of borrowings present in the selected short stories. Hence, future studies could focus on different morphological processes and their forms. In addition, other linguistic phenomena, namely syntax and semantics are not considered which could offer a more comprehensive understanding forms of borrowing.

Keywords: literature, morphology, variety, word formation

STUDY ON THE IMPACT OF THE CLASSROOM ENVIRONMENT ON THE SUCCESS OF THE LEARNING AND TEACHING PROCESS

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Abstract

The education sector plays a prominent role in every country, including Sri Lanka. The impact of the classroom environment on the success of the learning and teaching process is crucial. The research problem addresses the low success of students in the learning process, which is characterized by poor performance. The objective of this study is to enhance the success of students' learning and teaching processes by improving the classroom environment. Here, from primary grades to advanced levels 100 students and 60 teachers from four schools with different characteristics such as infrastructure, number of children studying, their socio-cultural status, etc. were interviewed in the Kandy district was selected. Data were collected using a mixed methodology that included interviews, oral questionnaires, and observation. The findings highlight several challenges, such as the concentration of schools in urban areas leading to noisy learning environments, classrooms being closely located within the same hall, limited outdoor learning space, and inadequate facilities for practical activities. Additionally, buildings are reported to be dilapidated and unsafe, and there is a shortage of learning equipment and classroom facilities. To address these issues, the government should intervene to improve classroom facilities, create environments with natural beauty, reduce noise, display student creativity, incorporate beautiful natural designs, arrange seating systematically, and equip classrooms with learning aids. By making these changes, an optimal classroom environment can be created, leading to improved success in the learning and teaching process.

Keywords: Classroom Environment, Classroom Facilities, Learning Aids, Learning and Teaching Process, Practical Activities.

A STUDY ON THE USE OF STUDENT INTEREST-BASED TEACHING METHODS FOR THE SUCCESS OF THE LEARNING AND TEACHING PROCESS

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Abstract

Education is considered the most powerful tool for change, and it holds a crucial place in every country's development. In Sri Lanka, education is vital for societal progress, and its effectiveness largely depends on the quality of the learning and teaching process. The low success rate currently observed in this process presents a research problem. This study aims to enhance educational outcomes by focusing on a student interest-based approach to teaching and learning. Four schools with different educational cultures in the Kandy district were selected for the study. Data were gathered from 100 students and 50 teachers using a mixed-method approach, including oral questionnaires, interviews, and classroom observations. Data analysis involved both qualitative coding for interview responses and quantitative analysis of survey data to identify trends and correlations. The findings revealed that the education system was predominantly teacher-centered, lacked practical activities. Some student's even skipped school due to these issues. Based on student feedback, several solutions were proposed, including teaching according to students' interests, adopting a student-centered approach, and incorporating practical learning in subjects like science, health, and physical education. Additionally, teaching complex subjects gradually, offering group activities, and providing breaks were also recommended to improve student engagement and learning. In conclusion, to improve the effectiveness of the learning and teaching process, it is essential to prioritize student interests, implement practical activities, and adopt a more student-centered approach.

Keywords: Group Activities, Learning and Teaching Process, Student-Centered Education, Student Interest, Practical Activities.

ASSESSING THE ACADEMIC IMPLICATIONS OF ONLINE GAMING ENGAGEMENT AMONG UNDERGRADUATE STUDENTS: A CASE STUDY OF A SRI LANKAN UNIVERSITY

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Abstract

Due to advancements in technology, online gaming has become a widely accessible and engaging activity, leading many students to incorporate it into their daily routines. Understanding its impact on academic performance, time management, and motivation is crucial as gaming continues to evolve. This research explores how engagement in gaming influences the academic experiences of undergraduate students. Overall, the aim of the study is to investigate the basic impact of online gaming on academic efficiency, time management and learning motivation. A descriptive research design focused on surveying 100 undergraduate student from technology stream. The survey asked about gaming habits, academic performance, and the impact of online gaming on cognitive skills. The outcome showed out of the people replied, 62% spent 1-2 hours a day playing online based games and around action (52.3%) and Strategic games (15.2%) are the most well-known sorts. But while 44.8% of respondents believe that gaming improved skills like problem-solving and focus, others admit challenges such as procrastination (50%) and poor time management (60%). Moderate gaming related positively to cognitive skills technology related subjects such as problem-solving and attentiveness while excessive gaming overthrew time from other activities, and decreased motivation to pursue academic goals. This correlates a lot and gives students their take on balance between online gaming and academics. It highlights the importance of managing gaming behaviour to reduce negative effects on academic performance. At the same time, though, it minimizes the concerns over gaming's cognitive effects and indicates that gaming can, in moderation, aid with learning and the development of skills.

Keywords: Academic performance, Online gaming, Time management, Learning motivation, Strategic games

EXAMINING STRATEGIES TO IMPROVE LANGUAGE SKILLS AND INTERACTION OF STUDENTS IN ESL CLASSES USING PROGRAMMES LIKE JAMBOARD, PADLET AND CANVA AS EDUCATIONAL AIDS IN ONLINE TEACHING.

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Abstract

Online teaching posed new challenges to educators and students alike. English as a Second Language (ESL) classrooms in universities were not immune to those and teachers tried various methods to improve language skills of students by exploring new programmes that were freely available online. Hence, this research was conducted in an English for the Humanities and Social Sciences-ELA3105 online class of third-year students in a state university. The objectives of the study were to examine strategies to improve language skills and interaction of students in ESL online classes using platforms like Jamboard, Padlet and Canva. Thus, convenience sampling method was used and data was gathered through interviews and observations of teachers and focus group discussions with students. A literature review supported the findings. Data gathered was analyzed through qualitative data analysis methods. It was noted that students preferred these user-friendly interfaces of these programmes as they offered exploration/interaction with peers and teachers without monotony, reducing asymmetries in experiences during remote teaching/learning. These programmes merged seamlessly with Zoom/Google Classrooms and group work, presentations and other multimodal aspects were accommodated using Padlet, Jamboard and Canva, thus reducing the challenges in synchronous online pedagogies. Students felt less inhibited and were able to focus more on learning without worrying about making mistakes in the class. Some believed that these programmes offered a safe space for their individualities to emerge. Teachers assessed and provided feedback to the students during/after the classes thus, unlocking the potentials of these programmes in teaching/learning ESL in the digitalized world.

Keywords: ESL, Online Teaching, Jamboard, Padlet, Canva

LEARNING STYLES OF MEDICAL STUDENTS AND THEIR RELATIONSHIP WITH ACADEMIC PERFORMANCE

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Abstract

Learning styles among medical students have been extensively studied worldwide, emphasizing the unique preferences each student has for gaining and retaining knowledge. Understanding these styles enables lecturers to provide personalized and effective teaching. This study aims to identify students' learning preferences and investigate the relationship between academic performance and learning styles. A cross-sectional study was conducted on 78 medical undergraduates at the Faculty of Medicine, Sabaragamuwa University of Sri Lanka, using convenience sampling. Data were collected through a Google Form including sections on socio-demographics and the VARK (Visual, Aural, Read/write, Kinesthetic) questionnaire. The Chi-square test was used to investigate the relationship between learning styles and academic performance. The study population consisted of 78.2% females (n=61) and 21.8% males (n=17). Multi-modal learners (61.5%,n=48) were higher than uni-modal learners (38.5%,n=30). Among multi-modal learners, the majority were bi-modal (28.2%). Uni-modal learners mainly preferred kinesthetic learning style (21.7%). Females showed higher pass percentages across all three subjects. Among the passed students, multi-modal learning styles accounted for 64.8% in Anatomy, 63.8% in Physiology, and 64.9% in Biochemistry. Furthermore, uni-modal learners showed the highest failure rates across all three subjects compared to multi-modal learning types. However, there was no statistically significant association between learning style and academic performance. Most students preferred multi-modal learning, with VAK being the most individually preferred type. Further, females showed higher numbers of pass rates, and multimodal learners appeared to perform better than unimodal learners. The lack of significant associations highlights the need for further research with larger samples to better understand these relationships.

Keywords: Learning styles, Multi-model, Uni model

THE EFFECTIVENESS OF ADAPTIVE LEARNING STRATEGIES IN MITIGATING SPEAKING ANXIETY AMONG ENGLISH AS A SECOND LANGUAGE (ESL) UNDERGRADUATES

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Abstract

Speaking anxiety presents a formidable challenge for English as a Second Language (ESL) learners, particularly among first-year undergraduates who are just starting their academic pursuits. This study explores the potential of adaptive learning strategies to mitigate this anxiety in virtual classrooms. Adaptive learning approaches utilise technology to tailor educational experiences to the needs of individual learners, aiming to improve their language skills and reduce anxiety. The study investigates the role of these strategies in alleviating speaking anxiety among first-year ESL undergraduates engaged in virtual learning environments. This qualitative research was conducted over two months with a sample of twenty (20) first-year undergraduates from the Department of Marketing Management at the University of Kelaniya. Participants engaged in various adaptive learning interventions, including interactive speaking exercises, real-time feedback sessions, and personalised practice tasks tailored to their needs. Data were collected through semi-structured interviews and reflective journals, allowing students to share their experiences and perceptions of the adaptive learning tools used in virtual ESL classes. Thematic analysis of interview responses and journal entries identified three main themes related to how adaptive learning strategies mitigated speaking anxiety: timely feedback that built confidence, comfortability through engaging activities and facilitated growth through targeted learning paths. The learners emphasised how immediate feedback helped them make real-time corrections and build their confidence. They also highlighted the positive impact of interactive activities, which created a comfortable environment, easing their anxiety. Furthermore, the personalised learning paths were instrumental in addressing individual challenges and fostering growth in their speaking abilities. These results suggest that adaptive learning strategies effectively create a less anxiety-provoking and more supportive virtual classroom experience for ESL learners. Educators are encouraged to utilise adaptive learning technologies to provide personalised support and develop a more engaging, supportive, and less anxiety-provoking virtual classroom environment for ESL learners. Future research should focus on assessing the long-term impacts of these adaptive strategies and exploring their effectiveness across diverse educational settings and learner populations.

Keywords: Adaptive learning strategies, Speaking anxiety, ESL Learners, Virtual classrooms

INTEGRATING INDIGENOUS KNOWLEDGE FROM *SIRITH MALDAMA* TO ADDRESS DIGITAL DEVIANCE AND ENSURE CYBER ETHICS RESPECTED IN SRI LANKA

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Abstract

Sirith Maldama written by *M.L. Silva guru muhandiram* in 1895 is an exceptional source of indigenous knowledge with guidelines on ethical conduct. Meanwhile, existing literature indicates a higher level of digital screen usage among children and has identified digital deviance as an emerging social problem. Though studies have suggested various models, a pronounced research gap was identified regarding studies involving indigenous knowledge systems to address this issue. Hence, this study was conducted with the objective to identify the potential teachings of *Sirith Maldama* in ensuring ethical cyber conduct and developing a framework for school education and community-based initiatives. The study employed a qualitative research design, where textual analysis was conducted on all 186 verses to identify applicable knowledge regarding cyber ethics. Following that, thematic analysis was utilized to incorporate gathered knowledge into problematic areas of digital conduct. The study identified four key areas of digital conduct where teachings in *Sirith Maldama* can be applied. These include commenting, sharing, networking, and addiction. In terms of commenting, the significance of avoiding harmful expressions and being respectful was found to be implied. Responsibility and preserving the intended meanings were recognized as applicable to content sharing. In addition, the importance of distinguishing individual characteristics before social networking was also identified. Moreover, the value of productive involvement was noted as required in preventing digital deviance. Based on these findings, the study proposes a framework incorporating respect, responsibility, discernment, and priorities to be implemented in school education and community-based initiatives to ensure digital ethics.

Keywords: Children, Cyber ethics, Digital deviance, Indigenous knowledge systems, *Sirith Maldama.*

EGOCENTRIC THINKING AND ITS INFLUENCE ON LANGUAGE ACQUISITION AND COMMUNICATION AMONG FIRST-YEAR ESL UNDERGRADUATES IN THE FACULTY OF HUMANITIES, UNIVERSITY OF KELANIYA

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Abstract

Egocentric thinking, which involves processing information mainly from one's own perspective and ignoring others, has a significant impact on communication and language acquisition. Henceforth, this study examines the impact of egocentric thinking on first-year English as a Second Language undergraduates in the Faculty of Humanities at the University of Kelaniya while addressing an underexplored aspect of language education. Using a mixed-methods approach, data were collected through structured interviews and questionnaires that were administered to a randomly selected sample of 50 individuals. Quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS) version 23.0 to achieve descriptive while thematic analysis was employed to analyse qualitative data from the interviews to identify recurring themes and insights. Thus, according to quantitative results, egocentric tendencies cause problems like misunderstandings, strained relationships with teachers, and decreased participation in group projects. The quantitative results indicated that egocentric tendencies contribute to challenges such as difficulties in language acquisition, miscommunication, weakened relationships with instructors, and reduced participation in collaborative activities. Qualitative data further revealed key issues, including diminished motivation, inadequate language fluency, and resistance to adapting to cultural differences, all of which impede linguistic growth and intercultural competence. These findings highlight the importance of implementing pedagogical approaches that encourage cultural awareness, collaborative engagement, and improved learner motivation to counteract the negative effects of egocentric thinking. By addressing these obstacles, educators can enhance language learning outcomes and cultivate communicators who can effectively navigate diverse cultural and linguistic environments.

Keywords: Egocentric thinking, ESL learners, language acquisition, intercultural competence, collaborative learning

THE STUDY OF KABIR'S POETRY WITH SPECIAL REFERENCE TO THE CONCEPTS OF *ACHARA RASAYANAYA* IN AYURVEDA

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Abstract

Across diverse cultures, numerous teachings exist on how individuals can manage their lives in a positive and balanced manner. In Ayurveda, health is defined as a harmonious equilibrium between the physical, mental, social, and spiritual dimensions of well-being. Ayurveda is not only a science of healing but also an art of living. It emphasizes the well-being of the body, the senses, the mind, and the soul, all of which are essential for attaining a long, healthy life. In today's fast-paced, modern world, individuals are increasingly susceptible to both physical and mental health challenges. Factors such as demanding work schedules, environmental pollution, and poor dietary habits significantly impact overall health, often without being properly addressed. This study draws on authentic Ayurvedic texts, selected Hindi poetry, scientific journals, and trusted websites, following the PRISMA methodology. According to the findings, both the Ayurvedic classical text *Charaka Samhita* and the poetry of Kabir emphasize the importance of living in a manner that maintains a calm and healthy mind. The analysis suggests that adopting a code of conduct based on principles such as truthfulness, non-violence, emotional control, avoiding overexertion, cultivating inner peace, using soft and pleasing speech, and avoiding narrow-mindedness contributes to mental well-being. Both *Acharya Charaka*, as a physician, and the poet Kabir offer similar guidance to society, underscoring the importance of these principles in maintaining individual health and fostering a harmonious, peaceful society.

Keywords: *Achara Rasayanaya*, Kabir's Poetry, Behavioral Therapy, Social, Religious

THE IMPACT OF TECHNOLOGICAL LITERACY ON UNDERGRADUATE ESL LEARNERS IN BLENDED LEARNING ENVIRONMENTS IN SRI LANKA

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Abstract

Blended learning, an integration of face-to-face and online modes of instruction, has emerged as a transformative force in education, especially in Sri Lanka, where educators are trying to find ways to increase access and engagement across diverse learning environments. Although there are literature reports on how blended learning benefits higher education teachers, there is still a significant gap in understanding its impact on undergraduates, particularly those studying English as a Second Language. This study is premised on three key questions: (1) To what extent does technological literacy relate to engagement in blended learning environments among undergraduate ESL learners? (2) What is the relationship between technological literacy and learning outcomes among undergraduate ESL learners in Sri Lanka? (3) What are the challenges faced by undergraduate ESL learners in acquiring technological literacy, and how do these challenges influence their educational experiences? The objectives are to identify the technological literacy level among undergraduate ESL learners, and analyse how technological literacy affects engagement and academic outcomes of courses and determines the barriers to technological literacy development. The research design being mixed-methods, quantitative and qualitative methodologies are integrated. The sample of 50 ESL undergraduates from various government universities in Sri Lanka was selected by using random sampling method. A structured questionnaire administered via a Google form was used for data collection, with both closed- and open-ended questions to be filled out in order to gain complete information about the background, technological literacy, engagement, and perceived learning outcomes of the participants. Quantitative data from closed-ended questions was analysed using descriptive and inferential statistics to identify relationships between technological literacy, engagement, and learning outcomes. Qualitative data from open-ended responses was analysed using thematic analysis to uncover recurring themes and insights. The findings present a strong positive correlation of technological literacy and engagement among undergraduate ESL learners. Participants who are more technologically proficient were found to participate more in the online activities and be more satisfied with their learning experiences. Moreover, technically literate learners showed better learning outcomes, such as improved language skills and higher self-confidence. However, the study also revealed several significant challenges faced by adult ESL learners in their acquisition of technological literacy, including a lack of access to technology, a lack of training, and prior experience with digital tools. These often led to frustration and disengagement, thus adversely affecting their educational experiences. The implications of this research underline the importance of undergraduate learners' technological skills development in educational institutions. Future research should investigate the effect of technological literacy on adult ESL learners over a long period and identify best practices for integrating technology into language education in ways that will eventually prepare learners for success in an increasingly digital world.

Keywords: Blended Learning, ESL Learners, Sri Lankan Educational Context, Technological Literacy, Undergraduates

A CASE STUDY ON LANGUAGE POLICY PRACTICES IN DOCTOR-PATIENT INTERACTIONS AT A STATE HOSPITAL

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Abstract

In a multilingual and multi-ethnic country, language plays a pivotal role in representing the interests of various ethnic groups. Sri Lanka being a multilingual nation, has implemented language polices to foster integrity among ethnicities. Hence, the State declared both Sinhala and Tamil as official languages of the country. The State implements language policies ensuring that public services are provided to the public in their respective languages. However, mere implementation is insufficient; the actual practice of these policies is crucial. A hospital is a vital place where language policy should be effective, especially in areas with multilingual speakers. Thus, this study investigates how doctors and patients perceive the language during their interactions in the Out Patient Department (OPD) of a state hospital situated in a multilingual area. Semi-structured interviews were conducted with five doctors, ten Tamil speaking and five Sinhala speaking patients, selected through random sampling in the OPD of the Teaching Hospital in Karapitiya. Thematic analysis was employed to analyse the collected data. The major findings of the study include 1) the utilization of language assistance and 2) the use of alternative languages to perceive the language in interactions. These findings reveal that the official language policy is not consistently practiced in oral interactions between doctors and patients in the Out Patient Department. Nonetheless, doctors and patients manage to understand each other using alternative communicative strategies.

Keywords: Doctors and patients, hospital, language policy, OPD, oral interactions

INTEGRATING MULTIDISCIPLINARY APPROACHES IN TEACHER EDUCATION: FOSTERING COMMUNITY INVOLVEMENT THROUGH SCHOOL ACTIVITIES

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Abstract

This study explores whether teacher education programs, mainly through multidisciplinary approaches, promote community engagement through school-based engagement. Traditionally, teacher education programs have focused on teaching skills and content knowledge; however, recent changes have underscored the importance of teachers' involvement in larger communities. Integrating diverse approaches from sociology, psychology, and environmental studies to civic education equips teachers with rich perspectives and a wide range of skills to enable community interaction. This research investigation examines the effectiveness of a multidisciplinary framework for preparing teachers to lead community-focused school-based initiatives such as cultural events, social awareness campaigns, and environmental projects. This study was a mixed-methods study. Primary and secondary data were used to collect the data. Through this, findings include trained teachers within a multidisciplinary framework to examine the effects of such programs on teacher attitudes, social perceptions, and student outcomes. The results obtained through data analysis are characterized by greater cultural sensitivity, social responsibility, and a more developed capacity for school-community bridging. Such approaches enrich teacher education and help shape an inclusive and resilient society. Discussions of the study are necessary to discuss the implications of this study for the policy and practice of teacher education. There is also a need to reform the curriculum to include a variety of courses that promote engagement with society. By facilitating a good school-community relationship, teacher education programs will likely significantly engage future educators to become societal leaders. This research helps improve the schoolteacher’s professional development, design proper teacher education programs, create an opportunity to use multidisciplinary approaches and develop social involvement.

Keywords: Multidisciplinary, Teacher Education, Community Involvement, School

THE HOLISTIC DEVELOPMENT OF ESL STUDENTS IN A LITERATURE CLASSROOM: A STUDY BASED ON THE THREE MODELS PROPOSED BY CARTER AND LONG

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Abstract

Holistic development has gradually achieved prominence in the discipline of education. Generally, it refers to the notion that all the dimensions of an individual should be nurtured together to enhance their lives. Hence, its relevance to teaching literature in the Second Language context should be concerned, and this factor can be emphasized, focusing on the three models proposed by Carter and Long: the Culture Model, the Language Model, and the Personal Growth Model. As the existing literature indicates a gap in this phenomenon, the purpose of this present study is to explore the contribution of the three models to the holistic development of English as a Second Language students in a literature classroom. Therefore, a textual analysis was conducted focusing on Carter and Long's three models, Savvidou's Integrated Approach, and a five-month literature program in a classroom. The preliminary results firstly introduce the Cultural Model, the Language Model, and the Personal Growth Model, emphasizing a literary text as a cultural artefact, grammatical analysis, and a stimulus for personal growth, respectively. Secondly, it has been identified that these three models only contribute to the holistic development of ESL students in a literature classroom when they are employed in integration in a lesson. Therefore, the Integrated Approach is represented while paying attention to a sample program used in a Greek EFL classroom. Hence, it highlights the effectiveness of integration and the contribution of the three models to the holistic development of ESL students in a literature classroom.

Keywords: Literature, Holistic development, Method, ESL, Integration

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