Sri Devaraj Urs Academy of Higher Education and Research

DEPARTMENT OF PHYSIOLOGY

Sri Devaraj Urs Medical College, Tamaka, Kolar

NATIONAL CONFERENCE ON ARTIFICIAL INTELLIGENCE IN HEALTHCARE

Empowering Medical Professionals for Enhanced Healthcare Delivery

DATE: 24TH & 25TH JULY 2024

In Association with
South Asian Association of Physiologists, Sri Lanka
Federation of Indian Physiological Societies
Physiological Society of India
& APPI (Bangalore Chapter)
Co-Sponsered by MERT, Karnataka



Organising Committee



Shri G H Nagaraja

Chancellor
Sri Devaraj Urs Academy of Higher Education and Research
Tamaka, Kolar

Message

Dear Participants,

As the Chancellor of Sri Devaraj Urs Academy of Higher Education and Research, it is my distinct pleasure to welcome you to the National Conference on "Artificial Intelligence in Healthcare – Empowering Medical Professionals for Enhanced Healthcare Delivery," scheduled on 24th and 25th July 2024.

Artificial intelligence is transforming healthcare, offering new horizons for diagnostics, treatment, and patient care. This conference brings together brilliant minds from academia, industry, and clinical practice to explore these advancements and collaborate on future innovations.

The conference provides the participants with a platform to engage in the presentations, discussions, and networking opportunities. Your contributions and insights are invaluable as we strive to harness the power of AI to improve health outcomes and advance medical science.

Thank you for your participation and commitment to excellence. I look forward to the impactful exchanges and groundbreaking ideas that will emerge from this conference.

I congratulate the department of Physiology, Sri Devaraj Urs Medical College, for organizing such a timely event and wish the National Conference, a great success.



Shri. Rajendra J

Vice President
Sri Devaraj Urs Educational Trust

Message

Dear Delegates and Honored Guests,

On behalf of the Sri Devaraj Urs Educational Trust, I am delighted to welcome you to the National Conference on "Artificial Intelligence in Healthcare – Empowering Medical Professionals for Enhanced Healthcare Delivery," scheduled on 24th and 25th July 2024.

As the Vice President of the Trust, I am deeply proud to support this landmark event, which brings together pioneers and innovators dedicated to transforming healthcare through AI.

The integration of artificial intelligence into healthcare systems is not just a technological advancement but a profound leap towards more personalized, efficient, and effective patient care. This conference provides a unique platform for discussing cutting-edge research, sharing best practices, and forging collaborations that will shape the future of healthcare.

Your presence here underscores a shared vision of leveraging AI to tackle some of the most pressing challenges in medicine. I encourage you to actively participate in the discussions, workshops, and networking opportunities that this conference offers.

Thank you for being a part of this significant event. Your contributions and insights are vital to the advancement of AI in healthcare, and I look forward to the innovations and progress that will undoubtedly arise from our collective efforts.



Shri. K.G.Hanumantha Raju

Secretary
Sri Devaraj Urs Educational Trust

Message

On behalf of Sri Devaraj Urs Educational Trust, it is my pleasure to welcome you to this National Conference on "Artificial Intelligence in Healthcare – Empowering Medical Professionals for Enhanced Healthcare Delivery." As the Secretary of SDUET, I am honored to contribute to this souvenir of the conference, which marks a significant gathering of experts and enthusiasts in the field of AI.

Artificial intelligence holds immense promise for the future of medicine, from enhancing diagnostic accuracy to personalizing patient care. This conference is a testament to our collective commitment to exploring these possibilities and driving forward innovative solutions.

I would like to extend my heartfelt thanks to all the speakers, organizers, and participants for their invaluable contributions. Your dedication and insights are the cornerstone of this event's success.

May this conference inspire you, provoke thought, and pave the way for groundbreaking advancements in AI and healthcare.



Dr. D V L N Prasad
Chief Administrative Officer
SDUAHER
Tamaka, Kolar

Message

It is with great pleasure that I extend my warmest greetings to all participants of the National Level Conference on Artificial Intelligence in Healthcare organized by the Department of Physiology at Sri Devaraj Urs Medical College, Kolar, Karnataka.

At Sri Devaraj Urs Academy of Higher Education and Research, we take pride in our commitment to embracing advancements in medical education technologies. The organization of this conference by the Department of Physiology underscores our dedication to exploring cutting-edge innovations in healthcare.

I commend the organizers for their initiative in convening this important event, which promises to foster insightful discussions and collaborations at the intersection of AI and healthcare.

I wish all the participants a fruitful and enriching experience. May this conference pave the way for new discoveries and advancements in the field of healthcare AI.

Best wishes for a successful event.



Dr. B Vengamma
Vice-Chancellor
SDUAHER
Tamaka, Kolar

Message

Dear Delegates,

Warm greetings to all members attending the conference on "Artificial Intelligence in Healthcare." It is a privilege to welcome you to this esteemed event, which brings together experts, researchers, and practitioners to explore the transformative potential of AI in the healthcare industry.

Artificial Intelligence (AI) is revolutionizing healthcare, offering unprecedented opportunities to enhance patient care, streamline operations, and improve outcomes. AI technologies, such as machine learning, natural language processing, and computer vision, are driving innovations across various domains, from diagnostics and treatment planning to patient monitoring and administrative efficiency.

This conference aims to provide a comprehensive overview of the current state and future prospects of AI in healthcare. We will delve into cutting-edge research, share practical applications, and discuss the ethical and regulatory considerations that accompany the integration of AI into healthcare systems.

One of the key areas where AI is making a significant impact is in diagnostics. AI algorithms can analyze vast amounts of medical data, including imaging scans, lab results, and patient histories, to identify patterns and predict disease outcomes with remarkable accuracy. This capability not only enhances the precision of diagnoses but also enables earlier detection of conditions, leading to more effective interventions and improved patient outcomes.

In treatment planning, AI is proving to be a game-changer. Personalized medicine, powered by AI, allows for tailored treatment plans based on individual patient profiles, genetic information, and real-time data. This approach maximizes the efficacy of treatments while minimizing adverse effects, ultimately leading to better patient care.

AI also plays a crucial role in patient monitoring and management. Wearable devices and remote monitoring systems, equipped with AI, can continuously track vital signs, detect anomalies, and alert healthcare providers to potential issues before they escalate. This proactive approach to patient care not only enhances patient safety but also reduces hospital readmissions and healthcare costs.

Administrative tasks in healthcare, often time-consuming and prone to errors, are also being streamlined through AI. From automating routine paperwork to optimizing scheduling and resource allocation, AI is helping healthcare organizations operate more efficiently, allowing healthcare professionals to focus more on patient care.

However, the integration of AI into healthcare is not without challenges. Ethical considerations, such as patient privacy, data security, and the potential for bias in AI algorithms, must be carefully addressed. Additionally, regulatory frameworks need to evolve to keep pace with technological advancements, ensuring that AI applications are safe, effective, and equitable.

Throughout this conference, we will engage in thought-provoking discussions, share insights from pioneering projects, and explore strategies to overcome these challenges. I encourage you to actively participate, share your experiences, and collaborate with your peers. Together, we can harness the full potential of AI to transform healthcare for the better.

Your presence at this conference is invaluable. I hope that your attendance sparks new ideas, inspires innovative solutions, and fosters lasting collaborations. Together, we can drive the future of healthcare, improving the lives of patients and advancing the well-being of our communities.



Dr. Muninarayana C
Registrar
Sri Devaraj Urs Academy of Higher Education and Research

Message

Dear Esteemed Participants and Resource Faculty,

It is with great enthusiasm that I welcome you to the National Conference on "Artificial Intelligence in Healthcare – Empowering Medical Professionals for Enhanced Healthcare Delivery," scheduled on 24th and 25th July 2024, organized by the department of Physiology, Sri Devaraj Urs Medical College. As the Registrar of Sri Devaraj Urs Academy of Higher Education and Research, I am delighted to see so many distinguished professionals, researchers, and scholars gathered to explore the transformative potential of AI in the medical field.

This conference represents a unique opportunity to share knowledge, exchange ideas, and forge new collaborations. The integration of artificial intelligence into healthcare is poised to revolutionize diagnostics, treatment, and patient care, and your contributions are crucial to this evolving landscape.

I encourage you to take full advantage of the sessions, workshops, and networking events. Your active participation will not only enrich your own understanding but also contribute to the collective advancement of our field.

Thank you for joining us and for your dedication to pushing the boundaries of medical science through AI.



Dr. Prabhakar K
Principal, SDUMC
Dean, Faculty of Medicine, SDUAHER

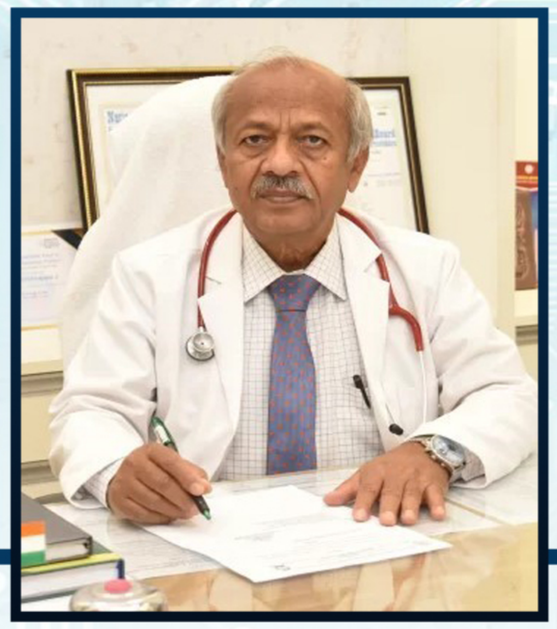
Message

It is with great pleasure that I introduce this special souvenir book published by the Department of Physiology of Sri Devaraj Urs Medical College, Kolar to commemorate the national conference on Artificial Intelligence (AI) in Healthcare . This conference represents the intersection of technology and healthcare, to explore the transformative potential of AI.

The pages that follow capture the essence of our discussions, and the depth of our shared vision. These contributions highlight the current advancements, promising future of AI in physiology and medicine, predictive analytics, machine learning, and data-driven insights. This dive into AI is underpinned by a commitment to ethical considerations, patient-centered approaches, and interdisciplinary collaboration. We can envisage powerful tools to improve health outcomes, personalize treatments, and ultimately, save lives.

I extend my heartfelt gratitude to all contributors, organizers, and participants who have made this conference and the publication of this souvenir possible.

I believe that you will enjoy this conference as much as we enjoyed organizing it.



Dr. J Krishnappa

Professor, Department of Paediatrics,
Medical Superintendent,
R L Jalappa Hospital & Research Centre, Kolar

Message

Dear Esteemed Colleagues and Participants,

It gives me immense pleasure to extend a warm welcome to all delegates and guest speakers attending the National Conference on "Artificial Intelligence in Health Care – Empowering Medical Professionals for Enhanced Health Care Delivery" hosted by department of Physiology at Sri Devaraj Urs Medical College, Kolar, on the 24th and 25th of July, 2024.

In recent years, the integration of Artificial Intelligence (AI) in healthcare has heralded a new era of innovation and transformation. AI technologies are not only enhancing diagnostic accuracy but are also revolutionizing patient care, treatment planning, and operational efficiency within our healthcare systems. This conference serves as a vital platform for us to explore these advancements, share knowledge, and collaborate on the future directions of AI in healthcare.

I extend my heartfelt thanks to the organizing committee, distinguished speakers, and all participants for contributing to this significant event. I am confident that the discussions and insights gained here will empower medical professionals to leverage AI for improved health care delivery, ultimately benefiting our patients and communities.

Wishing you all a successful and enriching conference.



Dr. Prasunpriya Nayak

President
Physiological Society of India

Message

It brings me great pleasure to know that the Department of Physiology, Sri Devaraj Urs Medical College, Kolar, is organizing a National Conference on 'Artificial Intelligence in Health Care – Empowering Medical Professionals for Enhanced Healthcare Delivery' on July 24th and 25th, 2024. This is a great initiative to hold a national conference on such an important emerging issue. I congratulate the Department of Physiology for taking the lead with this endeavour for medical professionals.

I am sure the participants of this National Conference will benefit greatly from attending the workshops and lectures of highly acclaimed experts in the field.

I congratulate Dr Jagadamba and her team for organizing such a great event, and best wishes to all participants for a successful conference! May this event foster meaningful discussions, fruitful collaborations, and significant dissemination of knowledge for the proper use of digital tools and artificial intelligence in the field of physiology and other health sciences! I am certain that it will be a productive and enriching experience for all involved.

I wish the conference, a total success!



Dr Arvind Natarajan

Dean, Faculty of Allied Health and Basic Sciences
Sri Devaraj Urs Academy of Higher Education and Research

Message

It is my great pleasure to introduce the National Conference on Artificial Intelligence in Healthcare sector organized by the Department of Physiology, Sri Devaraj Urs Medical College. In an era where technology is reshaping every facet of our lives, the intersection of artificial intelligence and healthcare stands as a beacon of hope and innovation.

This conference serves as a pivotal platform where leading experts, researchers, and practitioners converge to explore the transformative potential of AI in healthcare. From revolutionizing diagnostics and personalized treatment plans to enhancing patient care and operational efficiency, the possibilities are boundless.

As we embark on this journey of exploration and discovery, I encourage all participants to engage actively, share insights, and foster collaborations that will shape the future of healthcare delivery. Together, let us harness the power of artificial intelligence to drive advancements that improve health outcomes and empower both patients and healthcare professionals alike.

I extend my heartfelt gratitude to the organizers, speakers, sponsors, and participants for their dedication and commitment to advancing the frontiers of healthcare through artificial intelligence. May this conference ignite ideas, inspire innovations, and pave the way for a healthier and more equitable future.



Dr. Vinutha Shankar MS
Vice Principal
SDUMC, Tamaka, Kolar

Message

It gives me immense pleasure to extend my heartfelt congratulations to the Department of Physiology for organizing this national conference on "Artificial Intelligence in Healthcare and Medical Education." In today's rapidly evolving landscape, the integration of AI represents a transformative force, enhancing patient care, diagnostics, and educational methodologies. As we gather to explore these advancements, I am confident that the insights shared will pave the way for innovative practices and collaborations, propelling our medical community towards unprecedented heights of excellence. I commend the efforts of the organizers and participants for their dedication to this critical and timely subject.



Dr. Jagadamba A
Professor & Head
Department of Physiology
SDUMC, Kolar

Message

Dear Colleagues and Friends,

It is my pleasure to extend a warm welcome to all participants of the National Conference on 'Artificial Intelligence in Health Care – Empowering Medical Professionals for Enhanced Healthcare Delivery' on July 24th and 25th, 2024.

This conference comprises preconference workshops and talks by eminent speakers from the country.

As the Head of the Physiology Department at Sri Devaraj Urs Medical College, Kolar, I am excited to see a diverse and talented group of individuals come together to discuss and explore the integration of artificial intelligence in medical science.

Artificial intelligence holds tremendous potential to revolutionize our understanding of human physiology and medicine. By leveraging AI, we can uncover new insights into the complexities of the human body, enhance diagnostic accuracy, and develop innovative treatment strategies. This conference is a testament to our collective commitment to advancing medical knowledge and improving patient care.

I encourage you to engage with the presentations, share your expertise, and collaborate with fellow attendees. The exchange of ideas and experiences at this conference will undoubtedly pave the way for ground-breaking advancements in our field.

Thank you for your participation and for contributing to the success of this significant event.



Dr. Nalin Mehta
Director
North Eastern Indira Gandhi Regional Institute of Health & Medical Sciences
Shillong

Keynote address

ETHICS OF AI IN HEALTHCARE AND BIOMEDICAL RESEARCH

Artificial Intelligence (AI) is here to stay and we have to accept this fact! Apart from many other areas, it has become increasingly relevant in the field of Medicine due to its potential to totally transform the healthcare industry. AI has the potential to revolutionize healthcare byimprovingefficiency, accuracy, and patient outcomes while reducing costs and administrative burdens. However, challenges such asdata privacy, regulatory concerns, and the need for validation and integration into existing healthcare systems must be addressed to fully realize these benefits.

Ethical challenges surrounding the use of AI in healthcare are particularly pertinent in India, a country with a large population, rapidly evolving healthcare system and diverse socio-economic conditions. With AI making an entry in healthcare systems across India, several ethical considerations must be carefully addressed to ensure equitable, safe, and effective deployment of this new and promising technologies while upholding patient welfare and rights.

One of the biggest issues is privacy and data security. India lacks comprehensive legislation specifically addressing data protection in healthcare, which has the risk of unauthorized access, data breaches, and misuse of sensitive medical information. Then there are concerns about biasand fairness in the AI algorithms.

In a country as diverse as India, AI systems trained on biased datasets may lead to disparities in outcomes across different socio-economic, regional, demographic or ethnic groups. Another critical matter is of ensuring transparency and accountability in AI-driven interventions. Doctors and patients must understand how AI algorithms function to promote acceptance and trust. Transparent communication about limitations and uncertainties associated with AI technologies is crucial to enable informed decision-making. Furthermore, establishing clear lines of accountability for AI-generated outcomes is essential to determine responsibility in cases of errors, malfunctions, or adverse events.

The impact of AI on Doctors and Nurses is a pertinent ethical consideration too. AI has the potential to augment clinical decision-making and improve operational efficiencies. This gives rise to concerns about job displacement, changes in professional roles, and ethical implications of relying on AI for critical medical decisions. Ensuring that AI remains a supportive tool rather than a replacement is essential to ethical utilisation of AI in the Indian healthcare system.

Equitable access to AI-driven healthcare technologies is another ethical imperative in India. AI can improve healthcare delivery in remote and underserved areas but inequalities in access, digital literacy, and status of healthcare infrastructure in those areas could widen existing gaps. Strategies to overcome barriers to access are essential to ensure that all segments of society benefit from AI advancements.

The regulatory framework governing AI in healthcare is still evolving, with gaps in guidelines specific to AI applications, data governance, and ethical standards. Comprehensive regulatory frameworks that balance innovation with patient safety, privacy, and ethical considerations are essential.

In conclusion, while AI holds immense promise to transform healthcare in India by improving diagnostic accuracy, enhancing treatment outcomes, and optimizing healthcare delivery, tackling ethical challenges is of paramount importance. By prioritizing ethical considerations, India can harness the potential ofAI to advance healthcare while safeguarding patient welfare and promoting equitable access to quality healthcare services across the nation.



Dr. Jagan Mohan R

Deputy Director

Centre for Digital Resources, Education & Medical Informatics

A Unit of Sri Balaji Vidyapeeth (Deemed to be University)

Pillaiyarkuppam, Pondicherry

AI in Healthcare: Empowering Clinicians and Researchers in the Digital Age

As we stand at the forefront of a technological revolution in healthcare, it's crucial for clinicians and researchers to understand and harness the power of Artificial Intelligence (AI) in their work. The workshop titled –, "AI in Healthcare: Empowering Clinicians and Researchers in the Digital Age" aims to provide the participants with a comprehensive overview of AI in healthcare and equip them with practical skills to leverage AI tools in their clinical practice and research endeavours.

As of 2024, AI is rapidly transforming various aspects of medicine, from diagnosis and treatment to patient care and research. Recent studies show that over 85% of oncology healthcare professionals recognize the need to explain clinical AI use to patients. The workshop will discuss how AI is being integrated into areas such as medical imaging, personalised medicine, drug discovery, and patient data analysis. It will also address the challenges and ethical considerations surrounding AI implementation in healthcare settings.

It will showcase some of the most promising AI tools available to clinicians. This will include: AI-powered diagnostic tools, such as those used in radiology to enhance image interpretation, Clinical decision support systems that assist in treatment planning, etc.. For the researcher participants, this workshop will help explore cutting-edge AI tools that are revolutionising healthcare research.

The core of this workshop will be interactive, hands-on sessions where the participants will have the opportunity to use some of these AI tools themselves.



Dr. Sitanshu Shekar Kar
Professor & Head
Preventive and Social Medicine
JIPMER, Pondicherry



Dr. Devi Prasad Mohapatra
Professor, Plastic Surgery
JIPMER, Pondicherry

Use of Digital Tools & Artificial Intelligence in Medical Education

Artificial intelligence (AI) is rapidly transforming healthcare, augmenting the capabilities of medical professionals and improving patient outcomes. AI also plays a major role in medical education. Digital tools and AI are reshaping the landscape of medical education, offering innovative solutions to enhance learning experiences, curriculum delivery, and student outcomes. This session explores some of the transformative impacts of these technologies in medical education.

Digital tools encompass a wide range of technologies, including mobile applications, online platforms, virtual reality, and augmented reality. These tools facilitate access to vast repositories of medical knowledge, enabling students to engage with interactive content, multimedia resources, and virtual simulations that replicate clinical scenarios. AI complements these tools by analyzing data, personalizing learning pathways, and automating administrative tasks, thereby optimizing the educational process.

AI-driven adaptive learning platforms utilize machine learning algorithms to assess individual student performance and tailor educational content accordingly. This personalized approach not only caters to diverse learning styles but also enhances retention and comprehension of complex medical concepts. Virtual simulations powered by AI allow students to practice clinical skills and decision-making in realistic environments, without risk to patients, thereby bridging the gap between theory and practice.

Moreover, AI enhances assessment methods through automated grading systems and predictive analytics, providing timely feedback to students and educators. Natural language processing algorithms support literature review and evidence-based practice by extracting relevant information from vast volumes of medical literature.

While these advancements offer unprecedented opportunities, challenges such as ensuring data security, maintaining ethical standards, and addressing disparities in access to technology require careful consideration. Furthermore, the integration of digital tools and AI must align with educational goals and pedagogical principles to maximize their effectiveness in medical education. While AI cannot replace human teachers, it serves as a powerful tool to augment instruction, making education more accessible, engaging, and effective for learners of all backgrounds and abilities. AI offers immense potential to solve complex problems and improve efficiency, it also raises important ethical and societal questions that need to be addressed as technology evolves.

In conclusion, digital tools and AI are revolutionizing medical education by expanding access to knowledge, enhancing interactive learning experiences, and optimizing educational outcomes. Embracing these technologies promises to equip future healthcare professionals with the skills, knowledge, and adaptability needed to navigate and innovate within the evolving healthcare landscape effectively.



Dr. Raksha K Bhat
Consultant Microbiologist,
Infection Control Officer & Head of Department
Central Laboratory, St. Martha's Hospital, Bengaluru

From Data to Diagnosis: Role of Artificial Intelligence in Modern Medicine

"Will AI replace doctors? is a frequently asked question.
Healthcare setups in our country serve as abundant data mines. We often look to international and Western guidelines for reference in treating patients in India. Even within institutions, there is often a disconnection between research and clinical practice. With India boasting the youngest population actively engaged in Information Technology and Biotechnology and experienced researchers who have made significant contributions to various fields of science and medicine , interdisciplinary collaboration holds the key. By breaking down silos and fostering partnerships across all specialties, I believe we can unlock potential solutions beyond our comfort zones In this regard Artificial Intelligence (AI) is rapidly reshaping modern medicine, leveraging subsets like machine learning and deep learning to revolutionize diagnostic processes.
A brief overview of AI in healthcare would thus include: definitions and concepts in AI, the need for AI, data acquisition and management, designing AI algorithms and models, evaluating accuracy and efficiency of these models, their challenges and limitations, integrating them into clinical practice, their future perspectives, collaboration and interdisciplinary approach along with ethical and regulatory concerns.
The escalating importance of AI in healthcare arises from its capacity to overcome traditional diagnostic challenges and efficiently analyze the surging volumes of medical data, sourced from electronic health records, medical imaging, wearables, and genomics. Through AI algorithms, medical data is processed and analyzed with remarkable precision, enhancing diagnostic accuracy and expediting treatment decisions. Despite the promise, challenges persist, including data privacy concerns and the need for interdisciplinary collaboration between clinicians, data scientists, and engineers. Incorporating AI into clinical practice requires addressing ethical and regulatory considerations, such as algorithmic bias and patient data security. Successful integration relies on collaborative efforts and the development of interdisciplinary training programs.
AI-driven diagnostics hold the potential to personalize medicine and refine healthcare delivery, but continued research and responsible implementation are essential to fully harness its benefits while navigating ethical complexities and regulatory frameworks.
Coming back to the question of AI replacing doctors.
No, it's doctors who know AI that will replace those who don't."



Dr. Lokesh B
Consultant Neurologist,
Aster CMI Hospital, Hebbal, Bengaluru

AI and Brain - Myth vs Reality

Artificial Intelligence is an interdisciplinary science creating a paradigm shift in virtually every sector of the industry.

Artificial intelligence (AI) uses machine-learning and deep learning algorithms to mimic human cognition in the analysis, and comprehension of complex medical and health care data Machine learning and Deep learning is a subset of AI that allows machines to learn from data without being programmed explicitly.

In the healthcare space, AI is seen as a helping hand to clinicians. Artificial Intelligence (AI) is revolutionizing healthcare by empowering medical professionals to deliver enhanced care in several transformative ways:

AI systems can analyze vast amounts of patient data, including medical records, imaging results, and genetic information, to assist in diagnosing diseases accurately and promptly. This capability helps clinicians make informed decisions based on comprehensive data analysis and pattern recognition.

By integrating AI algorithms with patient data, healthcare providers can tailor treatment plans to individual patients. AI can predict patient outcomes based on historical data, genetic predispositions, and treatment responses, leading to more effective and personalized therapies.

AI accelerates the drug discovery process by analysing vast databases of chemical compounds and predicting their potential efficacy and safety profiles. This capability expedites the development of new treatments and therapies for various diseases.

AI-powered devices and applications enable remote monitoring of patients' vital signs and health metrics. This technology facilitates proactive interventions and reduces the need for in-person visits, particularly beneficial in rural or underserved areas.

As AI adoption increases in healthcare, addressing ethical concerns regarding data privacy, algorithm bias, and patient consent becomes paramount. Establishing robust guidelines and regulations ensures that AI technologies benefit patients while upholding ethical standards.

In conclusion, AI empowers medical professionals by augmenting their capabilities, improving diagnostic accuracy, personalizing treatments, and enhancing operational efficiency in healthcare delivery. Embracing AI responsibly can lead to a future where healthcare is more accessible, effective, and patient-centered.



Dr. Pradeep Kumar Sreenivasaiah

Technical Program Manager

AI Research @ Google Deep Mind, Bengaluru

AI in Healthcare: Innovations, Challenges, and Opportunities

This talk, "Titled: AI in Healthcare: Innovations, Challenges, and Opportunities", will equip medical experts with the knowledge and insights needed to navigate the rapidly evolving landscape of AI in medicine.

Talk will move beyond the hype and delve into real-world applications of AI already making a difference in healthcare. From AI-powered diagnostics that detect early-stage cancers to personalized treatment plans based on individual genetic profiles, talk will cover some of the tangible benefits AI offers.

Ethical considerations will be discussed - covering how to ensure responsible and equitable AI integration - emphasizing inclusive AI that benefits all populations, not just the privileged few. Strategies for mitigating bias in algorithms, addressing data scarcity in underserved communities, and developing culturally sensitive solutions will be discussed. Through real-world examples, this talk will showcase how AI can be used to improve healthcare access in low-resource settings and bridge language barriers to reach diverse patient populations.

Other critical/practical challenges associated with AI adoption, including data privacy and security, transparency in AI decision-making, and the potential impact on the healthcare workforce will be highlighted.

Looking towards the future, talk concludes by delving into the exciting realm of Artificial General Intelligence (AGI). AGI, with its human-like capacity for understanding, learning, reasoning, and knowledge application across diverse tasks, could enable truly personalized medicine, accelerate scientific discovery through the analysis of vast datasets, and contribute to breakthroughs in regenerative medicine and disease eradication. Hopefully, this talk will leave the audience pondering the profound impact of this next frontier of AI on the future of healthcare and medicine, sparking discussion and inspiring collaboration to harness the transformative power of AGI for the benefit of all.



Dr. Sivarama Krishna
Professor & Head
Department of Urology, SDUMC

Artificial Intelligence in Health Care Promises & Pitfalls

Artificial Intelligence (AI) in healthcare indeed holds immense promise while also presenting several potential pitfalls. Let's explore both sides:

Promises of AI in Healthcare:
Improved Diagnostics: AI can analyse vast amounts of patient data (like medical records, test results, imaging scans) to assist in more accurate and timely diagnoses. Personalized Treatment: By analysing individual patient data and patterns across populations, AI can help tailor treatment plans for better outcomes. Efficiency in Healthcare Delivery: AI can streamline administrative tasks, optimize scheduling, and improve the overall efficiency of healthcare operations. Drug Discovery and Development: AI algorithms can accelerate the process of identifying potential drug candidates, thereby speeding up the development of new treatments. Remote Monitoring and Telemedicine: AI-powered devices can monitor patients remotely, alerting healthcare providers to potential issues and enabling telemedicine consultations. Predictive Analytics: AI can predict disease outbreaks, patient deterioration, and healthcare trends, allowing for proactive interventions.

Pitfalls and Challenges:
Data Privacy and Security: AI relies heavily on patient data, raising concerns about privacy breaches and unauthorized access to sensitive information. Bias in Data and Algorithms: Biases present in training data or algorithms can lead to disparities in healthcare delivery, potentially affecting marginalized groups disproportionately. Regulatory Hurdles: Healthcare regulations often struggle to keep pace with rapid advancements in AI, leading to uncertainties and delays in implementation. Integration and Adoption Challenges: Healthcare systems are complex and diverse, making it challenging to integrate AI solutions uniformly across different settings and regions. Reliability and Accountability: AI systems may make errors or misinterpret data, raising concerns about liability and accountability when decisions are made based on AI recommendations. Impact on Healthcare Workforce: While AI can automate routine tasks, there are concerns about its potential to replace certain healthcare jobs or change the nature of healthcare professions.

Conclusion:
The promise of AI in healthcare is undeniable, offering potential improvements in diagnostics, treatment, efficiency, and accessibility. However, careful consideration of ethical, regulatory, and practical challenges is crucial to ensure that AI technologies are deployed responsibly and equitably. Continued research, collaboration between technology developers and healthcare providers, and robust regulatory frameworks will be essential in maximizing the benefits of AI while minimizing its risks.

ABSTRACTS

Oral Presentations

FO1

Title: Development of an Elective Curriculum on the topic "Applications of Artificial Intelligence in Healthcare

Author: Dr.A.Lalithambigai (Associate Professor – Biochemistry)

Affiliation: Department of Biochemistry, GMERS Medical College, Gotri, Vadodara, Gujarat. Pin:390021.

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Background: What problem was addressed?

We physicians are at the cusp of having multiple AI mediated healthcare solutions, being integrated into our work environment. As future users of AI based technology in healthcare, it is imperative for physicians and medical students to gain a fundamental understanding about the design, development and implementation of AI applications in Medicine. Hence, we decided to develop a curriculum for the topic "Applications of Artificial Intelligence in healthcare", which may be offered as an Elective to MBBS students.

Methods: What was tried? We used the first four steps of Kern's six step approach to develop the curriculum for the topic "Applications of Artificial Intelligence in healthcare".

Step 1: Problem Identification and General needs assessment
Step 2: Targeted needs assessment
Step 3: Defining Goals and Objectives
Step 4: Defining Educational strategies

Results: What lessons were learned? Based on the Problems identified, General and Targeted needs assessment, the following Objectives were identified for development of the Curriculum on "Applications of AI in healthcare". (The Objectives of the course are defined as competencies expected to be gained by the end of the course).

At the end of the Elective Course the student should be able to:
1. Describe key challenges of present healthcare delivery system which can be solved with AI.
2. Describe the role of Clinical Data in development of AI applications in Medicine.
3. Describe and apply different AI techniques and algorithms to solve healthcare questions.
a. NLP for medical information extraction – Virtual Human Assistant (VHA) development.
b. CNN for Medical Image interpretation.
c. AI algorithm based prognostic models, Survival and Hazard models for development of Clinical practice guidelines, Clinical Decision Support Systems
4. Interpret Deep learning and Machine learning models used in AI applications.
5. Initiate development of AI solutions for relevant health care problems identified in your healthcare facility.
6. Identify ethical and data confidentiality issues related to implementation of the AI application.

Conclusion: The complete curriculum is displayed below.

Key words: Curriculum development, Artificial intelligence in healthcare

FO2

Title: Effects of online and offline remedial teaching on the outcome of underperforming First-year MBBS students in Physiology

Authors: Divyashree1, Siddeshwara Anand KS2, G.K. Sudhir3

Affiliations: 1. Assistant Professor, and 2. Professor and Head Professor and Head Department of Physiology, Adichunchanagiri Institute of Medical Sciences, 3. Professor and Head, Department of Physiology, PESU Institute of Medical Science and Research Begaluru

Background: Remedial teaching is found to improve underperforming students academic performance. Conventional remediation sessions are conducted in the physical presence of both mentor & mentee. However, due to the COVID-19 lockdown, the remedial classes were also conducted in dual mode, both online and conventional modes. This study aimed to determine the effectiveness of remedial sessions and compare the outcome of two remediation methods (conventional and dual mode) among underperformers in Physiology.

Methods: This Cross-sectional observational study, was conducted using available data of underperformers from two academic batches of the first MBBS in Physiology after receiving approval from Institutional ethical committee AIMS. Oral consent was taken from all the students of study group and written consent from HOD of Physiology. Underperformers from the first MBBS who scored less than 40% in the physiology first theory internal assessment (IA) from two academic batches were included. 14 students from the batch 2020-21, received dual mode remediation (online and conventional), and 25 students from the batch 2021-22, received conventional offline remediation formed the study group. The academic performance scores of these students in all 3 IAs along with their final University exam in Physiology theory were considered to compare the outcome. Data analysis was done using SPSS Version 22. A confidence interval of 95% with significance at $p < 0.05$ was considered as statistically significant.

Results: A significant improvement in performance in second IA (35.24 VS.30.76, P<0.00001) compared to first and in third IA compared to second (42.68VS. 35.24, P<0.00001), and a higher pass percentage in the University exams was observed in the conventional group(84%) compared to the dual mode(71.4%) group.

Conclusion: Conventional remedial sessions are more beneficial than dual-mode sessions to improve the performance among students with learning difficulties.

Keywords: conventional remedial sessions, dual mode remedial sessions, outcome, underperforming MBBS students.

FO3

TITLE – "CIRCULATING MIRNA1 AND MIRNA133A AS EARLY POTENTIAL MARKERS OF CARDIOVASCULAR DISEASE AMONG INDIANS WITH TYPE 2 DIABETES MELLITUS."

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BACKGROUND:
The role of miRNAs in the pathological process of cardiovascular disease have been recognized recently and has become a rapidly evolving field. Of all the miRNAs that have been detected the role of miRNA1 and miR133a have shown great potential in detecting cardiovascular risk. Available data suggests that an individual with Type 2 diabetes mellitus (T2DM) has considerably higher risk of cardiovascular morbidity and mortality,with an augmented prevalence of risk factors such as hypertension, dyslipidaemia and obesity in these patients. Currently cardiovascular disease evaluation involves clinical and biochemical tests which detect the disease after the onset. Therefore miRNA a novel biomarker could help pave the ne era of early detection and treatment among individuals with T2DM.The objective of this study was to compare the circulating miRNA1 and miR133a between obese and non-obese T2DM and also with BMI matched controls.

METHODS
Sixty participants including (n=30) T2DM (25-60 years) and age and gender matched controls (n=30) were recruited.The T2DM and control groups were divided into obese and non-obese based on their BMI cutoff of 25 kg/m2.The study measures included clinical evaluation, anthropometry, FBS, HbA1C, lipid profile, plasma Insulin and miRNA levels. Insulin resistance and beta cell function were calculated.

RESULTS
There was a significant difference in BMI, HOMA IR, and B% between the study groups.The miRNA comparison between the study groups indicated that miRNA1 and miRNA133a were significantly different between obese and non-obese T2DM groups.There was also difference between obese control and obese T2DM group for miRNA 133a.

CONCLUSION
The significant difference in miRNA1 and miRNA133a between obese and nonobese T2DM Indians and with obese controls indicate that they could potentially become biomarkers of cardiovascular risk. However, further evaluation is needed to confirm the same among T2DM with cardiovascular disease in the near future.

KEY WORDS: microRNA, Type 2 Diabetes Mellitus, BMI.

FO4

Title: Assessing the Need for A.I. Education in Indian undergraduate medical curriculum: A Survey of Student Perspectives”

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STRUCTURED ABSTRACT

Background: The current medical curriculum lacks comprehensive AI-focused training, potentially impacting future healthcare delivery. This study addresses the critical gap in AI training within medical education, particularly in India, by assessing medical students' Awareness, perceptions, Readiness, Confidence, and ethical considerations regarding AI in healthcare. Our findings underscore the necessity of integrating AI competencies into medical education to prepare future healthcare professionals for an AI-driven landscape.

Methods: After obtaining ethics approval, we conducted a cross-sectional study on MBBS students from the 2019-2023 batch. An exploratory survey using a validated questionnaire was employed to obtain medical students' current understanding and Awareness of artificial intelligence (AI) in healthcare, perceived Readiness, and Confidence in utilizing AI technologies in clinical practice.

Results: The survey received 217 responses from 2019-2023 MBBS students. We found a mean percentage awareness score of 44.74%, a mean percentage perception score of 68.96%, a mean percentage readiness score of 91.32%, a mean percentage confidence score of 58.48%, and a mean percentage ethics importance score of 69.27%.
Males had higher Awareness, Confidence, and readiness scores. Conversely, females scored slightly higher in Perception and the importance of ethics consideration, though not statistically significant. Junior batches outperform senior batches in Perception, Confidence, and readiness scores; in contrast, the Awareness and ethics importance scores do not show significant differences between the two groups.

Conclusion: Our study indicates a generally positive outlook towards AI's potential to enhance healthcare delivery and patient outcomes. The study suggests a strong inclination towards further education and practical training focused on AI in healthcare, considering a solid recognition of the significance of ethical implications related to AI in healthcare. These findings highlight the importance of fostering AI literacy within medical education curricula and underscore the necessity for ongoing evaluation and adaptation to ensure that future healthcare professionals are equipped to navigate the complexities of AI in healthcare delivery while upholding ethical standards.

Key words: Artificial Intelligence, Medical Education, Curriculum, Indian Medical Graduate, Integration, Medical Students, Undergraduate

FO5

Title – "EFFECT OF COMPUTER ASSISTED SIMULATION TEACHING STRATEGY VERSUS TRADITIONAL TEACHING METHOD ON KNOWLEDGE PERCEPTION AND RETENTION AMONG 1st YEAR MEDICAL (MBBS) AND PARAMEDICAL (BPT) STUDENTS."

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ABSTRACT

Background: National Medical Council (NMC) has recommended incorporation of skill and virtual lab activity (SVL Lab) into curriculum with help of computer simulation modules in Physiology, as a substitute for live amphibian dissection. Active learning is a better way of engaging students so that it helps better understanding and reflects upon the concepts learnt, bridging the gap between didactic theoretical lectures and real animal experiments. **Methods:** 150 1st year MBBS, 40 1st year BPT students from St. John's Medical College, Bangalore were provided a pre-test questionnaire (neuromuscular and cardiovascular physiology). Students were truly randomized. Half the students attended computer assisted simulation strategy method (SVL lab) and others attended traditional teaching. Immediately after the session the same questionnaire was administered. Then again after 15 days, same questionnaire was administered to understand retention of knowledge. For ethical purposes, students attended the other method which they had not attended and feedback about methods was collected. **Results:** Significant and similar improvement in subject knowledge immediately post-exposure to traditional and SVL lab activity ($p<0.001$) noted. Retention was better in students exposed to SVL lab as the decline in knowledge after 15 days was not significant ($p=0.160$) compared to the traditional group ($p<0.001$). Feedback from students collected showed that (i) SVL lab alone or (ii) when complemented with traditional teaching has easier understanding of physiological concepts (34%, 53.7%), longer retention time (35%, 29.19%) and recall (38.12%, 41.25%), visualization and real time recording (23%, 70%), may help performance in university examinations (35%, 28.12%). **Conclusion:** Overall conceptual understanding and retention of the knowledge (accounting for time and inter-individual variation- random effect model) was better in students exposed to SVL lab activity compared to traditional teaching. Subjective feedback from students recommend SVL lab activity should complement the traditional teaching. **Key Words:** SVL, computer simulation, traditional, understanding, retention, recall.

Source of Funding: Medical education and Research Trust (MERT) grant, Karnataka.

FO6

TITLE – "GENDER DIFFERENCES IN AUDITORY & VISUAL REACTION TIME AND WHOLE BODY RESPONSE TIME"

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BACKGROUND:
Auditory-Visual Reaction (AVR) time is the speed, with which a person can respond to an auditory stimulus and visual stimulus respectively. Whole Body Reaction Time (WBRT) determines the time taken by an individual for moving the whole body. The effect of gender differences on AVR and WBRT was investigated in this study.

AIMS AND OBJECTIVES:
1)To compare AV reaction time and WBRT in young female and male adolescents

METHODS:
Subjects were 58 normal healthy adolescents (18-23 yrs) recruited from MVJ Medical and Nursing college. Hoskote, Bangalore. The subjects were divided into two groups: 29 Female adolescent group and 29 Male adolescent group based on inclusion and exclusion criteria. The AVR and WBRT was found out in all the subjects with the help of AVR time apparatus called PC 1000 and WBRT apparatus. Institutional ethical clearance was obtained and written informed consent was taken from all the subjects.

RESULTS:
The average value of Auditory Reaction Time (ART) in males and females for auditory response was 150.2 and 152.97 msecs respectively. Whereas, the Visual Reaction Time (VRT) for male was 183.1 msec and for female is 199.2 msecs, which was statistically not significant.
WBRT was less for Auditory (1.79+0.16) (total) in males compared to females (1.89+ 0.22) and was also statistically significant ($p=0.03$; $p<0.05$)
WBRT was less for Visual stimuli (1.8 + 0.16) (total) in males compared to females (1.95 + 0.24) and was also statistically significant ($p=0.004$; $p<0.05$)
First component (Sensory + processing) (secs) time for Auditory and Visual stimuli were same in both males and females.
The motor component for Auditory stimuli (1.09 + 0.21) was less in males compared to females (1.17 + 0.21) but not significant. Whereas the motor component for Visual stimuli was less in males(1.09 + 0.19) than in females (1.21 + 0.25) and was statistically significant.

CONCLUSION:
Average response time in male was less than in female for simple reaction time, though not statistically significant for both ART and VRT. This concluded alertness was normal in both. As, WBRT for Auditory and Visual stimuli was more sensitive than simple Reaction time, WBRT is a better indicator of overall performance of a person than the simple Reaction time.

FO7

Title – "ASSOCIATION BETWEEN GLYCEMIC CONTROL AND VISCERAL ADIPOSITY INDEX AMONG THE PATIENTS WITH TYPE 2 DIABETES MELLITUS"

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BACKGROUND: Indians are predisposed to develop type 2 Diabetes Mellitus (T2DM) and also have abdominal adiposity (especially visceral adiposity). Recent studies have shown that good glycemic control in diabetics brought about good control of lipid profiles thereby minimizing complications. Therefore, Visceral adiposity index (VAI), a novel gender-specific index based on Body Mass Index (BMI) and waist circumference (WC) and metabolic Triglycerides (TG) and HDL Cholesterol (HDL) was developed, as a recognized replacement marker of adipose tissue function, which is linked to insulin sensitivity and CardioMetabolic Risk (CMR).

AIMS AND OBJECTIVES: To study correlation between glycemic control and anthropometric measures like BMI, WC, Hip circumference (HC), Waist-Hip Ratio (WHR), Body Adiposity Index (BAI) and VAI in T2DM.

METHODS: The study group comprised of 50 known T2DM, of more than 2-years duration, on treatment, aged between 40-60 years attending the medicine OPD in the Rural Hospital. Written informed consent was taken. Institutional Ethical clearance was obtained before starting the study.Height, weight, Waist Circumference (WC) and Hip circumference (HC) were measured. WHR was calculated. BMI, BAI and VAI were calculated using formulae.

RESULTS: Pearson correlation was done between glycaemic control and other anthropometric measures like BMI, WHR, HC, BAI, VAI, WC in T2DM. Only moderate correlation was found between glycaemic control and VAI (r=0.214;p= 0.135) No significant positive correlation was found between glycaemic control and BMI (r=-0.238; p= 0.095); glycaemic control and WC (r= 0.197; p= 0.169; glycaemic control and HC (r= 0.160; p= 0.268); glycaemic control and WHR (r= 0.015; p= 0.918); glycaemic control and BAI (r=-0.030; p= 0.835).

CONCLUSION: The possible reason for moderate positive correlation between glycaemic control and VAI could be the low mean duration of diabetes in the study population and also less sample size. This finding can be explained by the fact that VAI indirectly reflects altered production of adipocytokines, increased lipolysis, and plasma free fatty acids, which aren't signified by BMI, WC, TGs, and HDL. Therefore, VAI could be a valuable index of both fat distribution and function.18

Key words: T2DM, VAI, Glycaemic control, CardioMetabolic Risk, adipose tissue function

FO8

TITLE – "RELATIONSHIP OF NEUTROPHIL LYMPHOCYTE RATIO WITH MODIFIABLE RISK FACTORS FOR CORONARY ARTERY DISEASE IN HEALTHY INDIVIDUALS RURAL TERTIARY CARE CENTER KARNATAKA"

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Background: Cardiovascular disease is the third commonest cause of mortality, coronary artery disease is most common among them, and it has risk factors such as male gender, smoking, diabetes, hypertension, obesity, and dyslipidaemia. Neutrophil lymphocyte ratio (NLR) is a simple, cost-effective, and widely available inflammatory biomarker. It is known to be associated with coronary artery disease. Hence the present study aimed to detect if any correlation between NLR and modifiable risk factors for the future development of coronary artery disease identified among healthy individuals of rural area.

Methods: Among healthy individuals came for physical health checkup to Rural tertiary care centre in Karnataka during the period Jan 2022 to Dec 2022 volunteers aged 20-40years, volunteers(120) fulfilling inclusion and exclusion criteria were recruited by simple random sampling method. Anthropometric parameters, blood pressure were measured, then blood samples collected. fasting blood sugar, postprandial blood sugar, total cholesterol, high density lipoprotein, complete blood count were measured. Neutrophil lymphocyte ratio was noted by dividing total number of neutrophils by total number of lymphocytes. Using SPPS software statistical analysis was performed.

Results: This study depicts that 50(41.6%) volunteers were smokers, 34(28.3%) were obese, 45(37.5%) had higher waist circumference, 49(40.8%) prediabetics, 4(3.33%) were diabetics, 44(36.6%) prehypertensive, 48(40%) were hyperlipidaemic. Neutrophil lymphocyte ratio was positively correlated with Body Mass index ($r=0.35$, $p=0.042$), waist circumference($r=0.37$, $p=0.012$), fasting blood sugar($r=0.29$, $p=0.043$), total cholesterol($r=0.467$, $p=0.0008$) and negatively correlated with High-density lipoprotein of <40mg/dl ($r= -0.29$, $p=0.02$).

Conclusion: Modifiable risk factors detected were high in healthy individuals in and around rural part of southern India and they were positively correlated with NLR indicated that inflammatory changes increases with increase in the level of these risk factors. NLR can be used as simple, cost effective inflammatory marker to assess progress of risk factors (as a predictor of future risk) of coronary artery disease.

Keywords: Neutrophil lymphocyte ratio, Modifiable, risk factors, coronary artery disease.

FO9

TITLE – "UTILITY OF HEMATOLOGICAL PARAMETERS IN PREDICTING PRE ECLAMPSIA IN PREGNANT WOMEN- A PILOT STUDY."

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Introduction

Hypertensive disorders of pregnancy are one of the common health issues encountered in antenatal care. A pregnant woman is considered hypertensive if her blood pressure is greater than or equal to 140/90 mmHg on two consecutive measurements at least 4 h apart1. Preeclampsia is a disorder of pregnancy characterized by hypertension with a blood pressure of ≥140/90 mmHg and proteinuria with ≥300 mg/24 h urine or ≥2+ dipstick after 20th week of gestation3. The prevalence of preeclampsia in developing countries ranges from 1.8 % to 16.7 % 4.The complete blood count is a simple and affordable test performed in almost all the laboratories. Hence the study is being performed to identify hematological predictors of pre eclampsia.

Aims and Objectives

The aim of this study is to identify hematological parameters and its association with pre-eclampsia among pregnant women

Materials and methods

The study was done in Department of Pathology attached to Sri Devaraj Urs Medical College. All the pregnant women with pre eclampsia visiting the RLJH & RC were included in the study. A total of 20 patients with preeclamsia were included in the study and 20 non pregnant women without hypertensive disorder were considered as controls.Various hematological parameters like Hemoglobin, Hematocrit, MCV, MCH, MCHC, RDW-SD, Total WBC count, Neutrophil count, lymphocyte count and platelet count were included in the study.

Results: A total of 40 cases(20 cases with pre eclampsia and 20 control cases) were included in the study. The mean age of normotensive pregnant women was 21.2 ± 3.9 years while it was 25.7 ± 3.2 years for preeclamptic patients. Primigravida accounted for 16 cases. The numbers of gravidity among normotensive and preeclamptic pregnant women were 2.6 ± 1.3 and 2.9 ± 1.6 pregnancies respectively. The mean gestational age of normotensive control group was 25 weeks and pre eclapmsia group was 36 weeks. The hematological parameters like Hemoglobin, Hematocrit, MCV, MCH, MCHC, Total WBC count, Neutrophil count, lymphocyte count and platelet count were not found to be statistically significant. Only one hematological parameter RDW-SD was found to be statistically significant with P value of 0.029.

Conclusion

RDW SD can be used as a strong predicting factor for developing Pre eclampsia as it is economical and easily available in resource limited setting.

FO10

Title: PERCEPTION AND KNOWLEDGE OF ARTIFICIAL INTELLIGENCE (AI) IN MEDICINE AMONG MEDICAL UNDERGRADUATE STUDENTS AND INTERNS OF A RURAL MEDICAL COLLEGE IN SOUTH INDIA.

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Structured abstract

Background : Artificial intelligence (AI) is a term coined by John McCarthy in 1955. It means "the ability of computers to perform tasks normally requiring human intelligence, but this does not mean they operate in the same way as human thinking and behavior".
In medicine, AI plays an important role in Diagnostics and Imaging, Patient Monitoring and Management, etc
The current study explored medical students' and interns' knowledge of artificial intelligence (AI), perceptions of the role of AI in medicine, and preferences around the teaching of AI competencies.

Methods: In this cross-sectional study, the authors used a previously validated Canadian questionnaire. The questionnaire was administered to the participants using Google form. Responses were gathered from medical students and interns at Sri Devaraj Urs Medical College, Kolar, Karnataka. Survey results were analysed quantitatively (p-value = 0.05).

Results: In total 128 students responded. Out of which 5 students declined to participate. A total of 123 students (30.75% response rate) participated in the study. The average age of the participants was 21 years. Majority of the respondents were females (62%). Most of the responses came from the interns (27%). 89% respondents are aware of the AI's impact on patients and healthcare. Over 58% strongly agreed or agreed that AI would reduce the number of jobs for doctors. 34% expect AI to impact their specialty choice, 36% strongly agreed or agreed the Indian health-care system is well-equipped to deal with the challenges of AI, and 80 % opined medical students should receive training on AI competencies.

Conclusion: Most of the medical students seem to be aware of AI's impact on patients and healthcare. There is high willingness among respondents to learn about AI's role in the field of medicine. AI can be used in our country's healthcare system to address challenges related to shortage of resources and manpower.

Keywords: artificial intelligence, healthcare, medical students, South India

PO1

Title: “A study to compare heart rate variability and heart rate recovery indices in healthy young adults with and without music intervention”

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Abstract

Background: Physical exercise is a condition that places high functional demand on the cardiovascular system. Heart Rate (HR) increased during exercise, rapidly decreases after stopping the exercise. Post-exercise parasympathetic reactivation appears to be an important mechanism with a cardioprotective effect. Music is an efficient method of modulating emotions and autonomic nervous system activity. This study is being conducted to assess the effect of music intervention on heart rate variability (HRV) and heart rate recovery indices (HRRI) in healthy young adults after a submaximal exercise 6-minute walk test.

Methods: A study was done on 21 young healthy adults in the age group 18 -25. Baseline recording HR, BP, RR, and HRV were taken. Participants were asked to do 6-minute walk test. Immediately after exercise the peak HR, HRV, and HR at 1 min and 3 mins are recorded and HRRI was calculated. On the intervention day, the same procedure was repeated. Immediately after finishing the 6-minute walk test, the subject was made to listen to music for 3 minutes (Veena rendition in raaga Naata, at madhyamagati, i.e., moderate tempo), using a mobile phone and headset, in the research lab. As the subject listened to music, HRV was recorded and HRRI was calculated and analyzed.

Results: Music intervention after the 6-minute walk test did not show a significant difference in HRV after the 6-minute walk ($p < 0.05$) but the music intervention after the 6-minute walk test showed a significant difference in HRRI 1 [(12.571 ± 2.694), (14.19 ± 2.015), $P < 0.001$)] and HRRI 3[(39.476 ± 7.38), (43.857 ± 5.918), $(P < 0.01)$] compared to 6-minute walk without music.

Conclusion: Post-exercise music intervention enhanced the rate of heart rate recovery. It can be a useful adjunct to minimize cardiac workload after exercise.

PO2

Title: A cross-sectional study assessing the influence of duration of blue light exposure before bedtime on sleep quality and mental health among healthy young adults

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Structured Abstract:

Background: With blue light emitting electronic devices becoming ubiquitous, understanding their effect on health is important. Blue light has been implicated in causing adverse effects to sleep and mental health. This study aims to assess the correlations among duration of exposure to blue light before bedtime, sleep health as assessed by the Pittsburgh Sleep Quality Index (PSQI) and mental health as assessed by the Depression Anxiety Stress Scale-21 (DASS-21).

Methods: 182 medical university undergraduates answered an online google form survey assessing their screen use habits and use of blue-light filters, sleep health using PSQI, and mental health using DASS-21. The data were then analysed for linear correlation among the study parameters.

Results: Of the 182 participants, 89 (48.9%) reported using blue-light filters (Group F), and 93 (51.1%) did not (group NF). Linear correlation analysis in Group NF using Pearson's correlation coefficient revealed a trend towards a significant weak positive correlation between duration of blue-light exposure 4 hours before bedtime and PSQI ($r=0.198$, $p=0.056$), and a trend towards a weak negative correlation between duration of blue-light exposure 1 hour before bedtime and anxiety score ($r=-0.197$, $p=0.059$). PSQI, depression, anxiety and stress scores all showed highly significant strong correlations with each other ($N=182$, $r>0.5$, $p<0.001$). Independent samples student's t test showed no significant differences between Group F and Group NF in any of the study variables.

Conclusion: Weak correlation of blue-light exposure with sleep and mental health can be attributed to the study sample being medical students and must be verified in further studies with a larger sample of daily exposure data in more habitual screen users like IT workers. Strong correlation between sleep and mental health suggests either a causal relationship or an underlying common causative factor, requiring longitudinal studies to investigate further.

Keywords: blue light exposure, sleep health, mental health, PSQI, depression, anxiety, stress

PO3

Title: "EFFECT OF CLOSE TO BEDTIME VS AWAY FROM BED TIME STRENGTH TRAINING ON SLEEP QUALITY IN YOUNG HEALTHY ADULTS: A RANDOMIZED CONTROLLED TRIAL"

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Background: A lack of quality sleep increases the risks of mortality, cognitive impairment, and depression. Sleep onset is disturbed with pre sleep exercise, which causes large physiological excitement at bed time. Global exercise training guidelines suggest combined training of strength and endurance into the training programme to improve quality of sleep. There is a controversy regarding the effect of close to bedtime vs away from bed time training on sleep quality. The present study aims to compare quality of sleep among morning and evening strength and endurance trainers.

Aims and objectives: To assess quality of sleep using a sleep questionnaire in close to bed time and away from bed time strength and endurance training groups before and after an intervention and to compare the quality of sleep between groups.

Materials and methods: Study was conducted on 40 healthy young adults in the age group of 18 – 30 years who were previously not involved in regular physical activity. They were randomly divided using simple randomization into close to bed time and away from bed time training groups. They performed strength and endurance training in ultimate fitness gym. The quality of sleep was assessed using Pittsburgh Sleep Quality Index (PSQI) in both the groups before and after a 4-week duration, intergroup comparisons were analysed using applicable statistical tests.

Results: The data collected was analysed using Student T test. P value for global PSQI score was found to be statistically significant (p=0.005) for close to bed time training group whereas it was highly significant (p=0.0005) in away from bed time training group.

Conclusion:

Though both close to bed time and away from bed time exercise has proved to improve quality of sleep, away from bed time training is found more beneficial towards improving the quality of sleep when compared with evening group.

PO4

TITLE: A STUDY ON ROLE OF CHROMIUM ON BLOOD SUGAR LEVELS AND LIPID PROFILE IN TYPE 2 DIABETES MELLITUS PATIENTS

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INTRODUCTION: Chromium is an essential mineral that appears to have a beneficial role in the regulation of insulin action and its effects on carbohydrate, protein and lipid metabolism. Chromium is an important factor for enhancing insulin activity. Studies show that people with type 2 diabetes have lower blood levels of chromium than those without the disease. Insulin resistance is the common denominator in a cluster of cardiovascular disease risk factors. Chromium has been shown to reduce insulin resistance and to help reduce the risk of cardiovascular disease and type 2 diabetes.

METHODS: This is a randomised controlled trail done to 60 Type 2 Diabetes Mellitus divided into 2 groups –those receiving chromium supplementation and those receiving placebo. Fasting blood sugar levels, post prandial blood sugar levels and lipid profile are measured at the beginning and at end of the study. The patients were recommended not to change their normal diet, life style and medication. No significant changes were observed for weight, body mass index, and fasting blood sugar and post prandial blood sugar levels in both groups.

RESULTS: In this study, it is observed that chromium diet didn't have significant effect on blood sugar levels. However, the modest beneficial effects of chromium supplementation on insulin resistance and lipid profile were found.

CONCLUSION: Chromium supplementation might help T2DM patients to improve the disease-associated disturbance of lipid profile and insulin resistance.

Keywords: Chromium, Cancer, Diabetes Mellitus, Hyperlipidaemia, Trace Elements

PO5

TITLE – "CARBON MONOXIDE POISONING"

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Carbon monoxide (CO) is a odorless, colorless, tasteless, and non-irritating gas that is highly toxic, making it extremely difficult for individuals to detect. The characteristic has earned it the moniker "Silent Killer." CO is commonly produced during the incomplete combustion of organic materials, with frequent sources including faulty, poorly maintained, or inadequately ventilated gas appliances like heaters, stoves, generators, and grills, as well as residential fires. Due to its undetectable nature and the potential for exposure from everyday household items, CO poses a significant risk, necessitating proper maintenance and ventilation of such appliances to prevent poisoning.

Here a case of 21-year-old female was brought to R.L.J.H Mortuary, Kolar, Karnataka. She was found dead on the floor of a closed bathroom with a gas geyser was on. Cherry red discoloration of the nail beds, hypostasis areas, internal organs, and blood, which are indicative of carbon monoxide (CO) poisoning. Chemical analysis of the viscera confirmed CO poisoning as the cause of death.

The public must be educated about the dangers effects of carbon monoxide (CO) poisoning in ill-ventilated rooms and bathrooms. Special attention should be given to the risks associated with heating mechanisms during the winter season. It is crucial to raise awareness about the potential for CO poisoning in these situations, emphasizing the importance of proper ventilation and regular maintenance of gas appliances to prevent such fatal incidents.

Key words: Gas geyser, CO poisoning, Cherry red colour discoloration, Postmortem Examination.

PO6

Title: ASSESSMENT OF STUDENTS PERFORMANCE POST SMALL GROUP DISCUSSION vs DIDACTIC LECTURE – A CROSS-SECTIONAL STUDY.

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Background: SGD (Small Group Discussion) was introduced as a teaching methodology with the stated aims of improving the student's ability to grasp an idea, inculcating an exploratory/tangential thinking behaviour and also to foster better communication skills. Many institutions over the world have partly/completely transitioned to SGD. Societal behaviours also affect the workability of SGD. Hence the objective of our study was to see how SGD performs in comparison to a traditional lecture session in our setup.

Methods: 155 students attended a didactic lecture on the physiology topic – Gastric acid secretion & Gastric function tests. 45 students who have not attended the didactic lecture class were asked to attend the SGD on the same topic, 38 students were present. The same staff engaged both the lecture & SGD. At the end of the lecture class & SGD, students were provided a MCQ test of 20 questions. 38 students were randomly selected from the lecture group using random number generation by computer software. MCQ scores of each group were compared using students t test. A feedback form comprising of 7 questions were asked to be rated between 0 to 5 by both the group participants.

Results: Mean MCQ score of SGD group was 11.71, whereas 11.50 was for lecture group. By conventional criteria, this is not statistically significant. All the questions of the feedback form received a favourable response by all the subjects towards SGD.

Conclusion: The students as a whole preferred SGD over a didactic lecture session as evidenced by their feedback form responses. But these did not seem to fructify into clear-cut objective measures.

Key words: Small Group Discussion, Didactic lecture, Multiple Choice Question, Questionnaire.

PO7

TITLE – "DEVELOPMENT AND VALIDATION OF A STANDARD YOGA MODULE FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE"

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Background:
Chronic Obstructive Pulmonary Disease (COPD) is a progressive obstructive respiratory condition. Global Initiative for Chronic Obstructive Lung Disease (GOLD) reports, COPD affects approximately 10.3% of world's population, impacting around 300 million individuals. With high prevalence of COPD, there is a growing demand for complementary therapies to supplement conventional medical treatments. Bridging modern and ancient perspectives, the popularity of yoga is increasing due to its impact on respiratory health. Showing that yoga improves dyspnoea, fatigue, exercising capacity, and lung function in COPD patients. Yogic breathing practices enhance maximal voluntary ventilation, forced vital capacity, and overall performance. However, there is no standardized integrated yoga module (IYM). The aim of this study is to develop IYM that is a safe, beneficial approach in enhancing well-being and managing disease which can be used in pulmonary rehabilitation.

Methods:
An IYM was developed, integrating practices supported by classical literature like Hatha yoga pradipika, Patanjali yoga sutra and others, along with contemporary research publications. This module includes breathing exercises, shaktivikasaka vyayama, asana, pranayama, kriya, meditation, and relaxation techniques. A panel of 8 qualified experts was convened to validate the module and determine content validity by assessing the necessity of the included elements. The mean of Content Validity Ratio (CVR) across items is used to estimate the overall test content validity. Lawshe's CVR formula will be used to determine the cut-off value.

Results: Out of 63 IYM practices selected for validation, 42 had a CVR score of ≥0.75, indicating high content validity.

Conclusion
The present IYM is a valid module for COPD. However, future studies must determine the feasibility and efficacy of the IYM.

Key words: COPD, Yoga, Validation, Integrated Yoga Module.

PO8

TITLE – "EMPATHY LEVEL AMONG UNDERGRADUATE MEDICAL STUDENTS: A CROSS SECTIONAL STUDY FROM KANNUR DISTRICT, KERALA."

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Background: Empathy, in medicine, is defined as a physician's understanding of a patient's experience and his/her ability to converse the feeling back. A clinical relational connection must be established to obtain optimum clinical results. Our aim is to determine the level of empathy among first year undergraduate medical students and to determine the difference in empathy levels between the two genders.

Methods: A cross-sectional study was conducted amongst undergraduate first year medical students in the academic year 2022 to 2023 in Government Medical College Kannur, Kerala. The Toronto Empathy Questionnaire (TEQ) was used to assess empathy level. TEQ is a 16-question composite positive (8 questions) and negative (8 questions) were scored on a 5-point likert type scale for positively worded responses. The questionnaire was uploaded on google forms for data collection. Data collected was downloaded from Google Forms in Microsoft Excel format and converted to SPSS format version 27. All qualitative variables were expressed as frequency and quantitative using mean and standard deviation. Students t test was done to determine the association between quantitative variables. The level of statistical significance will be p value < 0.05.

Results: The mean age of study participants was found to be 20.05±0.99 years. A total of 100 participants,75 (75%) were females. Most participants showed high empathy. Mean TEQ score of study subjects was found to be 46.97±5.51. Female showed a significantly higher empathy score. The mean empathy score of female students was 47.97±4.87, while the empathy score for male students was 43.96±6.27.There was a statistically significant difference ($p<0.05$) in empathy scores among gender.

Conclusion: Empathy should be cultivated starting from the commencement of the Bachelor of Medicine and Bachelor of Surgery (MBBS) curriculum and beyond. More research with longitudinal study designs is required. Interventions like interpersonal training and workshops are required to enable our future doctors serve the community with high levels of empathy.

Keywords: Empathy, undergraduate, TEQ score, Interventions

PO9

Title: "Unveiling The Impact Of Obesity On Arterial Health: A Bioelectrical Impedance Analysis In Young Adults"

Authors: Dinakar Reddy[1], Dr Jagadamba.A[2], Dr Ashwini K Shetty[3]
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Background: Obesity is a significant public health concern, and contributes to various diseases, including cardiovascular disease (CVD). Arterial stiffness, a predictor of CVD, is associated with obesity, but the relationship between the two is not well understood. There is a need for robust research to investigate the link between obesity and arterial stiffness using bioelectrical impedance analysis (BIA) and pulse wave velocity (PWV).

Objectives: To determine arterial stiffness using pulse wave velocity in young adults and compare arterial stiffness parameters between obese and non-obese individuals.
Methods: This cross-sectional study included 132 young adults (18-25 years) who were categorized as obese or non-obese based on bioelectrical impedance analysis (BIA). Arterial stiffness was evaluated using pulse wave velocity (PWV) measurements, and comparison of arterial stiffness between obese and non-obese groups. Data analysis was done using SPSS Version 22. A confidence interval of 95% with significance at $p < 0.05$ was considered as statistically significant.

Results: The results of the study will be presented in the following sections: demographics, body composition, arterial stiffness parameters, and comparison of arterial stiffness between obese and non-obese groups. Preliminary results of our study show a significant difference in arterial stiffness among obese and non-obese individuals ($p<0.05$).

Conclusion: This study aims to investigate the association between obesity and arterial stiffness in young adults, which will provide valuable insights into the early detection and prevention of cardiovascular disease. Our findings suggest that bio electrical impedance analysis may be effective in categorizing obesity which has direct impact on arterial stiffness. However, further analysis is needed to confirm these results. This study contributes to the existing literature by providing evidence for impact of obesity on arterial health and the effectiveness of bio electrical impedance in categorizing obesity.

Keywords: obesity, arterial stiffness, pulse wave velocity, bioelectrical impedance analysis, young adults.

PO10

Title: "Validation of Formula based Glycosylated haemoglobin(HbA1c) for Artificial Intelligence (AI) Model Training"

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Title: "Validation of Formula based Glycosylated haemoglobin (HbA1c) for Artificial Intelligence (AI) Model Training"

Background:
Diabetes mellitus is a metabolic disorder affecting half a billion individual's world-wide. Glycosylated hemoglobin (HbA1c) is the reference standard parameter for monitoring blood glycemic control for previous 2-3 months. Traditional methods of estimating HbA1c involve complex laboratory procedures, often inaccessible in resource-limited settings. This study aims to simplify the estimation of HbA1c using a straightforward mathematical formula derived from fasting blood glucose (FBG) levels, which may be enhanced by artificial intelligence (AI) techniques.

Objectives: This study aimed to evaluate the accuracy of a mathematical formula for estimating HbA1c: HbA1c (%) = 2.6 + 0.03 × FBG (mg/dL) and compare it with traditional laboratory-analysed HbA1c values.

Materials & Methods: The study was designed as a record based observational study, utilizing the Fasting Blood Glucose (FBG) and HbA1c data retrieved from the Clinical Biochemistry section laboratory records for 2 months, spanning from May 2024 to June 2024.

Result: A total of 504 patients were enrolled among whom the average FBS was 157.9 + 63.9mg/dL.The HbA1c level ranged from 4 to 16.7% with average of 8.2 + 2.5% as measured in BIO-RAD D10 with HPLC Method. The average calculated HbA1c level was 7.3 + 1.92%Bland Altman analysis showed a Bias of 0.911 (95% Confidence Interval 0.774 to 1.049). The analysis of the plot showed that better levels of agreement when the average of estimated and calculated HbA1c was less than 9%. Further, Mc Nemar Bowker Test suggested that calculated HbA1c could be better used when the patient had fair or good control of glucose.

Conclusion: The formula for calculation of HbA1c gives better estimation and categorisation when the HbA1c levels are in good or fair control. Hence, the utilisation of the formula in AI should be incorporated only for screening and not for diagnostic and prognostic purposes

Key words: Fasting Blood Glucose, Glycosylated hemoglobin, Artificial Intelligence

PO11

TITLE – "ASSOCIATION OF SERUM MAGNESIUM LEVEL WITH AND WITHOUT RETINOPATHY IN TYPE-2 DIABETES MELLITUS"

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INTRODUCTION:
Diabetes Mellitus (DM), a metabolic disorder- occurs due to a complex interaction between environmental, genetic and lifestyle factors.Hyperglycemia due to DM leads to microvascular and macrovascular complications (retinal, renal and neural end organ damage) which causes significant morbidity. Magnesium has an essential role in both insulin release and cellular glucose metabolism and hypomagnesemia is common in DM.Nephropathy, a frequent consequence of the disease, can cause hypomagnesaem.

OBJECTIVES : To determine the association between serum magnesium levels and retinopathy in type 2 diabetic patients with normal renal function and to correlate it with severity of retinopathy.

MATERIALS AND METHODS: Study Design: cross-sectional observational study.Study period: 3 months Sample size: 60 (30 patients in each group),Study population:patients >40 years age with type 2 DM, serum creatinine □1.2 mg/dL and without microalbuminuria .

RESULTS: The mean serum magnesium levels in patients with retinopathy (1.63 ± 0.30 mg/dL) were lower compared with patients without retinopathy (1.76 ± 0.22 mg/dL). This reduction was statistically significant (p = 0.029 by Student's independent t test).In the retinopathy group, mean serum magnesium levels showed a decrease with increasing severity of retinopathy.

CONCLUSION: Serum magnesium levels were low in patients with diabetic retinopathy.Patients with Sight threatening diabetic retinopathy (STDR) had relatively lower serum magnesium levels compared to those without STDR

Keywords: Magnesium, type 2 diabetes mellitus, diabetic retinopathy

Poster Presentations

FP1

TITLE – "A BLENDED MODEL FOR PHYSIOLOGY TEACHING IN NURSING EDUCATION – LESSONS LEARNT FROM ONLINE TEACHING DURING THE COVID-19 PANDEMIC"

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Background: The forced shift to online education during the COVID-19 pandemic posed challenges to Physiology teaching in Indian nursing education. The objectives were to assess the apprehensions, expectations, and challenges, perceived by nursing students and physiology faculty, about the online mode of learning physiology, to evaluate the utility of reinforcement measures during the constraints of the pandemic, and to compare the online, offline, and blended modes.

Methods: First-year nursing students (n = 100) underwent online and blended modes of physiology learning, with added reinforcement measures, during the pandemic. Student feedback on the perceptions of the online mode was taken at the beginning, mid, and end of course. Feedback was obtained from students and faculty to understand the strengths and challenges of both modes. Quantitative data of feedback were analysed using the Cochran-Mantel-Haenszel test. Thematic content analysis was used for qualitative data. Objective measures of student performance were compared using unpaired t-tests.

Results: Online learning was perceived to be more difficult than anticipated by students. 'Comfort' in learning and 'time management' were the major strengths, while 'reduced internet connectivity,' 'lack of interactions' and 'health issues' were the biggest challenges expressed by students and faculty. The planned reinforcement measures were 'sometimes' helpful in revising and improving students' confidence. The final summative assessment scores showed a better performance compared to the preceding academic batch.

Conclusion: Students and faculty expressed some advantages and several disadvantages of online learning. They preferred offline or well-designed blended learning. The reinforcement measures seemed to aid student learning. The objective measures showed that students adapted well to the online mode. A model for blended learning for 1st-year nursing education, that utilises the advantages of both modes of learning, has been proposed, which requires further validation.

Keywords: Online physiology teaching, Blended learning, Reinforcement measures, Pandemic situation

FP2

Title: Blood Group Determination Using Image Processing Techniques; Role of Artificial Intelligence

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Background: Currently, laboratory medical technicians perform tests manually. Sometimes manual blood typing leads to human error, resulting in incorrect blood types and reporting errors that lead to fatal transfusion reactions.

Methods: Blood collected from the blood donors will be labeled and processed automated analyzer. ABO and Rh blood group typing of all donor blood samples in our institute were analyzed for a period 6 months. There were a total of 600 samples collected. Appropriate controls were used.

Results: We have succeeded in creating a system that can solve the task of detecting antibodies from red blood cells more robustly and flexibly than current systems. There is still a lot of information to be added to make this complete, but it is the focus of our current efforts.

Conclusion: Artificial intelligence can perform correct blood grouping and provide safe and error free transfusion services and there by improve patient safety.

Key words: Artificial Intelligence, Blood Grouping, Patient safety, Blood Transfusion.

FP3

Title Caught in the bet, “Gambling with AI”-A case series

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Introduction-
Gambling is a major public health problem in India, with a prevalence of around 7.4%. Previously restricted to casinos and card rooms, gambling has surged with the rise of online gaming, affordable mobile data, and digital banking. Online gambling is now just a click away. To increase revenue, online gambling operators use Artificial Intelligence (AI) algorithms to analyze player patterns and behaviors to prevent them from winning.

Method-“Case series”
CASE SERIES
We present a series of three individuals in their 20s and 30s from rural backgrounds and low socioeconomic status, who presented with depressive features and alcohol dependence. All had a history of deliberate self-harm in the context of heavy financial debt due to an irresistible urge for online gambling. Once they exhausted their monetary savings, they borrowed money from relatives and even stole from family to continue gambling, further worsening their financial burden and depressive symptoms. They were managed with SSRIs and psychotherapy sessions.

Discussion
The identified risk factors include being male, unmarried, of low socioeconomic status, and experiencing initial gains followed by financial losses in gambling, leading to deliberate self-harm. They also had co-morbid depression and alcohol dependence. These findings correspond with studies conducted by Silvia Saboia Martins in Canada and Paula Jaugegui in Spain.

Conclusion-
All three cases participated in nonstrategic online gambling and developed suicidal ideation, but early diagnosis and prompt treatment prevented further aggravation. AI-based applications should be developed to predict self-reported problem gambling. The Government should enforce the effective and ethical use of AI-based programs.

Key word: Gambling , Artificial intelligence, Suicide, Depression

FP4

Title of the article:
A Study to Assess the Infant Young Child Feeding Practices (IYCF) Among Mothers of Young Children Attending Paediatric out Patient Department in Selected Hospital Kolar in View to Develop an Information Booklet.

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Background: Nutrition during early years of life is crucial for children to survive, grow and develop into healthy adults who can lead rewarding lives and productively contribute to their communities. The period from birth to two years of age is considered as a “critical window”.

Objectives: To assess the infant young child feeding practices (IYCF) among mothers of young children attending pediatric outpatient department and to find out the association between selected demographic variable with infant young child feeding practices.

Methods: Quantitative approach with descriptive survey design was adopted. 60 mothers of young infants attending paediatric outpatient department were selected by using convenient sampling technique at R.L.J.H Kolar. The data were collected using Structured questionnaire to assess IYCF feeding practices.(Questionnaires related to infant young child feeding practices with regard to breast feeding, artificial feeding and complementary feeding. The study was approved by the Institutional Ethics Committee of Sri Devaraj Urs College of Nursing, Karnataka. Data was analyzed using SPSS version 26.0 software. Descriptive statistics and chi-square analysis was done to analyze the data.

Results:- Majority of the mothers initiated breastfeeding immediately after birth (61%), colostrum (51%), frequency of breast feeding (41%) exclusively breastfed (36%), powdered milk (27%) & cow’s milk and fed through bottle (25%) , complementary feeding at 6 months of duration (36%) with smashed rice (33%), consistency of food was liquid (41%) & preferred starchy vegetables (40%), used more bananas (35%), non-vegetarian started after 6 months (38%), eggs / meat/ fish were given rarely (31%), chicken soups (45%), bakery products was added (33%), legumes and pulses were avoided (41%). breast milk along with complementary feeding (58%). There was association found between the socio demographic variables and infant young child feeding practices.

Conclusion: It is evident that there is lack of awareness among mothers about the feeding practices of young infants.

Keywords: Infant young child feeding practices (IYCF), Information booklets, and Young infant

FP5

TITLE – "EFFECTIVENESS OF PEDAGOGY COMPETITION AMONG MEDICAL UNDERGRADUATES AS A TEACHING LEARNING METHOD IN MEDICAL EDUCATION."

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Background: The best way to learn is to teach, as one needs to have clarity and comprehension of the concepts to impart knowledge to others. This study was undertaken to assess the effectiveness of learning by teaching through pedagogy competition.

Methods: This questionnaire-based quasi-experimental cross-sectional study was conducted on 70 1st year MBBS students. The study participants were asked to complete the questionnaire, who were part of the pedagogy competition. 35 students who participated in the competition and presented their topic were considered active learners, and among the ordinance, 35 students participated in the study as passive learners. The data from the questionnaire were tabulated and the mean and standard deviation of the rating provided by the active and passive learners were extrapolated. The significance of the difference in the mean rating among the active and passive learners was assessed for each item using an independent t-test.

Results: Both active and passive learners expressed that pedagogy enhances motivation, improves comprehension, and encourages one to read beyond the standard curriculum. The degree of acceptance was higher in active learners. Both active and passive learners agree to the fact that participation in pedagogy improves communication skills. They were neutral to the opinion of stress due to pedagogy.

Conclusion: Pedagogy is beneficial in imparting concepts, enhancing comprehension, and improving communication skills in medical students

Keywords: Pedagogy, active learning, passive learning, teaching, medical education

PP1

Title: "Revolutionizing Nocturnal Asthma Management with Artificial Intelligence"

List of authors: Pavankumar B N[1], Dr. Senthil Kumar E[2]
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Introduction: Nocturnal asthma is a condition where asthma symptoms worsen at night, disrupting sleep and quality of life. Managing nocturnal asthma is crucial to prevent severe attacks and ensure restful sleep. Leveraging AI to enhance detection, monitoring, and personalized care for nocturnal asthma can be highly beneficial. Symptoms often go unnoticed until they become severe. Difficulty in identifying nighttime triggers is a common challenge. In the future, AI could analyze data from wearable devices to detect early signs of nocturnal asthma attacks.

Applications: Wearable devices will monitor physiological parameters and sleep patterns to detect early symptoms of nocturnal asthma. Telehealth platforms will enable remote monitoring and support from healthcare providers. Mobile apps will assist patients in tracking symptoms, medication adherence, and identifying triggers.

Procedure: A wearable nose sensor will be a device designed to monitor the itching level and Peak Expiratory Flow Rate (PEFR) in the nose. It will detect the severity of an asthma attack and send notifications to a mobile device, doctor, or healthcare team. This will allow the patient to take their inhaler or alert emergency care as needed.

Benefits: Preventing severe attacks will decrease emergency room visits. Early intervention will prevent severe attacks, leading to enhanced sleep and overall well-being. Treatment plans will be tailored to individual needs and responses. Optimizing treatment plans will reduce overall healthcare costs and prevent hospitalizations and emergency visits.

Conclusion: Continued advancements in AI will promise further improvements in nocturnal asthma management. AI tools will empower patients to take control of their condition and improve their quality of life.

Keywords: artificial intelligence, nasal sensor, wearable devices

PP2

Title: The Future of Elderly Care: Integrating Artificial Intelligence with Lo-fi and Hi-fi prototypes for Fall Prevention.

List of Authors: Dr. Sandhya M[1], Dr. Sarulatha H[2]
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Background: In recent years, the integration of artificial intelligence (AI) into elderly care has shown promising potential, particularly in fall prevention- a critical concern for the aging population, Falls leads to serious injuries, decreased independence, and decreased healthcare costs. Artificial intelligence powered algorithms offers innovative solutions to mitigate these risks by predicting and preventing falls through advanced analytics and real-time monitoring. Aim: To create a prototype that will assist in improving concentration and reducing the risk of falls in this population.

Application: Artificial intelligence with lo-fi and Hi-fi Prototypes for fall prevention. Lo-fi prototypes are initial, simplified versions of fall prevention solutions for monitoring movements and improving selective attention. Hi-fi Prototypes, which include advanced AI systems such as wearable sensors or simple AI- algorithms, can offer more sophisticated fall prediction models.

Procedure: Lo-fi Prototypes: A simple mobile application that prompts the elderly person to focus on specific tasks along with dual task, which offers to improve cognitive function, attention, balance and coordination. Hi-fi Prototypes: A wearable devices which uses sensors and algorithms to monitor the person's posture and balance, while they perform daily tasks and Smart Canes that uses sensors and cameras to detect obstacles in the environment with visual and auditory cues.

Benefits: The prototype sessions is to help elderly with higher falling risk, improve their selective attention and reduce of falling by training them to perform daily activities that will greatly improve the quality of life.

Conclusion: This approach harnesses AI's capabilities to detect, predict, and prevent falls more effectively, thereby enhancing safety, independence, and quality of life.

PP3

TITLE: "STUDY OF ASSOCIATION OF SUBCUTANEOUS AND VISCERAL FAT AREA IN TYPE-2 DIABETIC MELLITUS AND NON-DIABETIC PATIENTS – A PILOT STUDY"

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BACKGROUND:-

Obesity is probably the most powerful predictor in development of Type2diabetesmellitus.Regional obesity plays a greater role in development of diabetes. Abdominal obesity is determined by the accumulation of both subcutaneous fat and visceral fat area.

AIM & OBJECTIVES:-

To study the association of subcutaneous and visceral fat area in diabetes mellitus and non-diabetic patients.

To evaluate association of subcutaneous and visceral fat area in diabetic mellitus patients and nondiabetic patients by computed tomography

METHODS

Abdominal fat measured in eight patients at L3 level (four type 2 diabetes mellitus and four Non diabetic patients) that includes total fat, subcutaneous fat, visceral fat by computed tomography at L3 level using slice thickness of 3mm and attenuation of -190 to -30 hounsefield units.

DISCUSSION

Excess accumulation of visceral fat players a more significant pathogenic r0le, visceral fat is association with increased incidence of metabolic syndrome and has stronger relation with insulin resistance and Type 2 diabetes, Visceral fat accumulation is regarded as a risk factor for cardiovascular diseases.

RESULTS

Measured abdominal fat in eight patients, 4 diabetics and 4 nondiabetics patients. Diabetic patients – 3 males, 1 female & Nondiabetic patients – 3 females, 1male. Total fat area and Visceral fat area are high in diabetics than in non-diabetics. Visceral fat is high as compared to subcutaneous fat in diabetics. These findings suggest that visceral fat is better predictor of diabetes. It may have relevance to clinical assessment, prevention and treatment of diabetes.

CONCLUSION

Total fat area and Visceral fat area are high in diabetics than non-diabetics, it may have relevance to clinical assessment, prevention and treatment of diabetes

KEY WORDS

Total fat area, visceral fat area, subcutaneous fat area, Type 2 diabetes mellitus, Nondiabetics

PP4

TITLE: STUDY TO DETERMINE ASSOCIATION OF SMARTPHONE USAGE PATTERNS WITH POOR SLEEP QUALITY AMONG ADOLESCENT COLLEGE STUDENTS.

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BACKGROUND:- College students need 8–10 hr/day sleep to focus during studies, remain enthusiastic to get things done and alert during social interactions. Addictive use of inter-net-accessible smartphones with limitless functionalities, especially at bedtime in the dark, hampers sleep-hours, cognition, melatonin, causing sleep disorders, headache, tinnitus, depression, anxiety, hearing-impairment.

AIM:To study the Patterns of Smartphone Usage-Habits & its association with Poor Sleep Quality among 1st year MBBS students of G.M.C. Patiala.

METHODOLOGY:Cross-Sectional Study on 150 first year MBBS students at G.M.C. Patiala, with random sampling using a pre-designed, pre-tested questionnaire. Students with Medical Conditions & Medications that could be Confounding Factors influencing Sleep Quality were excluded.

5 contrasting pairs of Smartphone Usage-Habits were studied: (1). Using since ≥ or < 5 yr; (2). Using for ≥ or < 2 hr/day WITHOUT Screen-time (Music/Calls); (3). Screen-time ≥ or < 2 hr/day; (4). Bedtime use (in the dark) or Not; (5). Notifications ON or SILENT after Bed time.

The Sum-Totals of 7 Component Scores (each ranging 0 = no difficulty to 3 = severe diffi-culty) of Pittsburgh Sleep Quality Index (PSQI) ranging 0 – 21 for 150 students were qualita-tively classified into Sleep Quality Within Normal Limits (Global PSQI <5) & Poor Sleep Quality (Global PSQI ≥5).

For EACH of the 5 PAIRS of Contrasting Usage-Habits, Chi-Square Test ($\chi 2$ Test) was used to assess Statistical Significance (P-value <0.05; >95% Confidence) of association with Poor Sleep Quality, Odds Ratio was calculated & its effect on EACH of the 7 Components of PSQI, as well as on the Global PSQI Score was analyzed.

RESULTS:Mean PSQI of 150 students was 4.59 (just < cut-off 5, implying AVERAGE Sleep Quality JUST Within Normal Limits), but out of 150 surveyed students, 78 (52%) had Poor Sleep Quality (PSQI ≥ 5). GLOBAL PSQI Score (sum of all 7 Component Scores)Maximum adverse deviation from the weighted mean among those having Screen-time ≥ (vs <) 2 hr/day, Bed-time use in the dark & Notifications ON (vs OFF) in Bed. Use WITHOUT Screen-time for listening to Music etc. ≥ (vs <) 2 hr/day caused a slight FAVOURABLE deviation of GLOBAL PSQI Score from the weighted mean.

CONCLUSION

78 (52%) out of 150 surveyed 1st year MBBS students at G.M.C., Patiala had POOR SLEEP QUALITY having Statistically Significant Association with such PATTERNS OF SMARTPHONE USAGE that had a Higher Odds Ratio for Poor Sleep Quality.

PP5

Title: A Comparative Study Of Heart Rate Recovery In Normotensive Offsprings With Or Without Parental History Of Hypertension In Various Age Group.

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Background: Hypertension, characterized by elevated blood pressure, has long been recognized as a major contributor to cardiovascular diseases, including coronary artery disease, stroke, and heart failure. However, the emergence of research suggesting a hereditary link to cardiovascular risk prompts a re-evaluation of our understanding. Despite being labelled as normotensive, individuals with a familial predisposition to hypertension may harbour hidden risks. This study addresses the crucial knowledge gaps in our understanding of cardiovascular risk in normotensive offspring. By focusing on heart rate recovery we aim to discern subtle variations that might indicate underlying vulnerabilities and provide valuable insights into preventive strategies.

Material: The present comparative cross-sectional study was conducted in the Department of Physiology, Kodagu Institute of Medical Science Madikeri (Karnataka) for a duration of 6 months. Normotensive, non-obese, non-smoker, non-alcoholic were not included in the study. Patients without any history of systemic, metabolic diseases or active infection were included. 30 patients in each subgroup were enrolled. Group A (subjects with parental history of hypertension) and Group B (subjects without parental history of hypertension). Heart rate, heart rate recovery were compared between the two groups. A p value of <0.05 was considered as significant.

Results- The results clearly shows that in the age group of 18-22 years the comparison of mean HRmax, HRR1, HRR2, HRR3 and HRR4 showed no significant difference between the two groups ($P>0.05$), in 23-25 years the comparison of mean HRmax, HRR1, HRR2, HRR3 and HRR4 showed no significant difference between the two groups ($P>0.05$) but in 26-30 Years the comparison of mean HRmax, HRR2, HRR3 and HRR4 the mean HRR1 was significantly lower in Group of offsprings of normotensive parents compared to Group of offsprings of hypertensive parents $P<0.05$).

Conclusion: These findings clearly states that the difference in the HRR1 for the Group of normotensive offsprings of non-hypertensive parents than the normotensive offsprings of hypertensive parents in the age group of 26-30 years have a better parasympathetic activity thereby reducing their chances of developing hypertension in near future. Thereby, this study underscores the importance of considering age-specific variations in cardiovascular health among individuals with a familial history of hypertension.

Keywords : heart rate recovery, hypertension.

PP6

Title: Development and Validation of a Yoga Module for Chronic Kidney Disease

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Background- Chronic kidney disease (CKD) is a progressive condition that significantly contributes to global morbidity and mortality. It also imposes considerable psychological stress, manifesting as anxiety and depression, and deteriorates the quality of life. Conventional treatments often fail to halt the disease progression or adequately alleviate symptoms. Emerging research indicates that yoga, with its stress-reducing and health-enhancing benefits, may help manage CKD complications such as hypertension, fatigue, it also helps to adress mental health. However, there is a lack of scientifically validated yoga modules tailored for CKD patients. This study aims to develop and validate a safe and effective customized yoga module for individuals with CKD.

Aim- To design and validate an Integrated Yoga Module (IYM) for CKD patients.

Materials and Procedures- The first phase - IYM for Chronic Kidney Disease - was created based on a survey of classic books and recently available research studies. The designed IYM was validated by 10 subject matter (yoga) experts in the second phase. Lawshe's formula was used to calculate the content-validity ratio (CVR).

Results- The designed IYM for CKD consisted 74 yoga practices. The final Integrated Yoga Module featured 27 yoga practices with CVR ≥0.8 that were assessed by 10 yoga experts and agreed upon in faculty group discussion.

Conclusion- The yoga practices were designed and validated for IYM for CKD. By applying Lawshe's content validity criteria, 10 yoga professionals verified the IYM design. The result shows that, among the 74 practices, 27 were found to be essential (CVR ≥ 0.8) and were retained in the final yoga module. Based on the findings from this study, the Integrated Yoga Module for CKD suggests good content validity.

Keywords: Chronic kidney disease, Integrated yoga module, Subject matter experts, Content Validity Ratio.

PP7

Title: A cross-sectional study assessing the predictive power of blink rates and visual focus durations for dry eye symptoms among healthy young adults

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Background: Dry Eye Disease is a prevalent (18.4-54.3%) multifactorial syndrome, with several modifiable environmental and behavioural causes. Prolonged staring, especially in habitual electronic device users, leads to reduced blinking, causing tear film evaporation and dry eye. This study aims to assess the predictive power of electronically measurable factors of blink rate and visual focus duration (screen time) for dry eye symptoms, in the hope of formulating a novel and feasible screening model for early diagnosis and prevention.

Methods: 91 medical university undergraduates answered an online google form survey assessing their daily visual focus duration, blink rate measured using Blinkz (android application that uses front camera to track blinks), and dry eye symptoms assessed using OSDI (Ocular Surface Disease Index) and SPEED (Standard Patient Evaluation of Eye Dryness) questionnaires. The data were analysed for linear correlation between composite variables. Linear regression analysis was used to model correlated variables to predict dry eye scores.

Results: Predictor variables with medium correlation (Pearson's $r>0.2$, $p<0.05$) were selected for the model. The regression model significantly predicted 23% variability in composite dry eye score ($R^2=0.232$, $F(6,84)=4.24$, $p<0.001$). Significant predictors included scaled total stare time (Estimate=-4.348, $p<0.001$), total stare time squared (Estimate=4.357, $p<0.001$), scaled far stare time (Estimate=3.007, $p=0.009$), and far stare time squared (Estimate=-6.082, $p=0.020$). Interaction terms involving blink rate showed a trend towards significance (blink rate * far stare time).

Conclusion: The model suggests that prolonged staring is a significant predictor of dry eye. A larger study sample is required to evaluate the contribution of blink rates. Other measurable environmental, behavioural and genetic factors can be included to increase the model's performance and reliability. Such a model software deployed on electronic devices can use blink rate and screen time data to monitor eye dryness, appropriately warn the user and suggest behavioural modifications and remedies.

Keywords: dry eye syndrome, blink rate, visual focus duration, stare time, screen time, OSDI, SPEED, linear regression, predictive model.

PP8

Title: "Assessment of skin cancer awareness and sun protection practices among health care workers."

List of Authors:
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Abstract:

Background: Exposure to ultraviolet radiation has multiple consequences on human's health. Especially incidence of skin cancer cases are increasing worldwide. Though has relatively low mortality rate, the impact on aesthetic damage is too high and undesirable, costing too much. In terms of disability-adjusted life year rates (DALY) about 1.5 million days are lost from person's life every year worldwide due to UV radiation. There is large gap between skin cancer awareness and sun protection practices in southern part of India. The main aim of our study is to analyse the awareness about skin cancer and the skin protection practices followed among health care workers.

Methods: This cross-sectional study carried over in tertiary hospital located in Bengaluru city. About 62 males and females health workers willing to participate were included in the study. Those reluctant to participate and suffering from major health issues were excluded. After obtaining Institutional ethics clearance and informed consent, data collected by using prestructured questionnaire on sociodemograpghic profile, sun protection measures taken, knowledge about sun light and questions about the effects of sun light. The prestructured questionnaire were taken from previous literature. The data was analysed using SPSS v23, and MS excel and Chi-square calculator.

Results: From analysis it is found that the mean age of subjects is 27.5 ± 6.5 yrs. Out of total 62, 42 are females and 20 were males. 6 of them had sun burnt some time and none of them aware about the occurrence of skin cancer in the family. 50% of them used sun screen creams followed by sun glasses (23%), umbrella (31%) and shade (12%) as protective measures, least being wearing light protective clothing. Knowledge about sunlight of them know about beneficial effect of SUN light (vit D synthesis)

PP9

Title: STUDY OF PEAK EXPIRATORY FLOW RATE IN 6 TO 12 YEARS OF SCHOOL GOING CHILDREN, TIRUPATI.

Authors: Arundhathi. P V, Dr. Sharan B Singh. M (Professor and HOD Department of Physiology), Dr. Alladi Mohan (Professor (senior grade), HOD (Department of Medicine) and Dean (SVIMS)

Back ground: Peak Expiratory flow Rate (PEFR) is a vital measure in assessing lung function. PEFR reflects the maximum speed at which a person can exhale air from their lungs, typically measured using a portable Peak flow meter. Variations in PEFR can indicate airway obstruction, making it a valuable tool in diagnosing and monitoring asthma and COPD

Methods : The study will be conducted for a healthy school going children of age group 6 to 12 years both boys and girls. For the determination of PEFR we will be using Mini Wright Peak Flow Meter. At three time measurement, the highest value of PEFR will be recorded. Formula for prediction of PEFR will be estimated by linear regression analysis after the correlation of PEFR with age and height for both boys and girls.

Results: PEFR will be measured in 46 children aged 6 to 12 years by using Wright's mini peak flow meter. Prediction equations will be derived for PEFR with height in boys and girls. Normograms will be plotted based on the observed values of PEFR in the study population.

Conclusion: Reference values of PEFR are affected by regional, environmental and anthropometric factors. Hence, it is necessary to have regional reference values for children. Among different factors affecting PEFR, height correlates better with PEFR than weight and sex

Key words: Peak Expiratory flow Rate, Children , Tirupati

THE MAIN STUDY IS YET TO BE PERFORMED. Ethics is great fully acknowledged

PP10

Title: Predicting the Occurrence of DM Complications in Known Indian Patients Using Hospital Admission Data and Public Data Sets to Train AI Algorithm

List of authors: Hardik Mangla
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Background:
India faces a significant health challenge with over 77 million adults diagnosed with Diabetes Mellitus (DM), a number that is expected to nearly double by 2045. Managing DM complications remains difficult, emphasizing the need for a predictive model tailored for the Indian population. Alarmingly, about 52% of Indian diabetics suffer from cardiovascular diseases, 40% from nephropathy, and 35% from retinopathy. These statistics highlight the pressing need for machine learning (ML) applications to improve diabetes care at all stages, from early detection to personalized treatment.

Methods:
Our upcoming study aims to utilize hospital admission data alongside public datasets to develop an advanced AI algorithm for predicting DM complications. We plan to analyze historical patient data and clinical measurements to create a highly accurate in-hospital prediction tool. This tool will integrate patient demographics, medical history, and lifestyle factors to offer real-time risk evaluations, aiding in prompt and effective clinical decision-making.

Expected Results:
We anticipate that the ML models we develop will show high predictive accuracy, similar to existing models in diabetes care. For instance, we expect to achieve around 85% accuracy in predicting diabetes onset and approximately 80% accuracy in assessing risks for complications such as diabetic retinopathy and nephropathy. Our model will not only forecast complications but also identify the significance of different variables, providing insights for targeted interventions and enhancing patient outcomes.

Conclusion:
This research aims to transform diabetes management in India by leveraging AI and ML. By developing a precise, data-driven complication risk predictor, we hope to significantly reduce the growing burden of diabetes complications and improve the quality of life for millions of Indian patients.

PP11

TITLE – "EFFECTS OF YOGIC BREATHING PRACTICE (PRANAYAMA) ON PEAK EXPIRATORY FLOW RATE – A CROSS SECTIONAL STUDY"

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Background: Yoga is a Sanskrit word, means "unity of body and mind". Its a combination of breathing exercises, meditation, physical postures and has been practiced in traditional medicine India and other countries. Nowadays, body movements of human beings have been restricted due to this advanced scientific technological invention. Its leads to stress, hypokinetic, and psychosomatic diseases. Yoga offers health benefits like improving flexibility, reducing stress, improving overall wellness and physical fitness. Hence, man should not ignore the importance of any physical activities. Practice of yoga, especially 'Pranayam', improves both the physical and spiritual health. 'Pranayam', Yogic technique in which breathing is controlled voluntarily. Peak expiratory flow rate (PEFR), one of the lung function tests which is a measurable quantitative parameters of respiratory health. It is an early indicator of respiratory and systemic inflammation and associated with cardiorespiratory morbidity and mortality. Hence, present study is undertaken to know the effect of pranayama on PEFR. **Aims and Objectives:** The objectives of this study were to compare of PEFR values between Yoga practitioners and sedentary lifestyle individuals. **Materials and Methods:** This cross-sectional comparative study was conducted in the Department of Physiology, Hassan Institute of Medical Sciences, Hassan, Karnataka. The study comprises healthy subjects of both sexes in the age group of 20–40 years. The subjects were divided into two groups. Group Y consisting of 50 healthy subjects, selected randomly from a group of regular yoga practitioners practicing yoga for 20–30 min/day, 5 days/week, for a minimum period of 3 months. Group S consists of 50 sedentary lifestyle individuals. PEFR is assessed among both groups using JSB Peak Flow Meter. Statistics was done using independent Student's t-test. Results: The study showed a significant increase in PEFR values in yoga practitioners compared to sedentary individuals. **Conclusion:** Regular yoga practice helps in improving respiratory muscle strength and boosts pulmonary functions. **KEY WORDS:** Yoga; Sedentary; Peak Expiratory Flow Rate; Pranaya

PP12

TITLE: Symmetric Peripheral Gangrene Secondary To Sepsis

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ABSTRACT:
Symmetrical peripheral gangrene (SPG) is described as rapid onset of peripheral and symmetrical gangrene in the lack of large vessel occlusive disease with high mortality rate.1 hereby reporting a event of Upper limb symmetrical gangrene caused by septic shock in MODS ,Acute myocarditis and was managed by inotropes.The case shows Symmetrical peripheral gangrene as a complication of sepsis owing to systematic imbalance that disturbs the organ dysfunction mainly coagulation and microcirculation. Primary recognition and quick management of sepsis and weaning off the inotropes at the initial opportunity are essential to evade Symmetrical peripheral gangrene.

Keywords: Symmetric peripheral gangrene, MODS, Sepsis, Myocarditis, Inotropes.

PP13

Title: Artificial Intelligence and Future Horizons in Physiotherapy- A Comprehensive Review

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Abstract

Artificial intelligence (AI) presents a transformative opportunity in physiotherapy, revolutionizing diagnostics, treatment planning, and rehabilitation strategies. This scoping review delved into recent advancements by examining studies published within the last five years. Utilizing systematic reviews and meta-analyses, the review explored AI applications in physiotherapy, focusing on its efficacy and potential for enhancing patient care. Across various databases including PubMed, Web of Science, Scopus, and Google Scholar, the search strategy adhered to PRISMA-ScR guidelines, employing Population/Problem, Intervention, Comparison, and Outcome (PICO) criteria. Notable findings from the review include the dominance of machine learning as the preferred AI approach, demonstrating promising outcomes in diagnostics, personalized treatment planning, and rehabilitation interventions. Moreover, a systematic review and meta-analysis by Mahmoud et al. (2023) underscored the significant improvements in upper-extremity function observed with AI interventions, particularly in post-stroke rehabilitation settings. While the integration of AI-driven tools and algorithms holds immense promise for optimizing physiotherapy practice, further research is imperative to address challenges surrounding standardization of AI models and seamless integration into clinical workflows.

Keywords: Artificial Intelligence, Physiotherapy, Machine Learning, Rehabilitation, Treatment Planning

PP14

TITLE – "ASSESSING THE FEASIBILITY OF INTERVENTION PROGRAM WITH ADOLESCENT PARTICIPATION IN EVENT-BASED SURVEILLANCE WITH FOCUS ON ONE HEALTH IN VILLAGES OF SURYAPET, NALGONDA DISTRICT, TELANGANA."

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Background : The study proposes an effective surveillance system with a One health focus as a way to combat the rising emergence of zoonotic diseases across the world. It emphasizes the shortcomings of traditional surveillance methods in remote locations with limited assets and recommends using teenagers to enhance timely reporting of health incidents through mobile technology. It seeks to fill the gap between the demands of rural communities and current surveillance techniques.

Methods : Adolescent dropouts and certain school pupils are involved in the intervention, which is being implemented in ten randomly selected villages in Nalgonda district, Telangana. During training seminars, adolescents will learn about the use of mobile apps, event-based surveillance, and One Health concepts. A mixed-methods approach will be used to assess the timeliness of health event reporting through the mobile app and changes in teens One Health-related knowledge, attitudes, and behaviors before and after the intervention.

Results:
1. Real time quality data of health events in terms of timeliness and accuracy.
2. Successful Integration of Technology with existing surveillance system
3. Enhanced Adolescent Awareness about One health and responsibilities as citizen.
4. Positive Shift in Adolescent Attitudes about technology use, team building, communication skills, together we can! Attitude.
5. Positive Community Dynamics
6. Sustained Adolescent Engagement with carrying responsible attitude in future life.
7. Optimized Adolescent Role in Data collection will be Great help in limited resource

Conclusion : This approach helps in mobilizing multiple sectors, disciplines and communities at varying levels to work together to address the root causes and create long term sustainable solutions

Key words: one health, zoonotic diseases, mobile technology, adolescents, event based surveillance. .

PP15

TITLE – "THE STUDY FOR THYROID DISORDERS IN PREGNANT WOMEN IN GMH OP, TIRUPATI."

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Background: Thyroid disorders are encountered frequently during pregnancy and postpartum period. This is the second most common endocrine condition encountered in childbearing women and are treatable. If not evaluated, it may affect mother and fetus adversely and should be managed appropriately.

Aim and objectives : To evaluate these thyroid disorders early and effectively with treatment, ensures a safe pregnancy with minimal maternal and neonatal complications.

Materials and methods : Randomly 40 pregnant women were selected from OBG and outpatients who were under regular antenatal check-up. Cross sectional study was conducted before 6 months of conception till 30 wks of antenatal period. Subjects who have given informed and written consent, who know local language, English are included. Anti-thyroid drugs are started for pregnant ladies with deranged thyroid function test values and observed. If they are diagnosed at pre-conceptional stage, treatment varies.

Results : In hypothyroid patients, levothyroxine supplementation thyroid levels are monitored and kept under control, before thyroid supplementation TSH values are <0.2mu/l in 2nd and 3rd trimester. In 1st trimester TSH is 0.5mu/l, but after supplementation the values become normal around 0.7 in 1st trimester, 0.4mu/l in 2nd and 3rd trimester. Similarly for hyperthyroid patients with propylthiouracil and carbimazole supplementation. Thyroid levels are kept under control. Drugs and doses are chosen according to risk benefit ratio in pregnancy depending on the values (T4 is >270nmol/l) and before treatment, HR was 110bpm. After treatment HR became normal (86bpm) and T4 was 230nmol/l.

Conclusion : In this study, the thyroid disorders in pregnancy are evaluated pre-conceptional and continued with regular intervals of trimesters with treatment. With proper evaluation and treatment at appropriate timings in pregnant women, complications are avoided in both mother and child.

Keywords : Pregnancy, thyroid disorders, thyroid function test, anti-thyroid drugs

PP16

Title: "EFFECT OF 4-7-8 BREATHING EXERCISE ON HEART RATE VARIABILITY IN PARTIALLY SLEEP-DEPRIVED YOUNG ADULTS"

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Background: Sleep is required for physical and mental well-being and recovery. Total sleep deprivation has deleterious effects however partial sleep deprivation is more common on a day-to-day basis. Non-invasive physiological signals like Electrocardiogram (ECG), and photoplethysmography (PPG) can be used to determine whether HRV parameters in the morning following partial sleep deprivation were different from those following normal 7-8 hours of sleep at night and to determine the acute effect of the 4-7-8 breathing control on HRV in partial sleep-deprived subjects when practiced for 20 mins.

Methods: Twenty subjects were screened with the PSQI Scale and baseline HRV was recorded by using PPG. After 3 nights of sleep less than 5 hrs per night, on the morning following 3rd night, PPG was recorded. HRV [Total power (TP), Low-frequency power (LF) ms2, High-frequency power (HF), LFnu, HFnu, the LF-HF ratio)] were derived from PPG. Then, subjects were taught 4-7-8 breathing and asked to practice the same breathing exercise for 20 minutes Immediately after that, HRV was recorded and analyzed.

Results: Partial sleep deprivation shows a significant effect on HRV parameters [TP, baseline (5880.55 ± 2095.988), partial sleep deprived (4435.15 ± 1782.604)] ($P = 0.036$). The 4-7-8 breathing control intervention after partial sleep deprivation did not show a significant difference ($P < 0.05$) in HRV in the participants.

Conclusion: PSD showed an impact on HRV parameters mainly showing reduced parasympathetic activity in healthy young adults. However, 478 breathing exercises for 20 minutes improved the parasympathetic activity following partial sleep deprivation but was not statistically significant. Future studies need to be conducted in this area.

Keywords: PSD (partial sleep deprivation)

PP17

Title: "Comparing Sleep Quality in Karlakattai trained and Untrained Individuals."

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Background: Quality of sleep significantly impacts physical and psychological helath. Poor sleep quality can lead to mental, physical and emotional disorders in long term. Understanding patterns and their determinants is crucial for promoting overall well-being. Karlakttai is a traditional Indian exercise system that involves wooden clubs. Practitioners use specific movements to enhance strength, flexibility and coordination. Pharmacological treatment for Sleep disorders often end up with side effcets or dependence.Hence, its essential to explore the sleep quality among karlakattai practitioners, so that it can be suggested for non-phramacological treatment for sleep disorders. This study is being conducted to compare the sleep quality among Karlakattai trained and Untrained Individuals, and it is hypothesised that Karlakattai practitioners have better sleep quality and other sub modalities of sleep.

Methods: This study was done on 20 healthy individuals in the age group > 18 years. 10 of those were Karlakattai practitioners more than 6 months and the other 10 were Untrained individuals of the same counterpart After obtaining consent from the participants, they were asked to fill out the google form which contained Personal history, Family history, Past medical history, Sleeping pattern, and PSQI questionnaire. These questionnaire were then analysed and for Sleep quality and Sub modalities of sleep in each group. Datas were statistically analysed using jamovi software.

Results: Results are awaited.

PP18

Title - "UNLOCKING THE FUTURE OF PHYSIOTHERAPY: AI CHATBOT'S"

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Introduction: In the evolving landscape of healthcare, Artificial Intelligence (AI) has emerged as a pivotal technology reshaping traditional approaches to patient care. This presentation explores the integration of AI Chatbot's in physiotherapy settings, specifically through the innovative platform, Physio plus Tech.

Objectives: This session aims to showcase the transformative impact of AI Chatbot's on patient care within the physiotherapy domain. It highlights how AI-driven technologies enhance communication, engagement, and treatment outcomes in physiotherapy practices.

Methods: Through RCT's, case series and current research, we examine the functionalities and benefits of AI Chatbot's in physiotherapy. Physio plus Tech integrates natural language processing (NLP) algorithms to provide personalized exercise routines, real-time feedback, and educational resources tailored to individual patient needs.

Results: AI Chatbot's in Physio plus Tech facilitate seamless patient-provider interactions, improving accessibility and adherence to treatment plans. They empower patients with self-management tools and continuous support, thereby enhancing rehabilitation outcomes and patient satisfaction.

Conclusions: AI Chatbot's represent a paradigm shift in physiotherapy by democratizing access to personalized care and optimizing therapeutic interventions. As technology continues to advance, integrating AI Chatbot's into physiotherapy practices holds promise for revolutionizing patient-centered care, promoting independence, and achieving better long-term health outcomes.

Key words: AI Chatbot's, Physio Plus Tech, Therapeutic Intervention, Personalised Intervention

PP19

Title: AN INNOVATIVE PHYSIOTHERAPY FOLLOW-UP AND EXERCISE APP

Authors of affiliation: Dr. Sainiguntla Ajaykumar, Dr. Saniksha Sudhir Ravendikar

Introduction

Ensuring patient adherence to physiotherapy exercises and follow-up appointments remains a significant challenge in the ever-evolving healthcare landscape. Traditional methods, often reliant on paper-based exercise sheets and occasional check-ins, can fall short of providing the consistent support and motivation that patients need. Recognizing this gap, we want to develop the TelePhysio app, to provide a comprehensive solution for physiotherapy follow-up and home exercises.

App features

Exercise Library
Tailored exercise plans
Reminders and notifications
Feedback system

Testing and Validation

Beta testing: Feedback by group of physios and patients.
Utility testing: Ensuring the app is easy to use and meet the need.
Clinical validation: Trails to confirm the app's effectiveness in improving adherence and outcomes.

Conclusion

This app bridges the gap between physiotherapist and patients, improving exercise adherence and reduce loss of follow-ups.

PP20

Title: AI-POWERED HAND REHABILITATION FOR STROKE PATIENTS: INNOVATIONS AND IMPACT

List of Authors: Dr.Akshay kumar S, Dr.Naveen kumar.I
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Abstract:

Introduction: Stroke is the most common cause of severe disability. In particular, more than 85% of patients with stroke experience hemiplegia, which results in impaired upper limb function and decreased motor ability. This impairment is a major factor that affects the ability to balance, and the levels of daily and social activities. AI-powered hand rehabilitation for stroke patients is an emerging field that leverages advanced technology to enhance recovery and improve outcomes.

Aim: AI-powered hand rehabilitation for stroke patients aims to enhance the recovery process by providing personalized, efficient, and effective rehabilitation solutions.
Application: Personalized Exercise Programs: AI algorithms can analyse data from the patient's medical history, physical capabilities, and progress to design customized rehabilitation exercises. Machine learning models can adjust the difficulty and type of exercises based on the patient's improvement and current condition. Real-time Monitoring and Feedback: Sensors and wearable devices can track the patient's hand movements and provide real-time feedback on performance.AI can analyse this data to give immediate corrections and suggestions, ensuring exercises are performed correctly to maximize recovery.

Procedure: Conduct a comprehensive clinical assessment to determine the extent of the stroke and the level of impairment in the hand. Record baseline data on hand strength, dexterity, range of motion, and other relevant metrics. Use sensors and wearable devices to collect real-time data on the patient's hand movements and muscle activity. Apply AI algorithms to analyse the collected data, identifying patterns and specific areas that need improvement. Develop a personalized rehabilitation plan based on the AI analysis, tailored to the patient's specific needs and progress.

Benefits: AI ensures that exercises are performed correctly and consistently, reducing the risk of improper techniques that could hinder recovery. Remote rehabilitation options make therapy accessible to patients who may have difficulty traveling to clinics regularly. Remote rehabilitation options make therapy accessible to patients who may have difficulty traveling to clinics regularly.

Conclusion: AI-powered hand rehabilitation offers a sophisticated, patient-centered approach that enhances the efficacy of post-stroke recovery. As technology continues to evolve, its role in rehabilitation is expected to expand, offering new possibilities for improving the quality of life for stroke survivors.

PP21

Title: AI-ASSISTED PHYSIOTHERAPY FOR GERIATRIC PATIENTS: ENHANCING MOBILITY AND QUALITY OF LIFE

List of Authors: Dr.Ajay kumar S, Dr.Naveen kumar.I , Dr Sarulatha. H
Affiliations: Department of Physiotherapy, SDUAHER, Tamaka, Kolar.

Introduction: The aging population faces numerous health challenges, particularly in maintaining mobility and independence. Traditional physiotherapy, while effective, often requires significant time and resources. The integration of Artificial Intelligence (AI) into physiotherapy presents a promising solution, offering personalized, efficient, and accessible treatment options for geriatric patients.

Objective: This study aims to explore the impact of AI on physiotherapy outcomes for geriatric patients, assessing the benefits and effectiveness of AI-assisted physiotherapy in enhancing patient mobility and quality of life.

Method: The study involved a comprehensive literature review of recent studies and clinical trials on AI applications in physiotherapy. Data was collected from wearable sensors. Machine learning algorithms were utilized to develop personalized therapy plans, monitor progress, and provide real-time feedback. The outcomes of AI-assisted physiotherapy were compared with traditional methods in terms of patient outcomes, adherence, and satisfaction.

Result: The findings indicated that AI-assisted physiotherapy significantly improved patient outcomes. Personalized therapy plans adapted in real-time to patient progress, leading to notable improvements in mobility, balance, and overall physical health. The use of interactive technologies such as VR and AR increased patient motivation and adherence. Additionally, real-time monitoring and feedback streamlined therapy sessions, reducing the need for frequent in-person visits.

Application: AI applications in physiotherapy for geriatric patients include wearable technology for monitoring and feedback, tele-rehabilitation for remote care, and robotic assistants and exoskeletons for supporting movement and exercise performance. These technologies enhance the effectiveness and accessibility of physiotherapy for elderly patients.

Conclusion: AI-assisted physiotherapy offers significant potential for improving the quality of life for geriatric patients. By providing personalized, efficient, and accessible care, AI technology can help overcome the limitations of traditional physiotherapy, leading to better patient outcomes and increased engagement in therapy.

PP22

Title – "AN INTERESTING CASE OF LIPOID PNEUMONIA"

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ABSTRACT:
Lipoid pneumonia is an rare disease caused by the presence of lipid in the alveoli. It is categorized into two groups, exogenous lipoid pneumonia or endogenous/idiopathic lipoid pneumonia. The usual presentation are insidious onset and nonspecific respiratory symptoms such as breathlessness and cough. The radiological findings contain consolidations, ground-glass opacity, nodules and 'crazy-paving' pattern. However, the radiological appearance can mimic other lung diseases, like carcinoma. Due to the nonspecific presentation and radiological features, the diagnosis is regularly missed or delayed. Pathologically, lipoid pneumonia is a chronic reaction to fat as foreign body, characterized by lipid-laden macrophages. Diagnosis of this illness is difficult and can be confirmed by demonstration of lipid-laden macrophages in samples such as sputum, bronchoalveolar lavage fluid or fine-needle aspiration cytology/biopsy from lung lesions. Treatment protocols are poorly defined.

KEYWORDS: lipoid pneumonia, exogenous lipoid pneumonia, endogenous lipoid pneumonia, lipid laden macrophages, weight loss

PP23

TITLE: THE DARK NIGHTS, SECRET OF TWO BROTHERS: A CASE SERIES

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Background:
Nocturnal enuresis (NE), or bedwetting, is involuntary urination at an age when continence is expected. In India, NE prevalence is about 16% in children. While childhood NE is well-researched, adult NE is less studied and its progression into adulthood is unclear. Here we present a rare case of adult onset of NE seen in siblings.

Case series-
Two brothers, aged 18 and 22 belonging to low socioeconomic background and have attended till high school currently are skill labourer's presented to the psychiatric outpatient department with involuntary passing of urine during night time with frequency of 2-3 nights per week. The elder brother reported symptoms for 2 years, the younger for 4 years, The brothers lived together but in separate rooms and avoided family and travel due to embarrassment. There were no significant birth and developmental history. There is no significant medical or psychiatry history. General and systemic examinations were normal. Routine blood, urine, and urodynamic tests were unremarkable. A mental status examination revealed a preoccupation with their health condition and social embarrassment concerns with an anxious affect. They were diagnosed with adult-onset nocturnal enuresis using the UDI-6 Scale and began treatment with imipramine and CBT.

Method: case series

Result:
Primary NE is a common in paediatric age group and usually resolves by 10 years of age but this could rarely present in adults meeting the diagnostic criteria of adult onset NE.

Conclusion:
NE in adults has a direct impact on the emotional and behavioural aspects of client personality. Effective treatment often requires a combination of therapies, including cognitive and behavioural treatment along with pharmacotherapy. There is need for developing the AI based non-invasive pre-void alarm system, sensor shorts and bedspreads is an urgent need to determine imminent voiding needs.

Key Words: nocturnal enuresis, imipramine, micturition, urinary incontinence

PP24

TITLE: THE SCARS OF SYRINGES : A CASE REPORT

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INTRODUCTION: Tramadol, a synthetic opioid analgesic, is widely prescribed for moderate to severe pain. Opioid dependence, although uncommon in the general population (2%), is significantly higher in India (three times the global average). This case report highlights the rare but potentially life-threatening complications associated with tramadol dependence, particularly the development of ulceration at injection sites.

CASE DESCRIPTION: A 48-year-old married farmer of lower socioeconomic status with uncontrolled diabetes developed dependence on tramadol after being prescribed the medication for chronic pain management. He misused a single prescription to obtain injections from multiple dispensaries. Initially self-administering 1-2 ampules daily, his dosage escalated to 8 tramadol ampules per day, often combined with crushed Chlorpheniramine maleate tablets for perceived better effects. Examination revealed multiple tender, indurated, and infected ulcers on both thighs and legs, likely injection sites. Laboratory tests showed elevated white blood cell counts and blood sugar levels. Treatment included insulin, appropriate antibiotics, and opioid replacement therapy, leading to improvement over two months.

METHOD : Case Report

DISCUSSION: This case underscores the potential for dependence and misuse associated with self-administered opioids. It highlights the importance of comprehensive pain management strategies that consider underlying medical conditions and addiction vulnerability. Early recognition and intervention are crucial to prevent complications.

CONCLUSION: Formal pain management training for Indian medical practitioners is necessary. They should be vigilant in monitoring for signs of dependence and explore alternative pain management strategies. Stricter regulations by medical and law enforcement agencies, from production to dispensing, should be implemented and monitored by the Narcotics Control Bureau surveillance system.

KEY WORDS: Opioids, Tramadol, Dependence, Ulceration, Diabetes

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