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MONTHLY APPRECIATION
APRIL -2025

CIRCULAR

Sir CV Raman Research Council, Office of Joint Registrar (Research) is Happy to appreciate the staff members who have made due efforts to publish their papers in **WOS & Scopus** Indexed Publications, which are updated in the month of APRIL 2025. We are also pleased to announce the “**STAR FIRST AUTHOR**”, “**STAR CO-AUTHOR**”, and “**STAR RESEARCH SCHOLAR**” of **APRIL 2025**.

	STAR FIRST AUTHOR (FA CATEGORY)	Dr. U.VIDHYA REKHA (TMDCH)	
	STAR CO-AUTHOR (CA CATEGORY)	Dr.DAHLIA SAM (IT)	
	STAR RESEARCH SCHOLAR/STUDENT	Mrs.M. VINOLIA ALEXANDER (IT)	

The details of the author's publications are listed herewith, reference to MGR Research Engine @ <http://drmgrdu.researgence.com>

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	REGENERATIVE STRATEGIES IN DENTISTRY: HARNESSING STEM CELLS, BIOMATERIALS AND BIOACTIVE MATERIALS FOR TISSUE REPAIR		 Dr. VIDHYA REKHA UMAPATHY (TMDCH)
AUTHORS	VIDHYA REKHA UMAPATHY, PRABHU MANICKAM NATARAJAN, BHUMINATHAN SWAMIKANNU		
JOURNALNAME	BIO-MOLECULES		
SNIP-1.178	IMPACTFACTOR-4.8	INDEXED-SCOPUS/ WOS	

ABSTRACT:

Advanced bioengineering, popularly known as regenerative dentistry, has emerged and is steadily advancing to replace lost or injured tissues in the mouth using stem cells and other biomaterials. Conventional therapies for reparative dentistry, for instance, fillings or crowns, mainly entail the replenishment of affected tissues without much concern given to the regeneration of tissues. However, these methods do not enable the natural function and aesthetics of the teeth to be maintained in the long term. Several regenerative strategies have the potential to address these limitations by biologically restoring the function of teeth and their components, such as pulp, dentin, bone, and periodontal tissues. Hence, stem cells, especially dental tissue-derived stem cells, such as dental pulp stem cells, periodontal ligament stem cells, or apical papilla stem cells, are quite promising in this regard. These stem cells have the potentiality of generating precise dental cell lineages and thus are vital for tissue healing and renewal. Further, hydrogels, growth factors, and synthetic scaffolds help in supporting the stem cells for growth, proliferation, and differentiation into functional tissues. This review aims to describe the process of stem cell-based tissue repair biomaterials in dental regeneration, and also looks into the practice and prospects of regenerative dentistry, analysing several case reports and clinical investigations that demonstrate the efficacy and limitations of the technique. Nonetheless, the tremendous potential for regenerative dentistry is a reality that is currently challenged by biological and technical constraints, such as scarcity of stem cell sources, inadequate vascularization, and the integration of the materials used in the procedure. As we move forward, the prospects for regenerative dentistry are in subsequent developments of stem cell technology, biomaterial optimization, and individualized treatment methods, which might become increasingly integrated in dental practices globally. However, there are regulatory, ethical, and economic issues that may pose a hurdle in the further advancement of this discipline.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	AN ADVANCED ATTACK CATEGORIZATION IN NIDS USING ENHANCED DEEP LEARNING-BASED EOPTRESFEANET METHODOLOGY WITH HYBRID FEATURE EXTRACTION		 Mrs. VINOLIA ALEXANDER MOUDIAPPA (IT)
AUTHORS	VINOLIA ALEXANDER MOUDIAPPA, KANYA NATARAJ, VEERAMALAI NATARAJAN RAJAVARMAN.		
JOURNALNAME	CLUSTER COMPUTING		
SNIP-1.592	IMPACTFACTOR-4.1	INDEXED-WOS/SCOPUS	

ABSTRACT

Every day, there are more and more intrusions, which result in numerous privacy violations, financial loss, and unauthorized information transfers, etc. While the hackers may concentrate on stealing private information, trade secrets, and confidential data to be sold to third parties for illicit profit, each type of intrusion has a specific task in mind. Limitations, such as data lag on actual attacks and financial damages, are caused by the false detection of assaults in the security and environmental fields. Automatic abnormality detection techniques are needed to secure the necessary computing power and analyze the attacks. Therefore, this research paper proposes an effective automated detection system for intrusions utilizing a novel enhanced methodology. To address the low minority attack detection rate caused by the unbalanced training data, we employ Conditional Wasserstein GAN- Gradient Penalty (CWGAN-GP) technology to increase the minority samples. Next, the temporal features are retrieved using Res4Net, and the spatial characteristics are extracted using the Deep Concatenate Attention Augmented Convolution model (Deep CAC). With Res4Net efficiently modelling temporal dependencies and Deep CAC capturing intricate spatial patterns, this dual approach enables more accurate feature extraction. The Novel Quantized Salp Swarm Algorithm (NQSSA) is used to choose the key features. Finally, we employed a Novel Enhanced DL-based ResNet-fused External Attention Network (EResfEANet) for classifying attack categories, achieving superior categorization efficiency. Additionally, to further improve classification performance, hyperparameters were tuned using the Gooseneck Barnacle Optimization Algorithm (GBOA). The results from experimental verification on the proposed data sets demonstrate that applying oversampling techniques can enhance the detection rate of minority samples, increasing the overall accuracy rate. The proposed approach outperforms other current methods in that it requires less time for training and detection, with accuracy reaching above 99.86% in each of the three test sets.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	COMPARATIVE EVALUATION OF MICROARC OXIDATION AND SANDBLASTING ON THE RETENTION OF CEMENT-RETAINED IMPLANT RESTORATIONS: AN IN-VITRO STUDY		 Dr. HARIHARAN RAMAKRISHNAN (TMDCH)
AUTHORS	ANGELIN GLORY, VIDHYA JEYAPALAN, JAYAKRISHNAKUMAR SAMPATHKUMAR, HARIHARAN RAMAKRISHNAN , SHIVAKUMAR BASKARAN, DEEPAVALLI ARUMUGANAINAR		
JOURNALNAME	JOURNAL OF ORAL BIOLOGY AND CRANIOFACIAL RESEARCH		
SNIP-1.146	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT:

The aim was to compare the impact of two distinct surface treatment methods on implant abutments concerning the retention of implant-supported restorations. 30 implant analogs, individually embedded into blocks of auto polymerizing acrylic resin, were paired with 30 titanium implant abutments and divided into three groups (each, n = 10) based on surface treatment. Group I included untreated implant abutments; group II included abutments treated with sandblasting; and group III comprised abutments treated with Microarc Oxidation. A qualitative surface analysis was conducted using scanning electron microscope. Each abutment was connected to its analogy embedded in the resin block. Resin copings were fabricated using rapid additive prototyping (3D printing) and cast into Ni-Cr alloy copings and cemented onto the abutments using zinc-polycarboxylate cement. Test samples were subjected to tensile bond strength (TBS) testing using an Axial-Torsion Servo hydraulic Fatigue-Testing System. The results were tabulated and subjected to statistical evaluation. The mean TBS of the cemented cast copings on implant abutments was 4.276 MPa-group I; 6.340 MPa-group II; and 8.117 MPa-group III. Upon comparison, group III demonstrated the highest mean TBS, followed by group II, while group I exhibited the lowest strength. Qualitative surface analysis revealed that the test samples in group II and group III had greater surface roughness compared to those in group I. The surface treatments of implant abutments using sandblasting and Microarc Oxidation enhanced the tensile bond strength of cemented cast copings and, MAO significantly increased retention of cement-retained restorations compared to sandblasting.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	ADVANCING SPINAL CARE EXCELLENCE: A SPECIALIZED TRAINING SERIES FOR TRAUMA NURSE PRACTITIONERS		
AUTHORS	SARI WATHIQ AL HAJAJ, KARTHIC SWAMINATHAN, K C MOHAN, HAMEED MALIK, GIRISH SWAMY, SRIRAM HARISH SRINIVASAN		
JOURNALNAME	JOURNAL OF CLINICAL ORTHOPAEDICS AND TRAUMA		
SNIP-1.145	IMPACTFACTOR-NIL	INDEXED-SCOPUS	
			Dr. K C MOHAN (SLMCH)

ABSTRACT

Trauma nurse practitioners (TNPs) play an essential role in trauma and orthopaedic care domains. Their contributions extend beyond the mere provision of patient care; they also serve to mitigate physician shortages. TNPs deliver comprehensive post- and pre-operative care and assist patients in their healing process, from the initial stages following fractures through to the various stages of treatment. This study focuses on developing a teaching series to improve their knowledge and skills in managing spine trauma. We developed a structured educational program integrating theoretical instruction, interactive workshops, and practical sessions. The curriculum encompasses spinal anatomy, injury assessment, radiological imaging, and management strategies. Following these sessions, we gathered feedback through surveys to evaluate participants' confidence, knowledge enhancement, and overall satisfaction. A thorough statistical analysis of the collected surveys revealed a significant enhancement in TNP confidence, as indicated by a P value of 7.45×10^{-9} , thus confirming the effectiveness of the training program. Approximately 82 % of respondents reported a considerable increase in their knowledge, while 85 % indicated that the outcomes of these sessions met their expectations. Furthermore, a substantial majority of participants, 96 %, expressed a desire for additional education and training. The educational series has enhanced the confidence and expertise of Trauma Nurse Practitioners (TNPs) in managing spinal trauma. Our findings underscore the importance of implementing structured training programs to maximise TNPs' contributions, improve patient care, and reduce the burden on orthopaedic surgeons. Future research may investigate the long-term impacts, broaden training, and incorporate additional topics. Ultimately, this underscores the significance of continuous education for orthopaedic nursing

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	A NOVEL PHYTOSYNTHESIZED ZR DOPED SNO2 NANOCOMPOSITE FOR TEXTILE EFFLUENT PURIFICATION AND IN-VITRO BIOLOGICAL ACTIVITIES		 Dr. KALPANA J (CHEMISTRY)
AUTHORS	KALPANA J, ANITHADEVI R, SATHEESKUMAR S, SANGEETHA P		
JOURNALNAME	JOURNAL OF THE INDIAN CHEMICAL SOCIETY		
SNIP-0.755	IMPACTFACTOR-3.4	INDEXED-SCOPUS	

ABSTRACT:

Ecosystems and public health are seriously threatened by environmental pollution brought on by synthetic colours and harmful microbes. The current study aims to create a multipurpose nanomaterial with improved antioxidant, antibacterial, and photocatalytic qualities for possible environmental remediation to address this problem. Herein, a novel Zr-SnO₂ nanocomposite was effectively produced via a green approach. This effort aims to assess the synthesized composite's structural, optical, and functional characteristics and investigate how well it degrades organic dyes and suppresses microbiological growth. XRD analysis confirmed its crystalline nature, which showed an average crystalline size of 26.91 nm. Agglomerated spherical particles with the proper elemental composition were seen in FE-SEM images. The optical characteristics were ascertained using PL and UV-Vis spectroscopy, including a bandgap of 2.73 eV. Both cationic (Crystal Violet) and anionic (Brilliant Blue) dyes were used to measure photocatalytic activity; after 90 min in the sun, the degradation efficiencies were 85 % and 98 %, respectively. The composite also demonstrated 94 % antioxidant and intense antibacterial activity against *S. aureus* and *E. coli*. These results demonstrate the green-synthesized Zr-SnO₂ nanocomposite's potential as a valuable substance for environmental applications.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	POTENTIAL OF INTEGRATING PHYTOCHEMICALS WITH STANDARD TREATMENTS FOR ENHANCED OUTCOMES IN TBI		 Ms.VP LAKSHMI PRIYA (PHARMACY)
AUTHORS	VP LAKSHMI PRIYA, DEVI M.		
JOURNALNAME	BRAIN INJURY		
SNIP-0.696	IMPACTFACTOR-1.8	INDEXED-SCOPUS/WOS	

ABSTRACT:

TBI's intricate pathophysiology, which includes oxidative stress, neuroinflammation, apoptosis, and mechanical injury, makes it a serious public health concern. Although stabilization and secondary damage management are the main goals of current treatments, their efficacy is still restricted. The potential for improving patient outcomes by combining phytochemicals with traditional medicines is examined in this review. The study examined the neuroprotective qualities of ginsenosides, ginkgolides, resveratrol, and curcumin as well as their antioxidant and anti-inflammatory activities. Analysis was done on molecular pathways and medication delivery techniques to improve translational outcomes and drug availability for clinical practice. Phytochemical substances directly influence TBI-related neurogenic pathways and functional restoration while also affecting subsequent neural damage processes. Particle-based medicine delivery platforms enhance therapeutic drug efficacy, emerging as innovative solutions for targeted drug delivery. When traditional medical therapies integrate with phytochemicals, it becomes possible to achieve better patient results through enhanced synergy. This review uniquely integrates phytochemicals with standard TBI treatments, emphasizing advanced drug delivery strategies and their translational potential to enhance neuroprotection and clinical outcomes. Unlike previous studies, it explores novel drug delivery platforms, such as nanoparticle-based systems, and highlights the synergy between phytochemicals and conventional therapies to improve patient recovery.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	VIRAL INVASION OF THE ORAL CAVITY: A REVIEW OF VIRAL IMPACT ON ORAL HEALTH AND THE POTENTIAL USE OF SALIVA AS A DIAGNOSTIC TOOL		 Dr. SENTHIL RAJ R (PHARMACY)
AUTHORS	SENTHIL RAJ R, EVELYN SHARON SUKUMARAN, KEERTHANASHREE REDDY NAPA PRASAD, ANUSHYA VARDHINI VENKATESAN, TAMIL AZHAGAN SHANMUGAVEL RAVICHANDRAN, SARVESH SABARATHINAM		
JOURNALNAME	FRONTIERS IN BIOSCIENCE - ELITE		
SNIP-0.627	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT

The oral cavity is a complex ecosystem that harbors a diverse microbial community. Viral infections can significantly disrupt this delicate balance, leading to various oral health issues. This review delves into the intricate relationship between viruses and oral health, exploring the impact of both RNA and DNA viruses. We discuss the mechanisms through which these viruses influence the oral microbiome, modulate immune responses, and contribute to various oral diseases, including periodontal disease, oral candidiasis, and oral cancer. Additionally, we highlight the potential of saliva as a valuable diagnostic tool for viral infections and oral health assessment. By understanding the viral-oral health nexus, we can develop effective strategies for prevention, early diagnosis, and targeted interventions to improve oral health outcomes.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION-APRIL 2025

PAPERTITLE	AN ADVANCED BRAIN TUMOR DETECTION MODEL USING A HYBRID (1D/2D) CONVOLUTION-BASED EFFICIENT ATTENTION NETWORK WITH IMAGE FEATURE EXTRACTION		
AUTHORS	RASHIKA RAJENDRAN SANTHI, DAHLIA SAM, KANYA NATARAJ, A GAYATHRI		
JOURNAL NAME	SENSING AND IMAGING		
SNIP-0.508	IMPACTFACTOR-2	INDEXED-WOS/SCOPUS	
			Ms.RASHIKA RAJENDRAN SANTHI (IT)

ABSTRACT:

The average life span of the patient is shortened because of the deadliest and most destructive disease, called a brain malignancy. The chance of survival of the patient is limited because of the misdiagnosis of brain tumors in humans. The urgent need for an effective diagnostic method has increased because of the rising prevalence of brain tumors in humans. One of the most commonly used tools for tumor analysis is Magnetic Resonance Imaging (MRI). Manual segmentation is the most challenging process due to the vast amount of data produced by MRI. High accuracy in brain tumor detection is not attained by conventional approaches like ResNet-50, Inception V3 Convolutional Neural Networks, and VGG16, which greatly impact the health condition of the patient. Motivated by these factors, this research proposed a deep learning model to recognize brain cancer, which aids in ensuring timely treatment for enhancing the patient's life span. The proposed solution is more important for adopting efficient treatment approaches to potentially improve patient outcomes. It is also used for effectively managing the complications associated with the brain tumor to enhance the patient's life style. From the diverse sources, the brain images are initially collected. Subsequently, from the input images extraction of shape and texture takes place and is concatenated with each other. After that, the Adaptive Trans-Recurrent Residual Convolutional Neural Network based on Unet (AT-R2Unet) is used for obtaining the segmented images that help to recognize the brain tumor. The temporal dependencies of the input images are captured by the transformer and recurrent structure in the AT-R2Unet which helps to boost the segmentation accuracy.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	FIRST PRINCIPAL STUDY OF CONDUCTION MECHANISM OF MG DOPED BACOO2.6 NANOPARTICLES		
AUTHORS	FAREENPOORNIMA R, SABHAN DEBORAH, G PARTHIPAN.		
JOURNALNAME	NEXT MATERIALS		
SNIP-0.493	IMPACTFACTOR-NIL	INDEXED-SCOPUS/WOS	
			Dr.SABHAN DEBORAH (ECE)

ABSTRACT:

In this study, Mg-doped BaCoO_{2.6} (Ba_{1-x}Mg_xCoO_{2.6}) (x = 0.1 – 0.4) compounds were synthesized via the Sol-gel method, and their frequency and temperature-dependent electrical properties were investigated in the temperature range – using an impedance analyzer. Structural and chemical analysis of Mg-doped BaCoO_{2.6} was carried out via scanning electron microscope (SEM-EDAX) and Fourier transform infrared spectroscopy (FTIR). The imaginary part of impedance as a function of frequency shows Debye-like relaxation. Impedance data is presented in the Nyquist plot, and the Argand diagram with the grain, grain-boundary, and electrode contributions is estimated. The activation energies for the ac conductivity decrease with the frequency rise. The shifting of modulus peaks to the low-frequency region suggests long-range motion and the presence of two peaks at 473 K to both long and short-range motion with more than one relaxation time. Our research, being the first to report on dielectric studies, suggests the use of the sample's use as serial nano-capacitors and in optical and microwave devices.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	A REVIEW OF PRE-CLINICAL DATA ON THE PHARMACOTHERAPEUTIC POTENTIAL OF BLACK SEEDS (NIGELLA SATIVA) AGAINST INFLUENZA VIRUS INFECTION		
AUTHORS	RAJKAPOOR BALASUBRAMANIAN, NAINA MOHAMED PAKKIR MAIDEEN, ARUN SHANMUGAM, DR N HARIKRISHNAN		
JOURNALNAME	CURRENT TRADITIONAL MEDICINE		
SNIP-0.244	IMPACTFACTOR-NIL	INDEXED-SCOPUS	Dr. N HARIKRISHNAN (PHARMACY)

ABSTRACT:

Influenza is a respiratory virus, and certain patients with some chronic conditions and other risk factors are vulnerable to severe infection requiring hospitalization and further fatal complications. Few antiviral drugs are approved for the management of patients with influenza infection. Since N. sativa supplementation significantly reduces all-cause mortality, improves viral clearance, and diminishes viral loads in patients with SARS-CoV-2 infection and other viruses, including hepatitis C virus, our review focuses on the antiviral efficacy of black seeds (N. sativa) against influenza viruses. The databases, including Medline/PMC/PubMed, Scopus, Web of Science, Google Scholar, ScienceDirect, and reference lists, were searched to identify relevant publications using keywords, such as Nigella sativa, black seeds, black cumin seeds, kalonji, and influenza virus. This review included only English publications, while duplicates were excluded. Supplementation with N. sativa improved clinical symptoms, enhanced cytokine gene expression, suppressed H9N2 virus pathogenesis, increased antibody titers against the H9N2 influenza virus, significantly reduced mortality, decreased virus shedding, promoted weight gain, boosted both cell-mediated and humoral immune responses, and facilitated early viral clearance in several preclinical studies involving H9N2-infected turkeys. Furthermore, a number of preclinical and clinical investigations showed that N. sativa has antiviral properties against other viruses. Furthermore, N. sativa has several pharmacotherapeutic potentials, including antiviral, immunomodulatory, antioxidant, and anti-inflammatory qualities that may be helpful in the treatment of influenza virus infection, according to multiple meta-analyses. Additionally, N. sativa's pharmacological properties, including its antihistaminic, bronchodilatory, antidiabetic, antiobesity, antihypertensive, antihyperlipidemic, and anticancer properties, may help to alleviate the signs, symptoms, and complications associated with influenza virus infection. To prevent further complications, patients at higher risk of developing complications from influenza virus infection could be managed with specific antivirals and black seeds (N. sativa) as adjunctive therapy in the early stages of infection. Future clinical studies would establish the effectiveness of black seeds (N. sativa) against influenza infection.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	ENHANCED LOCOMOTIVE DELAY PREDICTION USING MACHINE LEARNING WITH MODIFIED Z-SCORE AND LASSO REGRESSION	
AUTHORS	MONITA WAHENGAM, TONJAM GUNENDRA SINGH, ABIRAMI P, NIRMALA SUGIRTHA RAJINI SELVARAJ.	
JOURNALNAME	COMMUNICATIONS IN COMPUTER AND INFORMATION SCIENCE	
SNIP-0.242	IMPACTFACTOR-NIL	INDEXED-SCOPUS



Dr.NIRMALA SUGIRTHA
RAJINI.S
(COMPUTER
APPLICATIONS)

ABSTRACT:

Prediction of train delays is critical for better adjustment in the plan made at stations on the one hand, and also plays a huge role in gaining customer satisfaction. In this paper, a more detailed methodology approach has been suggested for train delay prediction using SVM with MZ-Score preprocessing and LR feature selection. The MZ-Score is used to flag and prune outliers in the data, with LR carrying out feature selection by reducing coefficients towards zero for less relevant features. The suggested way is implemented and tested on the Train Delay Prediction. CSV dataset. This evaluation tests how much the performance of different FS methods—RFE, PCA, and LR with MZ-Score preprocessing can change. The results demonstrate that better performance and balance between precision and recall can be achieved by the synergy of MZ-Score preprocessing, LR feature selection, and SVM for train delay prediction. From the results obtained, it proved that the proposed MZ-Score + LR + SVM gave an accuracy of 96.45%, precision of 0.94, and recall of 0.92, which is high compared to other existing algorithms.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	MUTUAL INFORMATION-DRIVEN ANT LION OPTIMIZER FOR ENHANCED FEATURE SELECTION IN COLORECTAL CANCER DETECTION		 Dr.K SUJATHA (EEE)
AUTHORS	G VINUDEVI, S P VIJAYARAGAVAN, K SUJATHA		
JOURNALNAME	COMMUNICATIONS IN COMPUTER AND INFORMATION SCIENCE		
SNIP-0.242	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT:

In order to enhance the diagnostic accuracy, feature selection for colorectal cancer identification attempts to extract the most insightful features from medical images. This study presents a new method for detecting colorectal cancer that combines the Ant Lion Optimizer (ALO) with mutual information for feature selection and neural network-based classification. To standardize and improve the dataset, the process starts with preprocessing medical images, which includes resizing, normalization, and data augmentation. Local Binary Patterns (LBP) are used for textural feature extraction as they can enclose a significant amount of textural information pertinent to cancerous tissues. The ALO, enhanced with mutual information, is used to choose the most informative features through assessing their relevance to cancer classification. A neural network then utilizes the optimized feature set to perform the classification. The integrated approach capitalizes on the advantages of metaheuristic optimization and modern machine learning technologies that collectively lead to an improved efficacy compared with existing methods for colorectal cancer detection. Experimental results with respect to significant features and classification performance validate the effectiveness of our approach, suggesting its potential in improving diagnostic accuracy using medical imaging.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	CLINICO-MYCOLOGICAL ANALYSIS OF OCULAR INFECTIONS IN IMMUNOCOMPETENT VS. IMMUNOCOMPROMISED PATIENTS		 Dr.NATARAJAN V (SLMCH)
AUTHORS	NATARAJAN V, AKHILA KALYANI A, NANDINI D, PAVITHRA S, BALAMURALI V.		
JOURNALNAME	RESEARCH JOURNAL OF BIOTECHNOLOGY		
SNIP-0.234	IMPACTFACTOR-0.2	INDEXED-SCOPUS	

ABSTRACT:

Fungal pathogens have a crucial role in causing eye infections worldwide, which can often result in avoiding blindness. The use of corticosteroids has contributed to the recent surge in occurrences of fungal keratitis. This study aimed to determine the occurrence of ocular fungal infections in patients with immunocompetent and immunosuppressed patients. The study divided 184 cases into two groups: immunocompetent and immunocompromised. We directly examined and collected clinical samples under a microscope using a KOH mount and a modified LPCB mount, before exposing them to fungal culture. These diagnostic techniques made it easier to identify fungal species in the samples. Both groups showed keratitis as the most common clinical symptom. In patients with a normal immune system, trauma was the main factor that made them more susceptible to the condition, whereas in patients with a weakened immune system, systemic candidiasis was the most common contributing factor. Fusarium was the predominant causal agent in immunocompetent patients, while immunocompromised individuals more frequently observed Candida and Aspergillus species. These findings emphasise the need to take into account a patient's immunological condition when diagnosing and treating ocular fungal infections. This calls for additional research to improve treatment approaches and to evaluate antifungal susceptibility on a broader level.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	AUTOMATED TEXT-TO-AUDIO CONVERSION FOR VISUALLY IMPAIRED PEOPLE USING OPTICAL CHARACTER RECOGNITION		
AUTHORS	SM KAMALI, V MALATHY, G UMA DEVI, SK DEEPA, MARGABANDU ANAND, S VAISHNODEVI, DHAIRIYASAMY, SUBHAV SINGH.		
JOURNALNAME	INTERNATIONAL RESEARCH JOURNAL OF MULTIDISCIPLINARY SCOPE		
SNIP-0.076	IMPACTFACTOR-NIL	INDEXED-SCOPUS	
			Dr.M.ANAND (ECE)

ABSTRACT:

This work aims to get text from images and documents like Portable Document Format (PDF) and PowerPoint Presentation (PPT) using Optical Character Recognition (OCR). The text is turned into speech, and thus, audio files are received. Organizing these audio files in a specific folder makes it easier to find and listen to them. The work plan is to create a tool that can take documents, PDFs, or PPT files as input and extract letters and numbers from them. This tool is great for quickly entering data from printed documents. Many images are used as input for the tool, which uses a machine to find patterns in the images and extract characters. Python is the main tool used for this work. A Python wrapper for Tesseract is used to test OCR on images first to make sure it works well. Then, the solution is used with a live video feed from a smartphone, processed with OpenCV. The text obtained is then turned into speech using Google Text-To-Speech (gTTS). With this approach, the system can read any text it finds out loud. By combining image processing, OCR, and text-to-speech, the system aims to make it easy and enjoyable to listen to text

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	COMPARING THE EFFICACY OF NATURAL OILS AS CLEARING AGENTS IN THE HISTOPATHOLOGY LABORATORY		 Dr.NADEEM JEDDY (TMDCH)
AUTHORS	SHIVANI R, SUNDARARAJAN AMUTHA, NADEEM JEDDY, R ANANTHALAKSHMI, LALPETTAI JAYAKAR SAILAKSHMI, PAVITHRA DURAIRAJU.		
JOURNALNAME	JOURNAL OF THE SCIENTIFIC SOCIETY		
SNIP-NIL	IMPACTFACTOR-0.2	INDEXED-WOS	

ABSTRACT

Xylene is used as a clearing agent during tissue processing. It acts as an irritant to humans and poses various health hazards to those who are frequently exposed. According to the literature review, our native Indian oils have the property of a clearing agent. This study aims to evaluate the clearing efficacy of groundnut oil, sesame oil, coconut oil, and castor oil in comparison with xylene. Thirty retained oral soft-tissue specimens were subjected to clearing with four different oils (groundnut oil, sesame oil, coconut oil, and castor oil) and a control (xylene). Further, these tissue samples were routinely processed, stained, and examined under a light microscope. All the tissue sections were blinded and evaluated for various criteria by two observers and compared with xylene. The physical properties observed for the five clearing solutions were compared using the Kruskal–Wallis test. Intergroup comparisons were done using ANOVA in SPSS v 17, IL, Chicago, software. Among the four oils used, groundnut oil showed comparable results with xylene in its physical properties, ease in section cutting, cellular architecture, and staining quality, followed by coconut oil and sesame oil. Castor oil showed poor results in sectioning; hence, it was considered an ineffective clearing agent. In the present study, groundnut oil excelled among the four oils used and showed good cellular architecture and staining quality. Hence, it can be considered a natural alternative to xylene as a clearing agent and as a dewaxing agent during routine tissue processing procedures.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION–APRIL 2025

PAPERTITLE	INTELLIGENT 5G EVOLUTION: AI-AUGMENTED HYBRID MODEL WITH NETWORK SLICING AND AUTONOMOUS SELF-HEALING FOR FUTURE-READY CONNECTIVITY		
AUTHORS	PURUSHOTHAM ENDLA, RAMYA S PURE, ANITA SONI, ANDAL CHINNA GURUSAMY, D JAGADEESWARI, K NIRMALA DEVI		
JOURNALNAME	2025 INTERNATIONAL CONFERENCE ON ELECTRONICS AND RENEWABLE SYSTEMS (ICEARS)		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	
			Dr.C.ANDAL (PHYSICS)

ABSTRACT:

The increasing demand for dynamic, efficient, and resilient network management in 5G systems has driven advancements in AI-enhanced architectures. This research proposes an AI-Augmented Hybrid 5G Model that integrates dynamic network slicing, self-healing capabilities, and AI-driven predictive analytics to optimize network performance and reliability. The hybrid model employs supervised and unsupervised machine learning algorithms, achieving a fault detection accuracy of 95.2% and traffic demand prediction accuracy of 92.8%. Key innovations include dynamic resource allocation for enhanced mobile broadband (eMBB), ultra-reliable low-latency communications (URLLC), and massive machine-type communication (mMTC). Self-healing capabilities reduced fault recovery times to an average of 300 ms, significantly improving system uptime to 99.8%. Compared to traditional 5G systems, the model demonstrates a 50% reduction in latency, a 28.6% improvement in resource efficiency, and an 80% faster slice reconfiguration. These results highlight the model's potential to revolutionize 5G network management, ensuring reliability and adaptability for diverse applications. The study concludes by exploring the applicability of the hybrid model in future 6G networks and cross-domain orchestration.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	HYBRID MODELS FOR ENVIRONMENTAL MONITORING BY INTEGRATING DEEP BELIEF NETWORKS WITH SENSOR NETWORKS		 Dr.VIJAYAGOPAL VIJAYAN (COMPUTER APPLICATIONS)
AUTHORS	S DAVID SAMUEL AZARIYA, J JEBA EMILYN, V SATHIYAMOORTHY, SENGATHIR JANAKIRAMAN, VIJAYAGOPAL VIJAYAN		
JOURNALNAME	ENHANCING DATA-DRIVEN ELECTRONICS THROUGH IOT		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT

Understanding our world's condition and human activity's effects on ecosystems depends on environmental monitoring. This chapter examines how sensor network integration with Deep Belief Networks (DBNs) might improve environmental monitoring. The intricacy and noise of ecological data provide challenges for traditional approaches, but real-time information from sensor networks is invaluable. DBNs are perfect for deciphering sensor data because they extract intricate patterns from high-dimensional data. Environmental monitoring is now more precise and flexible thanks to this connection. Case studies in climate change forecasting and air and water quality monitoring demonstrate the useful advantages. The chapter highlights the promise of merging deep learning and environmental monitoring for sustainable management while addressing integration issues and outlining future developments.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	INTERNET OF THINGS ENABLED SMART ENERGY MANAGEMENT OF DISTRIBUTED ENERGY RESOURCES USING SELF-ADAPTIVE PHYSICS-INFORMED NEURAL NETWORK OPTIMIZED WITH GREEN ANACONDA OPTIMIZATION		 Dr.J SRI ARUNAA (ECE)
AUTHORS	RAHUL D GHONGADE, J SRI ARUNAA, P S LATHA MAGESHWARI, K VINOTH, M SHANMUGATHAI, J FEMILA MERCY RANI		
JOURNALNAME	2025 4TH INTERNATIONAL CONFERENCE ON SENTIMENT ANALYSIS AND DEEP LEARNING (ICSADL)		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT:

Internet of Things (IoT)-enabled Smart Energy Management (SEM) in Distributed Energy Resources (DERs), while crucial for optimizing energy distribution and resource management, faces challenges such as data inconsistencies and the variability of renewable energy generation. These issues result in inaccurate demand forecasts, leading to suboptimal allocation of resources and inefficient Energy Management (EM). Additionally, as energy demand and generation patterns are influenced by factors like weather conditions, time of day, and energy consumption behaviors, prediction models may struggle to capture these dynamic changes, affecting the reliability of forecasts. To address these limitations, this manuscript proposes a novel approach for energy demand prediction. Data is collected from IoT-enabled sensors monitoring DERs. The data undergoes pre-processing, where the Fast Resampled Iterative Filtering (FRIF) method is used to eliminate missing values and normalize the inputs. The Self-Adaptive Physics-Informed Neural Network (SAPINN) model then utilizes the processed data to forecast energy demand, renewable energy generation, and storage levels. Green Anaconda Optimization (GAO) is applied to optimize the weight parameters of the SAPINN model. The proposed SAPINN-GAO method is implemented using the MATLAB platform and compared with existing models, such as Stacked Convolved Bi-Directional Gated Attention Network-Hybrid Darts Seagull Optimizer (SConBGAN-HDSO), Recurrent Neural Network (RNN), and Support Vector Machine-Particle Swarm Optimization (SVM-PSO). The SAPINN-GAO method achieves an accuracy of 99.2%, precision of 99.2%, and a Root Mean Square Error (RMSE) of 2.2%, demonstrating its superior performance in energy demand prediction. The SAPINN-GAO method's higher accuracy and precision, coupled with its robust performance, make it a reliable and efficient solution for energy demand, renewable energy generation, and storage levels forecasting in IoT-enabled SEM systems.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION–APRIL 2025

PAPERTITLE	INTELLIGENT EYE STRAIN RELIEF GLASSES USING IOT AND NAIVE BAYES SOLUTIONS FOR DIGITAL WELLNESS		
AUTHORS	THANALAKSHMI S, G GEETHAMAHALAKSHMI, H AZATH, PRABU K, KUMANAN T, C SRINIVASAN		
JOURNALNAME	2025 INTERNATIONAL CONFERENCE ON EMERGING SYSTEMS AND INTELLIGENT COMPUTING (ESIC)		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	
			Dr.KUMANAN. T (CSE)

ABSTRACT:

Eye strain and its effects on general health have become more pressing issues due to the pervasive nature of digital devices in modern life. This work offers a new approach by combining the Internet of Things (IoT) with Naive Bayes classification for smart eyewear that reduces eye strain. The proposed system aims to reduce digital eye strain by adapting the lens's characteristics in real-time to user behavior and ambient factors. Using the IoT architecture, data like screen time, distance from the device, and ambient lighting conditions may be captured in real-time when users interact with digital displays. Using Naive Bayes classification, this data is processed to identify probable causes of eye strain and suggest suitable eyewear changes to reduce pain. The proposed system provides a preventative method of fostering digital well-being using software and hardware components, such as sensors, microcontrollers, and machine learning algorithms. These smart glasses provide hope for a future free of the negative impacts of digital device use on eye health by making personal recommendations based on each user's unique requirements.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	MEDIAL CORTICAL REDUCTION DOES NOT INFLUENCE OUTCOMES IN GERIATRIC INTERTROCHANTERIC FEMUR FRACTURES TREATED WITH PROXIMAL FEMORAL NAIL		 Dr. NAVEEN JEYARAMAN (SLMCH)
AUTHORS	PRABU MOUNISAMY, HANOOP SURESH, SUSHMA CHANDRASHEKAR, UDAYAKUMAR D, NAVEEN JEYARAMAN, MADHAN JEYARAMAN, SATHISH MUTHU		
JOURNALNAME	WORLD JOURNAL OF ORTHOPEDICS		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-WOS/SCOPUS	

ABSTRACT:

In intertrochanteric fractures, the positive medial cortex support reduction is considered to provide a non-anatomical buttress that helps in controlled collapse. To analyze the concept of medial cortical reduction (MCR) and its clinical and radiological association in geriatric intertrochanteric femur fractures. Geriatric patients who presented with AO/OTA 31A1 and 31A2 femur fractures and were treated with proximal femoral nailing between July 2021 and June 2023 were included in this prospective cohort study. Based on the degree of MCR, they were divided into positive, neutral, or negative MCR groups. The demographic baseline characteristics, postoperative radiographic femoral neck-shaft angle, and neck length were analyzed at 6, 12, and 24 weeks post-surgery. Functional outcomes such as modified Harris Hip Score (HHS) and time to full-weight bearing were also analyzed. 47 patients (Male: Female 35:12) with a mean age of 65.8 ± 4.2 years were included in this study. Twenty-two cases had neutral support, nine had negative support, and sixteen had positive support in the medial cortex post-operatively. Baseline characteristics of the three groups were comparable. No significant differences were found in the femur neck length and femur neck-shaft angle changes post-surgery between the groups. The modified HHS was not found to be significant between the groups ($P = 0.883$), as that of the time to full weight bearing ($P = 0.789$). The type of reduction achieved based on medial cortical alignment does not affect the femur neck length shortening or varus collapse. Future randomized controlled trials are needed to validate the findings noted in the study.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	COMPARISON OF YOGA VERSUS SPORTS ACTIVITIES IN IMPROVING CARDIAC AUTONOMIC FUNCTION IN ADOLESCENTS WITH PERCEIVED ANXIETY: A COMPARATIVE RANDOMIZED PILOT STUDY		 Dr.THIRUMURUGAN E (AHS)
AUTHORS	THIRUMURUGAN E, SAI LAKSHMI D, ARCHANA DEVI K S, SWETHA V, GLADY CORMEL A, SASIDHARAN T, DIVYA DHARSHINI T, MOHANA PRIYA S, GIRISH P.		
JOURNALNAME	JOURNAL OF CARDIAC CRITICAL CARE TSS		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT

Heart rate variability (HRV) is a non-invasive metric to assess the psycho-physiological fluctuations in the temporal intervals between successive heartbeats. This measure offers valuable insights into the dynamic equilibrium between the activities of the sympathetic and parasympathetic nervous systems. In the academic setting, stress can negatively impact psychological well-being, potentially resulting in emotional distress and reduced cognitive function and learning abilities. Failure to seek treatment for an extended period may result in irreversible changes in autonomic functions, leading to significant alterations in cardiovascular health. The primary aim of this research was to evaluate the effects of yoga and sports activities on cardiac autonomic function in adolescents who are experiencing anxiety. The interventional study occurred at the Department of Allied Health Science in a private medical college and hospital in Chennai, Tamil Nadu. The study included forty adolescent students (aged 19–24) with reported anxiety who attended a paramedical college and had no previous exposure to yoga and sports activities. Significant differences were identified across several parameters within the yoga group following eight sessions, notably in the standard deviation of the normal-to-normal intervals (SDNN), the mean RR interval, mean heart rate, root mean square of successive differences between successive normal heartbeats, MXDMN, and pNN50. The yoga group demonstrated a statistically significant reduction in SDNN parameters compared to baseline measurements after the eighth session, which strongly suggests an enhanced capacity for stress management attributable to the yoga interventions. In contrast, the sports group did not exhibit any significant changes in SDNN, mean RR interval, or MXDMN, as *P*-values remained above the threshold of 0.05. The research identified a notable enhancement in cardiac autonomic function, signifying that Yoga positively influences an individual's overall health.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	SMART WATER MANAGEMENT SYSTEMS FOR SUSTAINABLE URBAN AND AGRICULTURAL APPLICATIONS		 Ms. AGALYA SELVAKUMAR (IT)
AUTHORS	G SEKAR, N MANJUNATHAN, AGALYA SELVAKUMAR, K SUDHA, T NITHYA, P RASHMI, K VIJAYAKUMAR		
JOURNALNAME	LEVERAGING URBAN COMPUTING FOR SUSTAINABLE URBAN DEVELOPMENT		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT

Smart Water Management Systems have gradually become important enablers to solve global water shortage, urbanization, and sustainable resource management. This survey is focused on understanding how IoT, data analytics, and AI can advance the typical approaches to water management. Some of the main uses of SWMS are explained, such as real-time monitoring of water usage, Detection of water leakage, Monitoring of water quality, Automated Irrigation, and Flood control systems. These technologies allow cities and the industrial sector to efficiently allocate water in terms of supply, use, and control, and adapt to changing circumstances. However, the implementation of SWMS suffers from some issues, such as data security, interoperability, scalability, and high initial cost for infrastructure. In the light of such growing integration of smart technologies in cities, SWMS can thus be seen as an instrumental facet of global water sustainability and efficiency.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	ENHANCED EARLY DIAGNOSIS OF LIVER DISEASES USING FEATURE SELECTION AND MACHINE LEARNING TECHNIQUES ON THE INDIAN LIVER PATIENT DATASET		 Mr. ARUN GANJI (CSE)
AUTHORS	ARUN GANJI, USHA DAMODARAN, RAJAKUMAR P S.		
JOURNALNAME	SCALABLE COMPUTING: PRACTICE AND EXPERIENCE		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT:

Liver diseases are a significant global health concern, with timely diagnosis crucial for effective treatment and prevention of further damage. This study addresses the challenge of early liver disease detection using machine learning techniques applied to the Indian Liver Patient Dataset (ILPD). Our proposed method comprises a four-phase approach: (1) initial model training using five machine learning algorithms - Multilayer Perceptron (MLP), Support Vector Machine (SVM), Decision Trees (DT-CART), Light Gradient Boosting Machine (LGBM), and Logistic Regression (LR) - on the original dataset; (2) feature selection using Forward Selection (FS) to identify the most relevant attributes; (3) model retraining with the selected features; and (4) model optimization to enhance prediction accuracy. The dataset was split into 80% training and 20% testing sets, with 10-fold cross-validation applied throughout. Our findings demonstrate the significant impact of feature selection and model optimization on algorithm performance. The Light Gradient Boosting Machine (LGBM) emerged as the top-performing model, achieving an accuracy of 82.12% after optimization, compared to its initial 76.21%. LGBM also showed balanced performance across specificity, sensitivity, precision, and F1-score metrics. This study contributes to the field by presenting a comprehensive approach to liver disease prediction, emphasizing the importance of feature selection and model optimization in improving diagnostic accuracy.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	UNDERSTANDING THE NECK'S SIGNIFICANCE: EXPLORING NECK CIRCUMFERENCE AS A MARKER FOR OBESITY AND HYPERTENSION IN PERAMBALUR DISTRICT’S 40–70 AGE GROUP		ABINAYA RAVI (ACSMCH)
AUTHORS	ABINAYA RAVI, MANIPRABHU SELVARAJU, TAMILARASAN MUNIYAPILLAI, RUKMANI SUBBHAIYAA MUTHU RAAJ KUMAR, NITHISH IMMANUEL REJEE		
JOURNALNAME	NATIONAL JOURNAL OF COMMUNITY MEDICINE		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT

Neck circumference (NC) is an emerging anthropometric marker for assessing metabolic and cardiovascular health risks. This study assessed the relationship between NC and obesity prevalence and examined its potential as a predictive marker for hypertension among individuals in Perambalur District. This cross-sectional study included 392 participants aged 40-70 years. Anthropometric measurements and blood pressure were recorded. Correlational analyses and receiver operating characteristic curve (ROC) analyses evaluated the relationship between NC and health indicators. Weight showed a significant positive correlation with NC ($r = 0.272$, $p < 0.001$), with a stronger relationship in females ($r = 0.413$, $p < 0.001$). Blood pressure parameters demonstrated consistent positive correlations across the population (systolic: $r = 0.345$, $p < 0.001$; diastolic: $r = 0.337$, $p < 0.001$). ROC analyses revealed optimal cutoff points: NC ≥ 37.5 cm for males and NC ≥ 34.75 cm for females. The predictive power for hypertension was notably stronger, with AUC values of 0.726 for males and 0.797 for females ($p < 0.001$). NC emerges as a promising anthropometric marker for assessing obesity and hypertension risks, with significant gender-specific variations. This simple, cost-effective screening tool shows utility for cardiovascular and metabolic health risk assessment in adults.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	ENERGY EFFICIENCY TASK RE-SCHEDULING IN VIRTUALIZED CLOUD COMPUTING		 Dr. GEETHA SOMAN (CSE)
AUTHORS	GEETHA SOMAN, PANUGANTI HANUMANTHA RAO, RAJAKUMAR P S.		
JOURNALNAME	SCALABLE COMPUTING: PRACTICE AND EXPERIENCE		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT:

Reduced energy consumption is an important goal for virtualized cloud computing systems since it has the potential to improve system efficiency, save operating costs, and lessen environmental impact. These objectives can be achieved by using an energy-efficient approach to job scheduling. The huge challenge lies in coordinating user demands with available cloud resources in a way that maximizes performance while reducing energy usage, all within the time frame that the user specifies. This article suggests a novel method called Energy Efficient Task Re-scheduling (EETRS) for a heterogeneous virtualized cloud environment as a solution to the problem of energy usage. The first step of the suggested approach assigns jobs strictly according to due dates, ignoring energy consumption. Task reassignment scheduling determines the optimal execution location within the deadline constraints while minimizing energy consumption in the second stage of the proposed method, which speeds up execution and meets deadlines. According to the simulation results, the suggested technique helps to significantly reduce energy use and boost performance by 5% while satisfying deadline constraints, in comparison to the current energy-efficient scheduling methods of EPETS, AMTS, and EPAGA. The proposed method outperforms the existing one with less than 1% total execution time, a reduction of 14% in total execution cost, a 3% decrease in energy consumption, and a 3% reduction in average resource utilization.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	METAVERSE SECURITY MONITORING BASED ON VIRTUAL ENVIRONMENT ANALYSIS USING MACHINE LEARNING TECHNIQUES		
AUTHORS	SHERYL OLIVER, A CHINNASAMY, P VARUN, N MANIKANDAN. SWEDHA M, R MANIKANDAN.		
JOURNALNAME	NAVIGATING AI AND THE METAVERSE IN SCIENTIFIC RESEARCH		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	
			Dr. SWEDHA M (COMPUTER APPLICATIONS)

ABSTRACT

A NextG Internet platform allows users to participate in many kinds of virtual events and communicate with avatars in a 3D virtual environment to perform many activities in this environment. Building an intrusion detection system is computationally challenging in the Metaverse because of its interactive nature as well as large number of user interactions that take place within virtual settings. This research proposes novel techniques in a Metaverse-based virtual environment in security monitoring using machine learning techniques. Here, security monitoring was carried out using reinforcement-federated regressive Gaussian neural networks. The metaverse virtual environment has been deployed, and its analysis is carried out using a cloud edge network with virtual software-defined infrastructure. Experimental analysis is carried out in terms of scalability, quality of service, latency, accuracy, and network integrity. The proposed model attained a scalability of 94%, a quality of service of 95%, an accuracy of 97%, a latency of 96%, and a network integrity of 93%

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	ADVANCEMENTS IN BIOMATERIALS FOR CARTILAGE TISSUE ENGINEERING: CHALLENGES AND FUTURE DIRECTIONS		
AUTHORS	MADHAN JEYARAMAN, NAVEEN JEYARAMAN, SWAMINATHAN RAMASUBRAMANI, ARULKUMAR NALLAKUMARASAMY.		
JOURNALNAME	BIOMATERIALS IN ORTHOPEDICS & TRAUMA		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	
			Dr. MADHAN JEYARAMAN (ACSMCH)

ABSTRACT

Cartilage damage, frequently resulting from trauma or degenerative conditions like osteoarthritis, presents a substantial clinical challenge due to cartilage's limited regenerative capacity. Current treatments, including microfracture and autologous chondrocyte implantation, often lead to the formation of fibrocartilage, which lacks the mechanical properties of native hyaline cartilage and deteriorates over time. Cartilage tissue engineering (CTE) emerges as a promising strategy to address these limitations by integrating cells, scaffolds, and bioactive molecules to restore cartilage function. Biomaterials play a crucial role in CTE by providing structural support, mimicking the extracellular matrix (ECM), and guiding cell proliferation and differentiation. Natural materials like collagen and hyaluronic acid offer excellent biocompatibility but suffer from inadequate mechanical strength, while synthetic polymers such as polycaprolactone (PCL) and poly lactic-co-glycolic acid (PLGA) provide mechanical integrity but lack bioactivity. Composite scaffolds, combining natural and synthetic components, offer a balanced solution. Innovations such as 3D printing, electrospinning, and the functionalization of scaffolds with bioactive molecules have advanced scaffold design, allowing for enhanced tissue regeneration and zonal cartilage architecture replication. Despite these advancements, challenges like achieving tissue integration, controlling scaffold degradation rates, and ensuring clinical scalability persist. Future directions in CTE focus on smart biomaterials, personalized tissue engineering, and overcoming regulatory hurdles to translate these technologies into effective therapies for cartilage repair.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	COMPARISON OF UPPER AIRWAY ULTRASONOGRAPHY PARAMETERS WITH WILSON’S SCORE FOR PREDICTION OF DIFFICULT AIRWAY IN ADULT PATIENTS: A PROSPECTIVE OBSERVATIONAL STUDY		 Dr. JYOTI PETKAR (RRMCH)
AUTHORS	JYOTI PETKAR, PRIYANKA GANGADHAR, MANASA M, BANDARI VAMSHI SAI.		
JOURNALNAME	INDIAN JOURNAL OF CLINICAL ANAESTHESIA		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT:

Pre-operative airway assessment is an essential component of General Anaesthesia. Adequate airway assessment helps better prepare with airway gadgets during intubation and prevents complications associated with laryngoscopy and intubation attempts. Conventional airway assessment tools used clinical parameters like Wilson's score. We aimed to compare this with the ultrasound airway parameters in predicting difficult airways. The study included 130 patients scheduled for general anaesthesia with endotracheal intubation. A clinical airway assessment was done, and Wilson's score was noted. Ultrasound airway assessment was done, and parameters like distance from Skin to the epiglottis, geniohyoid muscle thickness, skin to the hyoid bone, and skin to the vocal cord were noted. Laryngoscopy was performed by independent anesthesiologists who were blinded to the parameters, and the Cormack-Lehane grading was recorded. The distances from the skin to the epiglottis at the thyrohyoid membrane and from the skin to the vocal cords have demonstrated high sensitivity in predicting a difficult airway, with values of 89.74% and 92.31%, respectively. The cutoff values for these measurements are 1.81 cm and 0.78 cm, with corresponding AUROC values of 0.83 and 0.80, indicating strong predictive accuracy. In contrast, Wilson's score showed a much lower sensitivity of only 20.5% with an AUROC value of 0.764. Compared to Wilson's score, ultrasound airway assessment is more accurate in predicting difficult airways. Ultrasound can be an easy, rapid, non-invasive bedside screening tool for evaluating the airway. The Distance of skin to vocal cords (DSVC) and skin to epiglottis (DSE) were more sensitive in predicting difficult airways.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION–APRIL 2025

PAPERTITLE	ADVANCED SMART PREPAID METER		 Dr L RAMESH (EEE)
AUTHORS	P EZHILARASI, RAMESH L, J BALAMURUGAN, J B HOLM-NIELSEN.		
JOURNALNAME	CLOUD COMPUTING IN SMART ENERGY METER MANAGEMENT		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT:

The conventional power grid faces challenges in the distribution sector, leading to power losses and increased electricity costs per unit. To address these issues, the development of smart grids and automation has become essential. A key component of this shift is played by smart meters, which are advanced meters utilized for remote energy consumption measurement. They provide several advantages, such as effective billing, supply–demand balancing, remote metering, and monitoring. Smart meter deployment benefits energy suppliers, consumers, and society as a whole, and helps to accomplish various UN Sustainable Development Goals (UN SDG). The development of many types of smart meters with functions beyond the core functionality of smart metering is evidence of the ongoing evolution of this technology. In that transition, prepaid meters have emerged as a variant of smart meters, drawing more attention due to their effective energy management functionalities in addition to conventional smart meter functionalities. Although these additional functionalities offer significant advantages to both energy suppliers and consumers, it is imperative to consider the costs associated with designing and implementing such sophisticated prepaid meters. The design of the prepaid meter becomes more complex as it incorporates more features and capabilities, which drive up production and development costs. The combination of these factors may increase the overall cost of advanced prepaid meters, which may sometimes outweigh the direct benefits associated with their deployment. So, there is a need to develop a cost-effective strategy to address the aforementioned challenges. Consequently, in this work, a cost-effective prepaid meter design approach with advanced metering functionalities is proposed, developed, and tested in real-time scenarios to mitigate the aforementioned challenges.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	CNN-BASED NEUROIMAGING ANALYSIS FOR MAPPING NEUROTRANSMITTER DYSREGULATION IN ANXIETY DISORDERS		
AUTHORS	KUMANAN T, SANDEEP REDDY NARANI, BHARAT TIDKE, THIRUMURUGAN R, S KARTHIKEYAN, S SUJATHA		
JOURNALNAME	2025 3RD INTERNATIONAL CONFERENCE ON INTEGRATED CIRCUITS AND COMMUNICATION SYSTEMS (ICICACS)		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	
			Dr.KUMANAN.T (CSE)

ABSTRACT:

The gut microbiome comprises a vast community of microbes inhabiting the human alimentary canal, playing a crucial role in various physiological functions. These microbes generally live in harmony with the host; however, when dysbiosis occurs, it can contribute to the pathogenesis of diseases, including osteoporosis. Osteoporosis, a systemic skeletal disease characterized by reduced bone mass and increased fracture risk, has attracted significant research attention concerning the role of gut microbes in its development. Advances in molecular biology have highlighted the influence of gut microbiota on osteoporosis through mechanisms involving immunoregulation, modulation of the gut-brain axis, and regulation of the intestinal barrier and nutrient absorption. These microbes can enhance bone mass by inhibiting osteoclast differentiation, inducing apoptosis, reducing bone resorption, and promoting osteoblast proliferation and maturation. Despite these promising findings, the therapeutic effectiveness of targeting gut microbes in osteoporosis requires further investigation. Notably, gut microbiota has been increasingly studied for its potential in early diagnosis, intervention, and as an adjunct therapy for osteoporosis, suggesting a growing utility in improving bone health. Further research is essential to fully elucidate the therapeutic potential and clinical application of gut microbiome modulation in the management of osteoporosis.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION–APRIL 2025

PAPERTITLE	EXPLORING THE PERCEPTION OF LEARNING ENVIRONMENT AMONG UNDERGRADUATE MEDICAL STUDENTS IN SOUTH INDIA – A CROSS-SECTIONAL STUDY		 Dr. SUBA ANGAPPA (ACSMCH)
AUTHORS	SUBA ANGAPPAN, SUMA S, SHOBANA RAMASWAMY, ABEETHA S, CHITRA M, SHRUTHY K M.		
JOURNALNAME	HEALTH PROFESSIONS EDUCATION		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED- SCOPUS	

ABSTRACT:

The term "learning environment" refers to the combined social, physical, and psychological context in which the students learn. While a dismissive environment can lead to stress and burnout, a supportive environment enhances professionalism and academic success. Students' perceptions of the medical school learning environment might vary significantly depending on their age, gender, kind of institution and based on their academic year. Comprehending the disparities in perceptions towards the educational setting related to the above said variations may aid in devising interventions that promote favourable experiences for medical students. This study aimed to assess perception of learning environment by South Indian Medical Undergraduate students. This cross-sectional study included medical undergraduate students from various medical colleges in South India across all batches. The data was collected through google form which included personal details and modified Dundee Ready Educational Environment Measure (mDREEM) questionnaire. It consists of 17 questions and the dependent variables were categorised under five domains. SPSS was used for statistical analysis. Total respondents were 854 students (response rate = 94.88%). Total mDREEM mean score was 43/68 (57.2%). Highest score was found in the domain of student's perceptions of Teachers (58.7%) and lowest in domain of Student's Social Self-perception (53.7%). There was significant difference of total mDREEM score, between Government and private institutions. The analysis of students' perceptions based on their academic year revealed a statistically significant difference between Phase 1 and the subsequent years. According to our study, institutional type and academic year had a positive influence on learning environment among South Indian. Findings underscore the importance of resource allocation, student support, and engagement strategies to enhance the learning experience further.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	THE ROLE OF STRESS IN CANCER CARE	
AUTHORS	KIRUPA K, S BRIGHTLIN, SARASWATHI K, HEMAMALINI MADHAVAN	
JOURNALNAME	CANCER DIAGNOSIS, TREATMENT, AND CARE	
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS



Dr. KIRUPA K
(PHYSIOTHERAPY)

ABSTRACT

Coping with stress is also a common topic for cancer patients, as it is recognized as one of the greatest risk factors to be connected with their health and quality of life. The essay describes the situation in which cancer patients might have too much pressure brought by stress, and it mentions the fact that work-life balance is significant for patients to go through treatment carefully. Things related to stress management are regarded as one of the core components of the disease-related quality of life and the attainment of health-oriented, personal, and professional goals for cancer patients. Indiscriminate care for the whole health of individuals is promoted at the end of the essay. Employing the coping strategies of work-life balance is an approach to help individuals pass through the multiple challenges that cancer treatment brings. The article emphasizes the importance of providing cancer patients with the resources and support they need to manage stress effectively.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	SIGNIFICANCE OF ARTERIAL LACTATE LEVELS AS A MORTALITY INDICATOR IN SEPSIS PATIENTS		 Dr. SOWMYA MADIHALI JANARDHAN LYENGAR (RRMCH)
AUTHORS	SOWMYA MADIHALLI JANARDHAN IYENGAR, NADIA ROSE, B SARATH CHANDRA		
JOURNALNAME	INDIAN JOURNAL OF CLINICAL ANAESTHESIA		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT

Sepsis is a life-threatening condition resulting from infection, with a mortality rate of 10% and high morbidity. Serum lactate levels are commonly used for diagnosing septic shock and guiding fluid resuscitation. However, the value of serum lactate levels beyond the initial 6 hours of resuscitation remains under investigation, as many septic patients continue to die even after the crucial initial phase of treatment. The primary objective of this study was to assess the association between initial arterial lactate levels and 30-day outcomes in sepsis patients. Additionally, we aimed to explore the relationship between arterial lactate clearance and the initial lactate levels with the 30-day outcome in these patients. Patients aged 18 years with sepsis were diagnosed and treated according to the Sepsis Survival Campaign 2021 guidelines. Arterial lactate levels were measured at the time of admission (H0), 6 hours (H6), and 24 hours (H24) using ABG analysis. Lactate clearance was calculated at H6 and H24. Clinical data, treatment details, and 30-day mortality were recorded, with follow-up via phone for discharged patients. Lactate levels at 0, 6, and 24 hours, as well as lactate clearance at 6 and 24 hours, showed significant differences between survivors and non-survivors. Lactate clearance at 6 hours was notably higher in survivors (46.15%) compared to non-survivors (28.81%), with a similar pattern observed at 24 hours. The Area Under the Curve (AUC) of 0.847 from the ROC curve for lactate levels at 6 hours was superior to lactate values measured at 0 and 24 hours, indicating a better prognostic value at this time point. Arterial lactate serves as a strong predictor of mortality in sepsis patients, with elevated lactate levels being associated with a higher risk of death. The lactate value at 6 hours, exhibiting an AUC of 0.847, provides superior prognostic accuracy when compared to measurements taken at 0 and 24 hours.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	WORLD TB DAY 2025 THEME: “YES! WE CAN END TB: COMMIT, INVEST, DELIVER,” PROMISING A TARGETED APPROACH TO FIGHT THE OLDEST KNOWN INFECTIOUS DISEASE IN THE WORLD		
AUTHORS	SANKALP YADAV, AMRUTA NADAR, MADHAN JEYARAMAN, GAUTAM RAWAL, NAVEEN JEYARAMAN		
JOURNALNAME	IP INDIAN JOURNAL OF IMMUNOLOGY AND RESPIRATORY MEDICINE		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT:

Tuberculosis is a deadly infectious disease that continues to loom large in the densely populated countries of Africa and Asia. Globally, World TB Day is observed annually on the 24th of March. The theme of this year’s World TB Day 2025 is “Yes! We can end TB: commit, invest, deliver.” It is very important, as to achieve the global targets of tuberculosis elimination, it requires focused efforts, and these editorial sheds light on the same.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	LIFESTYLE RISK FACTORS OF METABOLIC DISEASES AMONG ADULT WOMEN IN SELECTED COMMUNITY SETTINGS - A COMMUNITY-BASED CROSS-SECTIONAL SURVEY		
AUTHORS	MADHURIMA DESI REDDY, J C HELEN, HEMAMALINI MADHAVAN.		
JOURNALNAME	JOURNAL OF EDUCATION AND HEALTH PROMOTION		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS/WOS	
			Dr. HEMAMALINI MADHAVAN (PHYSIOTHERAPY)

ABSTRACT

Metabolic diseases are a group of disorders characterized by abnormalities in the body's metabolism. Sedentary lifestyles and lack of regular exercise are key risk factors for metabolic diseases, as they lead to decreased insulin sensitivity and increased obesity. The study aimed to find the prevalence of lifestyle risk factors for metabolic diseases among adult women and to find the association of risk factors with the selected demographic variable at $P < 0.001$. A community-based cross-sectional descriptive design was used. A total of 1200 adult women between 20 and 59 years were selected using a non-probability convenience sampling method. A Standardized WHO STEPS survey tool was used to survey the participants. The present study survey revealed that about 1.08% and 0.42% have habits of tobacco usage and alcohol usage, respectively. A total of 86.08% and 95.25% of the adult women had inadequate fruit and vegetable intake per day in the study. 72.75% of the participants had not followed the recommended physical activity per week. Age and family income are found associated with inadequate fruit intake, and occupational and family income are found to be associated with inadequate vegetable intake of the participants at the 0.001 level of significance. Similarly, age and family income are found to be associated with decreased physical activity. The study has shown the presence of lifestyle risk factors for metabolic diseases among women in the community. The rising burden of chronic diseases can be curtailed with the appropriate health promotional interventions among women.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	BIOMATERIALS FOR NONUNION OF FRACTURES MANAGEMENT		
AUTHORS	MADHAN JEYARAMAN, NAVEEN JEYARAMAN, SWAMINATHAN RAMASUBRAMANIAN, ARULKUMAR NALLAKUMARASAMY.		
JOURNALNAME	BIOMATERIALS IN ORTHOPAEDICS & TRAUMA		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	
			DR MADHAN JEYARAMAN (ACSMCH)

ABSTRACT:

Nonunion fractures present a significant clinical challenge, often resulting in prolonged disability and increased healthcare costs. Conventional treatments, including autografts and allografts, have limitations such as donor site morbidity, limited availability, and the risk of immune rejection. Biomaterials have emerged as a promising alternative, providing scaffolds that support cell proliferation, vascularization, and bone regeneration. These materials, categorized as metals, polymers, ceramics, and composites, can be tailored to enhance Oste inductive and osteoconductive properties, offering improved outcomes for nonunion fracture treatment. Recent advancements in biomaterials, including biodegradable scaffolds, nanomaterials, and smart materials, have further enhanced the potential for bone regeneration. Additionally, tissue engineering approaches incorporating growth factors and stem cells into biomaterial scaffolds have demonstrated significant improvements in bone healing by creating a biologically active microenvironment. While biomaterials hold great promise, challenges such as immunogenicity, mechanical limitations, and regulatory hurdles must be addressed to fully realize their potential in clinical applications. Future research will focus on developing personalized, multifunctional biomaterials that align with patient-specific needs and further optimize bone healing. These advancements are expected to revolutionize the management of nonunion fractures, providing more effective and less invasive treatment options for patients.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	UNLOCKING THE DUAL POWER OF CHARYBDIS NATATOR SHELL: ANTIVIRAL AND LARVICIDAL ACTIVITIES		Dr. M. RAMESH (ACSMCH)
AUTHORS	KARNAN RAMACHANDRAN, SENTHIL BAKTHAVATCHALAM, SHUNMUGA VADIVU RAMALINGAM, RAMACHANDRAN VINAYAGAM, MUKESHWARAN RAMESH, ZHI-HONG WEN, CHANDRAMOHAN GOVINDASAMY, YI-HAO LO		
JOURNALNAME	BIORESOURCES AND BIOPROCESSING		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS/WOS	

ABSTRACT:

This study investigates the in silico anti-arboviral potential of zoo chemicals derived from the methanolic extract of *Charybdis natator* shell, alongside their larvicidal efficacy against *Aedes aegypti* 4th instar larvae. Through GC–MS analysis, 27 zoo chemicals were identified, demonstrating promising in silico activity against molecular antiviral targets: DENV2 protease (PDB: 6MO1) for anti-dengue, RNA polymerase (PDB: 5U04) for anti-Zika, and nsP2 protease (PDB: 3TRK) for anti-chikungunya. A strong positive correlation ($r = 0.726–0.889$) in binding affinities (kcal/mol) suggests a consistent inhibitory mechanism across these targets. Furthermore, PASS analysis indicates higher probabilities of activity (Pa) for insecticidal properties compared to antiviral efficacy, highlighting their dual potential as larvicidal agents and antiviral candidates. The methanolic extract of *Charybdis natator* shell exhibited potent larvicidal activity against *Aedes aegypti* ($LC_{50} = 81.001 \mu\text{g/mL}$) in a dose-dependent manner ($R^2 = 0.968$). In silico analysis further elucidated its inhibitory action on key growth regulators of *A. aegypti*, underscoring its potential to disrupt larval development. These findings highlight the dual utility of *C. natator* shell extract in vector management and in mitigating the transmission of arboviral diseases such as Dengue, Zika, and Chikungunya. The extract's promise as an eco-friendly, cost-effective source for developing novel insecticidal and antiviral agents merits further exploration.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	SPATIOTEMPORAL CHANGE-AWARE MACHINE LEARNING MODELS FOR IMPROVED CYBERCRIME TYPE PREDICTION		 Mr. N NEEMU KAVI (CSE)
AUTHORS	N NEEMUKAVI, B NITHISH, R SELVEMEENA, CHINCHU NAIR SIVANANDAN, J JAYAPRAKASH		
JOURNALNAME	2025 INTERNATIONAL CONFERENCE ON KNOWLEDGE ENGINEERING AND COMMUNICATION SYSTEMS (ICKECS)		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT:

The project named Cyber Criminal Activity Analysis is all about analyzing cybercrime records using geospatial as well as temporal data, which are latitude, longitude, date, and time, respectively, so that we can analyze what types of crime have taken place at a certain location during a specific time period. This study hopes to use machine learning algorithms to develop predictive models that can be used for the proactive prevention of cybercrime. It consists of a dataset of records about cybercrime incidents, with spatial (latitude, longitude) and temporal (date, time) information. A variety of machine learning models were trained to classify types of cybercrimes using decision trees, random forests, and K-nearest neighbor (KNN). When tested for performance on the accuracy front, all three models, which are Decision Tree, Random Forest, and KNN, achieved the magic number of 99%. Model evaluation from previous findings on cybercrimes also highlights the potential of these models as they achieve a high accuracy when we predict types of crimes according to space and time features. Such analysis serves as an important tool for law enforcement agencies to target crimes and allocate resources based on data. A potential area of improvement for future works could be the expansion of the dataset, as well as adding extra features, which can lead to a further architectural transformation.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

PAPERTITLE	AN IOT-ENHANCED FEDERATED LEARNING APPROACH FOR EDGE COMPUTING		 Dr. SHANMUGA PRIYA VELAYUTHAM (BIO-TECHNOLOGY)
AUTHORS	D DINESH KUMAR, SHANMUGA PRIYA VELAYUTHAM, SIVA SARANA KUNA, ISA BAYHAN, IHTIRAM RAZA KHAN, SOWMYA GUDEKOTA		
JOURNALNAME	2025 4TH OPJU INTERNATIONAL TECHNOLOGY CONFERENCE (OTCON) ON SMART COMPUTING FOR INNOVATION AND ADVANCEMENT IN INDUSTRY 5.		
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS	

ABSTRACT:

This paper reviews environmental risk management data analysis approaches, focusing on how to handle low model quality, communication delays, and limited resources in IoT peripheral devices. This flexible federated learning method employs edge computing and devices to handle data at the network's perimeter. To properly control the global model update frequency, the approach considers device resource restrictions. The capacity to monitor in varied situations increases its adaptability. The recommended solution accounts for peripheral device resource capabilities in the Internet of Things (IoT). The system's dynamic iteration frequency adjustment boosts model training efficiency. The algorithm's adaptive adaptation handles diverse data distributions and participant characteristics better than set iteration rates. We examine the IoT performance of three federated learning-enabled convolutional neural networks: IOT-CNN-FL, FedAvg, and HFEL. Detailed research compares and examines these networks using different methods. The data show that the recommended strategy improves algorithm performance and lowers costs. The method provides a viable, robust, and customizable solution to data analysis and model creation for environmental monitoring in the IoT context.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025		
PAPERTITLE	CURRENT STATUS ON M. PNEUMONIAE: CLINICAL FEATURES AND MANAGEMENT STRATEGIES	
AUTHORS	ASIT KUMAR, BRAGADEESHWARAN N, JANHAVI M S, SHAMINA S, LAVANYA SUBBAROYAN VIJAYAKUMAR , SURIA PRABHA, MUTHU PRASANNA P	
JOURNALNAME	IBOM MEDICAL JOURNAL	
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS
ABSTRACT: The COVID-19 pandemic has significantly impacted Mycoplasma pneumoniae (MP), leading to a decline in prevalence and delayed resurgence. The rise of macrolide-resistant <i>M. pneumoniae</i> complicates treatment, necessitating alternative antibiotics. This review examines the impact of COVID-19 on <i>M. pneumoniae</i> (MP) epidemiology, rising macrolide resistance, and evolving treatment challenges. It highlights advanced diagnostics, alternative antibiotics, and future research needs for predictive biomarkers and novel therapies. Continuous surveillance and adaptive strategies are crucial for optimizing MP infection management in a post-pandemic world. A comprehensive review of recent literature was conducted, focusing on epidemiological trends, antimicrobial resistance patterns, diagnostic innovations, and treatment strategies for MP infections. Data were extracted from peer-reviewed journals, clinical studies, and global health reports to provide an updated perspective on the evolving landscape of MP infections. <i>M. pneumoniae</i> infections, which declined during COVID-19 due to non-pharmaceutical interventions, have resurged post-pandemic due to macrolide-resistant infections. Rapid molecular diagnostic tools and predictive biomarkers are needed to improve treatment outcomes and optimize infection management in pediatric patients. Managing MP infections in a post-pandemic world requires continuous surveillance, advanced diagnostics, and adaptive treatment strategies. The increasing prevalence of MRMP underscores the need for alternative therapeutic options and robust antimicrobial stewardship. Future research should focus on predictive factors for treatment response, novel drug development, and the long-term impact of epidemiological shifts on respiratory infections.		

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Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –APRIL 2025

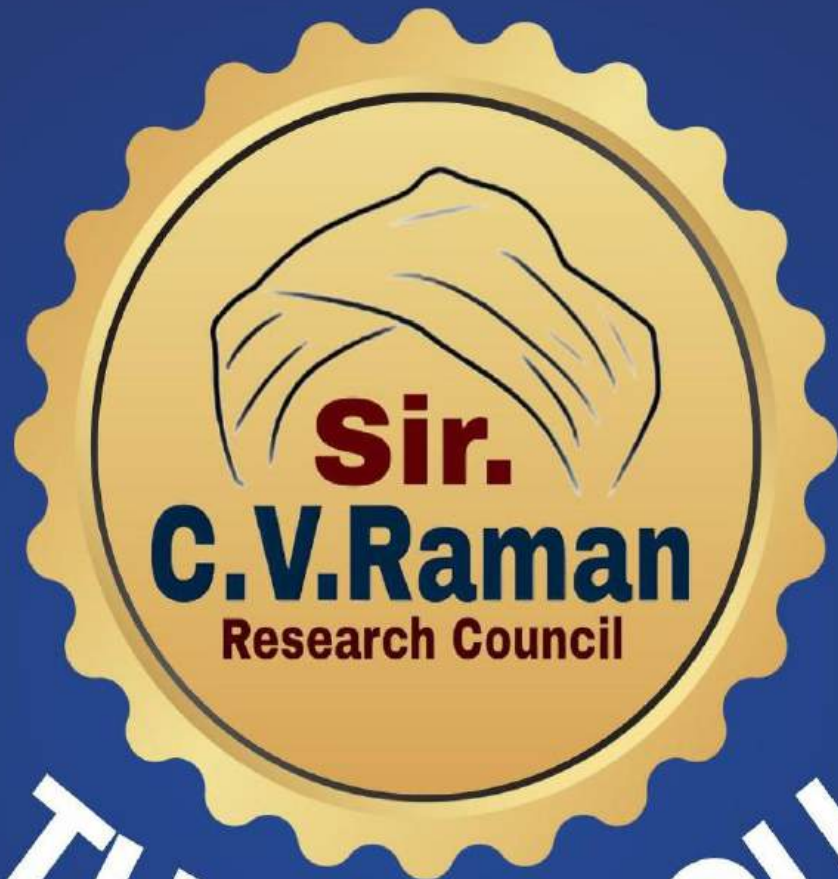
PAPERTITLE	GAMIFICATION-BASED TEACHING METHODS FOR PANDEMIC AND OUTBREAK INVESTIGATION TRAINING AMONG HEALTHCARE PROFESSIONALS AND STUDENTS: A SYSTEMATIC REVIEW	
AUTHORS	YUVARAJ KRISHNAMOORTHY, DHANAJAYAN GOVINDAN, MONICA K, GUNASEELAN RAJENDRAN	
JOURNALNAME	SIMULATION AND GAMING	
SNIP-NIL	IMPACTFACTOR-NIL	INDEXED-SCOPUS/WOS



Dr. MONICA K
(SLMCH)

ABSTRACT:

The COVID-19 pandemic has highlighted the urgent need for effective training in pandemic and outbreak management among healthcare professionals. Traditional teaching methods often lack the engagement required to prepare learners for real-world challenges. This systematic review evaluates the effectiveness of gamification-based teaching methods in enhancing knowledge, skills, and engagement in pandemic preparedness education for healthcare professionals and students. A systematic search was conducted across PubMed, Scopus, Cochrane, Google Scholar, and ScienceDirect databases, identifying studies that employed gamification-based learning for pandemic management training. Studies were screened and selected based on predefined eligibility criteria, focusing on interventions targeting healthcare professionals or students. 12 studies were included, and narrative synthesis was conducted due to the heterogeneity in study designs, participant groups, and outcome measures. Review found that gamification-based methods, such as serious games, e-learning modules, and simulations, improved knowledge retention, practical skills, and learner engagement compared to traditional teaching approaches. Participants reported high satisfaction and perceived usefulness of gamified interventions, with several studies demonstrating significant improvements in long-term knowledge retention and willingness to change behaviours related to infection control. However, variability in intervention design and outcome measures posed challenges for drawing generalized conclusions. Gamification-based teaching methods show promise in enhancing pandemic preparedness training among healthcare professionals. While these methods improve engagement and learning outcomes, further research is needed to explore long-term impacts, cost-effectiveness, and applicability in diverse educational settings. In addition, heterogeneity and methodological limitations of included studies underscore the need for more rigorous, high-quality research to validate these findings.



THANK YOU