International Journal of Unified Academic Perspectives
IJUAP

KNOWLEDGE, RIGHTS, & EQUITY :

Multidisciplinary Pathway to Health and Gender Justice within the SDGs

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Multidisciplinary Pathways to Health and Gender Justice within SDGs

Publisher :

Success Mantra Publications

15/1/1A, Biswa Kosh Lane, Shyambazar, Kolkata - 700003

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ANTIMICROBIAL POTENTIAL OF *CASSIA FISTULA* LINN. FLOWER : A COMPREHENSIVE STUDY

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Abstract :

In today's world, microbial diseases pose one of the greatest global health challenges, largely driven by rapid population growth, industrial expansion, increased use of toxic substances, scarcity of clean water, and deteriorating environmental conditions. Human health is constantly threatened by disease-causing microorganisms known as pathogens, including bacteria, fungi, protozoa, and certain algae. In many developing regions, contaminated water remains a major source of microbial infections, while poor sanitation and inadequate food safety practices further aggravate the problem.

Over the years, various treatments have been developed to manage microbial and skin diseases, such as monoclonal antibodies (mAb), red light therapy, ultraviolet protection, and synthetic medications. However, in the 21st century, herbal medicines have regained importance due to their cost-effectiveness, minimal side effects, and growing public awareness regarding the risks of synthetic drugs. This shift reflects a global trend toward safer and more sustainable natural remedies.

The persistence of infectious diseases highlights the urgent need for improved public health measures and the exploration of natural antimicrobial agents as alternatives to chemical drugs. The present study investigates the antimicrobial potential of *Cassia fistula* Linn. flower, a widely used medicinal plant known for its diverse therapeutic properties. Commonly known as the Golden Shower Tree, and locally called "Bandar Lathi" in West Bengal, *Cassia fistula* Linn. is also valued for its ornamental beauty. Phytochemical screening revealed the presence of flavonoids, tannins, saponins, and phenolic compounds, known for their potent antimicrobial activity. These findings validate the traditional use of *Cassia fistula* flowers in herbal medicine and demonstrate their promise as a natural, eco-friendly alternative to synthetic antibiotics.

Keywords : *Flower Extracts, Antimicrobial, Microbial Diseases, phytochemical compounds*

EMPOWERING WOMEN ENTREPRENEURS FOR SUSTAINABLE DEVELOPMENT : CHALLENGES, OPPORTUNITIES AND PATHWAYS TO INCLUSIVE GROWTH

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Abstract :

Entrepreneurship is crucial for stimulating job creation, innovation, and economic growth, thereby significantly aiding inclusive development and improving social and fiscal stability. Through the application of entrepreneurial skills and creativity, individuals and communities can effectively tackle various pressing social issues identified in the Sustainable Development Goals (SDGs), such as poverty alleviation, gender equality, quality education, and environmental sustainability. In recent years, women have gained prominence in the entrepreneurial sector, promoting sustainable business practices and fostering community empowerment. Notwithstanding these contributions, women entrepreneurs persistently encounter significant barriers, including restricted access to capital, educational resources, technology, and institutional support. The entrepreneurial ecosystem is predominantly male-dominated, leading to diminished revenue generation and decreased market presence for women-led enterprises.

This study analyses the impact of traditional value systems on women's entrepreneurial aspirations and assesses the contributions of government policies, financial institutions, and support organizations in creating a favourable environment for women entrepreneurs. The study emphasizes the significance of cultivating a digital entrepreneurial mindset among women to surmount traditional societal obstacles, utilizing secondary data from scholarly articles, books, and reports. Research indicates that the most commonly examined Sustainable Development Goals (SDGs) pertinent to women's entrepreneurship are SDG 4 (Quality Education), SDG 5 (Gender Equality), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 10 (Reduced Inequalities). Primary objectives focus on enhancing women's access to financial resources, ownership rights, vocational skills, technology, and affordable credit, especially for small-scale enterprises.

The study highlights the resilience and determination of women entrepreneurs, providing insights for future research and policy development. It advocates for more inclusive financial frameworks, gender-sensitive policies, and enhanced institutional support to foster a dynamic, equitable, and sustainable entrepreneurial ecosystem for women globally.

Keywords : *Women entrepreneurship, traditional vs online entrepreneurship, socio-cultural support, work-life balance, technology driven.*

IMPACT OF SOCIOECONOMIC STATUS ON ADOLESCENT POLYSUBSTANCE USE AND NUTRITIONAL DEMOGRAPHY IN DEVELOPING NATIONS LIKE INDIA

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Abstract :

In developing nations like India, teenage nutritional demographics and polysubstance use are significantly influenced by socioeconomic level (SES). This study investigates the ways in which adolescent health trajectories and risk behaviours are influenced by poverty, education, and household wealth, based on a synthesis of secondary data and a review of the literature. Empirical data indicates that among Indian adolescents, undernutrition—which manifests as stunting, thinness, and underweight—is substantially correlated with lower SES. According to a systematic analysis, the pooled prevalence of underweight and stunting is roughly **41%** and **33%**, respectively, with parental education and income being identified as important determinants.

The poorest teenagers are disproportionately affected by thinness and stunting, according to regional assessments (such as those conducted in Uttar Pradesh and Bihar), with a significant percentage of socioeconomic inequality being explained by the wealth index.

Even after adjusting for SES, these problems are made worse by poor nutritional diversification and poor cleanliness practices.

Adolescents are also moving toward processed, high-energy foods at the same time, which highlights a change in nutrition, particularly among urban and higher-income groups.

However, research indicates that about one-third of young people in India use alcohol, tobacco, cannabis, or other substances, making substance use among teenagers an extremely widespread problem.

Polysubstance usage is frequently associated with lower socioeconomic class, masculine gender, family history, and peer pressure. Adolescents who are undernourished may also be more likely to start using drugs as a coping mechanism or as a result of environmental exposure due to these overlapping vulnerabilities, which include structural poverty, low levels of education, and societal norms. Substance abuse can also worsen nutritional health in a vicious circle.

In conclusion, this study contends that the association between teenage nutrition and substance use is mediated by SES as one of the root cause. Integrated policy interventions are necessary to address these issues: dietary programs must be created in conjunction with substance misuse prevention techniques, particularly for teenagers from low-income backgrounds. In low- and middle-income settings like India, holistic methods that include social protection, education, health promotion, and community engagement are essential for reducing the twin burden of polysubstance use and malnutrition.

Keywords : *Socioeconomic Status, Adolescent Nutrition, Stunting, Thinness, Polysubstance Use, India, Wealth Inequality.*

CLIMATE CHAOS AND CRIMINAL TRENDS : INVESTIGATING THE WEATHER-CRIME NEXUS IN KOLKATA

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Abstract :

Introduction

There will be increased stress, less social control, less social support, criminal inclinations, more opportunities for crime, and societal strife due to the debate about weather changes. The causes of criminal behaviour have drawn much attention, and a large body of research has linked the frequency of weather variations to criminal activity. Natural and socioeconomic systems are significantly impacted by climate change, particularly when it comes to extreme weather occurrences. Even though there doesn't seem to be much of a correlation between crime and climatic anomalies, given possible future warnings, crime rates might be significantly impacted by climate change.

Study area

This study focused on the Kolkata Metropolitan Region, utilizing data spanning one decade to conduct a longitudinal analysis.

Methodology

Using data from the Kolkata Metropolitan Region spanning one decade, a longitudinal analysis was carried out. Regression analysis was used in this research work to investigate the connection between Kolkata's crime rates and extreme weather occurrences. The analysis's empirical model sought to ascertain whether there was a statistically meaningful connection between extreme weather occurrences and crime. Statistical Package for Social Sciences version 20.0 was used for the statistical analysis. Python 3.10.12 of was applied as the mapping program.

Conclusion

The results of this study underscore the need for more investigation and possible interventions to address this issue, with significant implications for theory and policy on the relationship between climate change and crime rates. Temperature and precipitation data are incorporated into the study, demonstrating the substantial correlation between climate change and crime across a range of criminal categories.

Keywords : *Climate, Crime, Socioeconomic Condition, Policy, Criminal activity*

EQUITY AND URBAN MARGINALITY : EVALUATING MARGINALISED WOMEN'S HEALTH CONDITIONS IN URBAN INFORMAL SETTLEMENTS IN KOLKATA

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Abstract :

Urban–rural health disparities are usually interpreted through differences in infrastructure, resource allocation, and spatial accessibility. However, similar inequalities persist within cities where marginalised groups are often excluded from access to basic care. The presence of severe health deprivation within cities especially among women residing in informal settlements is an equally critical but is often an overlooked dimension. This paper examines the health status of marginalised women in the Kolkata Municipal Corporation Area using the health indicators outlined by the WHO Quality of Life (WHOQoL) framework. In the present study it has been argued that despite their physical proximity to urban healthcare facilities, the marginalised women experience a form of "intra-urban rurality," where living conditions, environmental exposure, and socio-economic precarity replicate the vulnerabilities traditionally associated with rural poverty. A mixed method approach has been employed for this study. A short WHOQoL based field survey has been carried out to measure the physical health and wellbeing. Direct observations has been made to understand the living conditionsof these women and brief interviews have been done to uphold the daily health challenges both physical and mental faced by them. Inspite of the close proximity to urban health facilities, many of these women face difficulties due to insecure housing, pollutions, unhygienic environment associated with washrooms, overcrowding and irregular livelihoods. Results reveal, a significantly lower WHOQoL health scores which reflects the chronic fatigue, untreated ailments and regular stress due to insecurity of shelter and unstable livelihoods. Their well-being gets further degraded due to the various environmental hazards faced by them such as over crowded dwellings, poor ventilation and unhygienic sanitation conditions. Moreover, the nearness to the health clinics does not necessarily translate into easy and effective access due to financial constraints, long waiting period and discrimination. This paper further highlights the need and requirement for equity-focussed urban health planning which will recognise the intra-urban marginality as the central to bridge the wider urban-rural health disparities that will lead to strengthen the commitments towards achieving the SDGs 3, 10 and 17.

Keywords : *Quality of Life, health disparities, marginalised women, urban health planning, discriminaton, SDGs*

APPLYING 'WEEDS-VEGETABLES-FRUITS-SPICES' AS 'COMMON COUNTRY BIO-MEDICINES' AGAINST COVID-19, ACHIEVED SUSTAINABLE NATIONAL HEALTHCARE, HEALTH ECONOMY, HUMANITARIANISM, AND GENDER EQUITY

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Abstract :

Problems :

The Sustainable Development Goals (SDGs) emphasise inclusive growth, gender equity, and universal health rights. Despite significant progress, persistent gaps in access to healthcare, representation, and education continue to affect gender justice globally. On the other hand, still now, puzzled scientists and professionals are searching for the proper way to nurse the patients OR to prepare vaccines OR to vaccinate for the 'COVID-19-like Future Pandemic' through Eco-friendly Education Healthcare Nursing, etc. The rapidly changing world due to catastrophic alterations of natural ecosystems, biodiversity, and climate change threatens these essential services. To address these issues, healthcare scientists are applying their knowledge and expertise to tackle new environmental, ecological, economic, social, and health challenges, thereby making significant contributions to preserving our planet. Pharmaceutical companies should take responsibility as quickly as possible to prepare vaccines. The different common products are used as 'Bio-Medicines' to conquer this situation.

Objectives :

The main objectives of the current 'Weed-Vegetables-Fruits-Spices' show some typical students-preventive-'Bio-Medicines' and therapeutic measures among school children for the 'Bio-Medicines-Nationalism-Passport-Equity', focusing on Sustainable National Healthcare, Health Economy, Humanitarianism Gender Equity.

Methodology :

Here, the advanced use of 'Weeds-Vegetables-Fruits-Spices (WVFS)' as 'Preventive Common Bio-Medicines (PBM)'. And the 'WVFS-Bio-Medicines' are prepared by mixing Weeds (amaranths), Vegetables (okra-cowpea-cucumber), Fruits (apple-orange), and spices (ginger-turmeric-garlic).

Findings & Conclusions :

The present 'Common-BioMedicines' are potentially able to prevent different diseases by increasing immunity with no toxic effects, showing the "Weeds-Vegetables-Fruits-Spices' May Popular as 'Cost-Effective-Bio-Medicines (CEBM)' Acting as a Security Guards in the Body,

Vaccine Nationalism Passport Equity Focusing Eco-Nursing-Health (ENH)". So, applying 'Weeds-Vegetables-Fruits-Spices' as 'Common Country Bio-Medicines' against COVID-19 Achieved Sustainable National Healthcare, Health economy, and Humanitarianism, Gender Equity, making the research priorities and policy issues of key matters, like food security, climate change, sustainable agriculture, biodiversity and conservation, etc. The present study highlighted the; Nursing Health Education & Research, Healthcare, Environmental Health and Nursing, Epidemiology and Community Health, Healthcare Management, Evidence-Based Nursing Practice, Family Participatory Care, Improving Mental Health & Psychiatric Nursing, Men in Nursing, Future of Nursing, Midwifery and Women Health Nursing, Health Economics and Public Health, Nursing Leadership &Management, Public Health Nursing, Improving Patient Education, Care & Outcomes and ultimately Leadership and Professional Development with Globalization and Health Challenges. It seeks to bring together scholars, researchers, practitioners, and students to critically engage with the intersections of gender, health, rights, and equity OR it fulfils the need of the "TWO-DAY INTERNATIONAL CONFERENCE KNOWLEDGE, RIGHTS, AND EQUITY: MULTIDISCIPLINARY PATHWAYS TO HEALTH AND GENDER JUSTICE WITHIN THE SDGS" through its practice, various activities, awareness, and publications sparking dialogues on pathways to justice, resilience, and sustainable futures.

Keywords : *Applying-'Weeds-Vegetables-Fruits-Spices'; 'Common-Country-BioMedicines'; COVID-19; Achieved; Sustainable-National-Healthcare-Health-Economy-Humanitarianism-Gender-Equity*

EDUCATION FOR EMPOWERMENT : HEALTH LITERACY AND GENDER EQUITY

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Abstract :

Education serves as a vital instrument for empowerment, particularly in advancing health literacy and promoting gender equity. This study examines the interconnected role of education in fostering awareness, decision-making capacity, and equitable access to health information among diverse gender groups. Employing a mixed-method approach with 300 respondents from higher secondary and tertiary institutions, the study analyzes the relationship between health literacy, education level, and gender empowerment. Results reveal a strong positive correlation ($r = 0.84$, $p < 0.01$) between health literacy and gender empowerment, indicating that education significantly enhances individuals' ability to make informed health-related and social decisions. Regression analysis further confirms that educational attainment and health literacy jointly contribute to 71% of the variance in empowerment outcomes. The findings underscore the need for integrating gender-sensitive health education into curricula, strengthening digital inclusion, and developing policies that promote equitable access to health resources. Ultimately, the study advocates education-driven health literacy as a sustainable pathway to gender-equitable empowerment.

Keywords : *Education, Empowerment, Health Literacy, Gender Equity, Inclusive Development, Educational Policy, Social Transformation*

SCENARIO OF FUNCTIONING HOUSEHOLD TAP WATER CONNECTIONS IN A PART OF SUNDARBAN UNDER JAL JEEVAN MISSION : A CASE STUDY OF KAKDWIP SUB-DIVISION, S.24 PGS DISTRICT IN WEST BENGAL.

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Abstract :

The need for providing safe drinking water has been well recognized and given priority in rural development in India since independence. With a community-centric approach to achieve Sustainable Development Goal 6.1, the Jal Jeevan Mission (JJM), launched in 2019 by the Government of India, ensures providing individual tap water connections to every household with the provision of 55 litres of water per capita per day. India has been making continuous efforts through public funding to provide access to drinking water, especially targeting vulnerable areas. The Indian Sundarbans Biosphere Reserve (SBR) is identified as a vulnerable island for the crisis of potable pure drinking water, lying in the south-western part of Ganges Ganges-Brahmaputra delta. The combined challenge of climate-induced changes and environmental degradation has intensified water insecurity in the Sundarbans. Despite the deterioration in water quality, many Sundarbans residents continue to consume the contaminated water due to a lack of pure potable drinking water. In the absence of treated pipe water in this fragile-vulnerable region, the inhabitants are compelled to rely solely on hand pumps for drinking water and on nearby pond water for other water-related activities. After the implementation of Jal Jeevan Mission (JJM) from August 2019 to till day (25/11/2025), only 53.57% of rural households have functioning household tap water connections (FHTC), and 52.5% found in South 24 parganas district of West Bengal. The mission aims to provide an uncompromised supply of potable water to prevent deaths and illness due to waterborne diseases, eliminate drudgery in accessing drinking water, and improve the livelihood and productivity of people in rural areas. The study Grampanchayats of Kakdwip Subdivision is under SBR region, where shallow groundwater is brackish to saline, while fresh groundwater occurs below 300m depth. The people of the study grampanchayats depend on spot water sources (Deep Tubewells/Handpumps), which are not always easily accessible and submerged during floods due to cyclones, i.e., Aila, Amphan, etc. My paper highlights the actual scenario of JJM among Forty-Two Grampanchayats and Eight intensive study villages, i.e., Ghoramara and Sagarcoloni of Sagar block, Chandipur and Akshyaynagar of Kakdwip block, Pailaghery and Amaravati of Namkhana block and Dakshin Sibganj and Gobardhanpur of Patharpratima block of Kakdwip -subdivision-2024.

Keywords : *Sustainable Development Goal, Jal Jeevan Mission, fragile vulnerable area, SBR*

WOMEN'S HEALTH, SOCIOECONOMIC CAPACITY AND DISASTER EXPOSURE : A DISTRICT-LEVEL ASSESSMENT OF WEST BENGAL

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Abstract :

The combined pressures of social inequality and environmental risk shape the health of women globally. In West Bengal, this vulnerability is heightened by recurrent hazards of flooding, cyclones, and thunderstorms. Its rank in the 2023 Multidimensional Poverty Index places the state in the moderate-to-lower poverty category, which underlines the need to examine how structural disadvantage interacts with environmental stress. The specific investigation here probes how exposure to disaster bears upon women's health outcomes across districts through the linking of a composite Women's Health Index (WHI) and Socioeconomic Index (SEI) with the proportion of land affected by recurring natural hazards. The central aim was to establish whether high-exposure districts exhibit systematic deficits in women's health independent of their socioeconomic situations. WHI and SEI were constructed from NFHS-5 district fact sheets and combined with secondary data on disaster exposure at a district level. To establish the extent to which disaster stress, along with socioeconomic capacity, influences women's health, both a correlation analysis and simple regression models were conducted. Preliminary results indicate that districts facing higher hazard exposure tend to have weaker WHI scores, especially where SEI is low, which suggests socioeconomic advantage may moderate but does not eliminate the impact of environmental risk. Meanwhile, the study provides a framework by which health, socioeconomic resilience, and hazard vulnerability can be integrated into district-level planning in accordance with SDGs 3 and 10, with limitations regarding temporality of disaster data, variation in quality of reporting at district level, and inability to capture intra-district disparities.

Keywords : *Women's Health Index (WHI), Socioeconomic Index (SEI), Disaster exposure, NFHS 5, SDGs*

CHALLENGES IN THE IMPLEMENTATION OF ELECTRONIC MEDICAL RECORDS (EMR) IN PRIVATE HOSPITALS AND NURSING HOMES IN WEST BENGAL POST-2025 REGULATION

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Abstract :

The healthcare system of West Bengal is experiencing a radical, legislatively imposed change after West Bengal Clinical Establishments (Registration, Regulation and Transparency) (Amendment) Bill, 2025 mandate of all privately owned hospitals and nursing homes to adopt Electronic Medical Records (EMR). This digital project of the top-down solution is driven by the principles of clinical data standardization, increased transparency, and improved patient care quality; it presents significant implementation difficulties in the state of the heterogeneous private sector.

The current research paper was planned to test empirically the perceived obstacles to EMR adoptions in relation to the concept of private healthcare facilities in West Bengal in the context of the compliance deadline of 2025. Quantitative survey was carried out on 200 private hospitals and nursing homes using a multi-stage sampling structure that included a mix of the types of facilities, size (small, medium, large), and geographical areas (Kolkata, other urban areas and rural areas). The Principal Component Analysis (PCA) was employed in order to detect salient factors of challenge, and the Analysis of Variance (ANOVA) was employed in order to detect significant differences between demographics involving perceived difficulties.

It was found that four major barriers were identified, namely : Financial & Resource Strain, Human and Digital Readiness, Infrastructure and Reliability, and Implementation and Technical Support. Statistical analysis showed that these perceived challenges do not occur in equal measures. Particularly, the degree of difficulty was much higher in nursing homes than in hospitals, and, most importantly, in smaller facilities and those located in rural districts the scores on the composite challenge index tended to be the highest.

Summing up, the EMR requirement aims to develop standardized digital health access, but with considerable financial and human resources shortages in smaller, rural institutions, it cannot be successfully implemented. Policy interventions should, therefore, involve specific monetary subsidies, infrastructure financing, and capacity-building measures to make the digital transition to be equitable and sustainable throughout the healthcare ecosystem in the state.

Keywords : *Electronic Medical Records, West Bengal, Digital Health, Sustainable Development*

MOSQUITO LARVICIDAL ACTIVITY OF GREEN-SYNTHESIZED SILVER NANOPARTICLES USING BAUHINIA PICTA LEAF EXTRACT AGAINST LATE 3RD INSTAR LARVAE OF AEDES AEGYPTI

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Abstract :

Objective

The recent study was carried out to test the larvicidal activities of crude extracts of leaves of medicinal plant Bauhinia picta (Family: Fabaceae) and synthesized silver nanoparticles using aqueous crude leaf extract against the dengue vector, third instar larvae of Aedes aegypti (Diptera: Culicidae) as target species.

Methodology

Larvae were exposed to varying concentrations of synthesized silver nanoparticles for 24 h. The concentration ranges of B.picta extracts and BpAgNPs used in the bioassays were established in several preliminary range-finding tests. Concentrations of B. picta extract used in bioassays were 500, 1000, 2000, and 3000 ppm. Concentrations of BpAgNPs used in bioassays were 300, 250, 200, 100, and 75 ppm. To obtain AgNPs coated with B. picta aqueous crude leaf extract (BpAgNPs), ten mL B.picta extract were added dropwise to 50mL of a 0.005 (M) AgNO3 solution. The pH of this mixture was adjusted by using a 1% NaOH solution, and the mixture was subsequently stirred for 30 minutes at 35 (± 1)°C. Once the mixture changed color from light brown to dark brown (indicating the reduction of Ag+ to Ag) the solution was exposed to UV light (366 nm wavelength) for one hour Pilaquinga et al., 2019. The results were recorded from UV–vis spectrum to support the biosynthesis and characterization of silver nanoparticles.

Findings

The maximum efficacy for BpAgNPs extract was observed at the LC50 = 123.02 ppm and LC90 = 199.52 ppm respectively. The BpAgNPs extract showed the effect on mosquito larvae. In the preliminary screening, potential larvicidal activity of plant extract was noted. The chi-square value was significant at $p<0.05$ level.

Conclusions

These results suggest that the aqueous crude leaf extracts of green synthesis of silver nanoparticles have the potential to be used as an ideal eco-friendly approach for the control of the A. aegypti. Therefore, this study provides the report on the mosquito larvicidal activity of synthesized AgNPs against dengue vector.

Keywords : *silver nanoparticles, B. picta, A. aegypti, larvicidal activity, eco-friendly*

PUBLIC HEALTH INFRASTRUCTURE OF WEST BENGAL : A GEOGRAPHICAL ANALYSIS

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Abstract :

Study of public health infrastructure is very importance as it has key role to play for health and well-being of people and society in an over-populated and developing country like India. This paper studies public health infrastructure of West Bengal where its capital Kolkata is the largest urban agglomeration of eastern India. The objective of this research paper is to highlight the geographical distribution of health infrastructure; accessibility, quality and disparity of health care delivery system and evaluate the effectiveness of existing government health schemes. Based on secondary data collected from various government reports, this paper analyses spatial distribution of district-wise health centres, number of beds, doctor-patient ratio, infant mortality rate and maternal health related indicators. These data have been represented through cartograms within a framework of geographic information system. The study finds that there is a major gap between rural and urban health care delivery system. The rural areas are facing poor infrastructural problem while cities are expanding their facilities. Medical services are more developed in districts like Kolkata, Hooghly and Howrah, while districts like Uttar Dinajpur, Purulia, Bankura are lagging behind in terms of quality of health services. Accesses of women to health services are less in rural areas than in cities. In addition to infrastructure in rural areas, poor transport system, lack of health awareness, and financial constraints have been identified as major barriers to health services. Although, several government projects are helpful in expanding health services. To reduce the geographical disparity in health infrastructure in West Bengal, the number of health centres should be increased. Recruitment of doctors, service workers, health workers, overall infrastructural development, health care information management and long-term plans are needed to ensure equitable distribution of health care services across different regions.

Keywords : *Public health, health infrastructure, health care, geographical disparity*

WHERE GENDER, RELIGION AND CLASS COLLIDE : AN INTERSECTIONAL STUDY OF MUSLIM WOMEN'S REPRODUCTIVE HEALTH

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Abstract :

Muslim women's reproductive health outcomes are often analyzed through homogenizing perspective, neglecting the intricate convergence of social identities. This study investigates the intersectional framework, in order to understand how gender, religion, identity and socio-economic class converge to shape the reproductive health experiences, access to care, and medical decision-making agency among Muslim women in Kolkata. By utilizing the recent data from the National Family Health Survey (NFHS-5) and other relevant health datasets, this research goes beyond the simple cultural or religious determinism. The study reveals that while Islamic principles provide a shared ethical framework for reproductive health, their impact on lived outcomes is profoundly stratified by class whereas there is a huge influence of misinterpretations. Relevant findings indicate that the affluent Muslim women or upper class Muslim women demonstrate healthcare utilization patterns that often mitigate structural barriers likely reflecting their ability to leverage their financial resources, compare to the women from the lower socio-economic backgrounds face a "triple bind," setting, gendered community norms that restricts them, and acute material deprivation collectively constrain their agency and access to quality services and even quality life. The study concludes that the effective public health interventions in Kolkata must transcend 'one-dimensional' understandings of religious influence. Instead, a multifaceted approach is needed which will gradually change the situation, one that addresses the structural violence of class inequality while constructively involving with the principles of Islamic bioethics. This necessitates fostering culturally competent and spiritually sensitive care (conceptually aligned with Taqwa, or God-consciousness) within Kolkata's healthcare system and promoting awareness of Fiqh al-Tibb (Islamic medical jurisprudence) to bridge the gap between religious values and equitable health access.

Keywords : *Reproductive Health, Socio-economic class, Taqwa, Fiqh al-Tibb*

ASSESSMENT OF SSR MARKER BASED GENETIC DIVERSITY OF NORTHEAST INDIAN TEA CULTIVARS FOR PATHOGEN RESPONSIVE PATHWAYS

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Abstract :

Tea (Camellia sinensis (L.) O. Kuntze) is the popularly consumed and oldest non-alcoholic beverage in the world. Many pests and phytopathogens cause 14-50 % of crop loss in Northeast Indian tea cultivars. Fungal pathogenesis causes transcriptome regulations and metabolic pathway alterations. Some of these pathways are also linked to the tea flavour quality. In our previous work a number of hub genes were identified by combining seven independent differential transcriptomics data generated during fungal infections of tea. There is up-regulation of important hub genes from various functional categories during pathogenic infections. These include cell wall organizing, secondary metabolic, phytohormone biosynthetic, oxidoreductase activity specific and homeostatic genes which cause resistance or susceptibility in tea plants. In this study twenty-eight genes were selected to assess genetic relatedness for disease responsive characters of the 31 northeast Indian tea cultivars. Some of the important genes were RPM1, WRKY33-TF, WRKY24-TF, bZIP-TF, α class expansin, Laccase15, Endoglucanse17, Cytochorme P450, GDSL esterase/lipase, Galacturonosyltransferase, RALF/RALFL-precursor polypeptide, Pectate lyase, metalloendoproteinase, Histone3, and Fasciclin-type arabinogalactan protein. According to the phylogenetic analysis based on 40 pairs of primers, two distinguishable clusters and one outgroup were obtained. This clustering could be correlated with diseases responses, yield and aroma specific phenotypes in these cultivars. These findings developed our understanding on SSR based genotypic variation among tea cultivars in response to fungal infection and highlighted the importance of biotic and abiotic factors in interpreting tea-environment dynamics.

শিরোনাম : স্থিতিশীল উন্নয়নের লক্ষ্য : পঞ্চায়েত এবং লিঙ্গ-সমতাভিত্তিক নেতৃত্ব

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সারসংক্ষেপ (Abstract) :

লিঙ্গ-সমতাভিত্তিক নেতৃত্ব হল এমন এক ধরনের নেতৃত্ব, যেখানে নারী-পুরুষের মধ্যে সমতা এবং নারীর অর্থনৈতিক, সামাজিক ও রাজনৈতিক অধিকারকে নিশ্চিত করা হয়। ফলে ন্যায়, স্বাধীনতা এবং সাম্যভিত্তিক সমাজ প্রতিষ্ঠিত হতে পারে, যা স্থিতিশীল উন্নয়নের লক্ষ্য পূরণের সঙ্গে সরাসরি যুক্ত। স্থিতিশীল উন্নয়ন হল এমন একটি উন্নয়ন প্রক্রিয়া, যা পরিবেশের ক্ষতি না করে অর্থনৈতিক ও সামাজিক উন্নয়নকে সুনিশ্চিত করে থাকে। পঞ্চায়েত হল ভারতের স্থানীয় গ্রামীণ স্বায়ত্তশাসন ব্যবস্থা। ১৯৯২ সালে ৭৩তম সংবিধান সংশোধনের মাধ্যমে পঞ্চায়েতের সাংবিধানিক ভিত মজবুত করা হয়—ক্ষমতা বিকেন্দ্রীকরণের একক হিসাবে। উল্লিখিত সংশোধনী আইনে গ্রাম পঞ্চায়েত, পঞ্চায়েত সমিতি ও জেলা পরিষদের প্রতিটি স্তরে এক তৃতীয়াংশ আসনে মহিলাদের নির্বাচিত হবার তথা নেতৃত্বদানের সুযোগ সৃষ্টি করে। পরবর্তীকালে পশ্চিমবঙ্গ সহ ভারতের একাধিক রাজ্যে ত্রিস্তর পঞ্চায়েত ব্যবস্থায় ৫০% আসন মহিলাদের জন্য সংরক্ষিত করা হয়েছে, যার ফলে পঞ্চায়েতে মহিলা সমাজের সশক্তিকরণ ও সমনেতৃত্বের সুযোগ ঘটেছে। এই গবেষণাপত্রের উদ্দেশ্য হল গ্রামীণ ভারতে লিঙ্গ-সমতাভিত্তিক নেতৃত্ব সুনিশ্চিত করা, তৃণমূল স্তরে মহিলা সমাজের নেতৃত্বদানের সুযোগ সৃষ্টি করা, নারীর সক্ষমতা ও সশক্তিকরণের মাধ্যমে নারী পুরুষের মধ্যে সমতা প্রতিষ্ঠা করা, নারী-বান্ধব গ্রাম নির্মাণ করা এবং পঞ্চায়েতের মাধ্যমে নারী পুরুষের মধ্যে বৈষম্য দূর করে অন্তর্ভুক্তিমূলক স্বচ্ছ, দক্ষ এবং লিঙ্গ-সমতাভিত্তিক সমাজ তথা স্থিতিশীল উন্নয়নের পথ সুনিশ্চিত করা। এই গবেষণা পত্রটি সুসম্পন্ন করার জন্য ক্ষেত্র সমীক্ষার মাধ্যমে প্রাথমিক তথ্য সংগ্রহ করে এবং বিভিন্ন গ্রন্থ, সরকারি নথি, গবেষণামূলক পত্র-পত্রিকা প্রভৃতির সাহায্য নিয়ে আমি কাজ করেছি। পঞ্চায়েত নির্বাচন, গ্রামসভা ও গ্রামসংসদ মিটিংয়ে এবং ত্রিস্তর পঞ্চায়েতের প্রতিনিধি ও পদাধিকারী হিসাবে মহিলা সমাজের অংশগ্রহণ ও নেতৃত্ব গ্রামীণ ভারতের লিঙ্গ-সমতাভিত্তিক নেতৃত্বকে মজবুত করেছে। তৃণমূল স্তরে মহিলাদের ক্ষমতায়ন এবং অন্তর্ভুক্তিমূলক উন্নয়নকে পঞ্চায়েত নিশ্চিত করে থাকে। কৃষি, শিক্ষা ও স্বাস্থ্যের উন্নতি, পরিবেশ রক্ষা তথা বৃক্ষরোপণ, মহাত্মাগান্ধি জাতীয় গ্রামীণ কর্মনিশ্চয়তা প্রকল্প, জাতীয় জীবন-জীবিকা মিশন বা আনন্দধারা প্রকল্প প্রভৃতি কর্মসূচীর ক্ষেত্রে মহিলাদের নেতৃত্ব ও ভূমিকা নারী-পুরুষের সমানিধিকার ও সক্ষমতাকে বাস্তবায়িত করেছে, যা টেকসই উন্নয়নের লক্ষ্য পূরণের সঙ্গে সম্পর্কিত। পঞ্চায়েতকে শক্তিশালী করে এবং গ্রামীণ এলাকার রাজনৈতিক, সামাজিক ও অর্থনৈতিক বাধা দূর করে বিজ্ঞানভিত্তিক ভাবে প্রকৃত অর্থে মহিলাদের নেতৃত্ব, লিঙ্গ-সমতা এবং স্থিতিশীল উন্নয়নের লক্ষ্যপূরণ করা সম্ভব।

মূলশব্দ সমূহ (Keywords) : পঞ্চায়েত ব্যবস্থা, লিঙ্গ-সমতাভিত্তিক নেতৃত্ব, সামাজিক ন্যায়, মহিলা সমাজের সক্ষমতা, স্থিতিশীল উন্নয়ন।

A STUDY ABOUT KORNA-GANGAWAS WETLANDS OF BARMER DISTRICT OF RAJASTHAN : MAPS, STATISTICS AND IT'S ECOTOURISM IMPORTANCE

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Abstract :

Barmer is located in the western part of the state forming a part of the Thar Desert. The district is surrounded by Jaisalmer in the north, Jalore in the south, Pali and Jodhpur in the east and Pakistan in the west. The district is located in the south-west region of the state lies in between 24° 58' and 26° 32' North latitude and 70° 05' and 72° 52' East longitude. The total area of the district is 28387 sq. kms. Barmer is famous for its carved wooden furniture and hand block printing industry. The temperature varies from 450 to 9 C 0 and the average rainfall in the region is 28 cms. The Luni river (salt river), which rises in the hills of south-west of Ajmer city. After flowing into Jalore district it finally loses itself in marshy areas of Rann of Kutch. Total 2124 wetlands are mapped including 1584 small wetlands (< 2.25 ha.) with 44638 ha. area. The River/Stream with 19700 ha. contributed 44.13% to the total wetland area. The Tanks / Ponds with 11189 ha (25.07% area) is the second major wetland category, followed by Intertidal mud flats with 5294 ha area i.e. 11.86%. Thus, the district is dominated by man-made wetlands. Like as If I compare the biggest Gangawas pond of Jodhpur division, located in Gangawas village of Kalyanpur Panchayat Samiti of Balotra district, with Pichola Lake of Udaipur from the tourism point of view, then it is no exaggeration, just like there is an island in the middle, a temple on the island (Lakheta).), the immense panoramic flood of Siberian migratory birds Kurzan in winter, the abundance of Thar vegetation covering the biodiversity in the Oran-Gochar spread in the remote region, abundance of wild animals.

Keywords - *latitude, wetlands, dominated, longitude, marshy*

THALASSEMIA AWARENESS : A PUBLIC HEALTH CONCERN

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Abstract :

Thalassemia is a commonly inherited blood disorder, with major β-thalassemia being the most severe form, requiring lifetime transfusions. Globally, approximately 270 million contain abnormal hemoglobin, including 80 million β-thalassemia carriers. Yearly, 3-4 lakh neonates are bone with life threatening hemoglobin disorders 23,000 with β-thalassemia major in low and middle income countries, highest in the Mediterranean, North Africa, South Asia, West Asia and Southeast Asia. In India, 3-4 % of the total populations are β-thalassemia carrier, with up to 17 % in same ethnicity like Punjabis, tribal population and Sindhis etc. Other variants including Hb S, Hb E and HbD also occur regionally, with compound heterozygous forms increasingly observe due to immigration or emigration. Prevention strategies include Pre-marital screening (PMS), Early pregnancy screening (EPS) and Pre-natal diagnosis (PND). Pre-marital screening targets to identify at-risk couple before marriage, but experience in Cyprus, Saudi Arabia, Pakistan, Greece, Iran and India shows most couples marry although awareness of risks. Cyprus decreased new thalassemia major births through PND and selective abortion. Cultural and ethical factors often limited options like avoiding having children, donation of gametes, or adoption. Universal screening during early pregnancy via RBC indices, and HPLC can indentify carriers of β-thalassemia and other variants. PND serves are enlarging globally but remain inadequate in many regions, with lack of awareness being a major obstacle. Country experiences differs, Iran runs a nationwide programme with informed choice and legal termination up to 120 days. India lacks a national programme, but different NGOs offer reasonable screening and PND. Genetic counseling counters different challenges due to the difficulty of hemoglobin disorders, wide mutation spectrum and diverse cultural beliefs with over 1500 β-thalassemia mutations producing varying severity. Effective prevention needs awareness, culturally sensitive counseling, affordable diagnostic facilities and media outreach to reduce the disease load and improve patient care alongside prevention.

Keywords : *Hemoglobin, β-thalassemia, Premarital screening, Prenatal diagnosis, Awareness*

INVESTIGATION ON CHARGE RADII OF NUCLEI AROUND CALCIUM USING TENSOR INTERACTION

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Abstract :

In the realm of atomic and nuclear physics, the charge radius of the nucleus holds significant importance as it provides valuable insights into the fundamental properties and interactions of matter at the subatomic level. The charge radius is a fundamental parameter that characterizes the size of the nucleus, contributing to our understanding of nuclear forces, the distribution of electric charge within the nucleus, and the structure of matter as a whole. In order to find out a compatible study of nuclear charge radii in the Ca-region, we have taken recourse to Skyrme Hartree Fock theory after inclusion of tensor interaction term in the Hamiltonian. In this paper we shall show that through an optimized tensor interaction, Skyrme-Hartree-Fock calculations are able to fair reproduction of the nuclear charge densities of nuclei in the Ca-region. In the next section we present the formalism for calculation of root mean square nuclear charge radii for S, Ar, Ca, Sc and Ti isotopes and compare the results with other studies. The last section deals with conclusions.

Keywords : *Isotopes, Nuclei, Charge Radii, Shell Model*

EXPLORING RURAL WOMEN'S QUALITY OF LIFE IN A SEMI-ARID REGION : INSIGHTS FROM MGNREGA AND NRLM PARTICIPANTS

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Abstract :

The present study examines the determinants of Quality of Life (QoL) among rural women participating in MGNREGA and NRLM-SHG programmes in the Purulia Sadar Subdivision of West Bengal. A total of 218 women were surveyed from selected Gram Panchayats to analyse how multi-dimensional factors—economic, social, health, infrastructural, and psychological—shape their overall QoL. A composite QoL index was developed to represent household-level wellbeing. Multiple linear regression analysis demonstrates a strong explanatory power ($R^2 = 0.890$), indicating that the selected predictors collectively account for 89 percent of the variation in QoL. All dimensions show statistically significant positive effects on QoL ($p < 0.001$), confirming that rural women's wellbeing is influenced by multiple interlinked factors. Among these, psychological wellbeing ($\beta = 0.160$; standardized $\beta = 0.366$), infrastructural facilities ($\beta = 0.177$; standardized $\beta = 0.301$), and economic condition ($\beta = 0.181$; standardized $\beta = 0.236$) emerge as the strongest determinants. Participation status (Active Dummy) also exerts a substantial positive impact ($\beta = 0.302$; standardized $\beta = 0.537$), highlighting that active involvement in MGNREGA and NRLM enhances women's perceived quality of life through improved income opportunities, confidence, and access to support systems.

To further clarify the structural linkages among these variables, the study introduces a Partial Least Squares Structural Equation Modelling (PLS-SEM) framework. Within the proposed structural model, programme participation is conceptualized as an exogenous factor influencing five latent constructs—economic, social, health, psychological, and infrastructural dimensions—which in turn determine overall QoL. Initial path expectations indicate that economic, social, and psychological factors exert the strongest structural influence, aligning with the regression findings. This integrated analytical approach provides a comprehensive understanding of how different dimensions of women's lives collectively shape their quality of life in rural, semi-arid contexts.

Keywords : *Quality of Life (QoL), Rural Women, MGNREGA, NRLM, Empowerment*

Sub -Theme : Education for Empowerment: Health Literacy and Gender Equity (Education, Psychology, Gender Studies – SDGs: 3, 4, 5)

CITIES UNDER STRESS : IMPACT OF RAPID URBANIZATION ON ECOLOGY AND ENVIRONMENT IN KOLKATA METROPOLITAN AREA

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Dr. Mahua Bardhan [2]

Abstract :

Kolkata, the oldest and most densely populated conurbation is situated on the floodplains of the Hooghly River. The city depends on water from major two sources- surface water from river Hooghly and groundwater through tube wells especially in peri-urban areas, yet groundwater is the dominant source to meet the domestic need. The rapid urbanization and pressure of increasing population since independence have emerged several environmental issues in which at present scarcity of water is resultant adversity for the residents of Kolkata and its suburb. Due to urbanization, urban sprawl and gentrification about 14809 hectors of built up area is added to the KMA since 1990 to 2003. The objective of this study is to find out the reasons behind the increasing water scarcity and other ecological problems in KMA, the impact of real estate development on the environment. Methods used for this is the analysis of spatiotemporal images of the study area and relevant data analysis to identify the vanishing wetlands which is leading to different environmental issues in the metropolis. The result shows that mushrooming multi-stories in ecologically sensitive zones, over-abstraction of groundwater, development of metro-rails and flyovers, insufficient water management, loss of recharge zone lead to multi-dimensional effect on water resources as well as environment. This hyper-urbanization results in triggering the risk of land subsidence due to various developmental activities. So it can be concluded that the pattern of changing land-use and land-cover is actually a foot lose development that is plausibly dragging us towards a daring future of the 'Zero Water City'.

Keywords : *hyper-urbanization, Zero Water City, water recharge, land-use and land-cover*

MICROPLASTICS AND CARDIOVASCULAR TOXICITY : MITIGATING RISKS THROUGH MUSHROOMS

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Abstract :

The presence of microplastics (MPs) is very much evident in drinking water and also in the aquatic ecosystem. It is harming not only the lives of human beings but also affecting the aquatic ecosystem and the organisms living there. MPs are known to affect gastrointestinal (GI) tract, reproductive and endocrine organs, lungs and heart. Studies indicate that MPs accumulate in the cell membrane and cytosol, generate reactive oxygen species (ROS). Recent studies have shown that MPs are potent inducers of cardiovascular problems. Morbidity and mortality due to cardiovascular disorders (CAVDs) is a common problem worldwide. MPs cause endothelial dysfunction and atherosclerosis, improper cardiac rhythmicity, cardiac hypertrophy, fibrosis. Very few molecular studies have been done so far on the mechanism of MP mediated CAVDs. Previous studies have indicated that MPs increase the expression of Bax, Wnt, β-catenin, collagen I and III and reduce the expression of antioxidative enzymes in heart. More detailed studies on the signalling mechanism involved in MP mediated CAVDs are needed to understand the process and in finding out new avenues of treatment.

Keywords : *Microplastics, reactive oxygen species, edible mushroom, cardiovascular disorders, mushroom derived extracts*

UNDERSTANDING POLYCYSTIC OVARY SYNDROME (PCOS) THROUGH THE LENS OF SUSTAINABLE

Development Goals (SDGs) – A Sociological Study

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Abstract :

Polycystic Ovary Syndrome (PCOS) is among the most prevalent endocrine disorders affecting women of reproductive age, with global prevalence rates ranging from 5–21%, depending on diagnostic criteria. Existing literature within the biomedical framework portrays PCOS as a reproductive or metabolic disorder characterised by insulin resistance, obesity, anovulation, and hyperandrogenism. Recent studies have highlighted the multifaceted nature of PCOS. There is a lack of sociological and climate-induced environmental analyses of PCOS. This study reframes PCOS through Sustainable Development Goals- SDG 3 (Good Health and Well-Being), SDG 5 (Gender Equality), SDG 10 (Reduced Inequalities), SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action) to critically analyse how environmental degradation, structural inequality and gender disparity affect health care access. This study tries to understand how endocrine-disrupting chemicals, environmental degradation and socio-economic disparity affect the prevalence, treatment and understanding of PCOS. The study adopts a qualitative, interdisciplinary, eco-social approach grounded in a narrative literature review. Data were synthesised from biomedical studies, feminist sociological frameworks, public health reports, and PCOS-related literature. The data were collected from PubMed, Web of Science, PubMed Central, and Springer Nature. The review includes literature published between 2005 and 2025, with inclusion criteria focusing on keywords like 'environmental determinants of PCOS', 'gender and class inequalities in PCOS', and 'climate change case studies in PCOS'. The findings of the study indicate an intersection between SDG 3, SDG 5 and SDG 10, which focus on structural-health disparities intersecting with delayed treatment, lack of awareness and gendered inequalities in healthcare. Further, SDG 12 and SDG 13 point out the increased chemical exposures that worsen PCOS. The study recommends adopting an intersectional and eco-social approach to PCOS in public health planning and climate policy making. Future research must integrate environmental sociology with biomedical and feminist perspectives for women's understanding of PCOS.

Keywords - *Polycystic Ovary Syndrome (PCOS), Endocrine-Disrupting Chemicals (EDCs), Reproductive Health, Eco-social perspective, Climate stressors, Gender*

ANALYZING CONSUMER TRUST AND PURCHASE INTENTION TOWARD BRANDS ENDORSED BY VIRTUAL VERSUS HUMAN SOCIAL MEDIA INFLUENCERS

Md Huzaifa Arshad[1] | Saheli Majumdar[2] | Dr. Moumita Dey[3] | Srijita Kabiraj[4]

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Abstract :

The rapid integration of Virtual Influencers (VIs) into online marketing challenges the existing beliefs concerning the source persuasion, especially when it comes to authenticity. Even though VIs offer brands unprecedented control, predictable messaging, and flawless aesthetic performance, their non-human composition cannot be used to break the traditional bases of perceived authenticity and the creation of social associations, which makes Human Influencer (HI) campaigns successful. The current study makes use of a rigorous quantitative 2 (Influencer Type: HI vs. VI) x 2 (Product Involvement: High vs. Low) between-subject experimental design (n = 248) to carefully compare the disparate effects linked to each type of endorser. The main objective is to test a moderated mediation hypothesis where Influencer Type affects the consumer outcomes of Consumer Trust and Purchase Intention, and that source credibility and perceived authenticity mediates the effect, the overall impact of which is varied by the extent of Product Involvement.

Statistically significant crossover interaction is observed ($F(1, 244) = 38.18$, $p < .001$) based on the empirical results (n = 248). In particular, Human Influencers (HIs) invoke more Purchase Intention of high-involvement products, whose central route processing presupposes authenticity, and Virtual Influencers (VIs) work significantly more effectively when it comes to low-involvement products. It can also be explained by the moderated mediation framework, which allows concluding that the unvarying lack of Perceived Authenticity during VIs is fully balanced by high Source Credibility (Expertise) only in the low-involvement condition, hence supporting the Elaboration Likelihood Model. In this regard, this research paper provides practical strategic information to match the type of endorser with the product risk to understand the true persuasive effect of synthetic influence and marketing returns on investment in the modern age of artificial intelligence.

Keywords : *Virtual Influencers (VIs), Human Influencers (HIs), Influencer Marketing, Consumer Trust, Purchase Intention*

IMPACT OF BIO-INSPIRED TUTTON'S SALTS ON LARVAL NEUROPHYSIOLOGY AND OXIDATIVE STRESS RESPONSE IN *AEDES AEGYPTI*

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Abstract :

Objectives

Mosquito-borne diseases remain a significant global health concern. Mosquitoes, especially *Aedes aegypti,* are now spreading various diseases i.e. dengue, zika, chikungunya. In India, dengue is an alarming public health problem expanding numerically over the past few decades. As there is no available vaccine for dengue fever, mosquito control is one of the major options to control the spread of dengue infections. In response to this issue, our group has developed a new class of water-soluble metal-based Tutton's salts of general formula [MIMII $(XO_4)_2$], which were specifically designed to control the larvae of the dengue vector, *Aedes aegypti.*

Methodology

Tutton's salts were synthesized following standard literature method and characterized using single-crystal XRD and spectroscopic techniques. The larvicidal efficiency of the salts was assessed through dose-dependent mortality assays on third-instar larvae. Biochemical assays including MTT, NBT, H2DCFDA, GSH and GST were performed to assess cell viability, oxidative stress and ROS production. Acetylcholinesterase (AchE) activity was estimated to evaluate possible neurotoxic effects. Molecular docking further conducted to examine the binding interaction between Tutton's salts and the active site of the AchE supporting the biochemical findings. Ecotoxicity was evaluated using Poecilia reticulata to ensure environmental safety.

Findings

Ammonium copper (II) sulphate exhibited the highest larvicidal potency among the synthesized salts. Biochemical assays confirmed oxidative stress and metabolic inhibition. AChE activity was significantly inhibited, indicating interference with neural transmission. Molecular docking

supported this mechanism, showing strong binding of the salts with the AChE active site which confirmed a neurophysiological mode of action. Non-target toxicity assays showed minimal adverse effects, validating the eco-friendly nature of the compounds. Encouraged by these findings, we attempted to enhance the larvicidal efficiency and stability of these salts by systematically substituting the NH_4^+ and SO_4^{2-} ions with different analogues (MI = Na, K, Cs; MII = Cu; X = S, Cr, etc.).

Conclusion

Ammonium copper(II) sulphate, possess strong larvicidal activity against *Aedes aegypti.* The synthesized Tutton salts can be considered as promising, environmentally safe larvicidal agents with dual oxidative and neurophysiological mechanisms.

PERFORMING FEMININITY IN CALL ME BAE : FROM KALEIDOSCOPE QUEEN TO GIRL POWER

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Abstract :

In the contemporary age of OTT platforms, web series, and binge-watching, the neoliberal construction of femininities raises questions regarding how the notion of performing femininity is portrayed, making an impact on the audience. The paper focuses on the performance of femininity in the Indian OTT series Call Me Bae (2024), examining the conceptualization of post-feminism and neoliberal self-monitoring put forward by Angela McRobbie and Rosalind Gill, and viewing them through the lens of Rachel Morley notion of performing femininity. The paper emphasizes on the underexplored postfemininity, digital capitalism, and the performance of femininity, considering the Indian OTT series Call Me Bae (2024) and the digital politics of OTT platforms. The study employs a qualitative approach, conducting a discourse analysis of the series based on visuals, dialogue, characterization, mise en scène, and montage. The study aims to explore how femininity is constructed throughout the series and how the protagonist Bella's transformation from a 'Kaleidoscope queen' to a girl power figure sheds light on the frameworks within the context of India's streaming platforms.

Findings portray that the initial hyper femininity of Bae caters to the ideals of Mc Robbie, followed by the luxury aesthetics and branding of the self, connecting to neoliberal feminism by Gill and Morley. The study becomes significant in bringing academic conversations that cater to how Indian OTT Series and OTT platforms, in general, portray postfeminities in the contemporary scenario, with digital capitalism and gender hierarchies contributing to media studies.

Keywords : *Performing Femininity, Post Femininity, OTT platforms, Neoliberal Feminism*

SYNTHESIS OF METAL NANOCONJUGATES : A COMPARATIVE REVIEW BETWEEN GREEN AND SYNTHETIC APPROACHES

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Abstract :

Green Synthesis is an environment-friendly, low cost and efficient alternative of synthesizing nanoparticles that combines nanotechnology and green chemistry. The traditional chemical and physical methods like chemical reduction, sonochemical synthesis, grinding, milling, laser ablation etc have proven to be hazardous to the environment owning to pollution, toxic metabolite production, high energy consumption while also being highly expensive and time inefficient. Green synthesis using plant extracts is one of the most popular methods wherein plant extracts are used as reducing agents for metal precursors for nanosynthesis. Antioxidant compounds like polyphenols, flavonoids and flavanols present in plants are responsible for the reduction and capping of metal ions. The antioxidant properties of these phytochemicals can be analysed by performing DPPH, ABTS, FRAP and Peroxide scavenging assays. Methods like HPLC and UV-Vis Spectroscopy have been used to determine the participation of these phytochemicals in green synthesis. Some other bio-based methods of GS include bacteria, yeast and fungi mediated synthesis. The characterization of these NPs can be done by UV-Vis spectroscopy analysis, SEM, TEM, DLS, FTIR, XRD analysis, EDAX etc. Many metal NPs have proven to have antimicrobial properties which can be explored for drug-delivery, agriculture, dentistry and other biomedical applications.

Keywords : *Phytochemical Analysis, Green Synthesis, Nanoparticles, Antioxidant, Characterisation, Antimicrobial Properties*

COMPARATIVE IN-SILICO STRUCTURAL AND FUNCTIONAL CHARACTERIZATION OF ALPHA-AMYLASE FROM HUMAN, MOUSE, AND RAT

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Abstract :

Alpha-amylase is a major endo-hydrolase involved in starch degradation and a widely studied biomolecule in metabolic physiology and digestive biochemistry. In this study, we conducted a comprehensive in-silico characterization of alpha-amylase from Homo sapiens, Mus musculus, and Rattus norvegicus to evaluate evolutionary conservation, structural features, and determinants of ligand-binding specificity. Primary, secondary, and tertiary structures were predicted using standard bioinformatic servers, followed by model validation using Ramachandran Plot analysis and Verify3D scoring to ensure structural reliability. Multiple sequence alignment revealed strong conservation across the three species, particularly around the catalytic residues (Asp–Glu–Asp) and substrate-recognition loops. Mapping these conserved residues onto the 3D models confirmed their structural and functional centrality. Pocket identification using CASTp consistently revealed a conserved catalytic cleft typical of alpha-amylases. Molecular docking was performed with standard polysaccharide substrates and representative inhibitors to compare binding affinities and interaction geometries. Human and mouse enzymes showed nearly identical docking orientations, whereas subtle shifts in the rat homolog suggested minor species-specific conformational variation within the active site. In-silico alanine mutagenesis of conserved catalytic residues resulted in significant reductions in predicted stability and ligand interaction strength, underscoring their essential functional roles. Phylogenetic analysis supported the close evolutionary relationship among the three mammals and correlated with the observed structural conservation. Overall, this integrated computational workflow provides a comparative structural and functional overview of mammalian alpha-amylase and highlights conserved catalytic features that may inform inhibitor design, digestive physiology research, and translational applications across species.

Keywords : *Alpha-glucosidase, In-silico analysis, Molecular docking, Structural prediction, Multiple sequence alignment, Comparative genomics*

DRAGON FRUIT AS FUNCTIONAL HEALING PLANT : NUTRITIONAL, MEDICINAL, AND GENDERED PERSPECTIVES IN INDIGENOUS KNOWLEDGE SYSTEM

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Abstract :

Dragon fruit (Hylocereus spp.) has been identified as a promising medicinal plant with therapeutic ingredients for health promotion and disease prevention. This review discusses the nutritional value, phytochemical content, and health-promoting effects of dragon fruit with a specific focus on women's health. It also addresses the aspects of indigenous knowledge systems and the participation of women in production, processing, preservation, value addition. This research will help to increase the awareness of dragon fruit as a preventive food and is also one effort to balance the diet and nutrition in sustainable manner. A literature search was performed reviewing ongoing studies related to the vitamin, fibre and antioxidant content of dragon fruit. To evaluate case studies and ethnobotanical sources were searched Traditional agriculture and dietary activities of women. It also explored the contribution of dragon fruit to the conservation of biodiversity and sustainable agriculture and its connections with Sustainable Development Goals (SDGs) 3 and 15. It is high in Vitamin C, fibre, betalains, magnesium, and antioxidants – all of which are beneficial for immunity, gut health, blood sugar and female hormonal balance. There is strong evidence of the productivity enhancing home-level value addition where women are highly involved in harvesting and preparation of indigenous scenario. Biodiversity conservation and environmental preservation can be achieved through sustainable crops of dragon fruit, thus providing for global health benefit and ecological sustainability. Dragon fruit is a functional medicinal plant as it combines the nutritional, medicine and social empowerment. Recognizing the contribution of women to indigenous knowledge systems can improve health literacy, sustainable consumption and dietary equity. The promotion of dragon fruit in local and global diets contributes to preventive health, women's empowerment and biodiversity conservation.

Keywords : D*ragon fruit, Functional food value, Women empowerment, Traditional knowledge, Sustainable agriculture, Biodiversity conservation*

FROM TRADITION TO SCIENCE : A COMPREHENSIVE REVIEW OF *ALSTONIA SCHOLARIS*

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Abstract :

Alstonia scholaris (Saptaparni) is a tropical evergreen tree belonging to the Apocynaceae family, and it is famous because of its medicinal value and has been used in the traditional Ayurvedic and folk medicine of South Asia, Southeast Asia, and Australia for centuries. The current study seeks to bring to focus the medicinal importance, phytochemical profile of the plant, especially with reference to the historical use of the plant in the community-based healing practices of women healers. This is meant to bring together the traditional and scientific methods of acquiring a better picture of the therapeutic value.

The results of the research indicate that A. scholaris leaves and flowers contain bioactive compounds mostly high in polyphenols, flavonoids, flavanol, tannins, amino acids, and proteins. The antioxidant activity of the plant was determined by scavenging tests involving the DPPH radicals, and the results indicated that these compounds are responsible for the high activity observed. The local communities applied the herbal remedy in the treatment of diseases such as fever, respiratory diseases, skin diseases, digestive diseases, and so on. The tested, susceptible bacteria were active with gram-positive, Staphylococcus aureus, and gram-negative, Escherichia coli, thus indicating the possibility of the plant in the treatment of infectious diseases. The findings support the historical scientific knowledge of the A. scholaris used and still used by women healers in various forms to treat various patients.

In sum, the research results indicate that A. scholaris may be a promising natural resource having great pharmacological potential. Nevertheless, this still requires further research on standardization of doses, safety tests, and the action mode, which will give scientific justifications to its healing power as well as assist in its adoption in the mainstream medicine of the day.

Keywords : *Alstonia scholaris, medicinal plants, women healers, phytochemicals, antimicrobial activity.*

PHYTOCHEMICAL ANALYSIS, EVALUATION OF ANTIOXIDANT POTENTIAL & ANTIMICROBIAL ACTIVITY OF BRASSICA JUNCEA LEAF EXTRACTS AND GREEN SYNTHESIS OF METAL NANOCONJUGATE

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Abstract :

Recently there has been a growing focus on antioxidants derived from plants, with leafy vegetables becoming more favored through the use of nanobiotechnology to boost their health advantages. This research thoroughly explores "Brassica Juncea". Our aim was to identify the types of antioxidants they contain and evaluate the extent to which these effects could be amplified via nanoconjugates employing an entirely "Green" approach. Leaf extracts were produced utilizing water and a hydroethanolic blend. We subsequently assessed the capacity by quantifying total polyphenols and flavonoids alongside performing DPPH, and ABTS tests. Following this, these extracts were employed to create gold and silver nanoparticles utilizing the plants as reducing and stabilizing agents. The nanoparticle synthesis was tracked via UV-Vis spectrophotometry and their morphology and dimensions were examined. Notably when nanoconjugates were added to the extracts their antioxidant effectiveness markedly changed. A synergistic interaction exists between the phytochemicals and metal nanoparticles. Among The use of plant-derived nanotechnology is more, than a trend; it is demonstrating safety and efficacy in improving the functional and nutritional properties of natural antioxidants. Our findings show that biosynthesized nanoparticles can significantly strengthen phytochemical-driven antioxidant systems, making them even more promising in herbal drug development.

Keywords : *Green-synthesized nanoparticles, Antioxidant activity, Gold and silver nanoparticles, Plant extracts, Phytochemical analysis, Free radical scavenging assays*

DIGITAL HEALTH ACCESS AND HEALTH INEQUITIES AMONG OLDER ADULTS : A SYSTEMATIC LITERATURE REVIEW

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Abstract :

The shifting trend in healthcare communication due to advancement in digital health technologies has brought immense transformation in healthcare delivery. The United Nation's Sustainable Development Goals have prioritized 'Good health and wellbeing' as its 3rd Goal along with 'Fostering innovations and infrastructure' and 'Reduced Inequalities' as 9th and 10th goals to be achieved globally by 2030. Yet significant disparities prevails in how older adults access and benefits from these innovations. The research article is based on systematic literature review technique which examines the connection between digital health access and health inequities among older adults, synthesizing the findings from studies published in academic database 'Web of Science' within a considerate timespan of 13 years ranging from year 2013 to 2025. Applying keywords and inclusion-exclusion criteria of the mentioned database, a total of 33 corpses of literatures were thoroughly examined and analysed. The review identifies key barriers including limited digital literacy, inadequate technological advancement, limited infrastructure, cognitive and physical challenges, socioeconomic constraints, and differential trust in digital platforms that results to reluctance in adoption and utilization of digital health services by older adults. These barriers not only hinder effective engagement with ehealth or mhealth, electronic health records, telemedicine etc., but also widen existing health inequities by restricting health information accessibilities. The findings underscore the critical importance of addressing digital health access gaps to reduce health inequities and promote healthy aging among older adults. The study offers interesting insights for further exploration on this issue and acts as a useful reference for scholars in related field.

Keywords : *Digital Health Access, Health Inequities, Older Adults, Sustainable Development Goals, Systematic Literature Review*

THE ROLE OF NATURAL ALPHA-AMYLASE AND ALPHA-GLUCOSIDASE INHIBITORS IN HYPER GLYCEMIA AND TYPE 2 DIABETES : EXPLORING VARIOUS PLANT EXTRACTS TO REGULATE THESE ENZYMES

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Abstract :

Diabetes mellitus has now become a serious health issue among various age groups. It is usually caused by dysfunction of insulin production. Nowadays, Type-2 diabetes is the most common among individuals. Postprandial hyperglycaemia is the root cause of glucotoxicity that gradually damages blood vessels and organs.

Foods containing starch or carbohydrates give a fast spike in blood glucose level. Continuous such spikes can damage the body. Starch is a large polysaccharide that is broken down by our body to absorb it. This process starts from saliva to the pancreas, and the final breakdown takes place on the surface of small intestinal walls.

Pharmaceutical drugs like acarbose and voglibose effectively block α-amylase and α-glucosidases to resist the spike of glucose in the bloodstream. Blocking these enzymes can cause fermentation of undigested starch molecules in the large intestine, forming gas, bloating, and diarrhea.

Some natural inhibitors are already present in our well-known plants like mulberry and green tea. The competitive inhibitor iminosugar1-deoxynojirimycin (DNJ) is found in the leaves, roots, and fruits of the mulberry plant. They can effectively mimic sugar and can fit perfectly into the catalytic site of enzyme α-glucosidases and block the real sugar/starch from binding. Polyphenols from green tea, grapes, pomegranates, etc. are non-competitive inhibitors. They are often bulkier and bind to the allosteric sites of α-amylase and change the shape of α-amylase, therefore making the enzyme less efficient towards binding with starch.

so to avoid such disturbances in the body while regulating the blood glucose level, one must strongly block the activity of α-glucosidases while just slowing down the activity of α-amylase. In this way the glucose spike can be lowered, and maximum starch will also be broken down, while the minimum leftover may move to the colon to be fermented by bacteria, thus creating less gas or bloating.

Therefore, creating a blend of an iminosugar (like DNJ) for strong α-glucosidase inhibition with a polyphenol (like a low DP PAC) for mild α-amylase inhibition would be a solution to manage Type-2 diabetes.

Keywords : *Diabetes, α-amylase, α-glucosidase, iminosugars, glucotoxicity, polyphenols*

EDUCATION FOR HEALTH AND EMPOWERMENT AMONG TEENAGERS

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Abstract :

West Bengal is the significant state of India where with democracy the religious prejudices, the economic disparities, poverty, illiteracy, child marriage, and health negligence is shown great influences. Teenagers (those under 13-19 years of age) has negative demographic, socio economic and socio-cultural consequences. Teenagers suffer from severe complications and preventable and treatable health problems like early & unintended pregnancy, unsafe sex leading to STI/HIV/AIDS, nutritional disorders like malnutrition, anaemia & overweight, alcohol, tobacco and drug abuse, mental health concerns, injuries & violence.

According to data from Rashtriya Kishor Swasthya Karyakram (RKSK) the Ministry of Health and Family Welfare launched Rashtriya Kishor Swasthya Karyakram (RKSK) on 7 th January 2014 to reach out 253 million adolescents with special focus on marginalized and undeserved groups. It is shown there as teens go through this stage of development, it is normal for them to face different health challenges. These can include trying out drugs and Alcohol, dealing with mental health issues, and navigating complicated relationships.

Health education for teens should cover nutrition, physical activity, sexual and reproductive health, mental health, and injury/violence prevention. The effective health education may be delivered by qualified educational supports and awareness with counselling.

Some organization focused on uplifting young people by providing them with knowledge, skills, and platform to lead healthy, productive lives and drive community change, covering the areas like life skills, digital literacy, leadership, civic engagement and mental or physical wellbeing often through programmes, workshops, and mentorship, with specific examples being YES in India and the Youth empowerment Foundation of India.

Keywords - *Maternal mortality, Socio economic factor, Teenagers health issues, health education, common courses and themes for empowerment*

UNDERSTANDING ESSENTIAL AMINO ACIDS : FROM BIOSYNTHESIS TO CLINICAL AND NUTRITIONAL RELEVANCE

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Abstract :

Essential amino acids (EAAs) are important organic compounds that help produce proteins, support metabolism, and maintain balance in the human body. Unlike non-essential amino acids, the body cannot produce EAAs because humans lack the necessary enzymes and genetic pathways. This review addresses the structural features, biological roles, and metabolic pathways of the nine essential amino acids: histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine. These amino acids are naturally produced by plants, microorganisms, and higher animals, but humans must get them from their diet. The review notes that humans do not have key biosynthetic pathways, including the shikimate pathway, the aspartate-derived pathway, and the branched-chain amino acid pathway. This means dietary intake is the only reliable source of EAAs. Each essential amino acid has a unique role in growth, tissue maintenance, nerve cell communication, and immune defense. The review also looks at the health effects of both deficiency and excess, illustrating how imbalanced levels can affect metabolic health. It explores nutritional and clinical sources of EAAs, emphasizing the importance of careful dietary planning and medical supervision to maintain the proper balance. Overall, insights into the biology of essential amino acids directly strengthen modern proteomics and protein-engineering research, enabling more accurate analysis of protein structures, metabolic flux, and cellular responses. These advances also support the medical and biotechnology sectors by driving the development of improved therapeutic proteins, clinical nutrition formulations, and amino-acid–based interventions for metabolic and chronic diseases.

Keywords : *Essential amino acids, Biosynthetic pathways, Metabolic regulation, Nutritional sources, Branched-chain amino acids, Shikimate pathway, Human metabolism, Dietary supplementation, Amino acid imbalance*

INDIGENOUS KNOWLEDGE : MEDICINAL PLANTS EXPLORING THE PHYTOCHEMICAL, PIGMENT COMPOSITION & MICROBIAL ACTIVITY OF CALENDULA OFFICINALIS : MARIGOLD

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Abstract :

India is having a thousands of medicinal plants .Earlier these plants has been used as a herbal medicines. Calendula officinalis commonly known as marigold are rich in bioactive compounds like polyphenols, flavonoids, carotenoids and many more. These bioactive components are known as plant pigments which are primarily derived from secondary metabolites which play a very crucial role in various physiological process within plants including photosynthesis , protection against mental stress and signaling. Chlorophyll, the green pigment involved in photosynthesis have been explored for its antilioxidant and antinflammatory property. Carotenoids, responsible for the orange, red and yellow colorations of fruits and vegetables are also known for its antioxidant property and potential benefits for eye health. Studies have shown that marigold extract are good in reducing inflammation promote wound healing and help in curing skin diseases like dermatitis, acne, eczema and it also have antioxidant properties. My work proposes many of these claims and also show microbial activities against certain strains of bacteria .

Keywords : *Calendula Officinalis , Plant Pigments, Bioactive compounds Antioxidant , Anti-inflammatory and Anti-microbial*

GREEN BANKING : GLOBAL AWARENESS AND SUSTAINABLE PRACTICES IN THE FINANCIAL SECTOR

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Abstract :

Green banking is nothing more than current conventional banks embracing environmentally friendly methods. There is a need to adopt behaviors that will lessen carbon footprints and make our globe a better place to live due to rising environmental concerns worldwide. In the nation's society and economy as a whole, banks are extremely important. Nearly 80% of Indians over the age of 15 have a bank account, yet very few people are concerned about the effects that traditional banks have on the environment. This is a result of the populace's ignorance and lack of knowledge. The goal of this study is to learn more about green banking techniques used by banks and customer awareness of them. The current study article is conceptual and is based on several sources, including a comprehensive assessment of the literature, financial institution websites, and literature reviews. Several scientific papers have supported the research in this study. To learn about diverse green banking practices on a national and worldwide level, as well as their contribution to sustainability, the websites of numerous banks, including SBI (State Bank of India) were utilized and evaluated.

Keywords : *Green Banking, Sustainable Banking Practices, Customer Awareness, Carbon Footprint Reduction*

ECO-GOTHIC IMAGINATIONS : HOW CONTEMPORARY INDIAN POETRY (2020-2024) REFLECTS SDG 13-CLIMATE ACTIONS

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Abstract :

This research looks at Indian English poetry from 2020 to 2024 through the lens of eco-gothic to understand how the poetry engages with the UN Sustainable Development Goal 13: Climate Action. While the environmental issue has been a concern in the classic works through ecocriticism, the increase in climate-conscious poems by well-known poets like Arundhathi Subramaniam and K. Satchidanandan as well as by new voices on the internet has not been sufficiently explored theoretically. The paper demonstrates that the poets' use of gothic themes such as death, haunting, and desolate or uncanny landscapes to highlight the neglect of the environment and to raise climate awareness is one of the ways these works function. By studying 30 poems carefully selected, the research identifies the repeated figures of speech (such as glaciers melting, rivers getting polluted, animals being displaced) and matches them with specific targets of SDG 13 showing the lyrical beauty existing side by side with the threat of catastrophe. The methods used in this study include a detailed examination of the text alongside ecocritical theory and thematic coding to capture the social dimension of the engagement in which the climate emergency is expressed as the need for collective action at the level of the social sphere. The results confirm that the eco-gothic mode not only enhances the sense of shared obligation to the environment, but it also critiques both the lack of action by the government and the hopeful views of the return of the earth under the care of the community of the human and non-human. This research contributes to the voice that literature is a medium for the sustainability movement and offers suggestions for pedagogy if climate poetry is part of English curricula.

Keywords : *eco-gothic, climate poetry, SDG 13, Indian English literature, ecocriticism*

IMPACT OF CLIMATE-RELATED DISASTERS ON WOMEN IN THE WORKFORCE : A CASE STUDY OF THE SUNDARBANS DELTA, WEST BENGAL

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Abstract :

Climate change has long posed a significant threat to humankind, manifesting in an increasing frequency of natural disasters in both urban and rural areas. These events have profound implications for the sustainability of rural livelihoods. In societies marked by gender bias, such as West Bengal, women are disproportionately affected by natural calamities, including floods, droughts, and tornadoes. These disasters not only disrupt their traditional means of sustenance but also exacerbate their vulnerability due to limited education and awareness. This paper critically examines the multifaceted impact of such natural disasters, specifically on women in the workforce. The devastating effects of cyclone Amphan on Raidighi, a block within the Sundarbans delta, have left women grappling with severe financial crises and the near destruction of local resources for sustenance. Consequently, women from these areas are compelled to seek employment, often in distant urban areas. This shift presents a myriad of challenges, affecting not only their daily lives but also their physical and mental health. This paper sheds light on the distressing cycle that ensues each time a cyclone strikes, leading to the trafficking of vulnerable girls and women.

Keywords : *climate change, natural disasters, gender bias, women's socio-economic status, rural livelihoods, trafficking, Sundarbans delta, West Bengal*

PERFORMANCE OF PRO-KABADDI LEAGUE IN INDIA DURING THE POST-COVID PERIOD : A CRITICAL STUDY WITH REFERENCE TO SDGs

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Abstract :

Pro-Kabaddi League (PKL), a major sports league in India, went through a major leap in its post-COVID period. The research paper embarks on a critical journey to analyze the happenings in the PKL from Stagings 8 to 10, covering the topics of player dynamics, financial revival, fan engagement, and organizational reforms. Their results indicate that the virus outbreak was a rude shock as far as the viewership and the revenue were concerned, however, PKL did not lose its fighting spirit and showed a remarkable comeback. The league's engagement of online platforms, the adoption of hygienic and protective measures, and the tech-driven resolving of issues are in line with SDG 9 (Industry, Innovation and Infrastructure), which points to the innovative measures that have kept the sports ecosystem going during the challenging times. After the virus outbreak seasons also managed to spread sports through multilingual commentaries and raised digital activities allowing sports-interested people from the areas of Tier-II and Tier-III to take part in the events more easily. This acts in favor of SDG 10 (Reduced Inequalities) as sports content become increasingly accessible to those belonging to different linguistic and socio-economic groups. The trends in the performance of players reveal that because of the help they got from science in the field of sports, fitness and data were at a much higher level, thus the athlete welfare issue was greatly promoted and SDG 3 (Good Health and Well-being) was achieved.

The return of sponsors, digital advertising, and the presence of live audiences has contributed to the financial revival of the league, which is in line with SDG 8 (Decent Work and Economic Growth). Moreover, PKL through its local-level programs has taken the initiative to spot and nurture talent among the rural athletes, thus reinforcing the talent becoming the major contributors not only to SDG 4 (Quality Education) but also to SDG 1 (No Poverty) by generating employment and income for different classes of people living in deprived areas. To sum up, this paper finds PKL's revival after the coronavirus crisis as an example not only of organizational resilience but also of how a local sports league can be an effective means to different SDGs thus a facilitator of sustainable development.

Keywords : *PKL, Post-COVID, Sustainability, Innovation, Revival*

EXPLORING THE ROLE OF SELF-DEFENSE PROGRAMS IN ADVANCING GENDER EQUALITY : A STUDY OF SDG 5 IN INDIA

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Abstract :

Empowering women through safety and self-reliance is a critical component of advancing gender equality, as outlined in Sustainable development goal 5 (SDG 5). In India, where women constitute 48.4% of the population (approximately 691 million individuals), gender disparities persist despite significant socio-economic progress. Self-defense programs offer a practical and impactful approach to addressing these inequalities by enhancing women's confidence, preparedness, and ability to navigate threatening situations. This study evaluates the effectiveness of self-defense workshops in West Bengal as a targeted intervention for advancing SDG 5. By fostering empowerment and resilience, such initiatives contribute directly to building a safer and more equitable society. Ordinal regression analysis was utilized to assess the impact of the number of women in the labor force, the number of MSMEs, and the incidence of crimes against women on the Global Gender Gap Index rank. Data from 120 participants were analyzed using the Wilcoxon signed-rank test to evaluate changes in confidence, awareness, and preparedness. Furthermore, multiple regression analysis was conducted to examine the influence of workshop content and demonstrator effectiveness on skill enhancement. The findings demonstrate that self-defense training significantly improves women's ability to navigate threatening situations, fostering empowerment and resilience. By addressing both immediate and long-term safety concerns, self-defense programs contribute meaningfully to SDG 5 objectives, promoting a safer and more equitable society. This research highlights the transformative potential of such initiatives in advancing gender equality and empowering women in India.

Keywords : *India, gender equality, SDG -5, self defence, women empowerment, women safety*

INDIAN *LABEO ROHITA*, A HOTSPOT OF ANTIBIOTIC RESISTOME

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Freshwater fish and fish products are widely consumed globally, and quality and safety are the critical determinants of consumers' preferences [1, 2]. To retain them as a source of high-quality proteins, it is important to assess the microbial niche of these foods. The aquatic environment influences the gut microbiota of fish produced in them. However, extensive use of broad-spectrum antibiotics to treat humans, animals, and fish ends up in wastewater, freshwater streams, and wetlands, raising concerns about the aquatic environment [3, 4]. This study investigated the microbial dynamics of locally produced (West Bengal, India) and imported (Andhra Pradesh, India) rohu (Labeo rohita) to assess the prevalence of antibiotic-resistance genes (ARGs) in them. The gut microbiota of Labeo rohita was predominantly composed of Proteobacteria (79.9% in local fish and 71.6% in imported fish). Species-level analysis indicated that the gut of rohu was dominated by several Aeromonas spp., followed by Plesiomonas shigelloides and a commensal microflora, Cetobacterium somerae. A widespread presence of several ARGs, including tetA, tetG, and tetD in local and tetA, tetD, and cmlA in imported fishes, indicates region-dependent selective antibiotic pressure in pisciculture. Thus, the prevalence of pathogenic species and the occurrence of ARGs in them raise serious concerns about the consumption of these fish, which might pose significant human health risks.

Keywords : *Freshwater fish, Labeo rohita, gut microbiota, antibiotic-resistance genes.*

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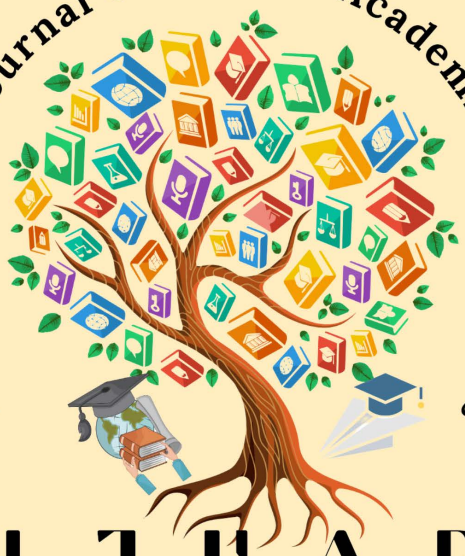
International Journal of Unified Academic Perspectives



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