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# 2023 **GARI** **WINTER** MULTIDISCIPLINARY **SYMPOSIUM**

# GLOBAL ACADEMIC RESEARCH INSTITUTE

COLOMBO, SRI LANKA



## PROCEEDINGS

### GARI WINTER MULTIDISCIPLINARY SYMPOSIUM 2023

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## PREFACE

Global Academic Research Institute is proud to present GARI WINTER MULTIDISCIPLINARY SYMPOSIUM 2023 which is a series of successful research symposium. The Inaugural Session and the Technical Sessions were conducted in Galle Face Hotel, Colombo, Sri Lanka. The conference was organized into different disciplines which empirical, conceptual and methodological papers were received from academics, practitioners and public policy makers were accepted paying austere attention to the academic standards of the papers. To maintain consistency, authors were prescribed to follow the academic writing format of the GARI Publishers. The reviewing process was apparently transparent where papers underwent a double blinded review process by eminent subject specialists in respective areas. Thus, refereed full papers selected to be presented at the conference were published here. We do not assume any responsibility for any errors or omissions in the research papers which rests solely with the authors

Special thank goes to Key note addresses & Co-chairs made by Dr. Mathi Kandiah (Dean, School of Science, BMS, Colombo) Dr. Manoharan Kesavan (Lecturer, Department of Construction Technology, Faculty of Technology, Wayamba University of Sri Lanka) and Scientific Reviewers and Journal Editorial Board of the conference and GARI Journal. The organizing committee special Appreciation Online Research Publications Partner NLSL's National Digital Library and Repository in Sri Lanka, an International Academic Affiliation with Jagadguru Kripalu University - India, Department of Community Medicine, Mysore Medical College and Research Institute - India, International Federation for Fitness Health, Physical Education & Iron Games - Saudi Arabia, Australasian Institute of Ayurvedic Studies - Australia, Kathmandu School of Law – Nepal, Noble School of Business, India.

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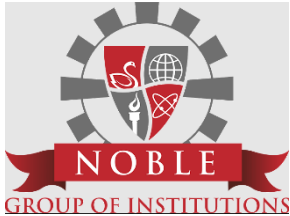
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# ASSOCIATION BETWEEN INTERMITTENT CHRONIC PAIN EXPERIENCE AND QUALITY OF LIFE AMONG OLDER ADULT PATIENTS WITH PERIPHERAL VASCULAR DISEASE

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## ABSTRACT

Peripheral vascular disease (PVD) is a blood circulatory disorder that causes the blood vessels to narrow, block, or spasms. PVD typically causes intermittent pain and fatigue, often in legs particularly at the old age leading them to experience a poor quality of life. This cross-sectional study was conducted in three vascular units of National Hospital in Sri Lanka to examine the impact of intermittent pain on quality of life of older people with peripheral vascular diseases. About 168 male and female participants were recruited using stratified random sampling method and WHOQOL-BREF and numerical pain rating scale were used to collecting data. Pearson correlation and regression analysis tests were conducted to analyzing data. The results showed that while all aspects of quality of life were significantly negatively associated with intermittent chronic pain, participants' psychological health was the strongly associated and mostly impacted aspect of all ( $r = -.655$   $p < .01$ ) and ( $t = -11.15$ ,  $\beta = -.141$ ,  $p < .000$ ).

**Key Words:** Peripheral Vascular Disease, Older Adult Patients, Quality of Life

## INTRODUCTION

Peripheral Vascular Disease (PVD) is a prevalent condition characterized by symptoms such as intermittent pain indicative of ischemia (Morley et al., 2018). Age related vascular dysfunction is one of the main causes for PVD and

therefore, older age is amongst the strongest risk factors (Fowkes et al., 2013). Chronic pain is the most prevalent problem among patients with PVD. Pathological changes in PVD are characterized by formation of clots and plaques in blood vessels resulting arterial blocks. If left untreated, this can result in organ damage and the loss of fingers, toes, or limbs (Giorgi, 2018) consequently experiencing in loss of functional abilities, and chronic pain (Cicekci et al., 2017). This situation can be compounded at the old age owing to their age-related changes hence experiencing poor quality of life

## METHODOLOGY

This is a quantitative, correlational, and cross-sectional study examined relationship between intermittent pain experience and quality of life, among older adult patients with peripheral vascular disease admitted to vascular units at the National Hospital of Sri Lanka. Participants were recruited from three vascular units of the hospital. Ethics approval for the study was obtained from the Ethical Review Committee of the National Hospital of Sri Lanka. A total sample of 168 participants including males and females were recruited using stratified random sampling method. Participants at the age of 60 and above, diagnosed with peripheral vascular diseases, and both males and females were recruited while those who had undergone

major surgeries recently, with severe physical disabilities and cognitive impairments were excluded from the sample. Descriptive statistics showed the male and female composition of the sample and the difference of mean score of pain and quality of life between two groups. Globally validated WHOQOL-BREF scale was used to assess overall quality of life and other four aspects of health in participants' quality of life. Numerical pain rating scale (Dennison & Leal, 2011) was used to assess the levels of pain. The Pearson correlation test was done for assessing the relationship between pain and quality of life and simple linear regression was done to find the effect of pain on domains of quality of life of participants.

## RESULT

About 46% of the sample were male and 54% were females. The mean score of pain among males is 6.00 (SD=2.32) and 5.52 (SD=1.89) among females. The mean score of QOL among males is 69.1 (SD=2.71) and 70.1 (SD=3.12) in females indicating not a big difference between two groups. The correlation matrix revealed that pain scores had significant ( $P<0.05$ ) negative relationships with all individual aspects of health indicating a significant ( $P<0.05$ ) reduction in quality of life with increased pain. Psychological health exhibited the highest negative correlation with pain (-0.655). Further, descriptive statistics indicated that higher mean score of quality of life 3.41 (SD=1.15) was reported from participants with no pain experience while participants with pain reported lower quality of life 2.52 (SD=0.81) than those without pain (Table 3).

*Table 1 - Relationship between Quality of life and pain score*  
*Correlation matrix*

		PAIN	Overall health	Physical health	Psychological health	Social health	Environmental health
Pain score	Pearson Correlation	1	-.628**	-.324**	-.655**	-.253**	-.438**
	Sig. (2-tailed)		0.000	0.000	0.000	0.001	0.000
Overall health	Pearson Correlation		1.000	.333**	.668**	.165*	.464**
	Sig. (2-tailed)			0.000	0.000	0.032	0.000
Physical health	Pearson Correlation			1.000	.344**	0.135	.203**
	Sig. (2-tailed)				0.000	0.080	0.008
Psychological health	Pearson Correlation				1.000	.260**	.336**
	Sig. (2-tailed)					0.001	0.000
Social health	Pearson Correlation					1.000	.162*
	Sig. (2-tailed)						0.036
Environmental health	Pearson Correlation						1.000
	Sig. (2-tailed)						

\*Significant at 0.05/\*\*significant at 0.01

As indicated in the model summary below, regression analysis showed that participants' intermittent pain had a large impact on their overall quality of life ( $t = -10.40$ ) and if pain increases by one unit, their overall quality of life decreases by 0.22 units ( $B = -0.22$ ).

*Table 2 - Regression coefficient of intermittent pain on participants' overall quality of life*

Coefficients						
Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.804	0.130		29.191	0.000
	PAIN	-0.22	0.021	-0.628	-10.405	0.000

*Table 3 – descriptive statistics across pain experience and overall quality of life*

Pain category	Mean	Std. Deviation	Std. Error Mean
Without pain	3.4167	1.15830	0.47288
With pain	2.5216	0.81016	0.06365

## DISCUSSION

This study specifically examined the levels of pain and QoL in patients with intermittent chronic pain associated with PVD and found that older adults with Peripheral Vascular Disease (PVD) who feel pain were less satisfied with life, indicating a lower quality of life (QoL) (Liu et al., 2012). A big difference of mean score of pain cannot be seen among males and females. However, difference between mean score of pain and quality of life among two groups indicated that males had poor quality of life than females and experiencing a higher level of pain than female counterpart. Further, when comparing people with and without chronic pain, those with pain had low quality of life than those without pain (table3). These findings support that if participants with PVD experience a degree of pain, it affects reducing their quality of life (Fakhry et al., 2015). This means lower level of pain in participants related with higher quality of life while higher pain related with low quality of life.

Finally, intermittent pain found to be a major contributor of poor quality of life among patients with PVD.

## CONCLUSIONS

The findings highlighted the need for comprehensive evaluations and personalized interventions for PVD patients, considering the profound impact of severe pain on various aspects of their lives. Health professionals should be vigilant about the prevalence of severe pain in PVD patients and develop effective strategies for pain reduction. Social support groups and interventions aimed at pain reduction could contribute to improving the QoL of PVD patients. Further research is necessary to assess the efficacy of these interventions and promote better outcomes for individuals with PVD.

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**EVALUATION OF THE USE OF DIFFERENT SOLVENTS FOR  
PHYTOCHEMICAL PROFILE AND DETERMINATION OF ANTIOXIDANT  
ACTIVITY IN LEAVES OF SELECTED BRASSICA CROPS GROWN IN SRI  
LANKA**

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**ABSTRACT**

Plants have drawn a significant attention in the development of therapeutics. Particularly Brassica crops known to be a good source of phytochemicals and their leaves have a limited consumption, worldwide. The principal objective of this study was to extract phytochemicals from the leaves of selected Brassica crops (Broccoli - BC, Cauliflower- CF, Red Russian Kale - KL, Knol-Khol- KK and Cabbage - CB) using water and methanol to assess the phytochemical profile, antioxidant and antibacterial activities. Total Phenolic Content (TPC), Total Flavonoid Content (TFC) and Total Antioxidant Capacity (TAC) were analysed using Folin–Ciocalteu method, Aluminium chloride method and Phosphomolybdate assay respectively. DPPH (2,2-diphenyl-1-picrylhydrazyl) and ABTS (2,2'-azino-bis (3-ethylbenzothiazoline-6-sulfonic acid)) free radical scavenging assays were carried out to determine the antioxidant activity of the samples. The antibacterial activity was investigated against *Escherichia coli* and *Staphylococcus aureus* by well diffusion technique. All the results were statistically analysed. Highest TPC and TFC were found in KK(WE) (0.919 mg GAE/g) and BC(WE) (0.014mg QE/g) respectively. All five WEs demonstrated a significantly higher antioxidant capacity and free radical scavenging activity ( $p < 0.05$ ) by DPPH and ABTS assays, compared to their corresponding MEs. Lowest IC<sub>50</sub> in DPPH and ABTS assays were recorded in CB(WE) (0.86 mg/mL) and BC(WE) (22.53 mg/mL) respectively. All WEs and MEs were effective in inhibiting *S. aureus* and *E. coli* respectively at 20mg/mL. Pearson correlation analysis indicates a strong negative correlation between TAC-ABTS and TAC-TFC in WEs and MEs respectively. In conclusion, Water is more effective in extracting phytochemicals from leaves of Brassica and BC and KK leaves are rich in phenols, flavonoids and possess high antioxidant and antibacterial activities which can be used for developing functional foods and medicinal drugs.

# QUALITATIVE AND QUANTITATIVE ANALYSIS OF PHYTOCHEMICALS AND THE DETERMINATION OF ANTIOXIDANT AND ANTIMICROBIAL ACTIVITY IN SELECTED SPECIES OF SYZYGIUM IN SRI LANKA

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## **ABSTRACT**

Many herbal plants in Sri Lanka have been traditionally used in the treatment of various diseases such as diabetes and cancer. Plants from the *Syzygium* genus are widely used as medicinal plants due to possessing pharmacological properties as traditionally reported. The aim of this study was to analyse the phytochemical composition of the aqueous leaf extracts of five selected *Syzygium* species (*S.mrytifolium*, *S.samarangense*, *S.aromaticum*, *S.cumini* and *S.zeilanicum*) and their antioxidant and antimicrobial activity. The qualitative analysis was carried out for the detection of phytochemicals, and the Total Phenolic Content (TPC), Total Flavonoid Content (TFC) and Total Antioxidant Capacity (TAC) were determined quantitatively. TPC, TFC and TAC were assessed using the Folin Ciocalteu method, Aluminum Chloride colorimetric assay and phosphomolybdate method respectively. The free radical scavenging activity was assessed using DPPH free radical and the antimicrobial activity was determined by agar well diffusion method against *E. coli* and *S.aureus*. Reducing sugars, coumarins, phenols, flavonoids, saponins, tannins, steroids and terpenoids were found in all tested *Syzygium* species. Results showed that *S.cumini* contained the highest TPC ( $13.68\pm0.47$  w/w) and TAC ( $22.83\pm0.78$  AAE mg/mL), while *S.mrytifolium* expressed the highest TFC ( $20.56\pm2.56$  w/w). The strongest scavenging activity with an IC<sub>50</sub> of  $35\pm2.31\mu\text{g/mL}$  was expressed by *S.aromaticum*. At 20mg/mL, *S.mrytifolium*, *S.cumini* and *S.aromaticum* depicted antimicrobial activity against *S.aureus*, however none of the species exhibited activity against *E.coli*. The findings of the study unfold the potential of selected *Syzygium* species to act as sources of antioxidants and antimicrobial agents that can be incorporated in drug formulations in future.

Keywords: *Syzygium*, Phytochemicals, Antioxidants, Antimicrobial activity

# ASSESSING THE FACTORS AFFECTING FOR ORGANIZATIONAL COMMITMENT AMONG NURSES IN NATIONAL HOSPITAL OF COLOMBO, SRI LANKA

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## **ABSTRACT**

The idea of organizational commitment has an intuitive appeal because of the relationship of commitment to turnover, absenteeism, and organizational performance. All these are important to healthcare executives who are attempting to stabilize a nursing workforce in the presence of a growing nursing shortage. This study aims to assess the factors affecting for organizational commitment among nurses in National Hospital of Colombo, Sri Lanka. An institution based cross-sectional study design was conducted in the National hospital of Sri Lanka, Colombo 10. Self-administered structured administered questionnaire was used to collect data. Out of the total nursing staff at National Hospital of Sri Lanka of 2715, data from 349 participants were collected within 30 days. The questionnaire consisted of demographic data, questions to assess quality-of-life benefits and work life balance and possible feelings of hospital. The result of the current study shows that satisfaction with quality of family life, quality of professional life, salary/ income, working condition/ working unit, Union leaders/union support, ward manager attitudes of organization, gender, family member employment, working time and working experience ( $p = 0.000$ ) had a positive association with organizational commitment. While age ( $p=0.298$ ), family structure ( $p=0.032$ ), number of children ( $p=0.004$ ), level of education ( $p=0.265$ ), marital status ( $p=0.746$ ) and health status ( $p=0.045$ ) were not associated with organizational commitment. Quality of family life, quality of professional life, salary/ income, working condition/working unit, union leaders/union support, ward manager attitudes of organization, gender, family member employment, working time and working experience had a positive association with organizational commitment. Age, family structure, number of children, level of education, marital status and health status were not associated with organizational commitment.

Key Words: Nurses, Organizational commitment, Quality of family life, Quality of professional life, Work-life balance

# **LITERATURE REVIEW ON SIDDHA HERBAL PREPARATION ARUKAN KADDAI THILUM -A SIDDHA CLASSICAL DRUG USED IN SKIN DISEASE**

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## **ABSTRACT**

Skin diseases and antibiotic resistance are health burdens to the modern world to overcome the issues they turned their concentration to herbal preparation. Arugan kaddai thailam is the Siddha polyherbal external preparations, which contains *Cynodon dactylon* L., *Glycyrrhiza glabra* L., and Coconut oil and is used to treat karappan, sori (itching), sirangu, and burning sensations in the extremities. However, the scientific studies on Arugan kaddai thailam is less. The present study aims to review the pharmacological activities, phytochemical, and antimicrobial properties of ingredient of Arugan kaddai thailum. The data was collected from Siddha authentic books and journals from scientific databases. The research documented that the ingredients of Arugan kaddai thailum have valuable properties of antimicrobial, anti-bacterial, anti-fungal, and antioxidant activities and phytochemicals like flavonoids, alkaloids, steroids, terpenoids, saponins, tannins, and glycosides. Further, the study revealed the presence of these phytochemicals enhances antimicrobial activity. Based on the Siddha authentic textbook ingredients of Arugan kaddai thailum, have the capacity to cure skin-related diseases. This study concluded that the presence of phytochemical constituents influences the medicinal uses and antimicrobial activity of ingredients in Arugan kaddai thailum. Further research should be carried out to confirm the efficacy and safety of the drug.

Keywords: Arukan kaddai thilum, Karappan, Sirangu, Antimicrobial activity

# EFFECTIVENESS OF AYURVEDA TREATMENT FOR VITILIGO (SHVITRA): A CASE STUDY

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## **ABSTRACT**

Vitiligo is a chronic autoimmune dermatological disorder that causes white patches of the skin due to melanocytes deficiency. Ayurveda has explained all the skin diseases under the heading of Kushta roga. Shvitra which explained under the Kushta roga in Ayurveda can be correlated with Vitiligo. Shvitra is induced by the vitiation of tridoshas well as dhatus such as rasa, rakta, mamsa and meda. Ayurvedic approach to autoimmune disease treatment focuses on restoring balance with natural immunity boosting. The present study was carried out for evaluate the effectiveness of Ayurveda treatment for Vitiligo (Shvitra). A 51-year-old female patient presented to the Bhagya Suwa Arana Ayurveda Medical Center, Sri Lanka with a complaint of whitish discolored patches all over the face with itching. She was treated by using a treatment protocol of shodhan and Shamana chikitsa in Ayurveda with diet and lifestyle management. Oral herbal drugs were administered for 6 months with external oil and paste application. Patient was observed and improvement from discolored patches and itching was evaluated using scoring method as subjective criteria and objective criteria evaluated using VETI scoring method. After the 6 months of treatments, there was a 100% improvement seen in reduction of patches and restoring normal skin color with absence of itching as subjective criteria and VETI scoring improvement from 20 to 0. The present study indicates effectiveness of Ayurveda treatment for Vitiligo by increasing the immune system and enhancing the quality of life in less duration.

Keywords: Vitiligo, Shvitra, Ayurveda

# A SYSTEMATIC LITERATURE REVIEW; THERAPEUTIC VALUE OF PUSHPADHANWA RASA (PR) IN AN INFERTILITY (VANDYATWA)

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## ABSTRACT

Infertility is a reproductive system disease, failure to achieve pregnancy after 12 months of regular unprotected intercourse. It's affecting 10-12% of couples worldwide, In Ayurveda system of medical known as a vandyatwa. PR is an ayurvedic drug used to treat infertility, impotency, rejuvenation, and other sexual disorders. Main objective of this study is to identify the therapeutic value of PR in an infertility. The study reviewed literature on PR, exploring its description, and efficacy for vandyatwa by using sources included Ayurvedic texts of Bhaishajya Rathnawali, Rasa tarangini, Rasa rathna samuchchaya and data was collected from web searchies like electronic databases like Google Scholar, MEDLINE, PubMed, and Scopus. PR contains Rasa sindoorā, Nāga bhasma, Vanga bhasma, Abhraka bhasma and Lauha bhasma. All these substances have Vruśya (aphrodisiac) and Śukravardhana properties. Due to its Prabhava, it has direct effect on Śukra dhatu. So, it can be used Vājīkarana, Kāmottejana, Vandyatavanāśana, Garbhastāpaka. PR addresses vandyatwa by balancing vāta-kapha doshas with its thikta rasa, uśhna veerya, and lekhana swabhāwa. It's deepana and pāchana actions eliminate agnimāndya and āma, mitigating srothorodha. Lauha bhasma nourishes the Rakta dhātu, while the lekhana swabhāwa of Lauha bhasma, Nāga bhasma, Vanga bhasma aids vātānulomana, eliminating srothorodha, and the yogavāhi guna of Rasa sindoorā increases the ability of sperm accumulation. As well as Vāta Dosha shamana and shodhana kriya respectively. In review of these studies, it is a rasa medicine. According to Āchārya Charaka, all diseases occur due to imbalance in Agni and resulting build-up of āma. Āma formation results in to srothorodha, which leads to vāta prakopa. It leads to koshtāgnimāndhya and then it develops dhāthvāgnimāndhya, especially improper functioning of Rasa, Raktha, Medas and Śukra dhāthus. By analysing the overall properties of the drug, we can conclude that the drug may be effective in management of kapha-vāta pradhāna avasthā of infertility.

Key words: Pushpadhanwa Rasa (PR), Infertility, Vandyatwa, Āma, Vruśya

# SYSTEMATIC REVIEW ON DYSMENORRHEA (KASHTARTHAVA) IN FEMALE INFERTILITY

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## ABSTRACT

Many women experience dysmenorrhea as a primary form of the disease, although it is a common symptom of various gynecological disorders. Hypersecretion of prostaglandins and increased uterine contractility are the causes of pain associated with dysmenorrhea. According to a systematic review of studies from developing countries, approximately 25% and 50% of adult women and 75% of adolescents experience dysmenorrhea. The Prevalence of this is estimated as 45% to 80 % among reproductive-aged women. According to Ayurveda, it is mentioned as Kashtarthava. Infertility is defined by the failure to achieve a pregnancy after one year or more of regular unprotected sexual intercourse. It is possibility for women who are afflicted with dysmenorrhea. This study aims to explore the impact of dysmenorrhea on female infertility. Data collection was done as a systematic literature review by using the PRISMA method. Dysmenorrhea is classified as primary and secondary. Herein, any degree of perceived cramping pain during menstruation in the absence of detectable pelvic pathology indicates primary dysmenorrhea. Prostaglandins, which are natural chemicals produced in the uterus lining, are the main cause of this Menstrual pain that is associated with an underlying disease, disorder, or structural abnormality both inside and outside the uterus is known as secondary dysmenorrhea. Such as endometriosis, adenomyosis, fibroids, Pelvic inflammatory disease, ovarian cyst, and Adhesions after previous abdominal surgery, etc. According to Ayurveda, four factors are responsible for healthy conception. These are ritu (Ovulatory period), kshetra (endometrium), ambu (Hormones), and beeja (Ovum and Sperm), abnormality in any of these factors leads to Vandhyatva. Vataja, Udavarta, Antarmuki, Suchimuki, Paripluta, Vipluta yoni vyapad leading to Kashtartava. All these reasons are the causes of female infertility. Considering the diseases involving dysmenorrhea, it can be reflected in this research that it directly affects female infertility.

Keywords: Dysmenorrhea, Infertility, Kashtartava

## IMPACT OF MATERNAL NUTRITION ON FETAL OUTCOME

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### ABSTRACT

The genesis of life, Garbha Utpatti, hinges on pivotal factors Ritu Kshetra, Ambu, and Beeja with Ambu playing a crucial role not only in Garbha Poshana but also in fetal nourishment and acknowledging nutrition's paramount influence on fetal development. This research aim is to investigate Garbha Utpatti, emphasizing maternal nutrition's critical role, in addressing IUGR and integrating Ayurvedic and modern texts. While secondary data were gathered from internet databases like PubMed, Scopus, Google Scholar, and journals, primary data were taken from Ayurvedic literature. Eleven of the twenty-five journal publications published between 2012 and 2022 provided detailed insights into the extensive study conducted. In Garbha Utpatti, Rasa Dhatu is divided into three parts, aiding breast, embryonic, and maternal development. Ayurveda warns that incorrect Garbha Poshana leads to abortion, developmental restrictions, and congenital issues. Modern insights link inadequate fetal feeding to maternal and placental factors causing intrauterine growth restriction, placental diseases, and fetal death. The discussion delves into the alignment and contrasts between Ayurvedic principles and modern medicine on maternal nutrition's impact. Emphasizing the urgency for increased awareness and interventions, the study highlights maternal nutrition's pivotal role in fetal development, bridging ancient Ayurvedic wisdom with modern medical insights. In regard to maternal nutrition and its effect on fetal health, the conversation threads through the points of convergence and divergence between Ayurvedic principles and contemporary medical insights. It emphasizes how critical it is to raise awareness and implement strategies to address IUGR and the difficulties that come with it. Implementing maternal nutrition education and Ayurvedic practices like Masanumasika garbhini paricharya in prenatal care is crucial for optimal maternal and fetal health.

Key Words: Garbha Utpatti, Intrauterine Growth Retardation (IUGR), Ayurvedic Perspective, Fetal Nourishment, Masanumasika Garbhini Paricharya

# COMPREHENSIVE LITERATURE STUDY ON APPROACH OF AYURVEDA FOR FEMALE INFERTILITY

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## ABSTRACT

Infertility is a major clinical impact as an embarrassing problem as well a burning issue universally. Fertility has been an essentiality for production of a healthy progeny there by making possible the transmission of genetic mate from the parent to the next generation for a healthy human development both socially and economically. Aim of the study was determination of Ayurveda approached regarding female infertility. This research was designed as a conceptual study and the Ayurvedic Samhitās and data were collected from journals and electronic databases such as PubMed, Scopus and Google scholar According to Ayurveda, fertility has an overwhelming importance giving equity to Stree and Purusha in terms of Shukra and Suddha Shonitha for Garbha dharana (to conceive) four factors Ritu, Kshetra, Ambu and Beeja. In due course of time, due to various physical, psychological modifications influenced by food habits lifestyle, environment and miscellaneous factors, a remarkable decrease in the rate of fertility. Ayurveda has advice various forms of Ahara, Vihara, Rutucharya, Dinacharya and Aushada for the Swasthya rakshan Vikara prashamana considering the reproductive health of an individual. So, an approach is to manage and treat the condition menstrual problems (Artava dushti) and implement Rasayana and Vajikarana therapies successively in

preventive as well as curative specially infertility condition. A healthy reproductive life concentrates upon the procreational, recreational and relation aspects of life. Furthermore, Ayurveda medical system rich with well described pre-conception care in terms of Garbhadhana vidhi since centuries back and mainly emphasizes healthy and strong progeny by following the regimens. Infertility can be managed by looking at the reproductive system components. Ayurveda pays attention to each individual body types, enhances the body systems participating in the process of fertilization and therefore serves as an excellent alternative for reaching fertilization.

Keywords: Infertility, Artava dushti, Rasayana, Vajikarana, Pre-conception care, Garbhadhana vidhi

## INTRODUCTION

Ayurveda is a science which has both preventive as well as curative aspects. The main aim of Ayurveda towards disease management and maintaining the health of healthy individuals. Reproduction is one of the prime requirements of any species to continue its existence in the universe. Infertility is significant public health issue in the modern world, affecting over 10 % of women involved in active marital

relationship. Ayurveda has mentioned the most possible factors responsible for infertility are Yoni dosha (Yoni vyapad) Manasika-Abhitapa, Shukra-Artavadosha (Artava vyapad), Ahara-Vihara Dosha, Akaalyoga, Bala-Kshaya. Another major factor is alterations in semen quality have been affected for the delayed childbearing. The fertile ratio of Sri Lanka which was 5.00 (-1.950%) in 1965 has decreased to 2.128 (-0.750%) at present era. Infertility is a major clinical impact as an embarrassing problem as well a burning Sociologically issue in universally. According to the world health organization, infertility has become a global challenge in the modern era compared to past decades. Therefore, it is a major requirement to turn back to history and compile valuable cultural data before the information is destroyed over time. Mainly due to environmental, physical, mental, and socio-cultural factors. Fertility has been an essentiality for production of a healthy progeny thereby making possible the transmission of genetic mate from the parent to the next generation for a healthy human development both socially and economically.

### **Aim of the Study**

Aim of the study was determination of Ayurveda approached regarding female infertility.

### **METHODOLOGY**

A literature review was done as a conceptual study through Ayurvedic Samhitās including Vriddattraya, Lagutraya and Kashyapa Samhita and Haritha Samhita, databases including PubMed, Science Direct, Google Scholar, Scopus and Research Gate using the keywords “Female infertility”, “Essential factors of conception” and “Vandytva”. The selection criteria included published reviewed articles, concept papers, e-

books, scientific articles, whereas articles published in languages other than English, and in complete articles were excluded.

### **RESULTS**

Infertility condition According to Ayurveda, fertility has an over whelming importance giving equity to Stree and Purusha in terms of Shukra and Suddha Shonitha for Garbha dharana (to conceive) four factors i.e Ritu, Kshetra, Ambu and Beeja. In due course of time, due to various physical, psychological modifications influenced by food habits lifestyle, environment and miscellaneous factors, a remarkable decrease in the rate of fertility. Ayurveda has advice various forms of Ahara, Vihara, Ritucharya, Dinacharya and Aushada for the Swasthya rakshan Vikara prashamana considering the reproductive health of an individual. According to Āchārya Charaka, all diseases occur due to imbalance in Agni and resulting build-up of āma. Āma formation results in to Srothorodha, which leads to Vāta prakopa. It leads to Koshtāgnimāndhya and then it develops Dhāthvāgnimāndhya, especially improper functioning of Rasa, Raktha, Medas and Shukra dhāthus. So, an approach is to manage and treat the condition menstrual problems (Artava dushti) and implement Rasayana and Vajikarana therapies successively in preventive as well as curative specially.

### **DISCUSSION**

A healthy reproductive life concentrates upon the procreational, recreational and relation aspects of life. Pre-conception care could be considered as one of preventive measures and it helps in early identification of high-risk factors and prevents the adverse effect of that. Also improve maternal, paternal and child health in both the short and long term. Pre-conception care can be defined as the

provision of biomedical, behavioural and social health interventions to women and couples before conception. Ayurveda medical system rich with well described pre-conception care in terms of garbhadhana vidhi since centuries back and mainly emphasizes healthy and strong progeny by following the regimens. Infertility can occur vitiated of Rithu (pertil feriod), Kshetra(reproductive system), Ambu (homonal and nutrition) or Beeja (sperm and ovum). In such a situation Ayurveda can contribute tremendously with the effective preconception care and it helps to fertility, minimize complications of pregnancy by changing the physical and mental status of couple willing for pregnancy.

## CONCLUSION

Infertility can be managed by looking at the reproductive system components. Ayurveda pays attention to each individual body types, enhances the body systems participating in the process of fertilization and therefore serves as an excellent alternative for reaching fertilization.

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## **EFFICACY OF *DIYAMITTADI KASHAYA* IN THE MANAGEMENT OF UTERINE FIBROID (*MAMSARBUDHA*) - A REVIEW**

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### **ABSTRACT**

Uterine leiomyomas considered as benign monoclonal neoplasm originated from the smooth muscle layer of uterus. Prevalence is high with the increased age within reproductive years, family history, higher BMI and nulliparity. Though this condition having unknown etiology ovarian steroids having significant influence to grow this. According to the Ayurveda this condition categorized under Mamsarbudha. The purpose of this study is to find out the literature of ingredients in Diyamittadi kashaya which is used successfully in the management of uterine fibroids. Data was gathered through Ayurveda textbooks and articles gathered via electronic databases including Google Scholar, PubMed, Research Gate and ScienceDirect. Diyamittadi kashaya is consisted of 13 medicinal herbs including Triphala, Dhanyaka, Gugul, Vrischikali, Pippali, Haridra, Dharuharidra, Paataa, Kalajaji, Patola and Chopachini. Results shows Diyamittadi Kashaya having significant effect on reducing the vitiated Mamsa dhathu in the management of uterine fibroids due to it has Lekhaniya action (thinning the tissues or reducing corpulency).

Key words: Uterine Fibroid, Mamsarbudha, Diyamittadi Kashaya, Uterine leiomyomas

# ASSESSMENT OF ANTIFUNGAL POTENCY IN TRIGONELLA FOENUM- GRAECUM AND MELALEUCA LEUCADENDRA EXTRACTS AGAINST CANDIDA ALBICANS 90028: AN IN VITRO INVESTIGATION

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## ABSTRACT

*Candida albicans* is a major cause of vaginal candidiasis, with higher prevalence among pregnant women. The rising antifungal resistance in conventional treatments underscores the need for alternative therapies. The study aimed on assessing the antifungal effectiveness of extracts from *Trigonella foenum-graecum* L. and *Melaleuca leucadendra* L. against *Candida albicans* 90028 in an in vitro investigation. Decoction samples of these extracts were prepared as per traditional methodologies for vaginal washing. The antifungal activities were evaluated using the agar well diffusion method. Results indicated a notable inhibition zone of 9.67 mm for *Melaleuca leucadendra* L. bark decoction at 500 mg/ml, while *Trigonella foenum-graecum* L. seed decoction did not exhibit detectable inhibition zones. The study compared these natural remedies' efficacy, focusing solely on water-based decoctions, akin to those used traditionally. However, it did not explore the potential effects of other solvents on antifungal efficacy. Further research is needed to identify active constituents and explore their potential for combating antifungal resistance. *Melaleuca leucadendra* L. decoction, prepared following traditional Ayurvedic methods, showed promise in controlling pathogenic *Candida albicans*, particularly the *Candida*

*albicans* 90028 strains. However, the study's limitations highlight the necessity for further investigation to leverage the full therapeutic potential of these plant-derived remedies against fungal infections.

Key words: Antifungal potency, Agar well diffusion method, *Trigonella foenum-graecum* L., *Melaleuca leucadendra* L., vaginal washing

## INTRODUCTION

Vaginal candidiasis, predominantly caused by *Candida albicans*, presents a significant healthcare concern, notably among women experiencing recurrent vulvovaginal candidiasis (RVVC). Studies have consistently identified *Candida albicans* as the most prevalent species isolated from vaginal swabs, demonstrating a higher incidence among pregnant women compared to non-pregnant individuals (Babić & Hukić, 2010). The emergence of antifungal resistance, particularly in response to triazole compounds, poses a substantial challenge in effectively managing these infections. Resistance mechanisms exhibited by *Candida albicans* underscore the critical need for novel antifungal agents (Sobel, 1996). Remarkably, clinical features described in Ayurvedic texts as

"Shleshmika" and "Upaplutha Yoni Vyapath" bear resemblance to symptoms associated with vaginal candidiasis, suggesting a potential correlation between traditional Ayurvedic knowledge and contemporary reproductive health issues. This investigation aims to bridge Ayurveda with modern scientific validation by examining the antifungal efficacy of herbal extracts derived from *Trigonella foenum-graecum* L. (fenugreek) seeds and *Melaleuca leucadendra* L. bark. These botanical sources have historical recommendations in Ayurvedic literature for managing vaginal disorders, thereby prompting exploration of their potential antifungal properties against *Candida albicans*, a major causative agent in recurrent vulvovaginal candidiasis and vaginal candidiasis. The urgency to identify alternative therapeutic options stems from the documented resistance mechanisms encountered with existing antifungal treatments, emphasizing the imperative to explore natural remedies. This investigation endeavors to substantiate the therapeutic potential of extracts against *Candida albicans* through rigorous in vitro assays, aiming to validate their candidacy as potential solutions for vaginal candidiasis.

## **RESEARCH METHODOLOGY**

### **Setting of the Research:**

The activities pertinent to this research were conducted as outlined below

### **Preparation of Decoction Samples**

Decoction samples were prepared at the Baisjyāgāra, Department of Dravyaguṇa Vignāna, Faculty of Indigenous Medicine, GWUIM. *Melaleuca leucadendra* L. bark and *Trigonella foenum-graecum* L. seeds were sourced from the local marketplace in Gampaha, Sri Lanka.

### **Sample Preparation Method**

The collected plant materials underwent washing to eliminate physical impurities. Both *Melaleuca leucadendra* L. bark and *Trigonella foenum-graecum* L. seeds were washed thoroughly with tap water and air-dried for 3.5 hours at 40°C. Subsequently, decoctions were prepared by adding 30 g of plant materials to 1920 ml of distilled water, reducing the mixture to 60 ml through heating, and filtering the cooled solution using sterilized Whatman No 1 large filter paper. All laboratory procedures were conducted under aseptic conditions.

### **Method of Agar Plate Preparation**

Muller Hinton agar plates were prepared according to manufacturer specifications. The medium was dissolved in distilled water, heated, autoclaved at 121°C for 15 minutes (at 15 lbs pressure), cooled to room temperature, and poured into sterile petri plates to solidify.

### **Test Microorganisms Used:**

The *Candida albicans* 90028 strain was selected as the test microorganism for this study.

### **Preparation of Positive Control:**

Fluconazole was prepared and filtered to achieve a final stock concentration of 2.5 mg/ml, sterilized using an autoclave.

### **Inoculum Preparation:**

A young culture of *Candida albicans* 90028 strain was suspended in sterilized 0.9% saline and adjusted to a turbidity equivalent to 0.5 McFarland standard ( $1.5 \times 10^8$  CFU/ml, OD 0.08 at 625 nm).

### **Antifungal Activity Assessment:**

The antifungal effect was evaluated using the agar well diffusion method. Muller Hinton agar plates were initially incubated for 24 hours to ensure no contaminations. Subsequently, 100µL of

the prepared inoculum was swabbed uniformly on the agar surface. Wells (4 per plate, 6 mm diameter) were created, and test and control samples (50µL each) were added to labeled wells. Triplicates were performed for each sample against the same organism. All plates were incubated at 37°C for 24 hours.

#### Determination of Activity Index (AI):

The Activity Index (AI) for the decoction samples was calculated using the formula: AI = Inhibition Zone of the sample / Inhibition Zone of the standard.

## RESULTS

Antifungal activity, represented by the zone of inhibition (ZOI) and activity index (AI), was assessed against *Candida albicans* 90028 strains. The positive control demonstrated significant inhibition zones, while the negative control exhibited no noticeable inhibitory effect. *Trigonella foenum-graecum* L. seed decoction at 500 mg/mL did not display detectable ZOIs. However, *Melaleuca leucadendra* L. bark decoction exhibited ZOI = 9.67 mm and AI =  $3.8116 \times 10^{-1}$  at 500 mg/ml. (See Table 1 and Table 2 for detailed data). [Table:1, Table:2]

Table1: Antifungal activity (ZOI)

	Diameter of zone of inhibition for <i>Melaleuca leucadendra</i> L./mm	Diameter of zone of inhibition for <i>Trigonella foenum-graecum</i> L./mm	Diameter of zone of inhibition for positive control/mm	Diameter of zone of inhibition for negative control/mm
Plate A	10	00	26	00
Plate B	09	00	25	00
Plate C	10	00	25	00
Mean diameter of zone of inhibition	9.67	00	25.37	00

[ZOI]=zone of inhibition (in mm), includes the diameter of cork borer (6mm)

Table2: Antifungal activity (ZOI and AI)

[Activity index=AI]

Sample	Concentration	ZOI/mm	AI
Decoction of <i>Melaleuca leucadendra</i> L.	500mg/ml	9.67	$3.8116 \times 10^{-1}$
Decoction of <i>Trigonella foenum-graecum</i> L.	500mg/ml	00	0

## DISCUSSION

There was a discernible variation in the inhibitory actions of *Melaleuca leucadendra* L. and *Trigonella foenum-graecum* L. against the *Candida albicans* 90028 strain, although the fact that both are suggested in Ayurvedic texts for vaginal washing. However, the study utilized a lower concentration owing to the traditional decoction preparation method (Yoni prakshalana) involving a reduction from 1920 ml to 60 ml. This factor might have influenced the observable inhibitory zones. The research focused solely on water-based decoctions, akin to those used in yoni prakshalana. This limited evaluation didn't explore the potential effects of other solvents, disregarding their possible impact on antifungal efficacy. In vivo applications of these herbal remedies might enhance antifungal effectiveness by improving bioavailability factors. These factors could facilitate drug access to the stratum corneum and support cellular mechanisms that impede fungal virulence. Further studies should aim to isolate and purify the active chemical constituents from these plant decoctions. This effort is pivotal in substituting synthetic medications with natural remedies, potentially addressing the challenges of antifungal resistance.

## CONCLUSION

The findings suggest that *Melaleuca leucadendra* L. decoction, prepared following the standard Ayurvedic

procedure for yoni prakshalana, exhibits potential in controlling pathogenic *Candida albicans*, particularly the *Candida albicans* 90028 strains. However, the study's limitations, including the use of lower concentrations aligned with traditional methods, underscore the need for further investigation to harness the full therapeutic potential of these plant-derived remedies against fungal infections.

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# A SURVEY ON THE ASSESSMENT OF THE VIABILITY OF RATHA KALKA IN THE PREVENTION OF PAEDIATRIC DERMATOLOGICAL AILMENTS

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## ABSTRACT

Paediatric skin problems are common globally, with eczema, infections, and pigmentary diseases being the most prevalent. Ratha Kalka, a traditional Sri Lankan medicine, treats paediatric skin issues, but its effectiveness is debated. It incorporates Dolichos biflous (Kollu), Glycyrrhiza glabra (Welmee), Acorus calamus (Wadakaha) Pterocarpus santalinus (Rathandun) Santalum album (Suduhandun) and Rock salt (Savindalunu) ground with lime juice and prescribed for Balaka Ratha Roga (Paediatric dermatological ailments) as preventive and curative therapy. Several scientific studies have confirmed that Ratha Kalka possesses immune-enhancing, anti-bacterial, anti-inflammatory, non-toxic, and microbiologically safe properties. The goal of this study was to investigate the effectiveness of preventing and managing dermatological conditions in children between the ages of 1 - 7 in the Attanagalle divisional secretariat. To achieve this, conducted a cross-sectional survey using a self-reported, closed-ended Sinhala questionnaire. 250 eligible children were randomly chosen, and their parents were provided with a questionnaire. The collected data was analysed. Out of all the participants who responded, only 44.1% (n=106) had given Ratha Kalka to their children, while 55.8% (n=134) hadn't. While children who had Ratha Kalka did not report any skin ailment, the study found that among 55.8% of the children, 35% (n=47) were suffering from skin diseases. These children's parents were advised to administer Ratha Kalka, and out of them, 40 had subsequently recovered from their skin conditions. The study indicates that Ratha Kalka could be effective in preventing and treating skin issues in children aged 1-7 in Attanagalle. However, more research is necessary to establish its efficacy and educate people about its usage.

Keywords: Ratha Kalka, Dermatological ailments, Paediatric

# **A SYSTEMATIC REVIEW OF DIMBAKOSHA GATHA GRANTI POLYSYSTIC OVARIAN SYNDROME (PCOS)**

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## **ABSTRACT**

Ovarian cyst is an emerging problem in present era. In new era ovarian cyst, irregular menses, uterine fibroids can be seen commonly. Ovarian cyst is one of the prevalent reasons for ovarian dysfunction, which directly affects the fertility. The objective of the research is to understand the role of tridosha in the development of follicles in the ovaries. In this a critical review of Ayurvedic and Modern literature regarding the problem that is PCOS was carried out. It covered all the relevant information from ancient classics to latest treatises which was searched, compiled & analyzed systematically. According to the Ayurveda classic analysis and data analysis PCOS is studied, and its pathogenesis tried to be established. Kapha Vata predominant tridoshaja vikara & agnimandhya is the main reason for pathogenesis. PCOS being a syndrome cannot be correlated with any particular disease in Ayurveda. Hence for the better comprehension of this disease in terms with Ayurveda, the diseases mentioned in Ayurveda classics manifesting with signs and symptoms of PCOS have been studied in detail in relation with Nidana, Dosha and Srotas involvement. Diseases like Vandhya, Arajaska, Nashtartha, Arthavakshaya and Pushpagni jathaharini shows resemblance in signs and symptoms and to some extent these can be related with PCOS.

Keywords: PCOS, Kapha Vata

# **THE ROLE OF THE TEACHERS, WORKING IN SPECIAL NEEDS CHILDREN'S CLASSROOMS THAT ENSURE QUALITY LEARNING OUTCOMES FOR ALL LEARNERS**

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## **ABSTRACT**

The teachers, serving in the special classrooms have to play a major role in further extending their services focusing on the special needs of children's achievement in education. "The term disability is encompassed by the current research on children with learning disabilities such as Down syndrome, cerebral palsy, and autism." This study aims to explore the teachers' role and serving gaps to enhance the education achievement of special needs children in Sri Lanka. The study mainly intends to understand the teachers' current knowledge and skills to serve the special needs of children that were measured considering the UNICEF guidelines of adaptation to proper curriculum & confidence for the special skills to serve these children. The current study further extends to investigate how the teachers are involved in controlling the children's situational behaviors, utilizing their capabilities. Mainly, data were collected by a structured questionnaire from the teachers served in the special needs children's classrooms of the government school in Gampaha District, Sri Lanka, additionally the research was intended to understand the children's situational behaviors and teachers' treatment style on these behaviors (words and actions) observing each classroom separately during the three months (July, August and September 2023). Critically analyzed collected data using the SPSS software and qualitative research technique, the major finding was the barriers include many interrelated factors, majority of teachers (90%) are positioned by lack of knowledge and skills to cover the proper curriculum and to control the children's situational behaviors. 96% of teachers indicated that the difficulty of time limitation to attend the individual children's education enhancement and difficulties of limited accessibility to infrastructure in special needs children's classrooms in government schools in Sri Lanka were highlighted by 99% of respondents. Against this backdrop, children with special needs continue to face several barriers to access, participation, and achievement in education in Sri Lanka. Therefore, current research recommended enhancing the teachers' knowledge & skills via continuous professional training and extending the infrastructure facilities in special needs children's education. The study thus recommended establishing a proper mechanism of involvement of other teachers to enhance the therapy activities of reading, music, Arts, dancing, sports, drama and IT to improve special needs children's achievement in education.

**Keywords:** Special needs of children's achievement in education, The teacher's role in special needs of children's classrooms, Special needs of children's education in Sri Lanka

# **REFORM MUSIC EDUCATION IN SRI LANKAN HIGHER EDUCATION INSTITUTIONS: COMBINING TECHNOLOGY AND MUSIC BUSINESS FOR THE CURRENT DOMAIN**

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## **ABSTRACT**

This article investigates the need for reform in institutions of higher learning by integrating technology and the music industry into music degree programs. The study emphasizes the intricacies and difficulties involved in putting these ideas into practice by drawing on observations and experiences from selected personalities in Western and Eastern cultures. To make beneficial changes in Indian music education, it highlights how important it is for local institutions to overcome organizational barriers and remain attentive to the changing dynamics of the world music industry. The research sought to investigate the potential and difficulties of combining technology and the music industry in educational settings through the views and opinions of reputed personalities in the relevant fields. The essay also makes recommendations for conventional music students, stressing the need to consult experts, do research before making judgments, and seize chances presented by the music industry and technology. It emphasizes how critical it is to be flexible in adapting plans in response to criticism and personal development, while yet recognizing the very competitive nature of the music industry. The study also emphasizes how crucial empirical research is for verifying hypotheses and evaluating how well-prepared students are for life after graduation. The argument made in the paper's conclusion is in favor of integrating technology and music business into Indian music education to

provide students with the tools they need to succeed in the contemporary music industry at local and international levels.

Keywords: North Indian music, Sri Lankan higher education reform, Implementation technology and business, Challenges, Responsiveness

## **INTRODUCTION**

Music technology and the music business have become crucial components of modern music curricula due to developments in the music industry and technological breakthroughs. The introduction of cutting-edge software and computers has completely changed the way that music is taught, impacting both instructional strategies and student reactions. Digital audio workstations (DAWs), MIDI instruments, and music notation software are examples of notable technical tools. These instruments have blurred the boundaries between various music roles and increased accessibility to music composition, production, and improvisation. Students' musical interests and tastes have also been impacted by modern music technology, with younger generations more receptive to innovative teaching methods and techniques. Consequently, there is a growing need to investigate the effects of music technology on students' lives as a result of the incorporation of this technology into the classroom. This development highlights the significance of integrating music

technology into music courses and suggests a renewed interest in jobs in the music business. The study's objectives were to cast light on the state of music education in Sri Lanka today and to highlight the significance of utilising technology and music business in order to satisfy the ever-changing needs of the local music industry. Furthermore, for complete music technology programs and to increase prospective graduates' professional chances, a grasp of the music industry is essential. Many international academic institutions have responded to these developments by introducing creative strategies and providing programs in Music Business and Industry studies.

## ***METHODOLOGY***

The author of this study used an interview-based methodology to obtain insightful information about the state of music education today and the importance of integrating technology and the music industry. A few educators, professors, musicians, and audio engineers in India and UK were chosen for the interviews both in persona and in online platform. The selection process was designed to include viewpoints from individuals with both academic and industrial experience, guaranteeing a thorough understanding of the future of music education. The purpose of the interviews was to discuss the gap that exists in the field of music education in their respective countries and how slowly it has changed to reflect the changing trends in the music business. Open-ended interview questions prompted to discuss thoughts, perceptions, and experiences. The importance of commercial music groups in developing students' musical skills and the general direction of music education with regard to the integration of business and technology were among the topics covered. As the interviews led researcher to reference few articles recommended by

the experts made more clear background on the scope of the work.

## ***DISCUSSION***

Modifying North Indian Music Education to Promote Commercial Musicianship in the Contemporary Sector Due to a number of circumstances, conventional career options for musicians in Sri Lankan industries such as orchestras, and media companies have decreased recently. These include younger generations' disinterest in art music, decreased support for entertainment initiatives, and developments in audiovisual technology. A growing number of music festivals, record labels, and film production companies are looking for musicians with a variety of skill sets rather pioneer in classical music as well as business and technological knowledge. This shift in the music industry highlights the need for musicians who can fulfil market demands and thrive in a variety of roles. In order to meet these changes, music education institutions need to shift their focus towards producing marketable musicians with a combination of artistic ability, technological know-how, and business savvy. The varied Indian performers such as Ustad Zakir Hussain (Tabla), Pandit Niladhir Kumar (Sitarist), Shankar Mahadevan (Vocalist) etc. are comparable to today's marketable musicians. To stay relevant, music institutions must modify their teaching approaches, rebuild what constitutes marketable musicianship, and re-organise their courses. Institutions may draw students interested in a career in music and provide them the tools they need to succeed in the contemporary music industry by incorporating technology and business education into their music programmes. It is imperative that music instructors use innovative pedagogical strategies that enable students to study music while striking a balance between

technical proficiency and artistic proficiency. In order to prepare students for the competitive market, it is also crucial to provide them with a solid foundation in the music business. Without these modifications, students could have trouble landing a job and living up to the demands of the ever-changing music business.

### **Crucial Business Skills for Handling the Modern Music Industry:**

Musicians now have to meet demands that go beyond just creative aptitude. They need to arm themselves with critical business information in order to creating a solid online presence through business websites and active social media accounts has become essential for music sharing, fan interaction, and self-promotion. Being how to use social media sites like Facebook, YouTube, and Instagram efficiently is crucial. For artists to safeguard their intellectual property and guarantee that royalties are collected, it is essential to comprehend copyright and performance rights. For complete protection, this entails obtaining copyrights for their works and becoming a member of Performance Rights Organisations (PROs). Furthermore, effective and lawful performances depend on adherence to venue standards, including liability insurance and performance licences. To protect themselves from being taken advantage of, musicians must also understand the rules governing music publication. This entails managing contracts, obtaining consent, and steering clear of any scams. An entrepreneurial attitude is essential, which includes self-marketing techniques, interacting with audiences on social media and blogs, and having a thorough awareness of the legal ramifications of the business. To be competitive, one must keep up with the latest developments in music technology, including virtual instruments, digital audio workstations,

and production software. It is required that you have a basic understanding of marketing, networking, and financial management. It is important for musicians to know how to negotiate contracts and look for ways to make money. Given how quickly the sector is evolving, adaptability and ongoing education are essential. To effectively manage the complexity of the music business, musicians need to remain up to date on industry developments, actively engage in workshops or seminars, and seek out educational materials. Musicians may position themselves for success in the contemporary music industry by gaining and refining these crucial business knowledge and abilities. It gives students the resources they need to flourish in a world that is changing quickly, as well as improving their prospects of establishing long-lasting jobs.

### **RESULTS**

It is obvious that the Sri Lanka university music education programmes need to be redesigned to make technology and the music industry core elements. The fundamentals of North Indian music education, including music theory and instrumental ability, may not change much, but popular music and the music business as a whole are always changing. Innovation and teamwork are also emphasised as essential components for bringing about constructive improvements in music education. It is crucial for educational institutions to adapt to these changing dynamics. According to the discussion it recommends that music academic institutions keep a careful eye on how people listen to music, what types are becoming popular, and how technological developments are influencing the music business. This suggests that in order to guarantee that students are well equipped for the dynamic music business, educational institutions should revise their curriculum and methods of instruction.

## CONCLUSION

The students in present traditional music programmes such as North Indian Classical who are not exposed to career options in music business and technology. They need of getting wise counsel, receiving top-notch instruction, and making well-informed choices about where and with whom they could adopt their qualification to uplift the career. it's crucial to understand that these perspectives might not fully capture the range of ideas within the Sri Lankan music education community. Furthermore, the discussion does not include facts or practical proof to back up the assertions stated. The observations and insights discussed are derived from professional experience, and empirical research is required to support and confirm these claims.

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# IMPORTANCE OF WOMEN EMPLOYMENT IN SRI LANKAN ECONOMY

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## **ABSTRACT**

Women have access to employment chances and incomes but they are employed chiefly in semi-skilled labor-intensive industries regardless of their learning level, without chances for improvement skills. Extensive working hours, disclosure to professional health hazards, vulnerability to job insecurity, inequitable gender division of labor, and gender relegation in the labor market are characteristic features of women's work in Sri Lanka. While Sri Lankan women appreciate high status compared to the rest of South Asia, gender problems have yet to be mainstreamed into the national or local planning process and tend to obtain scant care in national plans as seen in the irregular reference to women's issues in majority development planning in the annual Public Investment Program, which works as a five-year rolling plan. Improvements in Sri Lanka's social signs such as high literacy, improved life expectancy, and a low fertility rate were attained through worldwide application of social rule that did not discriminate against women but, at the same time, did not pursue to actively promote women's issues. As will be noted in the section on the evaluation of education, girls' education was easy to promote because it was free and gender stereotyping in education, while diminished, still exists (Centre for Women's Research 1995). The major objective of this study is to examine how women contribute to the country's economy and investigate how women's labour role can be recognized in the society in Sri Lanka. According to the periodization of Sri Lankan history, the

ancient and medieval periods are covered through the study due to time limitation. The study was based on primary and secondary data gathered from literature surveys directly related to the issues addressed in this study. The issues of women's economic situation have been discussed by feminist historians within the feminist theoretical approach, and they have developed a broader discussion regarding the economic involvement of women in the context of patriarchal society in South Asian countries. Furthermore, it can be recognized that women's role in economic standing directly affected women to increase their social development.

Keywords: Sri Lankan Woman, Economy, Feminism, Discrimination

## **INTRODUCTION**

Women's contribution to the Sri Lankan economy is remarkable as major foreign exchange earning sectors comprise larger proportion of women. Yet, Sri Lanka's female labour force participation is behind many Asian nations. Presently, Sri Lanka's female labour force participation rate is around 35 percent compared with male participation rate of 75 percent. However, female labor force participation in selected Asian countries particularly Singapore, Japan, Thailand, China and Bangladesh remain in the range of around 50 percent to 65 percent. Sri Lankan women possess 92.6 percent of literacy rate, which is above its regional peers, and the share of female student enrollment in university undergraduate

level is around 60 percent. Surprisingly, this remarkable educational achievement of Sri Lankan women is not portrayed in the economic participation highlighting a significant gap in transforming available human resource potential productively to generate economic outcome measured in GDP and the national wealth. Accordingly, the main aim of this article is to examine the economic contribution of women in Sri Lanka, with special reference to labour role and property rights, by using available historical sources in Sri Lankan history.

### Significance of the Study

Indeed, Sri Lanka's demographic transition with the rapidly ageing population creates critical labour crunch in several sectors whereas promising development potential of the service sector of the economy requires more female skilled labor input. In this given context, increased women's economic contribution is essentially vital to keep the wanted economic development momentum. Additionally, United Nation's Maintainable Development Goals also emphasizes to safeguard that all human being can accomplish their potential in dignity and equality paying attention to achieve gender parity and permit all women and girls. Additionally, the result of this investigation study may help to recognize women's economic supports in olden times and how they actively contributed in the economic development of the family and Sri Lankan society. Within this background, the study is worth undertaking for many reasons. First, the research inspects the three main development problems, such as women, Sri Lankan society, and economic impact to women in the patriarchal social context in Sri Lanka. Second, the current investigation opens a platform to examine the historical foundations significant to women's studies in the nominated period. It will advantage future research on

ancient women in Sri Lanka. Thirdly, the study mostly emphasizes on the women's economic involvement in Sri Lanka to develop a broader conversation among Sri Lankan women investigators in a new direction. Fourth, the present study can provide the ancient truth of women's economic contribution in Sri Lankan history. In addition to this, the current study is of much consequence to the discourse of women's studies in Sri Lanka.

### Percentage of Women employment in Sri Lanka



Source: International Labour Organization. "ILO Modelled Estimates and Projections database (ILOEST)" ILOSTAT. Accessed February 21, 2023.

### METHODOLOGY

The study is centered on a literature review of both published and unpublished resources (key published documents, during the time frame 2009 to 2022 any important unpublished material, together with seminar and workshop papers) to identify constraints on labour demand touching the Labour Force Participation of women; The literature review will be started by a brief statistical overview of the nature and structures of female labour force participation in Sri Lanka. Based on the likely restrictions identified in literature, Key Person Interviews will be carried out of employers in the proper private sector to ascertain the views of employers on the recognized restrictions and experiences in addressing those and other restrictions. Due to the difficulties of

obtaining access, the employers/representatives who have been interviewed are those who agreed to participate in the study; it is therefore not a survey of an illustrative sample of employers in Sri Lanka. The analysis of the interviews will offer recommendations for policy makers and is intended to provide the basis for a sample survey of employers in the private sector in Sri Lanka later to increase and validate the findings of this study. Data were inspected according to the groups and finally interpreted the situation.

### **Theoretical Perspective**

A labour market exists where there is an interchange of labour services between demanders (employers) and sellers (workers), and discussions between buyers and sellers determine in part the occupation of workers in jobs with identified wages, benefits and conditions of employment. The demand for labour is determined by the cost of labour, the productivity of the workforce, the current and anticipated level of production, and the price that the firm can command for its product or service. Job chances arise when employers establish enterprises, expand operations, or replace employees who leave the enterprise such as over retirement. The supply of labour, very simply, is the number of people currently working or actively seeking to take up the job chances that are accessible (Kaufman and Hotchkiss, 2003). However, although the labour market is defined in terms of demand and supply, unlike other market, there are laws norms or conventions, which prevent or reduce the applicability of the standard market framework to the labour market.

### **DISCUSSION**

Labor Role of Women in Sri Lankan History

Women's assistances to labour in the ancient and primitive period in Sri Lanka took different forms. It became a distinguished practice in the sphere of agricultural events. Many academics have pointed out that not only men but also women have made an equal involvement to agricultural activities since ancient times. In such a situation, women's labour commitment was dependent on both the social necessities and the nature of the agro-economic system. It can be argued that women in ancient times have made a significant involvement not only to domestic needs but also to agricultural activities. According to the literary and archaeological sources, it can be argued that women have functioned in various fields, including activities related to cultivation, internal trade affairs, animal husbandry, various other industries, and teaching. Accordingly, the systematic moving advancing as participants of social and economic development by the women who were spending the conventional household life preserving their families can be shown due to the progress made by them throughout history.

### **Women's Participation in Industrial Sector**

Internal skill was one of the areas where Sri Lankan women contributed hugely. It can be measured as one of the professions that Sri Lankan women were engaged in. The only problematic that arises here was that in the Raja Rata civilization (Anuradhapura and Polonnaruwa Kingdoms), there is only very little evidence regarding the participation of women in trading activities. The information contained in the Sandēsa literature is very important as evidence that women of this country were engaged in trading activities for the period of the Kotte period. The author of Girā Sandēsa mentioned that female traders engaged with trading activities without any cheating.

In addition, women have contributed their labour for different industries for the uplift or advancement of society. The sugarcane industry was distinctive among them. The history of sugarcane industry runs as far back as the Anuradhapura period, according to written evidence found in the literary sources. The Mahāvamsa discovered that the king Mahachuli Mahatissa had disguised himself and had worked in a sugarcane factory for three months. A story mentioned in the Sīhalavaththupakarana, women have donated to this industry too. As mentioned in the book Sīhalavaththupakarana, it was seen that women had donated their labour even in industries like pottery, cotton industry, animal husbandry, cooking, etc. Except for these industries, there were instances where women have contributed their labour in certain professions. There is evidence to show that they received appreciation for engaging in those professions. It was because women who knitted garlands were listed with payment for doing so. The inscription belonging to reign of Kalyānavathī mentioned female garland makers.

### **Other Employment of Women**

According to the pillar writings of Mihindu IV, ancient women had contributed their labour through different professions or activities, and certainly, it was clear that their labour was valued. Accordingly, in the mediaeval period, women, as if men have engaged themselves in diverse industries and other social services and had received wealth. Archaeological sources expose that the women who were engaged in different temples and the women who served as dancers received a payment. According to evidence, seven women measured as dancing girls of the god were devoted to the God Kailasha. From the temple of God Shiva, these girls have received a monthly

payment of 23 gold coins from the interest of a deposit.

“...having placed forehead marks on seven females (dedicating them) as dancing girls of the god, 23 kācu (coins) were deposited as an endowment...”

### **Property Ownership of Women**

Women had the ownership of property in early society. She was prepared a vigorous provider to the economic doings of the society because she amassed wealth by contributing her labour. When probing into the proprietorship of property of ancient Sri Lankan women, there are very reliable sources that show that women had preserved property and that she handled this property independently. When inquiring into the social status, the women who held the respect as a daughter, wife and mother and the nature of her proprietorship of property can be comparably analyzed from the information in literature, archaeological sources and records. Ownership of property by women in ancient times can be discussed under several headings from the information accessible in the chronicle, inscriptions, and verses on the Sigiri wall. Before inquiring into the tenure of property of ancient women, it is significant to refer to matters like the legitimacy of land tenure and other property matters in ancient Sri Lanka. It should be emphasized that it is difficult to compare the legitimacy of land in ancient times and the present day, especially regarding property. Comparing the concept of ownership of the present time with the ancient concept is not a fruitful endeavor.

In this background, when studying the women's property ownership, an investigation should be made as to how she acquired property. According to the data in records and literary sources, ancient women have owned property through several means. The key system among them was gift at marriage, inheritance from parents or husband,

engaging in numerous professions etc. One of the earliest Sri Lankan customs in marriage in Sri Lanka was to provide property as a dowry by the parents to their daughter. Therefore, she gets moveable property such as money, gold, jewelry and fixed property such as land, paddy fields, etc. A great deal of evidence is found in literary foundations, which approve these points. Allowing for the attainable proof, Sri Lanka women engaged in the economic sphere as discussed previously in this paper, and these indications clearly show that the economic role and things they earn through several kinds of work done by them help to maintain their social values and respect. For example, women who are strong economically through their work and with their property donate their prosperity to temples and for social activities. Furthermore, the influence of economic strength on women's social development can be identified through women's comfortable life in the past. Additionally, they helped in evolving their family, and they were involved in spiritual events and donated their prosperity to spiritual organizations. Women who belonged to royal relatives enjoy more property privileges than other women, and their social values, significance and their social evaluation were higher than other women were in contemporary society.

## **CONCLUSION**

Overall, the economic contribution of women is vital to sustain the economic growth motion in a changing socio-economic landscape. A strong cooperative strength of various stakeholders particularly government, companies, investors and citizens is critical to create helpful environment which improve women's labor force participation, which will not only permit women but also increase family living standards, uplift rural economy and leads to overall economic prosperity of the nation. In Sri

Lankan society, women in numerous divisions actively participated as workers in the ancient period than other South Asian women such as Indian women. In the economic sphere, women's labour commitment was reliant on both the social necessities and the nature of the agro-economic system. It can be justly argued that women in ancient times have made a considerable contribution not only to household necessities but also to agricultural events and other economic activities. According to the literary and archaeological sources, it can be argued that women have functioned in various fields, including activities related to cultivation, internal trade affairs, animal husbandry, numerous other industries, and teaching. It was very clear that in the Sri Lankan family-centered economic process, the woman did a boundless service. Therefore, it is stressed that Sri Lankan women were considered as a much-respected group. Sri Lankan women from Anuradhapura period socially known as daughters, wives and mothers and acted as social servants with great intelligence. It can be pointed out that she had wealth that could be utilized independently and thus, with the same fact, sharpened social recognition further.

Accordingly, the labour, economically socialized women, the value she acquired in turn, and the possession of her property should be further studied to ascertain how these aspects changed with time. It is important to carry out a thorough study, the forms of changes on the economic status of women following the politically aware, social and economic deviations in Sri Lankan history, which run from ancient times. Additionally, the discussion of the economic role of Sri Lankan women should motivate to examine by drawing attention to her social development. It was not enough to determine her status; although she was engaged in different professions, there is no doubt that she received some recognition through it, and

therefore, these facts are important. Therefore, I take responsibility that one who researches this field of study may receive direct access from this article.

### Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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**WEARABLE TECHNOLOGY DESIGN PROJECT FOR CONVENTIONAL  
FASHION DESIGN UNDERGRADUATES; A PRACTICE BASED  
INVESTIGATION TO OBTAIN A BETTER OVERALL OUTCOME**

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*Sri Lanka*

***ABSTRACT***

Sri Lanka is a country with more than three decades of experience in apparel manufacturing. In 2022, the industry had 5591 million U.S. dollars revenue. China seems to be the leading exporter with a revenue of 176 billion and performance of Sri Lanka seems to be at a minimum level compared to other countries. On the other hand, apparel sector is one of the leading sectors in foreign income generation in Sri Lanka. Hence, the country should find new strategies to gain a higher share at the global market. Accordingly, the current study attempts to seek the possibility of entering to a new category related to clothing which is the wearable technology category. Evidently, apparel manufacturers of Sri Lanka also kept some initial steps for moving towards this sector. In the current study, the focus has been given to the design and prototyping stages of wearable technology products. Accordingly, a wearable technology design project has been introduced to conventional Fashion Design students. Study findings prove the possibility of introducing technology content to conventional apparel-based fashion design curriculum.

Key words: Fashion Design, Wearable Technology, Apparel manufacturing, Prototyping, Design education

# **CURATORIAL FOOTPRINT IN DIGITAL ARCHIVES OF LIFE: ANALYSIS OF THE LIFE NARRATIVES OF SRI LANKAN WOMEN SURVIVORS OF WAR ARCHIVED IN PROJECTS I AM AND HERSTORIES**

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## **ABSTRACT**

In life writing, particularly in the digital sphere, the concept of the archive and the role of the curator are important especially when a third party is creating a repository containing life narratives of marginalised people. This research examines the role of the curator vis-à-vis two digital archives containing the life narratives of Sri Lankan women who have been exposed to the thirty-year war. For this purpose, the study scrutinizes the curatorial footprint, and the agency demonstrated by the curators as well as the women narrators in the process of constructing and presenting the narratives in a digital archive. Following a qualitative approach, the study examines the above-mentioned concepts based on a close reading and textual analysis of selected narratives from the digital archives *I Am* (2010-2012) by Kannan Arunasalam and *Herstories* (2012-2013) by Radhika Hettiarachchi. Based on the analysis, it is concluded that while the curators of the two projects have successfully created a niche for the life stories of Sri Lankan women survivors of war ensuring that their narratives are preserved and heard by the public, the agency of the women narrators over the manner and matter of life narration has been manipulated to an extent due to various reasons such as creative licence and practices, usage of tools, and digital dynamics etc., which has affected the balance (McLean, 2011) of contributions. However, it is further observed that attempts at decentralising the agency of the curator have also been made to an extent.

Keywords: Life narration, Sri Lanka, women's war life narratives, digital archives, *I Am*, *Herstories*

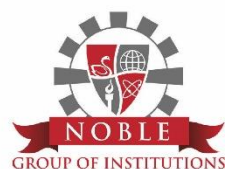
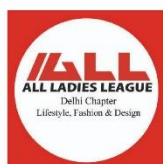
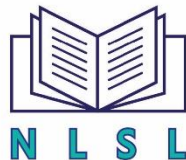
# LAKI SENANAYAKE'S UNIQUE ARTISTIC APPROACH IN CONTEMPORARY CONTEXT

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## **ABSTRACT**

Sculptural practices in the artistic world are undergoing conceptual and material changes, as well as exploring new ideas from traditional to contemporary art. In Sri Lanka, the artist and architect Laki Senanayake (1937–2021) had a profound impact on the art scene with his unique approach to nature. Collaborating with architects Geoffrey Bawa, Barbara Sansoni, Ena de Silva, Ismath Raheem, Ronald Lewcock, Ulrik Plesner, Edward Reed, and Begg, Laki engaged in various artistic endeavors such as painting, drawing, sculpture, architectural installation, landscape gardening, silk screen printing, batik, and digital art. His artistic repertoire showcased his exploration of the human form through multiple gestures, abstract erotic drawings, and depictions of animals and birds. While Laki's most notable contribution lies in his eco-friendly sculptures featuring animals and birds in naturalistic and abstract forms, his sculptural environment also reflects his commitment and conveys diversity. This paper examines Laki's artistic practices that revolve around nature, particularly his iconic representation of figures in abstract forms within a contemporary context

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