



National Conference

on

**Science & Technology for
Women Empowerment and
Rural Development**

13 – 14 October 2023

ABSTRACTS

Jointly organized by

The National Academy of Sciences, India

&

Pt. Ravishankar Shukla University

Raipur, Chhattisgarh



National Conference
on
Science & Technology for Women Empowerment and
Rural Development

13-14 October 2023

Jointly organized by

The National Academy of Sciences, India (NASI)
&
Pt. Ravishankar Shukla University (PRSU) Raipur, Chhattisgarh

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PREFACE

The National Conference on “Science & Technology for Women Empowerment and Rural Development”, will be jointly organized by School of Studies in Biotechnology, University Institute of Pharmacy, and Centre for Women’s Studies, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, and National Academy of Sciences (NASI), Allahabad, Uttar Pradesh, during 13-14 October 2023.

Women empowerment refers to increasing the spiritual, political, social or economic strength of women. An important factor in achieving these reforms will be a greater presence of women in decision-making bodies, be they scientific or political. The voice of women in governance is essentially required to create the political will essential to bring about changes that will benefit all of society. India is celebrating progressive 75 years of India after independence with “Azaadi Ka Amrit Mahotsav” and promulgating mission of warranting women as “Empowered Women-Empowered Nation”.

India is an agrarian economy with about 54.6% of total workforce engaged in agriculture. According to an estimate, about 41.8% of rural females participate as workforce, while only 35.3% of urban women. Hence, rural women can be tagged as “torchbearers” for social, economic and environment transformation for the New India. There are roughly 350 million women in rural India, who move from the villages to the cities in search of jobs now-a-days, hence; are left behind to fend for themselves and their families. Such women have the potential to contribute to the economy, besides generating an income for themselves and their families.

In India, reforms have been underlined for holistic development of women, enabling socio-economic and health security. Since Independence, several flagship schemes and programmes have been initiated by the Government to improve status of rural women in society by creating livelihood opportunities. Even though, a lot effort has to be still done to make the rural women techno-empowered and scientifically skilled, which will make this country an “Empowered Nation”, in real sense.

Keeping in mind, proposed Conference has been planned with objectives like; exploring roles/priority areas of science & technology for women empowerment and rural development in terms of enhancing livelihood opportunities, quality of life, new opportunities in agriculture and farm production, relieving burdens, prioritizing health safety, fostering entrepreneurship opportunities, and improving occupational health.

In this Conference, a total of one Keynote address and eight different Invited Lectures covering both the theme will be delivered by eminent scientists and academicians from all around India. A

significant number of faculties, research scholars, postgraduate and graduate students will deliver poster presentations. We hope that all the delegates and concerned persons will have a technically rewarding experience during this Conference. I would like to express our gratitude and sincere thanks to all the organizational staff, and the members of the organizing committee of this Conference. The hard work and valued contribution of all the faculty members, staff members, research scholars, M.Sc. students are also appreciated. At last but not least, I extend my sincere gratitude to Hon'ble Vice-Chancellor Prof Sachchidanand Shukla Sir and the Registrar Dr Shailendra Kumar Patel of Pt. Ravishankar Shukla University, Raipur, and Padma Shri Prof Balram Bhargava, President NASI; Chief, Cardiothoracic Centre, AIIMS, New Delhi, Padma Bhushan Dr Manju Sharma, Past President, NASI; Former Secretary to the Govt. of India, Department of Biotechnology; Chairperson, Science & Society Program, NASI, and Ms Archana Pant, YWS, NASI, for their constant help and support all through the organization of this Conference. I veritably believe that this Conference will surely play a key role to keep the academicians and researchers linked to the proposed theme and inculcate innovative ideas for the start-ups and open avenues for entrepreneurial opportunities.

(Keshav Kant Sahu)
Convener

PT. RAVISHANKAR SHUKLA UNIVERSITY, RAIPUR

Pt. Ravishankar Shukla University Raipur is one of the oldest leading higher education institutes of Chhattisgarh, established on 1st May 1964, through Madhya Pradesh State reorganization Act 1956. University named after the first chief minister of undivided Chhattisgarh. Institute has completed 59 glorious years of its establishment and continues to impart quality education to the students of Chhattisgarh and neighbouring states. University has grown by leaps and bounds by establishing excellent infrastructure spread over an exemplary clean and lush green 300.17 acre campus. It is hassle-free to reach the campus as it lies on NH-6 and is well connected to transport means from the Raipur railway station and airport. University hosts 29 Schools of Studies and interdisciplinary centers offering postgraduate, certificate and diploma, postgraduate diploma and research programs. There are 180 educational institutions affiliated with the university. Pt. Ravishankar Shukla University has alliances with University Grant Commission (UGC), New Delhi; Association of Indian University (AIU), New Delhi; All India Council of Technical Education (AICTE), New Delhi, and Association of Commonwealth University (ACU), New Delhi. It has NAAC accreditation with Grade B⁺⁺. The library of this university was selected as one among eleven University libraries in India for Computerization and automation under the INFLIBNET program of UGC, New Delhi. Further, the UGC-INFONET program has chosen the university library for participation in the first phase. The library is constantly receiving the World Bank Publications, free of cost directly from Washington D.C. under very few selected “Depository Library Program”.

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Empowered Women: Empowered Nation

AB-1

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Abstract

Women's empowerment is a vital catalyst for progress in India. This abstract delves into the symbiotic relationship between the empowerment of women and the development of the nation within India's unique socio-cultural and economic landscape. In India, women have long faced systemic discrimination, limited educational opportunities, and economic constraints. Nevertheless, concerted efforts have been made to empower women across various fronts. This abstract highlights key facets of women's empowerment in India:

Economic Empowerment: Women's increased participation in the workforce, spanning traditional and emerging sectors, bolsters India's economic growth, reduces gender disparities, and enhances overall prosperity.

Educational Empowerment: Initiatives like 'Beti Bachao, Beti Padhao' have improved female literacy rates, equipping women with the tools to make informed choices, pursue careers, and assert their rights.

Political Empowerment: Rising female representation in politics empowers women to influence policies addressing issues like healthcare, safety, and gender equality.

Social Empowerment: Grassroots movements and awareness campaigns challenge societal norms, gradually transforming women's status in India.

Healthcare and Well-being: Improved access to healthcare, including maternal and reproductive services, enhances women's well-being and contributes to a healthier, empowered population.

Empowering Indian women is not only a moral obligation but also an economic and social imperative. Empowered women not only elevate their own lives but also play pivotal roles in the nation's growth. India's continued progress in women's empowerment promises a brighter, more equitable future for the nation.

Keywords: Women's empowerment; gender equality; socio-cultural.

An *In vitro* investigation on Alleviating Salinity-Stress using Antioxidants in Rice Seedlings

AB-2

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Abstract

Rice is one of the primary carbohydrate sources for more than 1.6 billion people in the world. Which primarily includes Asian and African countries. An exponential growth in the population in the past few decades has increased the demand for food which majorly includes rice but the crop production is negatively affected by various abiotic and biotic stresses occurring due to rapid climate change and rigorous human activities. One of these stresses is salinity which has severely affected rice crop production throughout the world. This present *In vitro* investigation deals with analyzing the salinity stress effect on rice plants and its mitigation by using antioxidants like Citric Acid and Ascorbic Acid. The study showed that 51.33 mM NaCl induced salinity stress in the rice by decreasing the root length, shoot length, root number, and seed vigor index of the seedlings which were mitigated by the use of 0.28 mM Ascorbic acid. The addition of salt increased the total sugar and total soluble sugar in the seedlings while ascorbate content was reduced. The seedlings treated with 0.28 mM ascorbic acid under salt-stressed conditions had low total sugar and soluble sugar contents compared to salt-stressed seedlings, while no significant difference was found in enzymatic biochemical parameters like Catalase, Ascorbate peroxidase, and Superoxide Dismutase activities of controlled, salt-stressed, and ascorbic acid-treated seedlings. This study concludes that the exogenous application of Ascorbic Acid could mitigate the negative effect of salinity on the morphological growth parameters and improve seedling growth.

Keywords: *In vitro* analysis; antioxidant; ascorbic acid; seedlings.

Exploiting the economic applicability of Agro- wastes as a source for women entrepreneurship and development

AB-3

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Abstract

Rural women play a pivotal in achieving transformational economic, environmental and social changes required for sustainable development. Apart for taking care of house hold, family and children; women play a key role in the rural economy, as wage earners and as entrepreneurs. Women from indigenous and rural communities are often hardworking and custodians of traditional knowledge which is key for their communities livelihood, resilience and culture. Yet, these women face constraints in engaging in economic activities due to gender discrimination, social norms, healthcare etc. Promoting and empowering rural women through decent work and productive employment will not only contribute to sustainable economic growth but will also enhance the effectiveness of poverty reduction, climate mitigation and adaptation efforts.

Toward this end we have worked on developing protocols for the production of bio-alcohol and vermicompost from agricultural wastes. The protocols have been adapted so that they can be performed by a common man and do not require any state-of-art equipment. Production of bio-alcohol and vermicompost from agro- wastes will not only help reduce the environmental pollution caused due to the wastes but will help meet the growing demand of bio-alcohol as a green fuel and an alternative for the depleting fossil fuels . At the same time the vermicompost produced from the agro and bioalcohol wastes can be sold in the market and also be utilized in the field as a bio-fertilizer to enhance crop productivity. This will help generate economic profit from wastes with minimal or nominal investments.

Keywords: Agro-wastes; bio alcohol; vermicompost; women empowerment

Beti Padhao Beti Bachao: A Powerful Weapon for the Women Empowerment with Special Reference to Raipur District

AB-4

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Abstract

Empowerment is the process of becoming stronger and more confident, especially in controlling one's own life and claiming one's own rights. All the human beings possess rights to empower once own self. Empowerment scope is very broader in its concept. It may be the empowerment with respect to social, economic, political and health. History depicts the process of women empowerment and its various stages. In the patriarchal society of India, encompassing women empowerment witnessed its success. Education occupies significant place in this process. As it is correctly defined if you literate a man, you are educating a man whereas if you are educating a woman you are educating a family. Literacy of women is an important weapon to improve health, nutrition and education in the family and to empowering women to participate in decision making not only in the family but also in the society. In spite of good number of government programs in educating the girl child and even in education of women, few sectors of our demography cannot be witnessed in the stream line of education due to several reasons.

This study investigates into the actual execution of educational schemes for girls specially the scheme of Beti Padhao Beti Bachao in Raipur District. This study will initiate the awareness to all the citizens of Raipur district through awareness meetings, survey to find out the actual ground level and put efforts to enable the girls and women to utilize the empowerment provisions in this scheme. This will result in identifying multi sectoral interventions, to suggest measures in meticulously executing the Scheme and at the same time enable the women empowerment not only in education but also social, health, political and ultimately financial as it is directly attached with Sukanaya Samridhi Yojana. It will also ensure the survival, protection and empowerment of girls.

Keywords: Beti Padhao Beti Bachao; women empowerment; Sukanaya Samridhi Yojana.

An Inventory Survey of Utilization of Wild Mushroom and Livelihood Status of Rural Natives of Mangarload Block (Dhamtari)

AB-5

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Abstract

Population affects the state's socio-economic development; 2.02% of the country's population lives in Chhattisgarh; according to the Census of 2011, 76.76% of people reside in rural areas. Chhattisgarh is a dense forest state. Most rural peoples depend on forest product for livelihood; people collect and sell wild edible mushrooms in the local market for food. They gain folk taxonomy of mushrooms and pass it from generation to generation. The present survey focused on Mangarload Block, Dhamtari district. While the survey found that local people sell only a few edible mushrooms in the market, majority of preferable species are *Volvariella volvacea* and *Termitomyces* species, and many macrofungus species still unexplored, due to a lack of knowledge about wild edible mushrooms. The current study suggested that 56.8% of people purchased mushrooms from direct local markets in rural areas, and others picked mushrooms in the field or ground. The survey attempted to evaluate their income from selling wild edible mushrooms along with their characterized morphological identification approaches, studied interpreted with traditional to the scientific approach. Although the inventory survey extended toward awareness and sustainable practices of wild mushroom harvesting, rural people will be enabling the differentiation between poisonous and edible ones, livelihood improvement and promoting biodiversity conservation.

Keywords: Wild Mushroom; livelihood; inventory survey; rural areas; traditional approach.

Preparation of Ethno-botanical toiletries for the socioeconomic development of rural women

AB-6

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Abstract

Humans cannot exist without plants since they are essential to sustaining human quality of life, nutrition, and medical requirements. Plant based cosmetics boost rural households' and communities' overall welfare by increasing their income. There is a revived interest in researching natural resources, especially plants, for herbal-based cosmetics and cosmeceuticals as a result of the growing safety concerns linked to the use of synthetic cosmetics. The knowledge of medicinal plants in traditional communities is closely linked to the practical aspect, having been built over the years by social interactions with the surrounding environment. Rural women who belong to indigenous and tribal communities play major roles within the communities as custodians and transmitters of traditional ethano-botanical knowledge. This knowledge assumes an important role in the identity formation and self-recognition of these populations. In order to preserve traditional knowledge and advance the empowerment of rural women, we will need to place more focus on enhancing fair employment and economic possibilities for young women. Small-scale traditional ethano-botanical enterprises can provide women with a platform for employment and empowerment. As a result, they will develop competence, autonomy, and self-sufficiency. This will encourage economic expansion and development while also promoting cultural practices such as preservation, sustainable use, and plant resource conservation. In light of this, the goal of our study is to create ethano-botanical (herbal) cosmetics such as face packs, shampoo, and tooth paste utilising natural, medicinally relevant organic components derived from the local flora.

Keywords: Ethno-botanical; socioeconomic; traditional knowledge; herbal

Artificial Intelligence: Opportunity for Women to Enter the Realm of Advanced Technologies

AB-7

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Abstract

Artificial Intelligence (AI) represents a swiftly advancing domain concerned with creating smart computer systems capable of executing tasks traditionally reserved for human intelligence, such as recognizing images, understanding speech, making decisions, and processing natural language. AI boasts a diverse array of applications spanning healthcare, education, finance, transportation, and more.

The potential of AI to revolutionize the lives of women worldwide is substantial. It can improve their well-being, safety, career prospects, and economic empowerment. Nevertheless, the incorporation of AI to benefit women confronts several obstacles, including biases in data, issues of accessibility and affordability, trust and transparency concerns, ethical dilemmas, and the complexities of intersectionality. Addressing these challenges and harnessing AI's potential for women could foster a more inclusive and just society, enabling women to engage fully and flourish in all facets of life.

This study will investigate the avenues through which AI can enhance the lives of women. These include the development of AI-driven tools for women's health and safety, platforms offering career guidance and skill development, solutions for financial and business management tailored to women entrepreneurs, and educational resources for girls and women. The research will also delve into the challenges associated with integrating AI for women and emphasize the significance of ethical AI development. Additionally, it will underscore the necessity of gender-inclusive policies and regulations in the AI realm.

The study will place a particular focus on strategies for encouraging young females to pursue subjects like mathematics and science, opening doors to opportunities in the field of AI. Furthermore, it will explore methods for generating interest by showcasing success stories of women in AI and glean insights from their journeys in the field.

Keywords: Women empowerment; artificial intelligence; women entrepreneurs; AI to benefit women; challenges in AI for women.

Role of National Rural Health Mission in solving health problems of rural women

AB-8

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Abstract

According to the World Health Organization, Health does not only mean the absence of disease and disability, but is also a symbol of complete physical, mental and social harmony of a person. Health is completely physical, there is a state of mental and social balance. On one hand, there were many problems including increasing population growth, increase in maternal/child mortality rate and decrease in institutional deliveries, which put India in the dock in the field of health. As a result of this, the central government's most ambitious scheme NRHM 2005 started a revolution in the field of health. While institutional deliveries were limited to only 7 lakh in 2005, NRHM increased institutional deliveries and recorded an unprecedented increase of 1 crore by 2011. Under the study 05 villages of tribal dominated urban development block of Dhamtari district have been studied. First of all, detailed information was collected about the following villages under the study area, population, number of families, information about health facilities, buildings, local private doctors, Baiga Gunia. One thing that come out clearly in the survey is that health programs have left their indelible mark on the hearts and minds of the people. The credit for this goes to the entire health staff. Contagion is considered contagious for a few days after birth. The delivered women is kept in a separate room for 3 – 4 days. Many people breastfeed only after the birth ceremony (Chhathi). Breastfeeding is not done after 1 hour of birth which is wrong. According to the survey, only 30 percent of women breastfeed immediately. Whereas by breastfeeding 1 hour after birth, mothers milk Cholesterol is found in it which increases the immunity of the child. In ancient times, people used to live a healthy and happy life by eating fresh fruits, flowers and tubers. But in today's era it is not possible to do so. In the blind race of modernity and development, the intelligibility of food items and goods produced is not the same as before. The reason behind this is the increasing population. As a result of high demand for goods and decrease in production, there is competition to prepare crops quickly by using Hybrid seeds. In such a fast- paced life, human life is also being adversely affected. Apart from water, air, noise and environmental pollution, today human mental and is also suffering from physical pollution.

Keywords: Rural health; tribal; cholesterol; human life.

Role of Science and Technology in Women Empowerment

AB-9

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Abstract

In the latest G20 SUMMIT organised in INDIA (2023):- INDIA has been persistently placing women's issues at the forefront. Women's economic empowerment was at the heart of India's G20 agenda. The Women20 (W20) engagement group, under India's presidency, focuses on actualizing the vision of 'Women-Led Development' to create a world of equality and equity where every woman lives with dignity and gets the opportunity to thrive. THUS THE G20 SUMMIT INDIA had strongly stressed on "WOMEN LED DEVELOPMENT", GENDER EQUALITY & WOMEN EMPOWERMENT. There is,, no tool for development more powerful than empowerment of women.(1). The empowered woman is powerful beyond measure and beautiful beyond description (2). The near-ubiquitous spread of Science and technology offers unprecedented opportunities for social and economic agents, reshapes social and economic structures, reduce the social injustices, serve as a barrier for stereotypes and prejudices and drives the emergence of new socio-economic framework Information and communications technologies (ICTs) have empowered people to communicate and network at a global scale. However, there is lack of in-depth understanding of the use of ICTs for women's empowerment. This article stresses on how the concept empowerment is defined, historical perspective of condition of women and role of science and technology for women empowerment, schemes of govt for participation of women in field of science and technology, the existing evidence on the use of ICTs for women's empowerment and the gaps in knowledge at the national and global level.

Keywords: Women empowerment; gender equality; socio-economic.

Developing Rural Communities through Sustainable Cultivation of *Pleurotus florida* with Waste Paper and Paddy Straw Synergy

AB-10

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Abstract

Cultivation of mushrooms provides an economically viable, low-cost, and efficient means of transforming various lignocellulosic wastes into valuable resources. *Pleurotus florida*, renowned for its rich nutritional profile, constitutes a potent source of proteins and essential bioactive compounds crucial for human health. Harnessing waste for mushroom cultivation not only yields high-quality food from low-grade resources but also contributes to global environmental sustainability. To promote the growth of *P. florida* mycelium while excluding competing microorganisms, cultivating substrates require various pre-treatments. Methods such as steam pasteurization, hot water treatment, chemical sterilization, sterile technique, and fermentation are employed to eliminate undesirable microorganisms from the straw, thereby facilitating mycelium proliferation. Among these techniques, Indian farmers widely adopt chemical sterilization for its cost-effectiveness, despite the absence of specific fungicide label claims for mushroom cultivation. This study aimed to evaluate the feasibility of supplementing waste paper with paddy straw for *P. florida* cultivation, while determining the optimal incubation period with fungicide. In our study, we formulated substrates by combining waste paper and paddy straw at proportions of 25%, 50%, and 75%. These were subjected to incubation periods of 3 hours, 6 hours, 12 hours, and 24 hours with fungicide. Subsequently, the substrate was mixed with spawn, inoculated with a pure oyster mushroom culture under aseptic conditions, and evaluated for productivity, biological efficiency (BE), and nutrient content for *P. florida* cultivation. This study revealed superior BE and nutrient content in the combination of 50% waste paper and 50% paddy straw, along with a 24-hour incubation period with fungicide, compared to paddy straw alone. This emphasizes the potential of waste paper supplementation with paddy straw as a promising alternative for oyster mushroom cultivation, particularly when combined with other substrates.

Keywords: Chemical sterilization; mycelia running; Pinhead initiation; biological efficiency; nutritional profile.

From Fields to Clicks: Rural Women's Online Self-Sustenance

AB-11

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Abstract

Chhattisgarh, a state in central India, is home to a significant population of rural women who have traditionally faced socioeconomic challenges. However, in recent years, the integration of modern technology and web-based business opportunities has begun to transform the lives of these women. This abstract delves into the objectives, methodologies, and outcomes of initiatives aimed at empowering Chhattisgarh rural women through the use of technology, particularly online government portals and the support of non-profit organizations.

The primary objective of this study is to explore how modern technology and web-based businesses are enhancing the livelihoods and social status of rural women in Chhattisgarh. Specifically, the research examines the role of online government portals and non-profit organizations in facilitating this empowerment. Through qualitative and quantitative analysis, this study seeks to assess the impact of such initiatives on the economic independence, education, and overall well-being of Chhattisgarh rural women. The empowerment of Chhattisgarh rural women through modern technology and web-based business initiatives, facilitated by online government portals and non-profit organizations, is a testament to the transformative potential of technology in addressing gender disparities and fostering economic growth in rural regions. While challenges still exist, these initiatives have made substantial progress in improving the lives of Chhattisgarhi women. To sustain and expand these benefits, it is essential to continue investing in digital infrastructure, skills training and support networks for rural women. By doing so, Chhattisgarh can lead the way in harnessing the power of technology to empower its rural women and uplift communities across the state.

The study deals with detailed bifurcations of discrete panels of measures taken as a solution for the empowerment of Chhattisgarhi rural women by state government of Chhattisgarh at distinct points of time while being a developing state and fastest growing economy as a state.

Keywords: Chhattisgarh web-based; business initiative; rural women, skill training.

Nanocarriers as Potentially Effective Means of Controlling Microbial Biofilm

AB-12

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Abstract

Pharmaceutical research has benefited from advances made by nanotechnology, which has also played a significant role in the development of biotechnology and medication delivery. Nanotechnology has gained importance in the pharmaceutical industry as a result of its usage in the prevention, detection, and treatment of several diseases. Additionally, nanotechnology is used in various industries as a promising method to combat antimicrobial resistance brought on by microbes' formation of biofilms. A complex arrangement of bacterial states known as a biofilm is one in which cells are arranged in a grid of extracellular polymeric materials that is remarkably resistant to antimicrobials. The effectiveness of traditional antibacterial experts is steadily deteriorating as a result of oppositional factors and biofilm growth. As a result, using nanocarriers to deliver antimicrobial agents for the prevention and treatment of bacteria biofilms has several advantages over other methods, such as the use of a combination of antibiotics. To penetrate microbial biofilm, nanocarriers can be made biocompatible and biodegradable, and their integration is not difficult. Combining antibiotics entails risk, large dosages of blending antibiotic regimens, and poor long-term consistency. To penetrate the biofilm and provide antibacterial action, nanocarriers such as metal nanoparticles and polymeric nanoparticles were also used.

Keywords: Nanocarriers; Biofilm; Antibiotic resistance; polymeric nanoparticles; metal nanoparticles; biocompatible; biodegradable.

Empowerment of Women in Scientific and Technological Fields: A Crucial Strategy for the Development of a Dynamic Nation

AB-13

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Abstract

Increasing the spiritual, political, social, or economic strength of women in a variety of different spheres is one definition of the term "women empowerment." The empowered individuals must cultivate a sense of self-assurance in their abilities. It's a multifaceted social process that helps women take control over their own lives and contribute to the construction of a powerful nation by utilizing their knowledge and expertise in a variety of scientific and technological disciplines. Women are starting to become more knowledgeable about their legal entitlements, and they are working hard to increase their intellectualism and make positive value assertions. This allows them to develop their own definition of who they are, and they see themselves as fully formed human beings who adhere to liberal ideals and are unaffected by gender bias. The fields of science and technology have always played an essential role in the development of Indian culture and civilization. During the course of the country's history, Indian women have shown that they are capable of excelling in a variety of traditionally male-dominated industries, including teaching, medical, engineering, computer technology, biotechnology, nuclear science, space research, and many other areas of highly specialized work within the realm of science and technology. Their contribution to the growth of the socioeconomic system, both as employers and employees, led to their recognition and honour in both the public and private sectors.

In a manner that is relevant to this, the attention that has been paid to the concerns of women has assisted in revealing the worth of cognitive diversity in the process of doing scientific research. The human intellectual repertoire includes a wide variety of styles as well as numerous approaches to the organization of the generation of knowledge. The scientific method can be improved if we have a greater awareness of the vast amount of intellectual resources that may be obtained by appreciating cognitive diversity and working to promote it.

Keywords: Science and technology; Socio-economic development; Women empowerment; Indian culture and civilization.

Recent Advancement and Future Directions in the Treatment of Neurodegenerative Diseases

AB-14

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Abstract

The central nervous system (CNS) is vulnerable to pathologic processes that lead to the development of neurodegenerative disorders like Alzheimer's, Parkinson's and Huntington's diseases, Multiple sclerosis or Amyotrophic lateral sclerosis. These are chronic and progressive pathologies characterized by the loss of neurons and the formation of misfolded proteins. Additionally, neurodegenerative diseases are accompanied by a structural and functional dysfunction of the blood-brain barrier (BBB). Although serving as a protection for CNS, the existence of physiological barriers, especially the BBB, limits the access of several therapeutic agents to the brain, constituting a major hindrance in neurotherapeutics advancement. In this regard, nanotechnology-based approaches have arisen as a promising strategy to not only improve drug targeting to the brain, but also to increase bioavailability. Lipid nanocarriers such as liposomes, solid lipid nanoparticles (SLN), nanostructured lipid carriers (NLC), microemulsions and nanoemulsions, have already proven their potential for enhancing brain transport, crossing more easily into the CNS and allowing the administration of medicines that could benefit the treatment of neurological pathologies. Given the socioeconomic impact of such conditions and the advent of nanotechnology that inevitably leads to more effective and superior therapeutics for their management, it is imperative to constantly update on the current knowledge of these topics. Herein, we provide insight on the BBB and the pathophysiology of the main neurodegenerative disorders. Moreover, this review seeks to highlight the several approaches that can be used to improve the delivery of therapeutic agents to the CNS, while also offering an extensive overview of the latest efforts regarding the use of lipid-based nanocarriers in the management of neurodegenerative diseases.

Keywords: Neurodegenerative diseases; Neurodegeneration; Blood-brain barrier (BBB); Brain drug delivery; Nanoparticles; Lipid nanocarriers.

Women Empowerment: A key to Development

AB-15

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Abstract

Women can be empowered only if they are given education and made aware of their rights and hence they themselves prioritise their lives. Violence has to be completely eradicated from her life, then and only then can the dream of empowerment becomes a reality. Women have to be given due respect in a society to have actual empowerment. Women have always been suppressed, underestimated and valued less in the society and also within her family. Although efforts have been taken to improve the status of women, the constitutional dream of gender equality is miles away from becoming a reality. Even today, 'the mainstream remains very much a malestream'. Women empowerment refers to increasing the spiritual, political, social or economic strength of women. It often involves the empowered developing confidence in their own capacities. An important factor in achieving these reforms will be a greater presence of women in decision-making bodies, be they scientific or political. The voice of women in governance is required to create the political will essential to bring about changes that will benefit all of society.

Keywords: Salary bias; Violence; Laws and Regulations; Work and Family.

Empowering Women for Sustainable Development: Transforming Rural Realities

AB-16

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Abstract

A key element of attaining gender equality and sustainable development in rural areas is women's empowerment. In order to address the many difficulties faced by women in rural areas, this poster investigates several techniques and strategies to promote women's empowerment. In order to advance gender equality and women's wellbeing, it considers the significance of education, healthcare, economic empowerment, legal rights, and community involvement. This study offers insights into efficient interventions and policy proposals to empower rural women, drawing on current literature and case studies.

Keywords: Sustainable development; gender equality; women empowerment.

Targeted Drug Delivery approaches in Cancer therapy

AB-17

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Abstract

Targeted drug delivery in Cancer therapy is a specialized approach that aims to deliver drug directly to cancer cells while minimizing the impact on healthy cells.

Method: Different strategies are employed in drug targeting which includes Passive and Active targeting. Passive targeting approach relies on the unique characteristics of tumour tissues such as leaky vasculature, impairment in lymphatic drainage. Nanoparticles can exploit these features to accumulate in the tumor site and release the Medication selectively. On the other hand, Active targeting involves the use of specific molecules or ligands attached to the drug delivery system. These ligands bind to receptors that are overexpressed on Cancer cells, resulting in Targeted Drug Delivery. For this purpose, Antibodies or small peptides are commonly used. Targeted drug delivery is achieved through the use of various carrier systems like nanoparticles, liposomes, Antibodies etc. which selectively deliver the drug to the tumour cells. Targeted drug delivery offers several Advantages like Reduced side effects (Traditional chemotherapy drugs can have toxic effects on healthy cells leading to various side effects). Targeted drug delivery minimizes the impact on healthy tissues which results in fewer side effects. Also higher concentration of the drug at the tumour site leads to enhanced efficacy of drug. Targeted drug delivery can also protect the drug from degradation resulting in their prolonged circulation in the body and increased stability. Some FDA approved formulations include Doxil and Abraxane.

Result and conclusion: Targeted drug delivery holds great promise in cancer therapy by overcoming some limitations of the conventional cancer therapy. Ongoing research aims to further refine these techniques.

Keywords: Cancer; drug delivery; nanoparticle; drug target.

Artificial Intelligence in Pharmaceutical Technology

AB-18

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Abstract

Artificial intelligence (AI) has emerged as a powerful tool that harnesses anthropomorphic knowledge and provides expedited solutions to complex challenges. Remarkable advancements in AI technology and machine learning present a transformative opportunity in the drug discovery, formulation, and testing of pharmaceutical dosage forms. By utilizing AI algorithms that analyse extensive biological data, including genomics and proteomics, researchers can identify disease-associated targets and predict their interactions with potential drug candidates. This enables a more efficient and targeted approach to drug discovery, thereby increasing the likelihood of successful drug approvals.

AI can contribute to reducing development costs by optimizing research and development processes. Machine learning algorithms assist in experimental design and can predict the pharmacokinetics and toxicity of drug candidates. This capability enables the prioritization and optimization of lead compounds, reducing the need for extensive and costly animal testing. Personalized medicine approaches can be facilitated through AI algorithms that analyze real-world patient data, leading to more effective treatment outcomes and improved patient adherence. This comprehensive review explores the wide-ranging applications of AI in drug discovery, drug delivery dosage form designs, process optimization, testing, and pharmacokinetics/pharmacodynamics (PK/PD) studies.

Keywords: Artificial intelligence (AI); machine learning; drug discovery; formulation; dosage form testing; pharmacokinetics; pharmacovigilance.

Empowering Rural Women through Mushroom Processing and Preservation: A Path to Economic Independence and Sustainable Communities

AB-19

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Abstract

Mushrooms, a valuable and nutritious food source, have long been a cornerstone of rural economies and traditional knowledge systems. In recent years, their significance has been further highlighted as a catalyst for women's empowerment and rural development. This poster presentation explores the essential role of women in mushroom processing and preservation, focusing on drying, pickling, and canning techniques.

Keywords: Economic Independence; Mushroom Processing; Rural Development; Sustainability; Women's Empowerment.

Importance of Education in Women Empowerment

AB-20

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Abstract

Objective: Education is the most crucial component of women's empowerment, which refers to enhancing the spiritual, political, social, and economic strength of women. Women become more independent only by receiving knowledge and being made aware of their rights. "If you educate a man you educate an individual, however, if you educate a woman you educate a whole family". Since 2010, India has had a good female literacy rate. In 2010, it was 80.35%. With time eventually, the rate has increased. Between 2010-2021, the female literacy rate in India increased by 14.4%. In 2021, it was 91.95% which increased by 0.6%. But there are certain problems that arise with women's education such as lack of access to education, cultural and societal barriers, economic barriers, safety concerns, early marriage, and childbearing. This study helps to explore the importance of education in women's empowerment and solutions for the challenges present in this work and also how science and technology help in women empowerment.

Method: Strategies that can help promote women's education such as eliminating barriers to access, improving infrastructure and resources, new technology learning options, etc. that will help in women empowerment.

Results & Conclusion: Science and technology help in promoting the education of women which is directly related to women empowerment and their development. In conclusion, education is the key to unlocking the full potential of women. This review will aid in the empowerment of women in many fields and how education using technology plays a crucial role in achieving this goal.

Keywords: Women Empowerment; Education; Female Literacy; Technology.

Medicinal Plants for the Management of Rheumatoid Arthritis

AB-21

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Abstract

Objective: Rheumatoid Arthritis (RA) is a chronic inflammatory, autoimmune disorder with an unknown cause, which primarily affects the synovial tissue of the joints, destroys articular cartilage, and in some cases can also cause joint fusion (ankylosis). It can also involve extra-articular sites like lungs, heart, blood vessels, and skin. In 2019, 18 million people worldwide were living with Rheumatoid arthritis, out of which 70% were women. Currently, available treatment improves the quality of life, but are challenging to manage due to their adverse effects like cirrhosis, retinal damage, myopathy, and neuropathy. Due to this, there is a need for alternative drugs/formulations with lower side effects. The purpose of this study was to highlight the potential of medicinal plants for the management of Rheumatoid Arthritis.

Method: Plants were screened for their anti-RA activity using various in-vitro & in-vivo studies, and medicinal plants with the most potential for the development of new anti-RA drugs were shortlisted based on their anti-RA activity.

Result & Conclusion: Several medicinal plants such as *Citrus aurantium*, *Glycyrrhiza uralensis*, *Andrographis paniculata*, *Curcuma longa*, and *Curculigo orchioides* were screened for their anti-RA activity. This review would help in identifying new drug molecules and lead to the development of new herbal-based drugs.

Keywords: Rheumatoid Arthritis; Auto Immune Disorder; Herbal Drugs; Medicinal Plants.

Women Empowerment in India

AB-22

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Abstract

Objective:- Studies has shown that Indian women are less valued than men and are not permitted to do certain duties. The government has launched and carried out a number of programs and initiatives in an effort to empower women both nationally and globally. But still women are as not empowered in rural and backward area. The purpose of this study to better understand ‘Factors affecting women empowerment’, current situation and what further needs of improvements, developments program, campaign and initiatives to enhance women empowerment.

Design/methodology/approaches:- A range of approaches are used in women’s empowerment with the objective of increasing their social, economic, and political standing. Among the most important approaches are networking and mentoring, financial inclusion, gender-sensitive policy, education and skill development, advocating for equal chances. Each approach is essential for promoting gender equality and helping women to achieve their full potential.

Result & Conclusion:- Improvements in initiatives schemes, campaign launcher, development of women empowerment program and other programs may provide opportunities, and support needed to attain equal rights, participation, and influence in society. And can serve as a positive aspect for women’s empowerment in India.

Key words: Women; Empowerment; Rural; Right.

Natural alternative approaches for Polycystic ovary syndrome (PCOS)

AB-23

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Abstract

Objective: Polycystic ovary syndrome (PCOS) is heterogenous endocrine disorder. According to WHO, it affects an estimated 8–13% of reproductive-aged women. Up to 70% of affected women remain undiagnosed worldwide. Although PCOS is primarily a disorder of androgen excess, affected women frequently present with abdominal adiposity, insulin resistance and infertility on prolong incidence of cysts. There are many drugs for the management and treatment of PCOS however, due to side effects, long treatment periods and also separate treatment of all other problems associated with the hormonal imbalance, the alternative and traditional medicines has gained its popularity both in research field and usage by patients. The main objective of this study is to highlight potential of plants used for PCOS, which involves treatment with phytoestrogenic and non-estrogenic herbs such as Liquorice (*Glycyrrhiza glabra*), Cinnamon (*Cinnamomum zeylanicum*), Ginseng (*Panax quinquefolius L.*), Black cohosh (*Actaea racemosa* or *Cimicifuga racemosa*).

Methodology: Plants were screened for its effect on PCOS; several herbs were investigated by various in-vivo and in-vitro method.

Result & Conclusion: Plants such as Liquorice (*Glycyrrhiza glabra*), Cinnamon (*Cinnamomum zeylanicum*), Ginseng (*Panax quinquefolius L.*), Black cohosh (*Actaea racemosa* or *Cimicifuga racemosa*) were screened and results indicated that they have significant effect on PCOS.

Keywords: PCOS; Polycystic ovary syndrome; Herbal drugs.

Economic Empowerment of Women by Mushroom Production with Minimum Investment

AB-24

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Abstract

Women constitute almost half of the total population of the world and out of this two third of world adult illiterates are women. Empowerment of women and gender equality recognized globally as a key element to achieve progress. Entrepreneurship development and income generating activities for women will enable them in becoming economically self-reliant and independent but society will also be benefitted. In the present era, mushroom farming is a profitable enterprise since per unit productivity of mushroom is several folds high than any other crop. One of the greatest advantage of this venture is the fact that mushroom have capacity to convert nutritionally value less substances such as wheat and rice straw into nutritional delicacies. Recognizing nutritional and medicinal value, productivity and profitability; mushroom farming has been identified as a profitable enterprise which can lead to integrate rural development by increasing the income and self-employment. *Dept. of Microbiology, Govt. Mata Karma Girls College initiated a pilot study for economic empowerment of rural women, small farmer's landless labourers by organizing skill oriented trainings and establishment of small enterprises which in turn would improve quality of life of rural families.* The results of the present study revealed that by adopting mushroom farming as a profession, there is no need to go outside home for work as sufficient work opportunity is available at home. The major constraints faced by the respondents are inadequate knowledge.

Keywords: Women Empowerment; Mushroom production; Entrepreneurship development.

Nanotechnology in Drug Delivery System

AB-25

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Abstract

Nanotechnology is one of the most promising key enabling technologies of the 21st century. Nanotechnology is helping to considerably improve, even revolutionize, many technology and industry sectors: information technology, energy, environmental science, medicine, homeland security, food safety, and transportation, among many others. Today's nanotechnology harnesses current progress in chemistry, physics, materials science, and biotechnology to create novel materials that have unique properties because their structures are determined on the nanometer scale. This paper summarizes the various applications of nanotechnology in recent decades.

Keywords: Nanotechnology; Environmental Science; Agriculture; Food safety; Engineering.

Formulation and Characterization of Herbal Shampoo

AB-26

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Abstract

This research work focuses on the formulation and evaluation of a herbal shampoo. The shampoo was formulated using a combination of natural ingredients such as plant extracts, essential oils, and other herbal extracts. The aim of this research was to evaluate the effectiveness of the herbal shampoo in terms of its cleaning ability, foaming ability, and conditioning properties. The shampoo which is formulated by decoction method was evaluated for its physical properties such as pH, viscosity, and stability. In addition, the sensory properties such as fragrance, texture, and ease of use were also evaluated. The efficacy of the shampoo was assessed by conducting a user survey, which included questions related to hair and scalp health, overall satisfaction, and willingness to repurchase. The results of this study suggest that the herbal shampoo is an effective alternative to synthetic shampoos and is well-received by consumers because of any side effects. The herbal ingredients in the shampoo are gentle on the hair and scalp, while still providing effective cleaning and conditioning. Overall, this research provides valuable insights into the development and evaluation of herbal shampoos, which can be useful for the cosmetic industry and consumers seeking natural alternatives for their hair care needs.

Keywords: Shampoo; Herbal shampoo; Formulation; Evaluation; Side effects.

Computational and Multi-Targeting Approach for Psoriasis Treatment

AB-27

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Abstract

Psoriasis is a chronic inflammatory, proliferative, immune-mediated skin disorder. Its occurrence is due to environment conditions, certain drugs, stress and trauma related conditions. It is characterized by red and scaly plaques with itching and burning conditions. Major histological characteristics of psoriasis encompass parakeratosis, hyperkeratosis, elongation of dermal capillaries, and infiltration of immune cells. It may induce various complications such as psoriatic arthritis, metabolic syndromes, non-melanoma skin cancer and cardiovascular diseases. It affects both males and females, with earlier onset in females and those with a family history. It affects approximately 2-3% of global population. Nearly two thirds of people with psoriasis have a mild form of the disease, with less than 3% of the skin surface of the body affected, but others have more extensive involvement of the skin. Immune response mediated by T cells and keratinocytes has been implicated in the initiation and maintenance of psoriasis. Activated macrophages are the main sources of tumor necrosis factor-alpha (TNF- α), interleukin (IL-6), cyclooxygenase-2 (COX-2), IL-17A and IL-23. Since, there is no cure for psoriasis and treatment is directed at to decrease signs and symptoms and modifying the natural progression of the disease. Although some drugs have achieved clinical efficacy, but the side effects associated with them remains challenging. Some of the traditional herbal supplementation has shown to be beneficial effect for the treatment of psoriasis which includes *Artemisia capillaris*, *Hypericum perforatum*, *Rehmania glutinosa*, *Salvia miltiorrhiza*, *Veratrum grandiflorum*, *Mallotus phillipinesis*, *Pithecellobium dulce*, etc. Thus, computational approach towards the psoriasis is helpful in knowing the other phytoconstituents that can be used in the prevention of the disease. On the basis of this study, phytoconstituents shows good binding affinity with the target residue and may be used in the treatment of psoriasis. Overall, daidzein, hypericin, chlorogenic acid, naringin and resveratrol shows good binding energy of -8.727, -9.369, -8.507, -11.629, -9.115 kcal/mol with active site of target molecule. The compound have displayed selective docking to anti-inflammatory JAK1/2/3, TNF- α , IFN- γ) and anti-psoriatic (IL-17,IL-23, IL-7,IL-9,IL-28 etc.). Thus, these compounds reflect excellent ant psoriatic and anti-inflammatory potency in silico. The plants molecule can used as a prototype for psoriasis.

Keywords: Psoriasis; Phytoconstituents; Computational Approach.

Amyotrophic Lateral Sclerosis

AB-28

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Abstract

Amyotrophic lateral sclerosis (ALS), also known as motor neuron disease, is characterized by the degeneration of both upper and lower motor neurons, which leads to muscle weakness and eventual paralysis. Most cases of ALS (about 90% to 95%) have no known cause, However, both genetic and environmental factors are believed to be involved. and are known as *sporadic ALS* In most patients. The remaining 5% to 10% of cases have a genetic cause, often linked to a history of the disease in the family, and these are known as *familial ALS* (hereditary).The mechanisms underlying the development of ALS are poorly understood, although a subset of patients have familial disease and harbour mutations in genes that have various roles in neuronal function. Two possible disease-modifying therapies that can slow disease progression are available for ALS, but patient management is largely mediated by symptomatic therapies, such as the use of muscle relaxants for spasticity and speech therapy for dysarthria.

Keywords: ALS (Amyotrophic lateral Sclerosis); neuron disease; paralysis.

Nanotechnology and its Advancements

AB-29

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Abstract

Nanotechnology is the study of incredibly tiny structures with particle sizes ranging from 1 to 100 nm. There are numerous benefits and drawbacks to it. A classification system for nanoparticles based on their size. The development of nanotechnology aids in the treatment of numerous illnesses. It can also assist in medicine delivery to the desired place. The field of nanotechnology is becoming more important these days. New doors for research have been opened by recent advancements in the realm of nanotechnology. In addition to being a multidisciplinary subject, as nanotechnology develops, it will change everything. The 21st century's enabling technology is now generally recognised to be nanotechnology. Better materials are being produced nowadays using nanotechnology and nanostructured materials. Pharmaceutical nanotechnology has become a potentially lucrative field. It provides new opportunities, tools, and breadth.

Keyword: Nanotechnology; nanoparticles; pharmaceutical.

Paraben – Free Herbal Gel for the Treatment of Mouth Ulcer

AB-30

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Abstract

Mouth ulcers, a common oral ailment, can cause significant discomfort and pain. Traditional treatments often rely on synthetic chemicals, which may lead to adverse side effects. In response to this issue, the present study focuses on the development of a herbal mouth ulcer gel, utilizing natural ingredients known for their therapeutic properties. The research involves the formulation and evaluation of a gel containing a blend of herbal extracts, including aloe vera, licorice, and neem. These herbs are chosen for their anti-inflammatory, antimicrobial, and wound-healing properties. The gel is prepared using a standardized procedure, ensuring stability and safety. This research introduces a novel herbal approach to managing mouth ulcers, offering an alternative to synthetic treatments with potential side effects. The herbal mouth ulcer gel, being both safe and effective, has promising prospects for becoming a valuable addition to oral care products, promoting oral health and well-being.

Keywords: Mouth cancer; traditional treatment; herbal.

Menstrual health and hygiene empowers women

AB-31

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Abstract

Menstrual health and hygiene are important issue that affects women and girls all over the world. It is essential to ensure that they have access to the tools, knowledge, and resources they need to maintain good menstrual health and hygiene. This is especially important in developing countries, where access to sanitary products and education about menstrual health can be limited or non-existent.

Keywords: Women empowerment; menstrual health; hygiene.

Novel Drug Delivery System for Plant extract

AB-32

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Abstract

Background: Arthritis means joint inflammation, Joints such as elbow or knee, in traditional medicines, a limited amount of the drug has been reached at the target site, to enhance this novel drug delivery system is used.

Methodology: Several studies have been done for anti-arthritis activity by novel drug delivery system, such as synthesized silver nano particle with extract of *Merrmia dissecta*, curcumin – loaded Eudragit L and hydroxy propyl methyl cellulose [HPMC] micro particles, some in vivo and some in vitro.

Result & Conclusion: the studies reveals that plant extracts by novel drug delivery system has more significant anti-arthritis effect than normal delivery system.

Keywords: Anti-arthritis; silver nano particles; Novel drug delivery.