SUPERIOR UNIVERSITY

RASCON

2nd INTERNATIONAL REHABILITATION & ALLIED HEALTH SCIENCES CONFERENCE 2024

"Revolutionizing the Healthcare Services and Industry in a Hyper-connected World by Navigating the Digital Ecosystem"

FACULTY OF ALLIED HEALTH SCIENCES | ORIC Office Of Research, Innovation & Commercialization | ANCRD AZRA NAHEED CENTER FOR RESEARCH & DEVELOPMENT | CRC Comprehensive Rehabilitation Centre | BASARAT Low Vision Rehabilitation | NEWS HD | WFNR World Federation for NeuroRehabilitation | PSNR Pakistan Society of Neuro Rehabilitation | /SUPERIOR_FAHS

In the recent decades, amid the ongoing revolution in the healthcare services and industry within our hyper-connected world the field of rehabilitation and allied health sciences has garnered significance attention on both national and international platforms. RASCON will serve as a platform to showcase inter-professional viewpoints from various rehabilitation and allied healthcare professionals, all aimed at revolutionizing healthcare services.

Under the auspices of Superior University, the 2nd International Rehabilitation and Allied Health Sciences Conference (RASCON), aims for the provision of an interdisciplinary platform for the exchange of their scientific research and experiences to leading clinicians, academicians, scientists and emerging scholars. Besides, it will also provide them the opportunity to interactively present their latest researches, ideas, developments and applications in a diverse audience related to rehabilitation and allied health sciences.

RASCON Objectives

RASCON is being organized keeping the following objectives in focus:

- To Revolutionize the Healthcare services and industry in a hyper-connected World by navigating the digital Ecosystem.
- To prepare students to become rehabilitation and allied health professionals and educationalists and researchers with the aim to serve the community with their highest quality services.


Research
ENABLING KNOWLEDGE EXCHANGE
Week


Research
ENABLING KNOWLEDGE EXCHANGE
Week

MESSAGE

As the Patron in Chief of the **2nd International Rehabilitation and Allied Health Sciences Conference (RASCON – 24),** it is a matter of immense pleasure and honour to welcome you to an event themed "Revolutionizing Healthcare Services and Industry in a Hyper-connected World by Navigating the Digital Ecosystem," that promises to be a landmark in the annals of rehabilitation and allied healthcare innovation and collaboration.

Scheduled to unfold on 1st of March and will last till 3rd of March 2024 at the Pearl Continental Hotel, Lahore. RASCON – 24 is all set to be a convergence point for cutting-edge dialogue, breakthrough technology, and pioneering research in the field of rehabilitation and allied health sciences. This conference is designed to foster interdisciplinary collaboration and networking among professionals from diverse healthcare sectors, both nationally and internationally.

Our commitment to advancing healthcare services is reflected in the meticulous planning of the conference agenda, which features a rich tapestry of keynote addresses, interactive sessions, and workshops led by esteemed national and international speakers and researchers.

I am confident that RASCON – 24 will enrich your professional journey and provide you with invaluable insights and strategies to navigate the digital ecosystem that is transforming our healthcare landscape. Let us come together to share, learn, and contribute to the collective mission of enhancing healthcare services for a brighter, healthier future.

I look forward to welcoming you to RASCON-24 for what promises to be an unforgettable and transformative experience.

PROF. DR. CH. ABDUL REHMAN

Patron in Chief, RASCON-24
Chairman,
The Superior Group

MESSAGE

As the Patron of the **2nd International Rehabilitation and Allied Health Sciences Conference (RASCON – 24),** I extend my heartfelt greetings and commend all for their dedication, conviction and enthusiasm towards advancing the frontiers of rehabilitation and allied healthcare.

This year's conference, themed "Revolutionising Healthcare Services and Industry in a Hyper connected World by Navigating the Digital Ecosystem," stands as a testament to our collective resolve to integrate cutting edge digital technologies within the fabric of rehabilitation and allied health sciences.

I am inspired by the potential of this conference to serve as a catalyst for change and a platform for the dissemination of groundbreaking ideas that will shape the future of our rehabilitation and allied healthcare, revolutionising the overall healthcare landscape of our beloved Pakistan.

I look forward to the outcomes of this conference and to the positive impact it will undoubtedly have on our shared commitment to fostering a collaborative environment where evidence-based knowledge and innovative research converge to enhance patient care and healthcare delivery.

PROF. DR. SUMAIRA REHAMAN

Patron, RASCON-24
Rector,
Superior University, Lahore

It is with great honour and anticipation that I welcome you to the **2nd International Rehabilitation and Allied Health Sciences Conference (RASCON – 24).** As the Chairman, I am delighted to see such a vibrant gathering of rehabilitation and allied health professionals committed to transforming healthcare services and industry in this hyper connected digital age.

Our theme, "Revolutionising Healthcare Services and Industry in a Hyper connected World by Navigating the Digital Ecosystem," is not just a vision, it's a call to action. The Pearl Continental Hotel in Lahore is all set to become a beacon of knowledge, research and innovation from the 1st to the 3rd of March 2024, as we embark on this journey together.

With over 5,000 national and international delegates, RASCON-24 is more than a conference; it is a movement. A movement that will propel forward-thinking dialogue, collaborative breakthroughs, and evidence-based practices that will shape the future of rehabilitation and allied healthcare sectors. The exchange of knowledge over these three days will lay the groundwork for a more inclusive, efficient, and effective healthcare landscape, the very values on which this conference was founded.

It is confidently anticipated that the proceedings of RASCON-24 will have a reverberating impact that transcends the boundaries of our venue, acting as a catalyst to motivate individuals globally to pursue excellence in rehabilitation and allied healthcare services. This transformative undertaking seeks to cultivate a new cohort of healthcare practitioners who are resolute in elevating healthcare delivery standards, effecting positive and lasting changes in community well-being, and spearheading revolutionary advancements in allied health and rehabilitation sciences, all in alignment with the strategic framework of Superior's Soar to Roar plan for the years 2023-2028.

PROF. DR. MUHAMMAD NAVEED BABUR

Chairman, RASCON-24
Dean
Faculty of Allied Health Sciences, Superior University, Lahore

Three Days Plan (Summary)

Friday 1st –Sunday 3rd March 2024

Date	Day	Activity
01-03-2024	Friday	Workshops Day
02-03-2024	Saturday	Inauguration Ceremony
		Addresses by the Chief Guest, Patron-in-Chief, Chairman
		Lectures of Keynote Speakers (International)
		Lectures of Keynote Speakers (National)
		Oral Presentations
		Poster Presentations
		RASCON Sufi Night
03-03-2024	Sunday	Lectures of Keynote Speakers (National)
		Oral Presentations
		Poster Presentations
		Closing Ceremony

REGISTRATION & INFORMATION DESK

RASCON Conference Secretariat:
Faculty of Allied Health Sciences, Superior University, 17km Raiwind Road, Lahore

Friday, March 1st, 2024: 08:00 AM - 04:00 PM

Grand Ball Room, Pearl Continental Hotel, Mall Road, Lahore
Saturday, March 2nd, 2024: 08:00 AM - 04:00 PM

Sunday, March 3rd, 2024: 08:00 AM - 04:00 PM

Website: www.rasconpk.org/registration

Pre Conference Workshops

- February 22nd, 2024 - Thursday
- February 24th, 2024 - Saturday
- February 26th, 2024 - Monday
- February 27th, 2024 - Tuesday
- February 28th, 2024 - Wednesday
- March 1st, 2024 - Friday

Venue

- Superior University, Lahore
- College of Ophthalmology and Allied Health Sciences, Mayo Hospital, Lahore
- Lahore Diagnostic Center
- Institute of Microbiology and Molecular Genetics, University of the Punjab
- PACP Complex, 06 Bird Wood Road, Lahore
- Chashni - The Sweet House
- Forman Christian College, Lahore
- Government CollegeUniversity, Lahore
- Farooq Hospital
- Allah Yar Khan Hospital

At Superior University Lahore (Raiwind Campus, Lahore)

Code	Work shop Title	Trainer	Date	Time
RAS-W-001	Computational Chemistry	Muhammad Jalal	24th Feb 2024	10:00am-01:00pm
RAS-W-002	Revitalizing Aesthetic Procedures: Exploring the Artistry of HydraFacial Techniques	Ms. Fatima	26th Feb 2024	10:00am-01:00pm
RAS-W-003	Foundations of Airway Management in Emergency care	Mr. M Ahmed, Ms. Rubab Andleeb	26th Feb 2024	10:00am-01:00pm
RAS-W-004	Skin and Scalp Analysis with Interpretation	Ms. Mizna Ashiq	27th Feb 2024	10:00am-01:00pm
RAS-W-005	Code Blue Mastery: A hands-on workshop for cardiac emergencies	Dr. Nasir Iqbal	27th Feb 2024	10:00am-01:00pm
RAS-W-006	Revitalizing Aesthethic Procedures: Exploring the artistry for IPL Laser techniques	Ms. Khushbakht Kashif	28th Feb 2024	10:00am-01:00pm
RAS-W-007	Comprehensive understanding of continuous ambulatory peritoneal dialysis (CAPD)	Dr. Rasib Ali Moosvi	28th Feb 2024	10:00am-02:00pm
RAS-W-008	Advanced Cardiac Life Support (ACLS)	Dr. Nasir Iqbal, Mr. SanaUllah, Ms. Ayesha Yaqoob	28th Feb 2024	09:00am-01:00pm 02:00pm-06:00pm
RAS-W-009	Beyond scalpel: An introduction to Robotic surgery and advance laparoscopic techniques	Dr. Sami Ullah Bhatti, Mr Abdur Rahman, Dr Maham Qazi	1st March 2024	09:00am-02:00pm
RAS-W-010	Dealing with Stuttering in Preschool Age	Mr. Omer Ibrahim Bani Mustafa	1st March 2024	10:00am-01:00pm
RAS-W-011	Mastering the Art of Plant Multiplication	Dr. Mubeen Sarwar	1st March 2024	09:00am-03:00pm
RAS-W-012	Use of AI in Academic Medical Writing	Prof. Dr. Muhammad Naveed Babur	1st March 2024	10:00am-12:00pm
RAS-W-013	Foundations of Recovery: Core Principles in Stroke Rehab	Prof. Dr. Arshad Nawaz Malik	1st March 2024	10:00am-01:00pm
RAS-W-014	Workshop on Basic Working Model of Anesthesia Machine & Observation of Aseptic Measures during Spinal Anesthesia & its Placement	Dr. Hamza Noon	1st March 2024	10:00am-02:00 pm
RAS-W-015	Workshop on Basic Working Model of Anesthesia Machine & Observation of Aseptic Measures during Epidural Anesthesia	Dr. Shahzad Tabassum	1st March 2024	10:00am-02:00 pm
RAS-W-016	Fusion of Skill and Innovation: Minimally Invasive Surgery Workshop for Surgical Technologists	Dr. Mian Waleed Anjum	1st March 2024	09:00am-01:00pm
RAS-W-017	Mastering the Art of Suturing: Exploring Diverse Techniques for Surgical Excellence	Dr Hafiz M Adnan	1st March 2024	10:00am-01:00pm
RAS-W-018	Ultrasound Guided Injections for Shoulder Joint	Jae-Young Lim	1st March 2024	10:00am-01:00pm
RAS-W-019	Low vision assessment and effective management techniques	Ayesha Saleem	1st March 2024	09:00am-02:00pm
RAS-W-020	Navigating the Role of Emotional Intelligence in Health care Professionals	Dr.Imran Khalid Bhutta	1st March 2024	09:00am-02:00pm

CODE	Work shop Title	Facilitator	Date	Time
RAS-W-020	The Science of Strabismus Management: The Art of Orthoptics	Ayesha Sarfaraz	1st March 2024	09:00am-02:00pm
RAS-W-022	Visual Electrophysiology: Unveiling the Secrets of Vision	Zia ur Rehman	1st March 2024	09:00am-02:00pm
RAS-W-023	Eyes on Excellence: The Art and Science of Ophthalmic Dispensing Mastery	Hakim Anjum Naveed	1st March 2024	09:00am-02:00pm

In collaboration with other Institutions

CODE	Work shop Title	Trainer	Date	Time	Venue
RAS-W-101	Use of HPLC for Qualitative and Quantitative Estimation of Pharmaceutical Formulations	Dr. Shahzad Sharif	22nd Feb 2024	10:00 am-03:00pm	Government College University, Lahore
RAS-W-102	R Studio's Statistical Realm	Dr. Ammara Khalid	28th Feb 2024	09:00am - 02:00pm	Institute of Microbiology and Molecular Genetics, University of the Punjab, Lahore
RAS-W-103	Genome Editing Approaches: A Hands-on Practice on CRISPR Techniques	Dr Muhammad Irfan	28th Feb 2024	09:00am - 02:00pm	Forman Christian College, Lahore
RAS-W-104	Precision Diagnostics; Unlocking Clinical Mysteries with PCR Analysis	Dr. Warda Fatima	29th Feb 2024	09:00am - 02:00pm	Institute of Microbiology and Molecular Genetics, University of the Punjab, Lahore
RAS-W-105	ELISA Troubleshooting: Overcoming Common Challenges	Dr. Warda Fatima	1st March 2024	09:00am-02:00pm	Lahore Diagnostic Center
RAS-W-106	Mastering Bio-Risk Management Training Workshop	Dr Hasnain Javaid	1st March 2024	09:00am-02:00pm	PACP Complex, 6 Bird Wood Road, Lahore
RAS-W-107	Sweet Alchemy: Mastering the Art of Sweets	Mr. Mubeen Arshad Awan	1st March 2024	09:00am -01:00pm	Chashni - The Sweet House
RAS-W-108	Angiography Techniques and IR Procedures	Dr. Zaheer Anjum Sherazi, Mr. Abdul Basit	1st March 2024	10:00 am - 01:00pm	Farooq Hospital
RAS-W-109	Vascular Ultrasound	Dr. Tauseef Qamar	1st March 2024	10:00am - 01:00pm	Allah Yar Khan Hospital
RAS-W-110	Application of PCR in Medical Diagnostics and Research	Dr. Saadat Ali	1st March 2024	10:00am - 01:00pm	UMT, Lahore

DAY TWO

Saturday, March 2nd, 2024

08:00 AM - 04:00 PM

Inaugural Ceremony

International Invited Speakers

National Invited Speakers

Plenary Session

Poster Presentation & Evaluation

Venue: Grand Ball Room, Pearl Continental Hotel, Mall Road, Lahore

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RASCON SUFI NIGHT & DINNER

06:00 PM - 09:00 PM

Venue: Ball Room Event Complex, 01 KM Defence Road, Off Raiwind Road, Bhobhtian Chowk, Lahore

CONFERENCE PROGRAM

Day Two: Saturday

March 2nd, 2024 | 08:00 AM - 04:00 PM

Venue: Grand Ball Room, Pearl Continental Hotel, Mall Road, Lahore

Session	Time	Hall
On-spot Registration	08:00 AM-09:00 AM	Grand Ball Room Hall
Inaugural Ceremony	09:00 AM-10:25 AM	Grand Ball Room, Hall A
Refreshment	10:25 AM-10:45 AM	Grand Ball Room Hall
Session I	10:45 AM-12:45 PM	Grand Ball Room, Hall A
Session III	12:45 PM- 03:00 PM	
Session II	10:45 AM-12:00 PM	Grand Ball Room, Hall B
Session IV	12:00 PM-03:00 PM	
Lunch	03:00 PM-04:00 PM	Grand Ball Room Hall
RASCON SUFI NIGHT DINNER	06:00 PM - 09:00 PM	**Ball Room Event Complex, Defence Road, Lahore**

INAUGURAL CEREMONY

March 2nd, 2024| 09:00-10:15 AM

Venue: Grand Ball Room, Hall A, Pearl Continental Hotel, Lahore

Time	Program
09:00 AM	Guests to be Seated
09:05 AM	Arrival of the Chief Guest
09:10 AM	Recitation of Holy Quran
09:15 AM	National Anthem
09:20 AM	Welcome Address by Chairman, RASCON-24 / Dean Faculty of Allied Health Sciences
09:30 AM	Address by Prof. Volker Hömberg President Elect, Word Federation for Neurorehabiitation Vice President, European Federation of Neurorehabilitation Societies
09:45 AM	Address by Rector, Superior University, Prof. Dr. Sumaira Rehman
09:55 AM	Address by Guest of Honour
10:10 AM	Address by the Chief Guest
10:20 AM	Souvenir Presentation to Chief Guest
10:25 AM - 10:45 AM	Refreshment

RASCON HALL-A

March 2nd, 2024 | 10:45 AM – 03:00 PM

Venue: Grand Ball Room, Pearl Continental Hotel, Lahore

SESSION-I

Chair: Prof. Dr. Shahida Hasnain

Co-Chair: Prof. Dr. Akbar Chaudary

Discussant: Prof. Dr. Muhammad Salman Bashir

Sr. No.	Time	Speaker	Title of Presentations
IKS1	10:45 AM -11:00 AM	**Prof. Volker Hömberg** MD Dr.h.c. - Head, Department of Neurology, Gesundheitszentrum Bad Wimpfen, SRH-Group President Elect, World Federation for Neurorehabilitation Vice President, European Federation of Neurorehabilitation Societies	How to Face Challenges in Neuro-rehab World
IKS2	11:00 AM - 11:15 AM	**Prof. Jae-Young Lim** M.D., PhD. Seoul National University College of Medicine, Seoul National University Bundang Hospital, Gyeonggi-do, South Korea	New Horizons of Rehabilitation for Degenerative Musculoskeletal Disorders
IKS3	11:15 AM - 11:30 AM	**Dr. Sabahat Asim Wasti** Staff Physician, Neurology, Neurological Institute, Cleveland Clinic, Abu Dhabi, UAE	Navigating Challenges and Triumphs in Establishing Rehabilitation Programs for Acute and Hyperacute Stroke Patients: A Comprehensive Overview
IKS4	11:30 AM - 11:45 AM	**Prof. Dr. Rana Siddiqui** Concussion Management Specialist, Consultant, Ministry of Health Ontario Health Ministry, Canada	Role of AI in the Diagnosis and Management of Concussion in a Hyper-connected World
IKS5	11:45 AM - 12:00 PM	**Mr. Omar Bani Mustafa** Senior Speech Therapist Abu Dhabi Health Services Company-SEHA	Fluency Disorders
IKS6	12:00 AM -12:15 PM	**Prof. Dr. Shahzad Ali Khan** Vice Chancellor Health Services Academy, Islamabad	Integrating Public Health and Rehabilitation: Enhancing Holistic Well-being

Sr. No.	Time	Speaker	Title of Presentations
IKS7	12:15 PM - 12:30 PM	**Prof. Dr. Atta Ur Rehman** UNESCO Science Laureate, Academician, Chinese Academy of Sciences, Professor Emeritus - International Centre for Chemical and Biological Sciences, University of Karachi	Recent Developments in Medical Sciences
IKS8	12:30 PM - 12:45 PM	**Dr. Nirmal Surya** M.D., D.N.B. FIAN, MNAMS, FAAN Bombay Hospital & Medical Research Centre, Mumbai Saiffee Hospital, Mumbai Northcot Police Hospital, Nagpada, Mumbai, India	Telerehabilitation the Oppertunity and Challenges

SESSION-III

Chair: Prof. Dr. Volker Homberg

Co-Chair: Prof. Dr. Joe Young Lim

Discussant: Dr. Sabahat Asim Wasti

Sr. No.	Time	Speaker	Title of Presentations
NKS1	12:45 PM - 12:55 PM	**Prof. Dr. Ashfaq Ahmad** Dean, Faculty of Allied health Science The University of Lahore	Rehabilitation And Sustainable Development Goals
NKS2	12:55 PM - 01:10 PM	**Prof. Dr. Sumaira Imran Farooqui** Dean, Faculty of Allied Health Sciences Ziauddin University& Hospital	Visual Biofeedback and Exercise Reshape Parkinson's Management in Stage III Patients - A Paradigm-Shifting RCT and Meta-analysis
NKS3	01:10 PM - 01:20 PM	**Prof. Dr. Muhammad Salman Bashir** Dean, Faculty of Allied Health Sciences University of Management and Technology	Digital Health: Digital Transformation in Health Care
NKS4	01:20 PM -01:30 PM	**Prof. Dr. Arshad Nawaz malik** Principal Instituite of Allied Health Sciences Riphah International University	Breaking Barriers: Advancing Stroke Recovery Through Technology
NKS5	01:30 PM - 01:40 PM	**Dr. Muhammad Umar** HOD - Physiotherapy, Director IAHS, Rawalpindi Medical University, Rawalpindi	Bridging the Gap: Empowering Underprivileged Communities through Community-Based Rehabilitation in the Digital Age

Sr. No.	Time	Speaker	Title of Presentations
NKS6	01:40 PM - 01:50 PM	**Dr. Afzaal Alam** Consultant, Audiologist, Physician Alam Audiology Clinic, Lahore	Role of public & private partnership in early detection of hearing impairment and rehab modalities
OP1.	01:50 PM - 02:00 PM	**Dr. Erum Tanveer** Principal & Associate Professor, United College of Physical Therapy Karachi	Comparative effects of post isometric relaxation and sustained stretching in patients with upper cross syndrome
OP2.	02:00 PM - 02:10 PM	**Ms. Fatima Zehra** Jinnah University for Women	Determining the effects of center based vs tele-rehabilitation using an interval and continuous aerobic training among post coronary revascularization patients - a randomized controlled trial
OP3.	02:10 PM - 02:20 PM	**Dr. Amber Shabbir** Assistant Professor, Islamabad Medical & Dental College	Effects of muscle energy technique in patients with tension type headache; a randomized control clinical trial
OP4.	02:20 PM - 02:30 PM	**Dr. Asma Bashir** Senior Physiotherapist Sehat Medical Complex, Lahore	The effects of treadmill training with visual feedback and rhythmic auditory cue on gait and balance in cerebral palsy: a randomized controlled trial
OP5.	02:30 PM - 02:35 PM	**Dr. Hadiqa Adnan** Assistant Professor, Islamabad Medical and Dental College	The effect of body awareness therapy on balance and coordination in stroke
OP6.	02:35 PM - 02:40 PM	**Dr. Aamir Gul Memon** Assistant Professor Riphah International University, Lahore	Comparative effects of neuromuscular training and mobilization with movement on pain, range of motion, balance, and function in footballer with ankle sprain
OP7.	02:40 PM - 02:45 PM	**Dr. Tehreem Mukhtar** Ph.D. Scholar Rehabilitation Science Superior University Assistant Professor Riphah International University	Effects of joint integrity exercises versus mirror therapy on proprioception and functional rehabilitation of upper limb in hemineglect stroke survivors
OP8.	02:45 PM - 02:50 PM	**Dr. Roohi Abbas** Ph.D. Scholar Rehabilitation Science Superior University Lecturer, Lahore College for women University	Comparison and validation of extended ICF core set for stroke in post-acute stroke rehabilitation

Sr. No.	Time	Speaker	Title of Presentations
OP9.	02:50 PM - 02:55 PM	**Dr. Aleena Waheed** PhD Scholar Rehabilitation Science Superior University Lecturer Rashid Latif Medical College	Effect of buergers allen exercise on peripheral circulation among hysterectomy patients: quasi-experimental study.
OP10.	02:55 PM - 03:00 PM	**Dr. Hafiz Mudassir Riaz** PhD Scholar Rehabilitation Science Superior University Lecturer University of Health Sciences Lahore	Collaborative virtual reality environment – an advancement of digital technology in physical therapy- a narrative review
OP11.	03:00 PM - 03:05 PM	**Dr. Zohaib Shahid** PhD Scholar, Lincoln University, Malaysia	Innovative online stroke rehabilitation algorithm: conceptualization, design, implementation, and initial pilot study findings
OP12.	03:05 PM - 03:10 PM	**Dr. Kinza Idress** PhD Scholar Rehabilitation Science Superior University	Comparing the effects of kinesiology taping on quadriceps muscle and anterior cruciate ligament in fast cricket bowlers with dynamic knee valgus
OP13.	03:10 PM - 03:15 PM	**Dr. Saleh Shah** Assistant Professor Superior University	Comparative effects of dry needing and cross friction massage on pain, mobility and functional status in plantar fasciitis; a randomized clinical trial
OP14.	03:15 PM - 03:20 PM	**Dr. Muhammad Sanaullah** Ph.D. Scholar Rehabilitation Science Superior University Assistant Professor Superior University	Effects of instrument assisted fascial abrasion technique versus myofascial release technique in patients having cervicogenic headache: a randomized clinical study
OP15.	03:20 PM - 03:25 PM	**Dr. Sehar Aslam** Assistant Professor Superior University	Effects of myofascial release on pain and quality of life in patients with fibromyalgia
OP16.	03:25 PM - 03:30 PM	**Ms. Saba** Lecturer and PhD Scholar Rehabilitation Science Superior University	Barriers for audiology, speech, and language therapy services to cochlear implant recipients
OP17.	03:30 PM - 03:35 PM	**Dr. Saadia Pervaiz** PhD Scholar Rehabilitation Science Superior University Assistant professor Akhtar Saeed college of Rehabilitation Sciences, ACRS	Predictive accuracy of strength of wrist flexors measured through manual muscle testing versus hand-held dynamometer in young healthy females

Sr. No.	Time	Speaker	Title of Presentations
OP18.	03:35 PM - 03:40 PM	**Dr Rida Mustafa Awan** PhD Scholar Rehabilitation Science Superior University Lecturer Superior university, Faisalabad	Comparative analysis of conventional neck exercises with and without scapular corrective exercises on pain, cervical range of motion, and disability in patients with forward head posture
OP19.	03:40 PM - 03:45 PM	**Dr. Haroon Mansha** PhD Scholar Rehabilitation Science Superior University Assistant Professor College of Rehabilitation science Multan medical and Dental College	Telerehabilitation for the treatment in chronic low back pain in Pakistan: A randomized controlled trial
OP20.	03:45 PM - 03:50 PM	**Dr. Asima Irshad** PhD Scholar Rehabilitation Science Superior University Assistant Professor, Research Advisor Superior University	Association between pain and disability in patient with mechanical low back pain: a randomized control trial with kinesio taping and dry needling
OP20.	03:50 PM - 03:55 PM	**Dr. Qurba Kiran** Ph.D. Scholar Rehabilitation Science Superior University Assistant Professor Superior University	Frequency of developmental coordination disorder (dcd) among different level of autism in children
OP21.	03:55 PM - 04:00 PM	**Ms. Ayesha Firdous** PhD Scholar Rehabilitation Science Superior University	The impact of dysphonia on quality of life in stroke patients
OP22.	04:00 PM - 04:05 PM	**Dr. Gulnaz Zaheer** HOD, Assistant Professor Superior University	Comparison of myofascial trigger point release and kinesiotaping vs conventional physiotherapy treatment protocol of plantar fasciitis for pain management -rct study
OP23.	04:05 PM - 04:10 PM	**Dr. Sara Ahmad** Demonstrator Superior university	Comparison of effects of functional electrical stimulation versus constrained induced movement therapy for hemiparetic upper limb motor recovery and spasticity in chronic ischemic stroke
OP24.	04:10 PM - 04:15 PM	**Dr. Sumaira Sultana** Research Associate Superior university	Psychometric analysis and translation of patient-rated wrist evaluation score in Urdu version.
OP25.	04:15 PM - 04:20 PM	**Syed Nishat Akram Shah** Ms Scholar Rehabilitation Science Superior University	Effect of cylindrical lenses on stereoacuity

Sr. No.	Time	Speaker	Title of Presentations
OP26.	04:20-04:25PM	**Dr. Muhammad Zeeshan** MS Scholar Rehabilitation Science Superior University	Comparative effects of dynamic cupping and pnf stretching in hamstring tightness among football players
OP27.	04:25-04:30PM	**Mr. Faiz Ur Rehman** MS Scholar Rehabilitation Science Superior University Lahore	Perception about tele rehabilitation among practicing physiotherapists in the age of covid-19 pandemic in Pakistan
OP28.	04:30-04:35PM	**Prof. Dr. Ashfaq Ahmad** Dean, Faculty of Allied health Science The University of Lahore	Rehabilitation and sustainable development goals

RASCON HALL-B

2nd March 2024 | 10:45 AM - 03:00 PM

Venue: Grand Ball Room, Hall 2, Pearl Continental, Lahore

SESSION: II

Chair: Prof. Dr. Muhammad Iqbal
Co-Chair: Dr. Muhammad Ahmad
Discussant: Dr. Mirza Ayub Baig

Sr. No.	Time	Speaker	Title of Presentations
NKS7	10:45 AM -11:00 AM	**Prof. Dr. Muhammad Irfan Malik** MBBS, FCPS (Pulmonology) FRCP (GLASG), CMT (UHS) European Diplomate in Respiratory Medicine. Pulmonary Critical Care and Sleep Medicine at UOL Chairman of Non-Invasive and Sleep Guideline by Pakistan Chest Society University of Lahore	Navigating pulmonary function: understanding the abcs of spirometry for detecting small and large airway abnormalities
NKS8	11:00 AM -11:15 AM	**Dr Amdad Farooqi** MBBS, FCPS(Med), FCPS, CCM (R), Senior Registrar of Medicine/ Medical ICU, Consultant Physician, Pulmonologist, Intensivist, Department of Pulmonology Critical Care and Sleep Medicine SIMS/ Services Hospital, Lahore	Lung ultrasound in icu with special emphasis on lung recruitment in ventilated patients

Sr. No.	Time	Speaker	Title of Presentations
NKS9	11:15 AM -11:30 AM	**Dr. Mizna** Medicine Specialist, CEO M. Aesthetics	Aesthetic medicine: a comprehensive integration of various medical specialties
NKS10	11:30 AM - 11:45 AM	**Dr Noor-Ul-Arfeen** MBBS, FCPS Consultant Medicine Specialty Pulmonology & Critical Care Doctors Hospital, Lahore & Farooq Hospital, Lahore	Exploring the nexus: advances in neuro-respiratory and sleep medicine
NKS11	11:45 AM - 11:55 AM	**Dr Adnan Haider** BS Cardiac Perfusion, PhD Physiology, Lecturer / Senior Cardiac Perfusionist, Department of Cardiac Surgery, KEMU	Case report. Repair of ruptured sinus of valsalva, perfusion management

SESSION: IV

Chair: Dr Ijaz Ahmad
Co-Chair: Dr Ahmad Randhawa
Discussant: Hafiz Rehan Nadeem

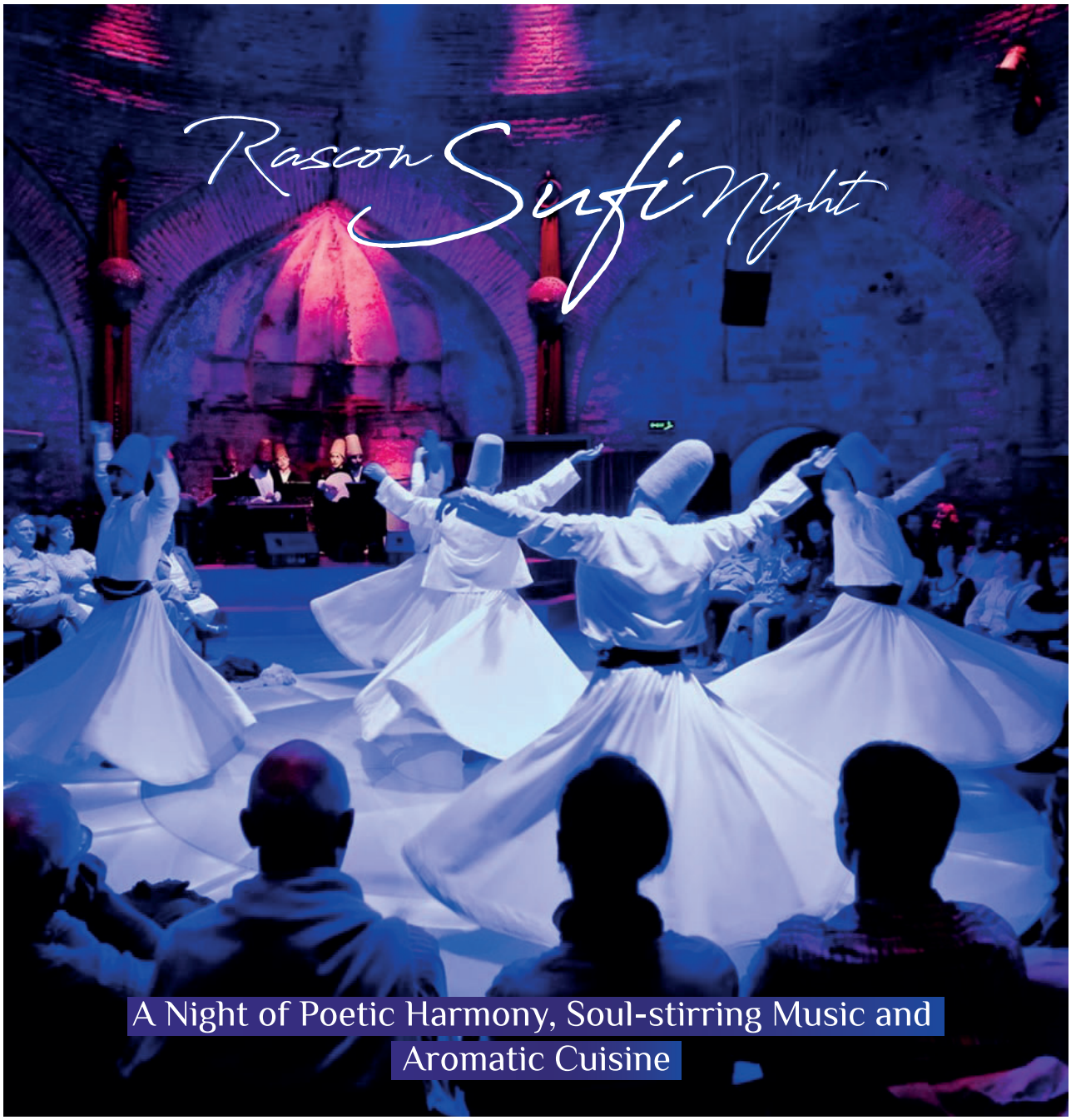
Sr. No.	Time	Speaker	Title of Presentations
IKS10	12:00 PM -12:15 PM	**Dr. Mohd Adzim Khalili bin Rohin** Assoc. Prof, School of Nutrition & Dietetics, Faculty of Health Sciences, Universiti Sultan Zainal Abidin, Maimunah, Malaysia.	Lansium parasiticum (duku) extracts as potential anti-proliferative against colon cancer cell lines (HT-29, HCT-116, CT-26)
NKS12	12:15 PM -12:30 PM	**Prof. Dr. Tahir Zahoor** Dean: Faculty of Applied Sciences, NUR International University, Lahore	Importance of food science and nutrition: a need for healthy nations
NKS13	12:30 PM -12:45 PM	**Dr. Imran Pasha** Professor/Director General, NIFSAT, University of Agriculture Faisalabad	Future trends in healthcare: harnessing digital innovation for patient-centric excellence
NKS14	12:45 PM - 01:00 PM	**Dr. Sanaullah Iqbal** Professor/Chairman Dept. Food Science and Human Nutrition Faculty of Bio-Sciences, UVAS, Lahore	Effect of moringa leaf powder supplementation on glycemic control in prediabetic individuals

Sr. No.	Time	Speaker	Title of Presentations
NKS15	01:00 PM - 01:15 PM	**Dr. Shinawar Waseem Ali** Chairman/ Associate Professor Department of Food Sciences, Faculty of Agricultural Sciences, University of the Punjab, Lahore	Functional potential of aloe vera to mitigate oxidative stress mediated dysfunctions
NKS16	01:15 PM - 01:30 PM	**Dr. Muhammad Wasim Sajid** Associate Professor Department of Biosciences COMSATS University Islamabad, Sahiwal Campus Pakistan	Potential Of Banana Peel And Peduncle Powder (BPPP) As Dietary Fiber In Bakery Products
NKS17	01:30 PM - 01:45 PM	**Dr. Raheel Suleman** Assistant Professor Department of Food Science and Technology, Faculty of Food Science and Nutrition, Bahauddin Zakariya University, Multan	Empowering health and quality of mutton patties with flaxseed: mitigating oxidative stress
OP27.	01:45 PM - 02:00 PM	**Farah Javed** Department of Food Science and Human Nutrition, University of Veterinary and Animal Sciences, Lahore	High pressure processing for the production of vegetable baby puree with enhanced nutritional, microbial, and sensory qualities
OP28.	02:00 PM - 02:15 PM	**Dr. M. Arsalan Mahmood** School of Food and Agricultural Sciences, University of Management and Technology, Lahore.	Application of ashwagandha (withania somnifera) roots for the development of gluten free quinoa pasta
OP29.	02:15 PM - 02:30 PM	**Azhar Mahmood** Department of Human Nutrition and Food Technology, Faculty of Allied Health Sciences, Superior University Lahore	Exploring the potential of fruit wastage in development of new food products to reduce environmental pollution
OP30.	02:30 PM - 02:45 PM	**Aneel Munir Khokhar** Department of Human Nutrition and Food Technology, Faculty of Allied Health Sciences, Superior University Lahore	Characterization and utilization of corn cob for the production of fiber-rich foods

RASCON SUFI NIGHT & DINNER

2nd March 2024 | 06:00 PM - 09:00 PM

Ball Room Event Complex, 1 KM - Defence Road, Off Raiwind Road, Bhobhtian Chowk, Lahore



DAY THREE

Sunday, March 3rd, 2024

08:00 AM - 04:00 PM

Plenary Session

Oral Presentation

Poster Presentation & Evaluation

Closing Ceremony

Venue: Grand Ball Room, Pearl Continental Hotel, Mall Road, Lahore

CONFERENCE PROGRAM

Day Three: Sunday

March 3rd, 2024 | 08:00 AM- 04:00 PM

Venue: Grand Ball Room, Pearl Continental Hotel, Mall Road, Lahore

Session	Time	Hall
On spot Registration	08:00 AM - 09:00 AM	Grand Ball Room Hall
Session V	09:00 AM - 10:30 AM	Grand Ball Room, Hall A
Session VII	10:45 AM - 12:40 PM	Grand Ball Room, Hall A
Session IX	12:50 PM - 02:00 PM	
Session VI	09:00 AM - 10:30 AM	Grand Ball Room, Hall B
Session VIII	10:40 AM - 2:00 PM	
CLOSING CEREMONEY	02:00 AM - 03:00 PM	Grand Ball Room, Hall A
Lunch	03:00 PM - 04:00 PM	Grand Ball Room Hall

RASCON HALL-A

3rd March 2024 | 09:00 AM - 02:00 PM

Venue: Grand Ball Room, Pearl Continental, Lahore

SESSION V

Chairperson: Prof. Dr. Saqib Mehmood

Co-Chair: Dr Atika Hashmi

Discussant: Prof. Dr. Muhammad Nawaz

Sr. No.	Time	Speaker	Title of Presentations
	09:00 AM - 09:05 AM	Tilawat	
NKS18	09:05 AM - 09:15 AM	**Dr. Hasnain Javed** Lab Director Provincial Public Health Reference Lab, Punjab AIDS Control Program, Lahore	Exploring emerging infectious diseases testing challenges in punjab's provincial public health reference lab, lahore.
NKS19	09:15 AM - 09:30 AM	**Dr. Farhan Rasheed** Associate Professor Pathology Allama Iqbal Medical College, Lahore	Ceftazidime-avibactam: a new option against carbapenem-resistant non-fermenters gram-negative bacteria.
NKS20	09:30 AM - 09:45 AM	**Dr. Mohsin Khurshid** Associate Professor Institute of Microbiology, Government College University, Faisalabad, Pakistan	Navigating the genetic landscape: a decade of multidrug resistance research in acinetobacter baumannii across Pakistan.
NKS21	09:45 AM - 10:00 AM	**Prof. Dr. Nadeem Afzal** Professor Akhtar Saeed Medical College, Lahore	Proportion of CD44+ subset of tumor cells in single cell suspension prepared from ffpet sections directly correlates with histological subtyping of head and neck squamous cell carcinoma.
NKS22	10:00 AM - 10:15 AM	**Dr. Muhammad Asif Shaheen** Assistant Professor Microbiology, GCU, Lahore	Phage-encoded lytic proteins as enzybiotics: an overview of potential implications of enzybiotics as precision antibacterial therapy.
NKS23	10:15 AM - 10:30 AM	**Dr. Usman Waheed** Associate Professor - Transfusion Medicine	Blood bags and transfusion medicine: challenges, opportunities, and the way forward.

SESSION VII

Chair: Prof. Dr. Kashif Jehangir
Co-Chair: Dr. Kashif Raza Khan
Discussant: Dr. Ubaidullah Jan

Sr. No.	Time	Speaker	Title of Presentations
NKS24	10:45 AM - 11:00 AM	**Dr Mufarriq Shah** Head of the Department of Optometry Associate Professor Pakistan Institute of Community Ophthalmology (PICO) Peshawar, Pakistan	Management of low vision in people with myopic macular degeneration
NKS25	11:00 AM - 11:15 AM	**Dr Mutahir Shah** Department of ophthalmology Avicenna Medical Complex, Islamabad	Pseudo-myopia and screen time: a pre and post cycloplegic refractive evaluation of children age 4-16 years.
NKS26	11:15 AM - 11:30 AM	**Dr.Memoona Arshad** Head of the Department of Optometry Assistant Professor Green International University,Lahore	Talk on artificial intelligence in optometry
NKS27	11:30 AM - 11:45 AM	**Ayesha Sarfraz** Orthoptist IOA Representative for Pakistan College of Ophthalmology and Allied Vision Sciences, KEMU, Mayo Hospital, Lahore	Evaluation of visual impairment following stroke
OP31.	11:45 AM - 11:55 AM	**Fiaza Hasan** Superior University Lahore	Significance of accurate diagnosis and optimal management approach for bilateral anterior lenticonus
OP32.	11:55 AM - 12:05 PM	**Kashmala Zarin** Lecturer Department of Optometry and Vision Sciences Superior University, Lahore.	Psychological acceptability and visual comfort in multifocal versus monovision contact lenses
OP33.	12:05 PM - 12:15 PM	**Mahfar Khan** Lecturer Department of Optometry and Vision Sciences Superior University, Lahore.	Effect of low plus addition and hart chart therapy in patients with accommodation insufficiency

Sr. No.	Time	Speaker	Title of Presentations
OP34.	12:15 PM - 12:25 PM	**Shahid Noor** Lecturer Department of Optometry Superior University, Lahore	Visual functions and quality of life changes with corneal and scleral RGP lenses in keratoconus.
OP35.	12:25 PM - 12:35 PM	**Fatima Zahid** Lecturer Department of Optometry and Vision Sciences Superior University, Lahore	Criteria of prescribing refractive correction in marginal refractive errors

SESSION IX

Chair: Prof. Dr. Zaheer Sherazi
Co-Chair: Dr. Fehmeeda Ansari
Discussant: Dr. Mehfooz ur Rehman

NKS28	12:50 PM - 01:00 PM	**Dr Tauseef Qamar** Assistant Professor Hussain College of Medical Sciences	Evaluation of visual impairment following obstetrical color doppler ultrasound, how significant it is to pick intrauterine growth restriction.
NKS29	01:00 PM - 01:20 PM	**Dr Athar Shams Rana** Assistant Professor & HOD Department of Radiological Sciences & MIT, Superior University, Lahore	Neuro sonography, how, when and why?
NKS30	01:20 PM - 01:40 PM	**Dr Muhammad Fiaz** Consultant Interventional Radiologist CEO, Lifeline Diagnostic Center	Modern Interventional radiological procedures
NKS28	01:40 PM - 02:00 PM	**Dr Saima Haider** Associate Professor University Department of Radiological Sciences & MIT, Superior University, Lahore	Theranostics: dawn of the new era
	02:00 PM	CLOSING CEREMONY	

RASCON HALL-B

3rd March 2024 | 09:00 AM - 02:00 PM

Venue: Grand Ball Room, Pearl Continental, Lahore

SESSION VI

Chair: Prof. Dr. Muhammad Aslam

Co-Chair: Dr. Muhammad Tahir Nazeer

Discussant: Dr. Mustajib Ahmad

Sr. No.	Time	Speaker	Title of Presentations
	09:00 AM - 09:05 AM	Tilawat	
NKS32	09:15 AM - 09:30 AM	**Muhammad Zeeshan Sarwar** Associate Professor East surgical ward Mayo Hospital Lahore	Mesh complication in hernia surgery
NKS33	09:30 AM - 09:45 AM	**Dr. Shehla Javed Akram** CEO Akram medical complex CEO Don Valley Pharmaceutical Company	Hypoferritinemia without anemia among reproductive age female: frequency , determinant and treatment.
NKS34	09:45 AM -10:00 AM	**Dr. Mian Waleed Anjum** Assistant Professor General Surgery in Sughra Shafi Medical College, Narowal.	Emerging allied health technologies
NKS35	10:00 AM -10:15 AM	**Dr. Ayesha Asad** Associate Professor of Anesthesia Kaul Associate, Lahore	Key performance indicator in anesthesia
NKS36	10:15 AM -10:30 AM	**Dr. Hassan Shaukat** Associate Professor, Services Hospital, Lahore	Advancement in laparoscopic surgery

SESSION VIII

Chair: Prof Dr. Anjum Nasim Sabri
Co-Chair: Prof. Dr. Perwaiz Iqbal
Discussant: Dr Junaid Zaidi

Sr. No.	Time	Speaker	Title of Presentations
NKS37	10:40 AM -10:55 AM	**Prof. Dr. Azra Yasmin** Professor/Chairperson Department of Biotechnology Fatima Jinnah Women University Rawalpindi	Synthetic biology in the era of AI.
IKS9	10:55 AM - 11:10AM	**Dr. Sadia Saeed** INSERM UMR 1283, CNRS UMR 8199, European Genomic Institute for Diabetes (EGID), Lille, France; University of Lille, Lille University Hospital, Lille, France; Department of Metabolism, Digestion and Reproduction, Imperial College London, London, UK	From genes to global health: unveiling the genetic foundations of childhood obesity in pakistan
IKS10	11:10 AM - 11:25 AM	**Dr. Shahbaz Khan** Post-doctoral Fellow Colorado Water Center Colorado State University, Fort Collins, CO 80523, USA	Moringa leaf extract mitigates the adverse impacts of drought and Improves the yield and grain quality of rice.
NKS38	11:25 AM - 11:40 AM	**Dr. Bushra Ijaz** Associate Professor National Center of Excellence in Molecular Biology (CEMB), University of the Punjab, Lahore	Gene expression profiling
NKS39	11:40 AM - 11:50 AM	**Dr Noreen Latief** Assistant Professor Stem Cell Division Molecular Biology (CEMB), University of the Punjab, Lahore	Stem cells and nanoparticles for the treatment of defected cartilage
NKS40	11:50 AM - 12:00 PM	**Dr. Saba Riaz** Associate Professor Institute of Microbiology and Molecular Genetics University of the Punjab, Lahore	Strategic objectives of who global action plan on antimicrobial resistance
NKS41	12:00 PM - 12:10 PM	**Muhammad Rehan Gul** Radio Pharmacy Head and Quality Assurance Representative Nuclear Medicine Department, SKMCH & RC Lahore	Breaking into the world of nuclear pharmacy & its applications in hospital setting; a springboard for clinical success

Sr. No.	Time	Speaker	Title of Presentations
OP36.	12:10 PM - 12:20 PM	**Mr. Rehman Sharif** Admin In-charge Department of Basic Sciences Superior University, Lahore	Color blind friendly interface optimization for enhanced user experience using color vision deficiency
OP37.	12:20 PM - 12:40 PM	**Dr Muddasir Iqbal** Department of Chemistry, The Superior University, Lahore	Application of biosynthesized ZnO nanoparticles to inhibit the microbial growth in wounds
OP38.	12:40 PM - 12:50 PM	**Dr Fizza Naseem** Department of Chemistry, The Superior University, Lahore	Tuning mesoporosity in aluminosilicates for controlled release fertilizers
OP39.	12:50 PM - 01:00 PM	**Dr Rabia Nawaz** Department of Biological Sciences, Superior University, Lahore.	Predictive etiology of Long COVID oncogenesis through SARS-CoV-2 proteins and AKT1 molecular docking
OP40.	01:00 PM - 01:10 PM	**Dr Attia Razzaq** Department of Biological Sciences, Superior University, Lahore	Meeting UN sustainability goals: deciphering genetic aspects of neurodevelopmental disorder
OP41.	01:10 PM - 01:20 PM	**Quratulain Amjad** School of Biological Sciences, University of the Punjab, Quaid-i-Azam Campus, Lahore	Recombinant Slit2 requires heparan sulphate to inhibit TGF- induced tumor proliferation in lung cancer and glioblastoma
OP42.	01:20 PM - 01:30 PM	**Muneeba Butt** Department of Biological Sciences, Superior University, Lahore	Design and validation of a latent fingerprint dusting prototype device
02:00 PM		CLOSING CEREMONY	

CLOSING CEREMONY

3rd March 2024| 02:00-03:00 PM

Venue: Hall A (Grand Ball Room, Pearl Continental Hotel, Lahore)

Time	Program
02:00 PM	Guests to be Seated
02:05 PM	Arrival of the Chief Guest
02:10 PM	Recitation of the Holy Quran
02:15 PM	National Anthem
02:20 PM	Overview of Conference by Chairman, RASCON-24, Dean - Faculty of Allied Health Sciences
02:30 PM	Reflection by International Speakers
02:40 PM	Address by Guest of Honour
02:45 PM	Address by Rector, Superior University / Chairman, The Superior Group
02:50 PM	Address by Chief Guest
02:55 PM	Award Distribution Ceremony
03:00 PM	Note of Thanks by Chairman, RASCON-24, Dean - Faculty of Allied Health Sciences
03:00- 04:00 PM	Lunch

POSTERS

Venue: Corridor of Grand Ball Room, Pearl Continental Hotel, Lahore

Poster ID	Author	Topic
PP1	Ayesha Areej, Rabia Nawaz, Attia Razzaq Department of Biological Sciences, The Superior University Lahore	In silico Analysis to Predict the Pathogenic Variants of METTL5 Gene Causing Intellectual Development Disorders
PP2	Hadiqa Tufail, Rabia Nawaz, Attia Razzaq Department of Biological Sciences, The Superior University Lahore	Intellectual Development Disorder: Predicting the Pathogenic Variant of the LINGO-1 Gene through In Silico Analysis
PP3	Shaiza Manzoor, Attia Razzaq Department of Biological Sciences, The Superior University Lahore,	Unveiling the Prevalence and Risk Factors of Hepatitis B and C Viruses Among Pregnant Women in Pakistan: Insights from a Community-Based Cross-Sectional Study
PP4	Urooj Fatima, Dr. Attia Razzaq Department of Biological Sciences, Superior University Lahore	Comprehensive Analysis of Iron Deficiency Anemia in Multan and Sahiwal Divisions of Pakistan: A Cross-Sectional Health Facility-Based Study
PP5	Faizan Mamoon1, Shoaib Akhtar2, Attia Razzaq1 1Department of Biological Sciences, The Superior University Lahore, 2Govt. Dyal Singh Graduate College, Lahore	Exploring Intestinal Helminth Fauna in Poultry across Varied Regions of Lahore and Estimating Economic Impacts
PP6	M. Usman Kabir, Dr. Ayesha Younis, Dr. Attia Razzaq, Department of Biological Sciences, Superior University Lahore	Exploring the Genetic Study of Intellectual Disability in Pakistani Population through Next Generation Sequencing.
PP7	Muhammad Daud Javed, Dr. Attia Razzaq, Dr. Zafar Iqbal Department of Biological Sciences, Superior University Lahore	Unmasking the origins of Intellectual disability in Pakistani Families through Exome sequencing
PP8	Sahar Nadeem, Dr. Attia Razzaq, Dr. Zafar Iqbal Department of Biological Sciences, Superior University Lahore	Molecular Mechanisms Underlying Neurological Disorder in the Pakistani Cohort
PP9	Noor ul huda, Sadia Din, Dr. Attia Razzaq Department of Biological Sciences, Superior University Lahore	Genetic insights of neurological disorders, molecular mechanisms in Pakistan population
PP10	Muhammad Asif, Dr. Attia Razzaq, Dr. Zafar Iqbal Department of Biological Sciences, Superior University Lahore	Tracing the Genetic Roots of Intellectual Disability in Pakistan
PP11	Ammara Arshad1, Attia Razzaq1 Department of Biological Sciences, Superior University Lahore	Understanding neurological disorders in Pakistani context
PP12	Hafiz.M.Saad Ali, Dr. Hina Zain, Dr. Muhammed Yasir Department of Biological Sciences, Superior University Lahore	Investigation of antioxidant and antimutagenic ability of trimetallic oxide nanoparticles
PP13	Majid Iqbal, Dr. Hina Zain Department of Biological Sciences, Superior University Lahore	Synthesis of biobased Superabsorbent Polymer (SAP) and its kinetic study
PP14	Khalil Ali, Rehana Badar, Shamma Firdous, Muafia Shafiq, Farzana Bashir Department of Biological Sciences, Superior University Lahore	A comparative study of soil seed bank and on-ground vegetation in diverse forest habitat to conserve native flora
PP15	Muqadas Asghar, Rehana Badar, Farzana Bashir, Shamma Firdous Muafia Shafiq Department of Biological Sciences, Superior University Lahore	Applications of Biochar on Canola (Brassica napus) and its evaluation

PP16	Sidra Batool, Rehana Badar, Muafia Shafiq, Farzana Bashir, Shamma Firdous Department of Biological Sciences, Superior University Lahore	Investigating the production and proximate analysis of fermented garlic using raw garlic
PP17	Qurat ul ain Fatima, Rehana Badar, Shamma Firdous, Muafia Shafiq, Farzana Bashir Department of Biological Sciences, Superior University Lahore	Comparative analysis of regeneration potential of soil seed banks in drought affected areas of district Chakwal
PP18	Riffat Fatima, Rehana Badar, Shamma Firdous, Muafia Shafiq, Farzana Bashir Department of Biological Sciences, Superior University Lahore	Evaluation of foliar spray of micronutrients on tomato to increase growth parameters and yield
PP19	Suman Riaz, Dr Usman Elahi, Dr Zahid Sharif Mirza Department of Biological Sciences, Superior University Lahore	Assessment of microbial quality of raw fish available in commercial market of Lahore
PP20	M Waqar, Dr Usman Elahi, Dr Samrah Masud Department of Biological Sciences, Superior University Lahore	Effect of antibiotics exposure on brain, gills, liver, and kidney of common carp (Cyprinus carpio)
PP21	Masooma Zahra, Dr Usman Elahi, Dr Hafeez Ur Rehman Department of Biological Sciences, Superior University Lahore	Effect of Heavy Metals Bioaccumulation on the vital organs of Major Carps (Labeo rohita, Catla catla and Cirrhinus mrigala) in Confined and Natural Water Bodies
PP22	Tayyaba Waris, Dr Usman Elahi, Dr Hafeez Ur Rehman Department of Biological Sciences, Superior University Lahore	Quality Assessment of Freshwater Fish from Retail Market of District Kasur, Punjab
PP23	Nida Noor, Dr Usman Elahi, Dr Zahid Sharif Mirza Department of Biological Sciences, Superior University Lahore	Growth performance of common carp (cyprinus carpio) rearing in cage culture system
PP24	Ansa Batool, Dr Usman Elahi, Dr Hafeez Ur Rehman Department of Biological Sciences, Superior University Lahore	Assessment Of Postharvest Practices of Freshwater Fish Species Sold at Fish Market District Kasur
PP25	M Ayub, Dr Usman Elahi, Dr Zahid Sharif Department of Biological Sciences, Superior University Lahore	Effect of vitamin c on the growth of Labeo rohita fingerlings
PP26	Fatima Musawar, Dr Usman Elahi, Dr Muhammad Mudassar Shahzad Department of Biological Sciences, Superior University Lahore	Role of Mono-calcium Phosphate supplemented plants meal-based diet on the growth performance of Labeo Rohita
PP27	Muhammad Mujahid, Dr Usman Elahi, Dr Samrah Masud Department of Biological Sciences, Superior University Lahore	Growth performance and its relationship to immunological status of grass carp
PP28	Muhammad Khalil Ul Rehman, Dr Usman Elahi Department of Biological Sciences, Superior University Lahore	Types Of Feed and Their Effects On Tilapia Fish In Fresh Water Ponds Of South Punjab
PP29	Farwa Mehmood, Dr Usman Elahi, Dr. Zahid sharif Department of Biological Sciences, Superior University Lahore	Environmental impact of cage culture in riverine ecosystem
PP30	Moafer Iqbal, Dr Usman Elahi, Dr Samrah Masud Department of Biological Sciences, Superior University Lahore	Parasitic disease of common Carp and their relationships to Antibodies
PP31	Muhammad Aakash, Dr. Samyyia Abrar Department of Biological Sciences, Superior University Lahore	Using Iron-nano particles against Multi-drug Resistant Bacteria

PP32	Maria Anwar, Dr. Samyyia Abrar Department of Biological Sciences, Superior University Lahore	Using Iron-nano particles against post burn infections
PP33	Saba Idrees, Dr. Samyyia Abrar Department of Biological Sciences The Superior university, Lahore	Biosynthesis of Silver Nanopartcles from vegetable peels and its Antibacterial activity against multidrug resistance bacteria
PP34	Ali Raza, Dr. Samyyia Abrar Department of Biological Sciences, Superior University Lahore	Prevalence of Carbapenem Resistant Bacteria in Tertiary Care hospital, Lahore
PP35	Noor-e-sehar,M. Mudassar, M.Bilal, M.Qamar ,Hafiz M. Awais, Dr. Samyyia Abrar Department of Biological Sciences, The Superior University, Lahore	Antimicrobial Activities Of Ethanol Leaves Part of Solanum Nigrum Against A.Baumannii Isolates
PP36	Mussrat Shabbir, Sehar Jaffer, Areej Fatima, Zunaira Khalil and Dr Samyyia Abrar Department of Biological Sciences, The Superior University, Lahore	Knowledge, Attitude, and Practice of Tuberculosis Among Healthcare Workers in Lahore, Pakistan: A Cross-Sectional study
PP37	Urooj Amjad, Amina Shehzadi, Aliya Rafique, Hafsa Jamil,Tehreem Fatima, Dr. Samyyia Abrar Department of Biological Sciences, The Superior University, Lahore	Antimicrobial Activity of Different Hand Sanitizers
PP38	M.Abrar, Muneeb Ahmad, Faizan Baig, M.waseem, M. Ahsan and Dr.Samyyia Abrar Department of Biological Sciences, The Superior University, Lahore	Distribution Of Associated Anomalies In Cleft Lip And Palate In Pakistani Population
PP39	Sheeza Nighat, Tayyaba Yousif, Minahil Zareen,Farah Tanveer and Dr. Samyyia Abrar Department of Biological Sciences The Superior University, Lahore	A comprehensive review of Diabetes, Current understanding and future perspectives
PP40	Sehrish Amjad, M. Babar, M.Salman, Tayyab Sajjad, Dr. Samyyia Abrar Department of Biological Sciences The Superior University, Lahore	Relationship between B12 deficiency and anxiety
PP41	Noor ul huda, Muhammad Yasin,Noble Francis, Ayesha Latif, M. Atif Ahmad, Dr. Samyyia Abrar Department of Biological Sciences The Superior University, Lahore	Cross sectional study on sputum for AFB and gene experts
PP42	Noor-ul-ain, Sehrish, Wajiha Zulfiqar, Jaweria Akhtar, Pakeeza Saif and Dr. Samyyia Abrar Department of Biological Sciences The Superior University, Lahore	Sensitivity Pattern Of Pseudomonas Aeruginosa In Urinary Tract Infection Patients
PP43	Ayesha, Dr. Samyyia Abrar Department of Biological Sciences, Superior University Lahore	Assesment of Liver Function Tests among Haemorhagic Degue Fever Patients
PP44	Haroon Ibrahim, Dr. Nazia Kanwal Department of Biological Sciences, Superior University Lahore	Comparative effectiveness of different chemotherapies
PP45	Rimsha Javaid, Dr. Nazia Kanwal Department of Biological Sciences, Superior University Lahore	3-dimensional structure prediction of Niemann pick mutant proteins

PP46	Hifza Nazir, Dr. Nazia Kanwal Department of Biological Sciences, Superior University Lahore	Exploring Cancer-Specific Circulating MicroRNA
PP47	Aamir Ameen, Dr. Nazia Kanwal Department of Biological Sciences, Superior University Lahore	Correlation between D-dimer levels and liver function test abnormalities in patients with viral hepatitis
PP48	Kaleem Arshad, Dr. Nazia Kanwal Department of Biological Sciences, Superior University Lahore	potential inhibitors of mycobacterial electron transfer protein
PP49	Maryam Afzal, Ms.Quratul-Ain Amjad Department of Biological Sciences, Superior University Lahore	Effect of collagen and fibronectin on liver cancer metastasis
PP50	Sadia Younis, Ms.Quratul-Ain Amjad, Dr. Fizza Naseem Department of Biological Sciences, Superior University Lahore	Role of iron-doped silica nanoparticles in cancer treatment
PP51	Muhammad Alamgir Khan, Miss Quratulain Amjad Department of Biological Sciences, Superior University Lahore	Impact of glucose on liver cancer metastasis with reference to Slit-robo pathway
PP52	Ayesha Naz, Dr. Aisha Younas, Dr. Ghulam Zahra Jahangir Department of Biological Sciences, Superior University Lahore	Impact of biogenically synthesised silver nanoparticles on housekeeping gene(s) and their anti-microbial activity in Citrus sinensis plant tissue culture medium
PP53	Muhammad Usman Kabir, Dr. Aisha Younas, Dr. Attiya Razzaq Department of Biological Sciences, Superior University Lahore	Investigating the Genes Related to Intellectual Disability in Pakistani Population using Next-Gen Sequencing
PP54	Alina Jabeen, , Dr. Aisha Younas, Dr. Ghulam Zahra Jahangir Department of Biological Sciences, Superior University Lahore	Impact of biogenically synthesised AgNPs on housekeeping gene(s) and their anti-microbial activity in Aloe barbadensis miller plant tissue culture medium
PP55	Ushna Naveed Hashmi, Dr. Aisha Younas, , Dr. Ghulam Zahra Jahangir Department of Biological Sciences, Superior University Lahore	Impact of biogenically synthesised AgNPs on housekeeping gene(s) and their anti-microbial activity in Punica granatum plant tissue culture medium
PP56	Nouman Ahmed yousuf, Dr. Fizza Naseem Department of Biological Sciences, Superior University Lahore	Fabrication of metal oxide doped-graphene oxide for solar fuels
PP57	Sohail Ahmed, Dr. Fizza Naseem Department of Biological Sciences, Superior University Lahore	Synthesis of metal oxide nanoparticles for enhanced photocatalysis
PP58	Hira Imanullah, Dr. Fizza Naseem, Dr. Shaista Ali Department of Biological Sciences, Superior University Lahore	Synthesis of high entropy aerogels for effcient photocatalytic carbondioxide reduction
PP59	Abu Sufyan, Dr. Fizza Naseem Department of Biological Sciences, Superior University Lahore	Synthesis of nano-porous drug carriers for cancer therapy
PP60	Hamda Rafique, Dr. Fizza Naseem, Dr. Shaista Ali Department of Biological Sciences, Superior University Lahore	Synthesis of metal selenide aerogels for photocatalytic production of solar fuels

PP61	Malik Waqar Hussain, Dr. Fizza Naseem Department of Biological Sciences, Superior University Lahore	Tuning band gap in metal oxide for efficient photoreduction of carbon dioxide
PP62	Javed Iqbal, Dr. Fizza Naseem Department of Biological Sciences, Superior University Lahore	Synthesis of exfoliated reduced graphene oxide for carbondioxide reduction
PP63	Muhammad Mushtaq1, Rabia Nawaz1, Faiqa Noor1, Maryam Afzal1, Meamona Afzal1, Aqsa Sarwar1, Ayesha Nawaz2, Zohal Hassan1, and Muhammad Idrees3,4 1Department of Biological Sciences, Superior University, Lahore, Pakistan 2Department of Economics, Superior University, Lahore, Pakistan 3National Center of Excellence in Molecular Biology, University of the Punjab, Lahore 4University of Peshawar, Peshawar, Pakistan	Pakistan's Implementation of "Smart Lockdown" Measures Amid the SARS-CoV-2 Pandemic: Success or setback
PP64	Hafiz Tanzeel Ahmad Qureshi, Bismah Shahid, Haroon Riaz, Dr. Samyyia Abrar Department of Biological Sciences, Superior University Lahore	Correlation of Helicobacter Pylori infection with Variation in Liver enzymes & Uric acid Level in Pakistani population
PP65	Bismah Shahid, Hafiz Tanzeel Ahmad Qureshi, , Haroon Riaz, Dr. Samyyia Abrar Department of Biological Sciences, Superior University Lahore	Predominance of Dyslipidemia in Pakistan and linkage of glucose levels with lipid proportion in Diabetic and pre-diabetic entities Abstract
PP66	Alyan Asghar, Ammara Hassan2, Attia Razzaq Department of Biological Sciences, The Superior University Lahore, 2Food and Biotechnology Research Center, Pakistan Council of Scientific and Industrial Research Lahore	Microbial Assessment and Quality Evaluation of Milk from Lahore and Kasur, Pakistan
PP67	Ayesha Ishaq1, Ammara Hassan2, Attia Razzaq1 1Department of Biological Sciences, The Superior University Lahore, 2 Food and Biotechnology Research Center, Pakistan Council of Scientific and Industrial Research Lahore	A Quality Exploration of Fresh and Packaged Orange Juices Available in Local Market
PP68	Muhammad Saad Akram1, Attia Razzaq1 1Department of Biological Sciences, The Superior University Lahore	Study of Autosomal Recessive Intellectual Disability in Pakistani Population
PP69	Ayesha Ishaq1, Dr. Samyyia Abrar1, Attia Razzaq1 Department of Biological Sciences, The Superior University Lahore	A Worldwide Systematic Review and Meta-Analysis on the Incidence of Urogenital Infections in Infertile Males
PP70	Muhammad Aleem Sabir Khan MS Scholar Rehabilitation Sciences Institute: Superior University Lahore	Assessment Of Ocular Surface Problems In Case Of Hyperthyroidism
PP71	Mehro Nisa MS Scholar Rehabilitation Sciences Institute: Superior University Lahore	Knowledge Evaluation Regarding Cortical Visual Impairment In Children Among Eye Care Practitioners
PP72	Zinnia Akram MS Scholar Rehabilitation Sciences Superior University Lahore	Prevalence Of Work Related Neck Pain And Disability Among Dentists Working In Lahore
PP73	Muhammad Asif MS Scholar Rehabilitation Sciences Superior University Lahore	Prevalence Of Convergence Insufficiency In The Student Of Institute Of Health Science Kfueit, Ryk

PP74	Waqas Hanif MS Scholar Rehabilitation Sciences Superior University Lahore	Effect Of Forward Head Posture On Neck Pain And Balance Disturbance In Computer Users
PP75	Iqra Akram MS Scholar Rehabilitation Sciences Superior University Lahore	Variation In Schirmer's Test Result In Three Follow-Ups Of One Week Apart After Phacoemulsification
PP76	Roveeha Anjum, Ayeza Imtiaz Department of Human Nutrition and Food Technology, Faculty of Allied Health Sciences, Superior University Lahore	Assessment of Nutritional Status in Type II Diabetes Mellitus Patients
PP77	Ali Raza, Muhammad Talha Department of Human Nutrition and Food Technology, Faculty of Allied Health Sciences, Superior University Lahore	Potential Health Benefits of Probiotics in Cardiovascular Disease
PP78	Sehar Taskeen & Rimsha Rafique Department of Human Nutrition and Food Technology, Faculty of Allied Health Sciences, Superior University Lahore	A Comparative Study of Preoperative Anxiety Among Adult Surgical Patients Associated with Gender, Educational Level and Pre-Operative Information
PP79	Tahira Shahbaz, Tahreem Iqbal, Numan Nisar Department of Human Nutrition and Food Technology, Faculty of Allied Health Sciences, Superior University Lahore	Determinants of Iron Deficient Anemic Adolescent Girls of Age 15 To 19 Years
PP80	Zainab Ishaq, Nawal Rasheed, Tahreem Amanat, Ali Haider, Muhammad Talha Nadeem, Talha Sarfraz Ahmad, M Usama Nasir, Adeela Shahid. Department of Human Nutrition and Food Technology, Faculty of Allied Health Sciences, Superior University Lahore	Prevalence of Skipping Breakfast Among High School Students and its Role on Academic Performance
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PP119	Maria Sana, Sadia Muhammad Din, Dr. Muhammad Mudassar Shazad Department of Biological Sciences, Superior University Lahore	Development of Cost Effective and Eco-Friendly Fish Feed by Using Di Calcium Phosphate Supplemented Plant Meal Based Diet for Cirrhinus Mrigala (Mori) Juveniles.
PP120	Marzia Batoolm, Sadia Muhammad Din, Dr. Muhammad Mudassar Shazad Department of Biological Sciences, Superior University Lahore	Efficacy of Di-Calcium phosphate (DCP) supplemented plant meal-based diet on Growth performance, carcass composition and immunological indices of Cirrhinus mrigala (Mori) fingerlings
PP121	Wardah Shaheen and Dr. Mudassir Iqbal Department of Chemistry, Superior University Lahore	Development of novel cellulose-based superabsorbent polymer through Esterification process
PP122	Zaheer Iqbal and Dr. Mudassir Iqbal Department of Chemistry, Superior University Lahore	Phytochemical profiling, antioxidant and bactericidal potential of different extracts of Convolvulus arvensis leaves

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COLLABORATORS

ABSTRACTS OF INTERNATIONAL SPEAKERS

Advanced patient care and scientific understanding in the field of neurorehabilitation

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Dept. of Neurology Gesundheitszentrum Bad Wimpfen SRH-Group President Elect Word Federation for Neurorehabiitation Vice President European Federation of Neurorehabilitation societies

Neurorehabilitation, a rapidly evolving field at the intersection of neuroscience, medicine, and rehabilitation, encompasses a broad spectrum of interventions aimed at optimizing functional outcomes and quality of life for individuals with neurological conditions. This abstract provides a comprehensive overview of recent advancements in patient care and scientific understanding within the realm of neurorehabilitation. Recent years have witnessed significant progress in the scientific understanding of neuroplasticity, motor learning, and neural repair mechanisms underlying recovery after neurological injury. This enhanced knowledge base has catalyzed the development of innovative rehabilitation strategies, including task-specific training, neuromodulation techniques, and technology-assisted interventions, tailored to harness the brain's innate capacity for adaptation and reorganization. Moreover, advancements in neuroimaging modalities, such as functional magnetic resonance imaging (fMRI) and diffusion tensor imaging (DTI), have enabled researchers to elucidate the neural correlates of rehabilitation outcomes and identify biomarkers of recovery, paving the way for personalized treatment approaches and prognostic tools. In parallel, there has been a paradigm shift towards patient-centered care models in neurorehabilitation, emphasizing collaborative goal setting, shared decision-making, and holistic assessment of individuals' biopsychosocial needs. Interdisciplinary teamwork, involving neurologists, physiatrists, therapists, psychologists, and social workers, is integral to delivering comprehensive and coordinated care across the continuum of rehabilitation. By synthesizing scientific evidence, clinical expertise, and patient perspectives, this abstract underscores the transformative potential of advancements in neurorehabilitation to optimize outcomes, promote recovery, and improve quality of life for individuals living with neurological conditions. In conclusion, the synergy between advances in scientific understanding and patient-centered care approaches heralds a new era of possibilities in neurorehabilitation. Through continued research, innovation, and collaboration, we can strive to enhance the effectiveness, efficiency, and inclusivity of rehabilitation services, ultimately empowering individuals to maximize their potential for recovery and participation in society.

Keywords: Neurorehabilitation, Advancements, Patient-centered care, Interdisciplinary teamwork, Technology-assisted interventions

Integrated rehabilitation methods for the prevention of falls and the treatment of fragility fractures

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Falls and fragility fractures represent major public health concerns, contributing to morbidity, mortality, and healthcare costs worldwide. While falls often precipitate fragility fractures, fragility fractures can exacerbate the risk of future falls, creating a vicious cycle of functional decline and impaired mobility. Drawing upon a synthesis of current research and clinical expertise, this abstract examines the multifaceted nature of rehabilitation interventions aimed

at reducing fall risk and optimizing functional outcomes following fragility fractures. It highlights the importance of a multidisciplinary approach, encompassing physical therapy, occupational therapy, and comprehensive geriatric assessment, to address the complex interplay of intrinsic and extrinsic risk factors associated with falls and fragility fractures. Key components of integrated rehabilitation programs include strength and balance training, gait and mobility exercises, environmental modifications, and education on falls prevention strategies and bone health. By targeting both modifiable risk factors and underlying impairments, these interventions aim to enhance physical function, mitigate fall-related injuries, and facilitate recovery following fragility fractures. By fostering collaboration between healthcare providers, policymakers, and community stakeholders, integrated rehabilitation methods can contribute to a holistic approach to musculoskeletal health promotion and injury prevention in older adults. Through proactive screening, early intervention, and ongoing support, we can strive to minimize the burden of falls and fragility fractures, empower individuals to maintain independence and mobility, and optimize their overall quality of life. In conclusion, the integration of rehabilitation methods for fall prevention and fragility fracture treatment represents a proactive and person-centered approach to musculoskeletal health promotion in older adults. By leveraging interdisciplinary expertise and innovative strategies, we can mitigate the impact of falls and fractures, promote functional independence, and enhance the well-being of aging populations.

Keywords: Fall prevention, Fragility fractures, Rehabilitation, Older adults, Multidisciplinary approach

Navigating Challenges and Triumphs in Establishing Rehabilitation Programs for Acute and Hyperacute Stroke Patients: A Comprehensive Overview

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Stroke, a leading cause of long-term disability globally, necessitates prompt and comprehensive rehabilitation interventions to optimize functional outcomes and quality of life for affected individuals. However, the acute and hyperacute phases present distinctive hurdles, including time-sensitive interventions, limited resources, and variability in patient presentation and response to treatment. Drawing from a diverse array of literature and clinical experiences, this abstract elucidates the multifaceted nature of rehabilitation program development for acute and hyperacute stroke patients. It examines barriers such as early mobilization constraints, staffing shortages, funding limitations, and geographic disparities, which can impede timely access to specialized care and hinder rehabilitation efforts. Moreover, it underscores the pivotal role of interdisciplinary collaboration, evidence-based practice, and patient-centered care in overcoming these challenges and fostering successful rehabilitation outcomes. Innovative approaches such as telemedicine, mobile health technologies, and community-based rehabilitation initiatives are explored as promising solutions to enhance access, continuity of care, and patient engagement across the continuum of stroke care. In conclusion, while the establishment of rehabilitation programs for acute and hyperacute stroke patients presents formidable challenges, it also represents a profound opportunity to improve outcomes and promote recovery. By acknowledging the difficulties and celebrating the successes, stakeholders can collaborate effectively to build robust and responsive systems of stroke rehabilitation care.

Keywords: Stroke rehabilitation, Acute stroke, Hyperacute stroke, Interdisciplinary collaboration, Innovation

Role of AI in the Diagnosis and Management of Concussion in a Hyper-connected World

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Concussion, a form of traumatic brain injury, poses significant challenges in both diagnosis and management due to its complex and often subtle symptoms. In the era of hyper-connectivity, where information flows rapidly and abundantly, leveraging artificial intelligence (AI) has emerged as a promising approach to enhance the understanding and treatment of concussions. This abstract explores the evolving role of AI in the diagnosis and management of concussions within a hyper-connected world. AI-driven technologies, including machine learning algorithms and neural networks, are increasingly being integrated into various aspects of concussion care. These technologies enable the analysis of vast amounts of data, ranging from medical records and imaging studies to wearable sensor data and real-time symptom monitoring. By identifying patterns and correlations within this data, AI systems can aid in the early detection of concussions, improve diagnostic accuracy, and facilitate personalized treatment strategies. Furthermore, AI-powered decision support systems offer clinicians valuable insights and recommendations for managing concussions based on the latest evidence and best practices. This assists healthcare professionals in making informed decisions regarding return-to-play protocols, rehabilitation strategies, and long-term monitoring of patients' recovery progress. In addition to clinical applications, AI plays a crucial role in advancing research on concussions by facilitating data-driven investigations into risk factors, prognostic indicators, and novel treatment approaches. By synthesizing information from diverse sources and generating hypotheses, AI-driven research platforms contribute to a deeper understanding of concussion pathophysiology and guide the development of more effective interventions. Overall, the integration of AI technologies holds great promise for revolutionizing the diagnosis and management of concussions in today's hyper-connected world. By harnessing the power of AI, healthcare professionals can improve outcomes for individuals affected by concussions while advancing our collective knowledge of this prevalent and often debilitating condition.

Key-words: Concussion, Artificial Intelligence (AI), Diagnosis, Management, Hyper-connected World

Understanding Fluency Disorders: Causes, Characteristics, and Interventions

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Fluency disorders, encompassing stuttering and cluttering, present significant challenges in communication, affecting individuals across various age groups and cultural backgrounds. This abstract provides a comprehensive overview of fluency disorders, elucidating their etiology, manifestations, and therapeutic interventions. The etiology of fluency disorders is multifactorial, involving genetic predispositions, neurological abnormalities, environmental influences, and psychosocial factors. Stuttering, the most prevalent fluency disorder, is characterized by disruptions in the flow of speech, such as repetitions, prolongations, and blocks. Cluttering, on the other hand, involves rapid and disorganized speech, often accompanied by poor intelligibility and impaired self-monitoring. Individuals with fluency disorders often experience negative emotional and social consequences, including anxiety, social withdrawal, and diminished self-esteem. These challenges underscore the importance of early identification and intervention. Speech-language pathologists play a crucial role in assessing fluency disorders and implementing

evidence-based interventions tailored to individual needs. Intervention strategies for fluency disorders encompass a range of approaches, including behavioral therapies, cognitive restructuring techniques, and technology-assisted interventions. Additionally, supportive counseling and education for individuals and their families are integral components of holistic management. Furthermore, ongoing research endeavors aim to deepen our understanding of fluency disorders, exploring novel treatment modalities and refining existing interventions. Collaborative efforts between researchers, clinicians, educators, and individuals with fluency disorders contribute to advancing clinical practice and enhancing quality of life for affected individuals. In conclusion, fluency disorders represent a complex interplay of biological, psychological, and social factors, necessitating a multidimensional approach to assessment and intervention. By fostering greater awareness, understanding, and support, we can empower individuals with fluency disorders to navigate their communication challenges with resilience and confidence.

Key-Words: Fluency disorders, Stuttering, Cluttering, Speech-language pathology, Intervention

Telerehabilitation the oppertunity and challenges

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Telerehabilitation, the delivery of rehabilitation services remotely using telecommunication technologies, has emerged as a promising approach to extend the reach and accessibility of rehabilitation interventions. This abstract explores the opportunities and challenges associated with telerehabilitation, highlighting its potential to revolutionize the delivery of rehabilitation services. The opportunity presented by telerehabilitation lies in its ability to overcome geographical barriers, enabling individuals to access rehabilitation services from the comfort of their homes. By leveraging videoconferencing, remote monitoring devices, and mobile applications, telerehabilitation facilitates real-time interaction between patients and healthcare providers, thereby enhancing convenience and reducing the burden of travel for patients. Furthermore, telerehabilitation offers flexibility in scheduling and customization of rehabilitation programs, allowing for personalized care tailored to individual needs and preferences. This flexibility not only improves patient engagement and adherence to treatment but also facilitates continuity of care, particularly for individuals living in remote or underserved areas with limited access to traditional rehabilitation services. Despite its potential benefits, telerehabilitation also poses several challenges, including concerns regarding privacy and security of patient data, technological barriers, and reimbursement issues. Ensuring the confidentiality and integrity of patient information, addressing disparities in access to technology, and advocating for appropriate reimbursement policies are essential steps in overcoming these challenges and maximizing the effectiveness of telerehabilitation initiatives. In conclusion, telerehabilitation represents a valuable opportunity to enhance the delivery of rehabilitation services, offering greater accessibility, flexibility, and convenience for patients. However, addressing the associated challenges is crucial to realizing the full potential of telerehabilitation and ensuring equitable access to high-quality rehabilitation care for all individuals, regardless of geographical location or socioeconomic status.

Key-words; Telerehabilitation, Remote Rehabilitation Services, Accessibility, Challenges, Opportunities

Integrating Public Health and Rehabilitation: Enhancing Holistic Well-being.

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Integrating rehabilitation and public health services is a critical strategy for improving overall well-being in communities across the globe. The holistic health needs of individuals are met by this synergistic integration, which covers prevention, treatment, and maintenance throughout the lifespan. This integrated approach acknowledges the interdependence of physical, mental, and social health variables by connecting the historically divided fields of public health and rehabilitation. At its core, this combination highlights proactive steps to foster well-being and avoid impairments, thus decreasing the load on systems of healthcare. The integration fosters a culture of protection through population-wide health education programs that target socioeconomic determinants of health and encourage healthy lifestyles. It also places a strong emphasis on early detection and assistance for people who may become disabled, allowing early access to services for rehabilitation. Furthermore, the incorporation of rehabilitation and public health emphasizes the significance of community involvement and participation. This approach ensures that services are responsive to the needs and objectives of local people by building partnerships with a variety of stakeholders, such as community organizations, legislators, and healthcare providers. It works for equality, social acceptance, and equal access to services for all people, regardless of ability, through activities that involve the community.
In conclusion, the combination of public health and rehabilitation signifies a revolutionary paradigm change aimed at augmenting comprehensive well-being. This integrated approach shows potential for promoting full participation and rights of individuals with disabilities, establishing inclusive communities, and improving health outcomes by addressing the continuum of health needs from rehabilitation to prevention.

Keyword: Integration, Public Health, Rehabilitation, Holistic wellbeing, disability

Lansium Parasiticum (Duku) Extracts as Potential Anti-Proliferative Against Colon Cancer Cell Lines (HT-29, HCT-116, CT-26)

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Colorectal cancer ranked as third most common cancer in Malaysia and the number of new cases is estimated to be on the increase. This in vitro study, aims to identify the anti-proliferative effect of duku extracts on human colorectal adenocarcinoma cell lines (HT-29), human colorectal carcinoma cell lines (HCT-116) and mouse colorectal carcinoma cell line (CT-26). The cells were treated with different duku extracts (acetone, 50% ethanol, water and chloroform) and MTT assay were conducted to measure the percentage of cell viability after the treatment. The morphology of the cells were observed under light microscope to observe the changes after treatment. In this study, acetone extract of duku was the most efficient in exhibiting anti-proliferative effect on HT-29, HCT-116 and CT-26 with the IC50 value of 0.38 ± 0.03 mg/mL, 0.34 ± 0.10 mg/mL and 0.36 ± 0.05mg/mL respectively. Acetone, 50% ethanol and water extract of duku demonstrated anti-proliferative effect on the three cell lines while the chloroform extract of duku did not show any effect on the cell lines. The cells showed

characteristic of cell apoptosis such as shrinking, blebbing and pyknotic bodies after treatment with acetone, 50% ethanol and water extracts of duku. In conclusion, duku fruit possesses anti-proliferative property and might be valuable as chemopreventive agent for colorectal cancer.

Keywords: Anti-proliferative; colorectal; Duku; morphology; Cancer; Extracts

From Genes to Global Health: Unveiling the Genetic Foundations of Childhood Obesity in Pakistan

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Obesity poses a significant health risk, tightly linked to genetic factors with an estimated 80% heritability. However, the genetic underpinnings remain largely unexplored, with only 10% of cases linked to specific monogenic causes. These often involve brain-expressed genes, particularly those in the leptin-melanocortin pathway. Our research focuses on these genetic links by studying children with severe obesity from consanguineous families in Pakistan, which aids in identifying genetic causes of severe obesity due to the prevalence of recessive and codominant genetic traits. Our collaboration with Pakistani hospitals and research institutes has enabled the recruitment of sizeable cohort with early-onset severe obesity from a consanguineous background for our SOPP (Severe Obesity in Pakistani Population) study. We conduct a detailed genetic analysis, including targeted and next-generation sequencing methods like augmented whole-exome sequencing to identify mutations and Copy Number Variations (CNVs). Additionally, we utilize computational strategy to analyse exome data, comparing our subjects with general population samples to spotlight genes with rare homozygous variations in children with severe obesity from our cohort. Our research uncovered that approximately 50% of severe obesity cases in the studied group are attributed to homozygous loss-of-function mutations and CNVs within genes active in the brain, particularly those associated with the leptin melanocortin pathway. Our analysis also highlighted potential new genes related to obesity within the SOPP cohort. We found a significantly higher incidence of monogenic obesity in this population compared to previous reports. Our study sheds light on the genetic basis of childhood obesity in Pakistan, uncovering significant genetic markers in large proportion of the cases. This study not only advances our understanding of obesity's genetic basis but also propels us towards precision medicine, promising a future where obesity can be more effectively managed.

Keywords: Obesity, Functional genomics, Molecular mechanisms, Therapeutic targets, Precision medicine

Moringa Leaf Extract Mitigates the Adverse Impacts of Drought and Improves the Yield and Grain Quality of Rice.

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Agriculture, round the globe, is facing grand challenges including the need to increase production of nutrient-dense food and to withstand the climate change impact on water and soil conservation. Among them, drought stress is considered the most overwhelming danger for the agriculture sector. Organic plant growth ingredients are frequently used to enhance growth and production of field crops cultivated in normal and unfavorable conditions. The present study was designed to explore whether leaves extract from various landraces of moringa could play defensive role against drought stress in rice. Seedlings were grown under three water conditions i.e., normal conditions (control; 100% field capacity), moderate (75%) and severe drought (50%). Leaves extracts obtained from four moringa landraces were used as foliar spray at tillering, panicle initiation and grain filling stages of rice plants. Both the levels of water stress negatively influenced photosynthetic pigments synthesis, gas exchange traits, antioxidants activities, yield, and grain quality parameters. Leaves extracts, at the rate of 3%, from all the landraces significantly enhanced the biochemical, physiological and yield related attributes under normal and unfavorable growth conditions. Particularly, leaf extract from Faisalabad landrace showed maximum biostimulant potential to increase the photosynthetic (8.2%) and transpiration (13.3%) rates, stomatal conductance (8.3%), chlorophyll a (15.9%) and b (9.7%) contents, and carotenoids (10.4%) as compared to water spray. Improved grain yield (25.4%) and grain quality (amylose; 10.1% increase and amylopectin; 2.8% decrease) of rice plants along with enzymatic activities like catalase (21.2%), superoxide dismutase (38.6%) and ascorbate peroxidase (24.3%) were observed at the peak by application of leaves extract from Faisalabad landrace. In is concluded from the findings of current experimentation that leaves extract of Faisalabad landrace possess higher biostimulant potential as compared to other land-races and can be applied to mitigate adverse impacts of drought stress with higher productivity and improved grain quality of rice.

Keywords: Biostimulant; foliar application; growth; productivity; water deficit.

ABSTRACTS OF NATIONAL SPEAKERS

Rehabilitation And Sustainable Development Goals

Prof. Dr. Ashfaq Ahmad
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To increase rehabilitation services globally, the rehabilitation community must focus on: consistent collection of information on functioning so that health policies can be planned. Researchers, journal editors and experts from WHO Collaborating Centres need to promote data collection on functioning and move towards research in health systems. Political commitment and investment in rehabilitation and assistive technology and rehabilitation stakeholders play a role in advancing the rehabilitation agenda. The responsibility is now on Member States and key rehabilitation stakeholders to ensure that rehabilitation and access to assistive technology is firmly positioned within the main health agenda and becomes a priority in their respective countries and regions. The Rehabilitation 2030 and AT 2030 agenda has paved the way for this process. Strengthening of health systems and integrating rehabilitation at all service levels including access to assistive technology is critical, particularly at the primary care level. Rehabilitation professionals need to strengthen their collaboration and join efforts for rehabilitation as a unified professional field. Organizations delivering services and organizations of specific medical specialties need to promote health system strengthening for rehabilitation. Sustainable Development Goal 3 “Ensure healthy lives and promote well-being for all at all ages” can be achieved only if health leaders adopt a comprehensive approach to health and well-being. Improving the health status of a population not only means reducing the number of deaths and of people affected by diseases, but also ensuring that people live, function, and participate at their best potential, allowing them to productively contribute to society. Thus, the performance of health systems should be monitored and evaluated based on the complete set of health indicators: mortality, morbidity, and functioning, keeping in mind that “health and well-being for all” is often a pre-condition to achieve many other SDGs.

Keywords: Rehabilitation, Sustainable developmental goals, Assistive technology, political commitment, well-being

Visual Biofeedback and Exercise Reshape Parkinson’s Management in Stage III Patients - A Paradigm-Shifting RCT and Meta-analysis

Prof Dr Sumaira Imran Farooqui
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A single-blinded, randomized controlled trial involving 40 individuals with stage III Parkinson’s disease (PD) aimed to assess the impact of Visual Biofeedback Therapy (VBFT) on balance, freezing of gait (FOG), and cognition. Participants were randomly assigned to either the experimental arm, receiving VBFT, or the control arm, undergoing conventional balance therapy (CBT). Notably, VBFT demonstrated a significant enhancement in balance, as evaluated by the Functional Reach Test (FRT) ($p<0.05$), although no statistically significant effects were observed on FOG and cognition. These findings underscore the efficacy of VBFT over CBT, specifically in restoring balance among PD patients, emphasizing the potential of biofeedback gaming interventions to bolster adherence to long-term exercise therapy in neurological disorders.

Following this trial, a comprehensive meta-analysis was conducted, reviewing 21 trials focusing on the impact of exercise-based therapies on balance and FOG in PD patients. The Berg Balance Scale (BBS) exhibited a pooled effect size mean of 0.60 ($p=0.0007$), indicating significant improvement. At the same time, the Mini-BES Test analysis revealed a pooled effect size of 0.87 ($p<0.00001$), emphasizing the overall efficacy of exercise-based management on balance. This meta-analysis underscores the positive impact of diverse exercise-based interventions, encompassing exergaming, virtual reality, and gait exercises, in addressing balance and FOG in individuals with Parkinson's disease.

The combined results from the RCT and meta-analysis offers a comprehensive understanding of the potential benefits associated with biofeedback therapy and exercise-based interventions for PD patients. This knowledge informs clinicians and researchers and paves the way for further advancements in neurological rehabilitation.

Keywords: Visual Biofeedback, Exercise Reshape, Parkinson's disease, balance, freezing of gait

Breaking Barriers: Advancing Stroke Recovery Through Technology

Prof. Dr Arshad Nawaz Malik
Riphah International University

Stroke rehabilitation is a complex and vital process aimed at helping individuals regain lost abilities and improve their quality of life. Traditional approaches to stroke rehabilitation have relied heavily on repetitive exercises, manual therapy, and caregiver support. While these methods have proven beneficial, they often come with limitations such as accessibility, affordability, and variability in outcomes.

The emergence of technological-based stroke rehabilitation has brought about a paradigm shift in how we approach recovery. By leveraging innovations such as virtual reality, robotics, machine learning, tele-rehabilitation, and mobile-based applications, we are breaking through barriers that once hindered progress.

Virtual reality offers immersive environments where patients can engage in rehabilitative activities tailored to their specific needs, promoting motor function and cognitive skills in a motivating and interactive manner. Robotics assist therapists in delivering precise, repetitive movements, enhancing motor recovery and reducing the physical strain on both patients and caregivers.

Machine learning algorithms analyze vast amounts of data to personalize rehabilitation programs, adapting to each patient's progress and optimizing outcomes. Tele-rehabilitation extends rehabilitation services to remote areas, providing access to expert care and support regardless of geographical limitations.

Mobile-based applications empower patients to take control of their recovery journey, offering tools for tracking progress, accessing educational resources, and connecting with support networks.

In this keynote address, we will explore how these technological advancements are breaking down barriers in stroke rehabilitation, improving accessibility, enhancing outcomes, and ultimately transforming lives. By embracing innovation and collaboration, we can continue to advance stroke recovery and ensure that all individuals affected by stroke have the opportunity to reach their full potential.

Keywords: Stroke recovery, technology, rehabilitation, virtual reality, machine learning algorithm

Bridging the Gap: Empowering Underprivileged Communities through Community-Based Rehabilitation in the Digital Age

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In our rapidly evolving healthcare landscape, it's crucial to address the healthcare disparities faced by underprivileged communities. This talk will emphasize the urgent needs and practical methods for implementing community-based rehabilitation (CBR) in underprivileged communities. It will highlight the challenges these communities face in accessing quality healthcare, such as limited resources and geographical barriers. By focusing on community involvement and empowerment, CBR offers a holistic approach to healthcare delivery.
Furthermore, the talk will explore how digital technologies can enhance CBR initiatives. From telehealth platforms to mobile applications, digital tools provide opportunities to bridge the gap in healthcare services. Attendees will learn about the benefits of CBR and practical strategies for integrating digital solutions into programs.
The goal of this talk is to inspire collaboration among healthcare professionals, policymakers, and stakeholders to leverage the digital ecosystem and revolutionize healthcare services for underprivileged communities worldwide. Together, we can work towards a future where healthcare is inclusive, accessible, and equitable for all.

Keywords: Bridging the Gap, Underprivileged Communities, Community-Based, Digital Age, Empowerment

Role of Public & Private partnership in Early Detection of hearing impairment and Rehab Modalities

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According to the World Health Organization (WHO), 5% of every country's population has some sort of hearing impairment Hearing impairment is such a disability which remains unnoticed for many years and most of the families are unable to detect this problem and children pass the crucial age of speech and language development It is a well establish fact that the program of universal hearing screening exist in all the developed and large number of developing countries of the world. Such programs ensure that every child born with hearing loss is identified before three months of age and is provided appropriate intervention services before six months of age. Keeping in view this huge societal or economic burden, SADA NGO (Society for Audiological & Developmental Ailments) initiate a standardized EHDI program in collaboration with Public Sector Institutions i.e. Sir Ganga Ram Hospital, Lahore and Services Hospital, Lahore in year 2019 and 700 neonates have been screened so far. Those babies who do not pass their first screening test, 2nd hearing screening test is being carried out before 3 months of age. All infants with confirmed permanent hearing loss are receiving interventional & rehabilitation services free of cost from SADA.
SADA (Society for Audiological & Developmental Ailments) was formed in 2014 with aim to provide diagnostic and rehabilitative services free of cost to the underprivileged hearing-impaired children up to 12 years of age. We understand that it is a very small effort and to complete this task, all segments of the society, relevant professional

bodies and media have to play their role.

Keyword: Public-private partnership, Hearing impairment, Rehabilitation modalities, EHDI, Neonatal screening, SADA NGO

Navigating Pulmonary Function: Understanding the ABCs of Spirometry for Detecting Small and Large Airway Abnormalities

Prof. Dr. Muhammad Irfan Malik
Chairman of Non-Invasive and sleep guideline by Pakistan Chest Society, University of Lahore

"Navigating Pulmonary Function: Understanding the ABCs of Spirometry for Detecting Small and Large Airway Abnormalities" explores the essential role of spirometry in assessing lung function and identifying abnormalities in both small and large airways. It emphasizes the significance of spirometry in clinical practice for early detection, monitoring disease progression, and guiding treatment decisions. The summary underscores the importance of interpreting spirometry parameters such as FEV1, FVC, and the FEV1/FVC ratio accurately. Overall, the topic highlights spirometry as a vital tool for evaluating pulmonary function and detecting airway abnormalities effectively

Key-words: FEV1, FVC, FEV1/FVC ratio

Lung Ultrasound in ICU with special emphasis on Lung Recruitment in Ventilated Patients

Dr Amdad Farooqi
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In our session we will explore the application of lung ultrasound in the intensive care unit (ICU) setting, focusing particularly on its role in lung recruitment for ventilated patients. The topic discusses how lung ultrasound serves as a valuable tool for assessing lung pathology, monitoring lung recruitment maneuvers, and guiding ventilator adjustments in critically ill patients. It highlights the advantages of lung ultrasound over traditional imaging modalities, such as its real-time capabilities, portability, and lack of radiation exposure. Furthermore, this emphasizes the importance of proper training and proficiency in lung ultrasound interpretation for healthcare professionals working in the ICU. Overall, the topic underscores the significant role of lung ultrasound in optimizing patient care and outcomes in the ICU, particularly in the context of lung recruitment strategies for ventilated patients

Key words: Lung Ultrasound, ICU, Lung Recruitment

Aesthetic Medicine: A Comprehensive Integration of various Medical Specialties

Dr. Mizna, Medicine Specialist,
CEO M. Aesthetics, Lahore

Aesthetic medicine isn't just about beauty; it's a fascinating blend of various medical specialties like neurology, plastic surgery, dermatology, and psychology. Imagine a field where science meets art to enhance your appearance, boost your confidence, and improve your overall well-being. From Fillers to Botulinum Toxin (Type A), from Intra-Lipotherapy to Needle Mesotherapy, and even Chemical Peels, Aesthetic Medicine offers a wide array of treatments tailored to your unique needs. It's like a makeover for your body and soul, making you look and feel your best. With its seamless integration into different medical realms, aesthetic medicine stands out as a captivating and essential branch of healthcare, dedicated to helping you shine inside and out.

Key Words: Botulinum Toxin, neurology, plastic surgery, dermatology

Exploring the Nexus: Advances in Neuro-respiratory and Sleep Medicine

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In our session we will discusses recent advancements in the intersection of neurology, respiratory medicine, and sleep disorders. This interdisciplinary field is crucial for understanding conditions like sleep apnea, narcolepsy, and other disorders that affect both the respiratory and neurological systems. This might highlight new diagnostic techniques, treatment modalities, and emerging research directions aimed at improving patient outcomes and quality of life in individuals with neuro-respiratory and sleep disorders. Additionally, it may touch upon the importance of collaboration between specialists in neurology, respiratory medicine, and sleep medicine to address the complex nature of these conditions comprehensively.

Key Words: neurology, respiratory medicine, and sleep disorders

Case report: Repair of ruptured sinus of Valsalva, Perfusion management

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The rupture of a sinus of Valsalva aneurysm is a well-known ailment that most commonly affects adolescents and children in their early childhood. When a patient has infective endocarditis or has an aortic valve replacement, it is uncommon to have a ruptured sinus of Valsalva aneurysm communication rupture. Aneurysmal formation is caused by several pathological conditions, the most significant of which are the thinned aortic media, bulbar septal partial fusion, and truncal ridges, as well as the malfunctioning of the aortic media and the creation of annulus fibrosis. Aneurysms of the sinuses of Valsalva can affect any of the three sinuses, although the right and

noncoronary sinuses are the ones that are most frequently affected. Aneurysms of the left sinus are extremely rare and only occur in a few people. Everything from an asymptomatic murmur to a sudden cardiogenic shock and death is a possibility in terms of the presentation. The fact that clinical examination is not always valid, and the fact that the patient may be in such poor condition that cardiac catheterization is not an option, it is estimated that 0.09 percent of the general population and 0.15 percent of the elderly suffer from cardiac catheterization. An SVA affects up to 1.5 percent of persons who have cardiac surgery, according to the American Heart Association. Most SVAs are congenital, but they can also be acquired as a result of infective endocarditis, trauma, systemic inflammatory illnesses, connective tissue diseases such as Marfan syndrome, or atherosclerosis, among other things. Infective endocarditis, trauma, systemic inflammatory illnesses, connective tissue diseases such as Marfan syndrome, and atherosclerosis are all risk factors for SVAs.

Key Words: sinus of Valsalva, Aneurysms, cardiac catheterization

Importance of Food Science and Nutrition: A need for healthy Nations

Prof. Dr. Tahir Zahoor
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In an era marked by rapid globalization, urbanization, and changing lifestyles, the significance of food science and nutrition has become paramount in ensuring the well-being of nations. The global burden of non-communicable diseases, such as obesity, diabetes, and cardiovascular ailments, has surged in recent years, posing a substantial threat to public health. The link between dietary habits and the prevalence of these diseases underscores the urgent need for a strategic approach to food science and nutrition. Proper nutrition not only serves as a preventive measure against these health challenges but also contributes to the overall growth and development of individuals, particularly in their formative years. Food science, encompassing fields like food technology, microbiology, and chemistry, plays a pivotal role in ensuring the safety, quality, and nutritional value of the food supply. Innovations in food processing and preservation techniques not only extend the shelf life of food products but also enhance their nutritional content. Furthermore, the role of nutrition extends beyond physical health, influencing cognitive function and mental well-being. Adequate nutrition during critical developmental stages, such as pregnancy and early childhood, is vital for the optimal growth and cognitive development of individuals. A lack of proper nutrition during these stages can have long-lasting effects on an individual's health and productivity, potentially impacting the economic prosperity of nations. As nations strive for economic development, the productivity and efficiency of their workforce become integral to success. A population with access to nutritious food is more likely to be healthier, resulting in reduced absenteeism, enhanced cognitive function, and increased productivity. This interconnected relationship between food science, nutrition, and national prosperity emphasizes the need for governments and policymakers to prioritize initiatives that promote healthy eating habits and ensure access to nutritious food for all.

Keywords: Food Science, Nutrition, Disease, Healthy Nation

Future Trends in Healthcare: Harnessing Digital Innovation for Patient-Centric Excellence

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The strain on the healthcare system caused by the Covid-19 pandemic has intensified its primary challenges, including fragmentation, data management issues, and a lack of inter-connections. It has become essential to reconsider the management and monitoring of the health systems from patient-centric perspectives to address the rising demands resulting from increased life expectancy and the growing prevalence of chronic diseases. Technological innovations play a crucial role in fostering patient-centricity and connecting the components of the evolving healthcare system. As the healthcare landscape evolves, the contribution of digital innovations, including telemedicines, health apps, wearable devices, and data analytics, is crucial for its potential to enhance personalized care, improve accessibility and empower patients in managing their health. Patients are increasingly taking an active and empowered role in overseeing their health and well-being through personal smart devices. This trend places considerable demand on healthcare service providers to enhance their efficiency and effectiveness. Identifying the primary characteristics of innovative business models anticipated to emerge in the healthcare context in the upcoming years will enable the researchers to outline the types of business models that will appear in the industry. This approach will provide managerial implications and novel paths for research in the future, as well as opportunities for researchers to demonstrate the healthcare framework. Need of the digital transformation in healthcare industry is more urgent now than ever before. Disruptive forces are transforming the healthcare industry in the fundamental ways that requires executives in healthcare organizations to be more proactive and strategic in their approach to digital transformation.

Key Words; healthcare, e-health, healthcare industry, digital innovations, smart devices

Effect of moringa leaf powder supplementation on glycemic control in prediabetic individuals

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Pakistan is ranked 1st in diabetes in the world with 30.8% prevalence in adult population and 5-10% of prediabetic population becomes diabetic annually. Improving diet and lifestyle along with functional foods is the best strategy against the progression of prediabetes into diabetes. Moringa oleifera is a functional food that contains flavonoids mainly quercetin, kaempferol and chlorogenic acid which are responsible for hypoglycemic effects in different animal models while very limited evidence is available in human. To evaluate anti-diabetic potential of moringa leaves supplementation in prediabetic human subjects. For 03 months clinical trial, prediabetic participants were screened using ADA and CDC prediabetes risk test before performing Fasting Blood Glucose (FPG) and HbA1c. Fifty-six individuals, aged 30 to 50 years, were randomly divided into two groups. The treatment group received moringa leaf powder supplementation, 8 grams per day. Parameters include BMI, waist and hip circumference, WHR, BP, FBG, HbA1c and lipid profile were performed at baseline and end of trail. Paired and independent t test were applied to observe differences within and between groups while for intervals, ANOVA was applied with $p < 0.05$. The results showed significant reductions in HbA1c in treatment group from 5.89 ± 0.16 to 5.77 ± 0.12

after 90 days. Moreover, significant reduction (7%) in FBG was observed at day 45 with a continuous decrease up to day 90 in intervention group. The TC, TG and LDL values were significantly decreased in the treatment group. However, no significant changes were observed in weight, BMI, waist circumference, waist circumference, WHR and BP in both groups. 8-grams Moringa supplementation can be used to manage diabetes biomarkers in prediabetic individuals in 3 months without change in anthropometric parameters.

Keywords; Moringa, Health Claims, Prediabetes, HbA1c,

Functional Potential of Aloe Vera to Mitigate Oxidative Stress Mediated Dysfunctions

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University of the Punjab, Lahore Due to increased nutritional awareness, more people focus on the use of natural nutrients instead of synthetic pharmaceutical agents. The present study was conducted to evaluate the efficacy of locally grown Aloe Vera in the mitigation of oxidative stress-mediated dysfunctions as well as its processing attributes in different food products. Proximate composition was determined as 97.65 ±0.03 % moisture, 0.28±0.02 % protein, 1.50±0.07 % fiber, 0.08±0.02 % fat, 0.32±0.03 % mineral contents, and 0.17 % nitrogen-free extract (NFE). The results indicated that 100 ml of Aloe Vera juice contains 2.40 mg ascorbic acid, 224±8.7 gallic acid equivalent total phenolic content, and 89±4.94 quercetin equivalent total flavonoid content, respectively. The maximum antioxidant activity of Aloe vera juice was found to be 34±1.99%. The radical scavenging assays showed 27.7±1.93 %, 2.63±0.6 µmol Trolox equivalent (TE)/ml and 7.53±1.16 µmol TE/ml for DPPH, FRAP, and ABTS, respectively. In addition, the lipid lowering effect of Aloe Vera juice was proved by in vivo study on rats, as the levels of cholesterol and triglycerides in serum were reduced up to 21 % and 25.7 % respectively. Furthermore, the intake of juice significantly increased (18.3 %) the level of high-density lipoproteins (HDL) and decreased (52 %) the level of low-density lipoproteins (LDL), indicating its positive role in lipid metabolism in the body. Moreover, superoxide dismutase, catalase and glutathione were also increased by the Aloe vera juice administration, depicting that it can be used as a potential functional food ingredient against hyperlipidemia. After characterization, the Aloe Vera was incorporated into different food products including Aloe-Strawberry blended beverages, Peach-Aloe RTS drinks and cookies. All of the products showed better nutritional profiles and sensory acceptability. This study proved the functional potential of locally grown and processed Aloe vera against oxidative stress-mediated dysfunction and its great potential as a valuable ingredient for future innovative commercial food products.

Keywords: Aloe barbadensis, Hyperlipidemia, Functional Food, Aloe RTS, Aloe Cookies.

Potential of Banana Peel and Peduncle Powder (BPPP) as Dietary Fiber in Bakery Products

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The banana pee1 and peduncle powder (BPPP) can be used to enhance the dietary and nutritional properties of a bakery product. The purpose of this study is to use banana fruit waste in an economical way and to enhance the nutritional properties of chicken patties. For this purpose, banana peels and peduncle samples were collected from the local fruit market of Sahiwal district. Then, samples were dried completely and ground to form powder. Chemical analysis was done to determine the different contents of this BPPP. Chicken patties with different levels of banana peel powder i.e. 0.0%, 0.5%, 1.0%, 1.5 %, and different levels of banana peduncle powder i.e. 0.0%, 0.5%, 1.0%, 1.5 % and a mixture of both powders (0.5+0.5) were processed to evaluate the effect on the chemical composition and sensory characteristics. The chemical composition such as moisture and crude fiber were similar among treatments. The level of ash and potassium in chicken patties increased and on the other side crude protein level decreased with an increasing level of BPPP. According to sensory evaluation, all parameters of control chicken patties and the patties with the addition of banana peel and peduncle powder (0.5+0.5%) were similar. Conclusively, the addition of banana peel and peduncle powder (0.5+0.5%), can produce a product with similar properties as that of the control.

Keywords: Banana waste, Chicken, Protein, Powder

Empowering Health and Quality of Mutton Patties with Flaxseed: Mitigating Oxidative Stress

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Oxidative instability and pathogenic growth reduce the quality and increase the safety risks of raw mutton patties. Despite containing anti-inflammatory and antioxidant compounds, the potential of flaxseed remains to be explored. The study's objective was to investigate the effect of flaxseed powder supplementation on raw mutton patties, on the quality and oxidative stability of mutton patties. The mutton patties were formulated including flaxseed powder (FP) in five different concentrations (treatments) at 2%, 4%, 6%, 8%, and control (no flaxseed powder). The proximate composition of flaxseed was 25.70 g protein, 21.44 g fiber, 35.49 g fat, 2.26 g ash, 7.37% moisture. Aqueous flaxseed extract exhibited significantly ($p<0.05$) higher total phenolic content (274.9 mg GAE/g), DPPH activity (75%), and FRAP activity (57.7 mg/g) compared to the methanolic and aqueous-methanolic extracts. Flaxseed enrichment in the raw mutton patties significantly ($p<0.05$) decreased the pH as compared to the control, as well as with an increasing storage period in the enriched samples. Enriched patties exhibited significant decreases in L*, while a* and b* values significantly ($p<0.05$) increased compared to the control; however, with prolonged storage, a* and b* values decreased. The enriched samples revealed significantly higher protein, fat, and ash content, but lower moisture content compared to the control. The mutton patties enriched with 8% flaxseed showed the lowest ($p<0.05$) lipid oxidation among all the treatments at all storage durations; however, lipid oxidation increased with the increasing number of days. The microbial analysis revealed significantly reduced total plate counts in flaxseed-enriched mutton patties compared to the control, with the lowest counts for 8% enrichment. The 4% flaxseed enrichment consistently displayed the lowest Salmonella counts. All treatments exhibited a significant decrease in Staphylococcus aureus counts compared to the control, with non-detectable counts for 4 and 8% enrichments. E. Coli counts decreased significantly over storage, but increased with time. In conclusion, incorporating flaxseed powder into mutton patties demonstrates substantial improvements in quality attributes, oxidative stability, and microbial safety, offering potential benefits for consumers seeking healthier and safer meat products.

Keywords: Flaxseed powder, antioxidants, mutton patties, sensory evaluation, colorimeter.

Exploring Emerging Infectious Diseases Testing Challenges in Punjab's Provincial Public Health Reference Lab, Lahore

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Public health laboratories play a pivotal role during pandemics and epidemics, contributing significantly to diagnosis, surveillance, outbreak investigations, patient isolation, virus transmission disruption, and therapeutic strategies. Provincial Public Health Reference Lab, Lahore of Punjab AIDS Control Program is state of the art lab with Advanced Molecular diagnostic techniques and BSL-3 facility. To determine the rate of infections during the pandemic and the impact of pharmacological and non-pharmacological interventions on the severity and duration of infection, we analyzed the COVID-19 PCR testing data for five waves of COVID-19 pandemic. All tests from March, 2020 to March 2023 received at Provincial Public Health Reference Laboratory (PPHRL), Punjab AIDS Control Program, Lahore were analyzed. A total of 36,252,48 cases were screened for COVID-19, and 90,923 (2.50%) were detected positive by RT-PCR, accounting for 5.69% of the cases reported positive throughout the country. The positivity rates among index cases were reported to be 2.37%, 2.34%, 4.61%, 2.09%, and 1.19%, respectively, for the five respective COVID-19 pandemic waves. Along with it, we also aimed to investigate the effect of new variants in Pakistani virus strains on human receptors, specifically ACE2 and NRP1. Genomic sequences of 41 SARS-CoV-2 strains were sequenced using Ion Torrent (NGS) and submitted to the GISAID database. Toxoplasma gondii is a zoonotically important parasite infecting almost all vertebrates. We aimed to estimate the prevalence of Toxoplasma gondii in people living with HIV. Overall prevalence of T. gondii was observed as 23.96%. Dengue fever is a viral infection caused by the dengue virus and is a growing concern for public health worldwide, particularly in tropical and subtropical regions. We aimed to assess the diagnostic accuracy of a commercially available NS1 ELISA kits for dengue fever in Pakistan using multiplex qRT-PCR as the gold standard. The study recruited 1236 suspected cases of dengue fever admitted to public sector hospitals in Lahore, Pakistan. The NS1 ELISA kit detected 71.1% of the positive cases. However, the diagnostic accuracy of the NS1 ELISA kit was found to be only 64.89%. We also conducted a multi-center study to determine the circulating dengue virus (DENV) serotypes and Chikungunya virus (CHIKV) co-infection in Lahore, Rawalpindi, and Peshawar cities in 2016–18. A total of 6291 samples were collected among which 8.11% were NS1 positive while 2.5% were PCR positive. Among a total of 590 dengue positive samples, 11.8% were also positive for CHIKV co-infection. Co-circulation of multiple DENV serotypes and CHIKV infection in Pakistan is a worrisome situation demanding the urgent attention of the public health experts to strengthen vector surveillance. We also estimated the Hepatitis C prevalence in Punjab Province with Serologic samples of ~66,000 participants from all major cities of the Punjab province were tested for anti-HCV antibodies. It was retrospective data of general population.

We also tried to explore the genetic diversity of multidrug-resistant M. tuberculosis isolates from Punjab, Pakistan with a combination of spoligotyping and 24-loci MIRU-VNTR typing. Overall, three clades, namely CAS1_DELHI, T1, and Beijing accounted for the majority of MDR-TB cases in Pakistan.

Key-Words: Emerging Infectious Diseases Testing, Provincial Public Health Reference Lab, Punjab, AIDS, COVID 19.

Ceftazidime-avibactam: A new option against carbapenem-resistant non-fermenters Gram-negative bacteria.

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Ceftazidime-avibactam (CAZ-AVI) is an innovative combination of the non-ß-lactam ß-lactamase inhibitor avibactam and the extended-spectrum ceftazidime. This combination is effective in treating infections resulted frommultidrug resistant (MDR) Gram-negative bacteria. Therefore, the present study was done to determine the efficacy of CAZ-AVI in carbapenem-resistant against non-fermenters Gram-negative bacteria. The present study was done at a tertiary care hospital in Lahore, Pakistan over the period of 2 years. Different clinical samples were processed according to standard microbiological techniques. Confirmation of bacterial isolates was done by different biochemical tests. Antimicrobial sensitivity testing was done onVitek 2® automated system. CAZ-AVI sensitivity testing was performed for carbapenem-resistant isolates on Meuller Hamilton (MH) agar according to Clinical and Laboratory Standard institute (CLSI) guidelines. CAZ-AVI was 100% sensitive in carbapenem sensitive isolates. Among non-fermenters, highest resistance against CAZ-AVI was found in Acinetobacterspp. (90.8%) while 75% resistance was observed in P. aeruginosa isolates. Maximum number of isolates were collected from wound (35%) followed by pus (16.8%). CAZ-AVI was considered a good option for the treatment of infections caused by XDR and MDR Gram negative rods. However, its effectiveness against non-fermenters is less as compared to othermembers of Gram-negative bacteria. Moreover, the increasing resistance rate against CAZ-AVI associated with CR needs to be noted.

Key words: Ceftazidime-Avibactam, Carbapenem Resistance, Pseudomonas aeruginosa, multi-drug resistant, Species.

Navigating the Genetic Landscape: A Decade of Multidrug Resistance Research in Acinetobacter baumannii Across Pakistan.

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Acinetobacter baumannii, a notorious bacterium causing hospital-acquired infections, is a growing global concern due to its resistance to numerous drugs. While this resistance is particularly prevalent in healthcare settings, there is a scarcity of information on the genetic background for these resistance phenotypes, especially in Pakistan. Our aim is to fill this gap in knowledge by studying A. baumannii collected from clinical and veterinary settings from Pakistan. Over the past ten years, we have conducted comprehensive studies on the prevalence and molecular mechanisms of antimicrobial resistance among A. baumanniiin Pakistan. Multidrug-resistant strains from various clones consistently harbored the blaOXA51 and blaOXA23 genesfrequently in conjunction with the insertion element i.e. ISAba1. Carbapenem resistantA. baumannii (CRAB) exhibited restricted susceptibility to nearly all antimicrobial groups notably fluoroquinolones and aminoglycosides. The aminoglycoside resistance was mainly conferred by specific resistance genes such as armA, aphA6, and aadB.Sequence typing revealed various clonal complexes, particularly CC1 and CC2. Colistin and tigecycline demonstrated effectiveness against these strains

and none of these MDR strains exhibited resistance to these drugs. Our studies offer a comprehensive perspective on the genes, drug susceptibility, and implications in A. baumannii, providing valuable insights to the scientific community.

Keywords: A. baumannii, Carbapenems, Aminoglycosides, MDR, Pathogens

Proportion of CD44+ Subset of Tumor Cells in Single Cell Suspension Prepared from FFPET Sections Directly Correlates with Histological Subtyping of Head and Neck Squamous Cell Carcinoma

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CD44 expression in tumors imparts potential to progress, metastasize, recurrence, and resistance against antineoplastic therapy. In this study, we sought to describe the variation in the immuno-expression and numeration of MDR1+ and CD44+ potential cancer stem cells in different histological grades and subtypes of head and neck squamous cell carcinoma (HNSCC). Flow-cytometric analysis was performed on single cell suspension prepared from formalin fixed paraffin embedded tissue (FFPET) sections of HNSCC using anti-CD44 and anti-MDR1/ABCB-1 primary monoclonal antibodies. Immunohistochemical (IHC) staining was also carried out using both of these antibodies on HNSCC tissue sections mounted on super frosted glass slides. On immunohistochemical analysis, the mean IRS for CD44 and MDR1 were 8.6364 ±3.02114 and 1.5909 ±1.27674 respectively. When mean immune-expression scores of CD44 antibody and MDR1/ABCB-1 were compared with histological grades and subtypes of HNSCC, the relationship was found to be statistically insignificant. Interestingly, a strong statistical difference ($p = 0.000$) was observed when the mean score of subset of dysplastic squamous epithelial cells with characteristics of cell stemness (CD326+CD44+) was compared among different histological subtypes of HNSCC using flowcytometric analysis. While no statistically significant association was observed when the mean score for subset of dysplastic cells with potential of drug resistance (CD44+MDR1+) was compared among different histological subtypes of HNSCC. Although potential cancer stem cell marker CD44 and the multidrug resistance maker MDR1/ABCB co-expressed in HNSCC but the proportion of CD326+CD44+ subset of tumour cells (potential cancer stem cells/CSCs) significantly correlates with least aggressive to more aggressive tumour subtypes.

Keywords: CD44; CSCs; FFPET; flowcytometry; HNSCC; immunohistochemistry; multidrug resistance; OSCC

Phage-Encoded Lytic Proteins As Enzybiotics: An Overview Of Potential Implications Of Enzybiotics As Precision Antibacterial Therapy

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Phage therapy holds great promise as an alternate or adjunct to antibiotics but has notable limitations. These include the potential for immunogenic responses against phages, the narrow host range of individual phages, and the risk of bacterial resistance development. Additionally, regulatory hurdles and IP rights along hinder the widespread adoption of phage therapy. Phage-encoded lytic proteins, like endolysin, holin, spannin and viroin – associated lysins are emerging as promising antibacterial agents. Lysins offer distinct advantages. They are highly specific, targeting essential components of bacterial cell walls, and are less likely to induce resistance compared to phages. Moreover, lysins can be engineered for broader efficacy, overcoming the host range limitations associated with whole phages. Their potential for synergy with conventional antibiotics and applicability in topical formulations make lysins an attractive and promising avenue for the development of effective antibacterial therapeutics with fewer associated challenges than phage therapy. We have cloned and expressed phage encoded lytic proteins and assessed their antibacterial activity. We also have engineered fusion of lytic proteins and assessed their antibacterial activity alone and in synergism with outer membrane permeablizing agents.We have showed that phage-encoded lytic proteins can be employed against pathogens alone or in combination with chelating agents.

Key-Words: Phage-Encoded Lytic Proteins, Enzybiotics, Antibacterial Therapy

Blood Bags and Transfusion Medicine: Challenges, Opportunities, and the Way Forward.

Dr. Usman Waheed
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Blood bags are an essential component of transfusion medicine, serving as vessels for the collection, storage, and administration of blood and blood products. This abstract examines the challenges and opportunities inherent in the field of blood bags and transfusion medicine, while also delineating a path forward for addressing current limitations and maximizing potential advancements. The challenges facing blood bags and transfusion medicine encompass various aspects, including ensuring the safety and quality of blood products, mitigating the risk of transfusion-transmitted infections, and meeting the demand for compatible blood products amid changing demographics and emerging infectious diseases. Additionally, issues such as blood shortages, storage limitations, and the need for effective blood component separation pose significant hurdles to the efficient provision of transfusion therapy. However, amidst these challenges lie numerous opportunities for innovation and improvement. Advances in blood bag technology, such as the development of novel materials, improved manufacturing processes, and enhanced storage methods, hold promise for enhancing the safety, efficacy, and accessibility of blood transfusions. Furthermore, the integration of digital health solutions, such as electronic blood bank management systems and real-time inventory tracking, can streamline transfusion processes and optimize resource utilization. Moving forward, collaboration between healthcare providers, blood collection agencies,

regulatory bodies, and industry stakeholders is essential for addressing existing challenges and capitalizing on emerging opportunities in transfusion medicine. Embracing a multidisciplinary approach that combines medical expertise, technological innovation, and regulatory oversight can facilitate the development of safer, more efficient, and sustainable transfusion practices.

Key-words; Blood Bags, Transfusion Medicine, Challenges, Opportunities, Innovation

Management Of Low Vision In People With Myopic Macular Degeneration

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To assess the effectiveness of correction of refractive error, use of contact lenses and low vision aids in visual rehabilitation of people with Myopic Macular Degeneration (MMD). This cross-sectional study included participants with MMD assessed for visual rehabilitation in a low vision clinic at Department of Ophthalmology Hayatabad Medical Complex, Peshawar, from June 2017 to June 2020. Data regarding distance and near visual acuities at the time of presentation with amount of myopia, best corrected visual acuity (VA) with glasses and contact lenses, VA with low vision devices and types of low vision devices prescribed were collected and analyzed. VA was recorded on Logarithm of the Minimum Angle of Resolution (LogMAR) chart. Data was analyzed using SPSS v.19.0. Out of 78 participants with MMD, 74.4% were male with mean age was 29.13±19.1 years. About 22% had vision impairment with their own glasses, 19% had severe impairment and 59% had blindness. Mean spherical equivalent refractive error amongst participants was -14.56 ± 5.39D and -12.52 ± 6.64D in right and left eyes respectively. With optimum correction (glasses/contact lenses) in 41% of participants distance VA was improved to 6/18 (0.54 Log MAR) or better in the better-seeing eye. With low vision devices, mean distance visual acuity was enhanced to 0.18 Log MAR ($p<0.001$). Correction of myopia is very important in visual rehabilitation of people with MMD. Low vision aids can be successfully used to enhance the residual vision among people with MMD in order to improve life efficiency.

Keywords: Myopic Macular Degeneration (MMD); Blindness; Visual rehabilitation; Low vision devices

Pseudo-Myopia And Screen Time: A Pre And Post Cycloplegic Refractive Evaluation Of Children Age 4-16 Years.

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The study aimed to examine the magnitude of pseudo-myopia in relation to pre- and post-cycloplegic refractive status among individuals aged 4 to 16 years and to investigate the relationship of pseudomyopia and screen time in said population. This comparative cross-sectional study was conducted at the department of Ophthalmology Avicenna Medical Complex, Islamabad. Consecutive non-randomized sampling technique was used. Screen time

duration in hours was measured using self-report or screen time tracking applications in smartphones. Visual acuity (VA) was measured with standard Log-MAR chart. Pseudomyopia was operationally defined as a spherical equivalent (SE) ≤ -0.50D prior to cycloplegia, and ≥ -0.50D following cycloplegia. Pre- and post-cycloplegic refraction (objective & subjective) with retinoscopy and Auto-refractometer were performed using Tropicamide 1%. Data were entered and analyzed with SPSS Version 21. Study included 66 subject's right eyes with gender distribution of 48% males, 52% females aged 4-16 with mean of 9.95±3.95. Average screen time was 5.56±1.43 hours, outdoor activity was 50.60±27.32 minutes. Pre-dilation VA improved from 0.28±0.25 to 0.05±0.14 log MAR post-dilation. The spherical equivalent of refractive error in pre-dilation state was -4.11±2.19DS as compared post-dilation was 0.76±0.80DS which showed statistically significant difference ($p<0.01$). A statistically significant relationship found between screen exposure time and pseudo-myopia ($r=0.41$, $p<0.001$). A significant relationship between pseudo-myopia and screen time was found. Prolonged screen exposure led to increased pseudo-myopia in low myopes and hyperopes.

Keywords: Log-MAR, Myopia, Screen Exposure, Visual acuity

Artificial Intelligence In Optometry

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The theme of "Artificial Intelligence in Optometry" revolves around leveraging advanced technological solutions, particularly AI, to enhance various aspects of eye care and vision health. This interdisciplinary field integrates the principles of optometry with cutting-edge AI algorithms and technologies to innovate diagnosis, treatment, and management of ocular conditions. The primary aim of this theme is to augment traditional optometric practices with AI-driven tools to improve the accuracy and efficiency of diagnostics. By harnessing the power of machine learning and computer vision, optometrists can analyze large volumes of patient data, detect subtle abnormalities, and predict disease progression with greater precision. Furthermore, the objective is to optimize patient care by personalizing treatment plans through AI-generated insights. By tailoring interventions based on individual patient characteristics and risk factors, optometrists can achieve better outcomes and enhance the overall patient experience. Another key objective is to facilitate early detection and intervention of ocular diseases through AI-powered screening programs. By developing automated screening algorithms capable of detecting early signs of conditions such as glaucoma, diabetic retinopathy, and age-related macular degeneration, optometrists can identify at-risk patients promptly and initiate timely interventions to prevent vision loss. Additionally, the integration of AI in optometry aims to streamline practice workflows and enhance operational efficiency. By automating routine tasks such as appointment scheduling, data entry, and documentation, optometrists can optimize time management and focus more on delivering high-quality patient care. In summary, the theme of "Artificial Intelligence in Optometry" seeks to harness the potential of AI technologies to revolutionize the field of optometry, improve diagnostic accuracy, personalize patient care, facilitate early disease detection, and enhance practice efficiency.

Evaluation Of Visual Impairment Following Stroke

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This study aimed to evaluate the visual problems following stroke and their overall prevalence. In this cross-sectional study, 116 stroke patients with visual problems meeting the inclusion criteria were enrolled. Qualitative and quantitative assessment of strabismus by Hirschberg, Cover test and prism cover test. Fusion status and stereopsis were evaluated by Worth Four dot test and Lang stereo test respectively. Ocular motility testing done in detail to assess saccades, pursuits, vergences, gaze defects and nystagmus. Visuospatial disorders were evaluated by visual inattention, Albert test and clock drawing test. Out of all 116 patients, 97 (83.6%) had ischemic stroke. Only 5 (4.3%) had pre- existing ocular disease. 112 (96.6%) had visual problems following stroke. 94% had blurred vision, 26.7 % had diplopia, 71% patients had reading difficulty, 19.8% had oscillopsia and 16.4% had Anton syndrome reported after stroke. 38.8% had prosopagnosia, 41.4% had alexia without agraphia, 2.59% had abnormal head posture, 78.4% had visual acuity <6/12 upto finger count in right eye, 75.8% had acuity ranging < 6/12 upto Finger count in left eye. Visual field defect was in 26% patients. 12.9% had defected color vision, 20.7% had strabismus; 16.4% had exotropia and 4.3% had esotropia. 75% patients had normal retinal correspondence, 11.3% had diplopia 6.1% had right suppression 2.6% had left suppression and 4.3% had Alternate suppression. 23.3% patients had no gross stereopsis. 62.9% patients reduced levels of stereo acuity ranged between 200 seconds of arc to 600 seconds of arc. 19% had ptosis and 3.4% had relative afferent pupillary defect. 15.5% patients had abnormal smooth pursuits movement, 52.6% had defected vergences, 55.2% had slow saccades, 22.4% patients had gaze abnormalities with 18.1% had absent gaze holding and 22.5% had nystagmus. 15.5 % patients presented with visual intentions after stroke, 11.2% patients were unable to bisect lines of Albert's Test, and 12.9% had cognitive problems. The percentage of visual impairment following stroke is quite significant. Almost 96% patients had some sort of visual problem. This percentage is high and produces negative impact on the rehabilitation of stroke patients. Standardized investigation with specialist Eye care professional should be offered.

Keywords: stroke, visual impairment, ocular motility, cognitive, perceptual

Significance Of Accurate Diagnosis And Optimal Management Approach For Bilateral Anterior Lenticonus

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A 16-year-old boy sought a second opinion for bilateral, gradual, and painless visual impairment, initially diagnosed as keratoconus. Despite a previous clinical diagnosis, a careful examination and corneal topography excluded keratoconus. Distant direct ophthalmoscopy revealed a central symmetrical oil-droplet sign and anterior segment examination showed a conical protrusion of the anterior lens capsule. Anterior segment-optical coherence tomography (AS-OCT) confirmed the diagnosis of anterior lenticonus. With a best-corrected visual acuity of 6/36 in the right eye and 6/24 in the left eye, the patient was diagnosed with Alport syndrome (AS), supported by bilateral sensorineural hearing loss and proteinuria/hematuria. The recommended approach involved bilateral clear lens exchange (CLE) with irrigation/aspiration (I/A), emphasizing meticulous care during continuous curvilinear capsulorhexis (CCC) using utrata forceps. This case underscores the importance of a holistic approach, combining thorough history, examination, and investigations for accurate diagnosis, and discusses the surgical management of the relatively rare finding of anterior lenticonus associated with AS.

Key words: Alport Syndrome, anterior lenticonus, anterior segment-OCT.

Significance of Obstetrical Color Doppler Ultrasound in Detecting Intrauterine Growth Restriction: A Comprehensive Analysis

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Intrauterine growth restriction (IUGR) poses a significant risk to fetal well-being, necessitating early detection and intervention. Obstetrical color Doppler ultrasound has emerged as a pivotal diagnostic tool, offering dynamic insights into blood flow patterns crucial for fetal growth. This study aims to investigate the significance of obstetrical color Doppler ultrasound in detecting IUGR, focusing on its role in assessing uteroplacental and fetal circulation. To evaluate the effectiveness of obstetrical color Doppler ultrasound in identifying early markers of IUGR through the assessment of uteroplacental and fetal blood flow dynamics. A prospective cohort study included pregnant women at risk for IUGR, with obstetrical color Doppler ultrasound performed at regular intervals. Uteroplacental blood flow, fetal vessel circulation, and Doppler indices (PI and RI) were measured. Results were compared with standard fetal growth parameters and pregnancy outcomes.
Results: Preliminary findings reveal a strong correlation between abnormal Doppler indices, altered blood flow patterns, and the subsequent development of IUGR. Doppler ultrasound effectively identified compromised uteroplacental circulation and provided early indicators of fetal distress, enabling timely intervention and management. Obstetrical color Doppler ultrasound proves to be a significant tool for detecting IUGR by assessing uteroplacental and fetal blood flow dynamics. Early identification of abnormal Doppler indices allows for timely intervention, reducing the risk of adverse outcomes associated with IUGR.

Keywords: Intrauterine growth restriction (IUGR), Obstetrical color Doppler ultrasound, Uteroplacental blood flow, Doppler indices, Fetal well-being.

Neuro sonography, how, when and why

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Background: Neuro sonography, or ultrasound imaging of the central nervous system, has emerged as a valuable diagnostic modality with applications across various clinical scenarios. This study aims to elucidate the methodologies, indications, and optimal timing for neuro sonography, exploring its utility in diverse patient populations.To provide a comprehensive overview of neuro sonography, focusing on its applications, optimal timing, and clinical relevance. The study aims to evaluate the efficacy of neuro sonography in different neurological conditions, ranging from neonatal brain imaging to adult neurologic assessments. A literature review and retrospective analysis were conducted, incorporating studies and clinical cases related to neuro sonography. Emphasis was placed on the timing of neuro sonography in neonates, infants, and adults, considering its role in the evaluation of conditions such as hydrocephalus, intracranial hemorrhage, and vascular abnormalities. The review also explored the correlation between neuro sonographic findings and other imaging modalities. Neuro sonography emerges as a versatile and accessible imaging technique, providing real-time visualization of intracranial structures. In neonatal care, early neuro sonography enables prompt detection of anomalies, facilitating timely intervention. In adults, neuro sonography complements other imaging modalities, offering a radiation-free and cost-effective alternative for certain conditions.Neuro sonography proves to be a valuable diagnostic tool across the lifespan, offering non-invasive and dynamic imaging of the central nervous system. The timing of neuro sonography plays a critical role, particularly in neonatal assessments, allowing for early detection and intervention. The results highlight the significance of neuro sonography in various neurological conditions and

emphasize its role as an adjunct or primary imaging modality in specific clinical scenarios.

Keywords: Neuro sonography, Diagnostic modality, Timing of imaging, Central nervous system, Clinical applications.

Advancements in Modern Interventional Radiological Procedures: A Comprehensive Exploration

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Interventional radiology has undergone remarkable advancements, revolutionizing diagnostic and therapeutic approaches across medical specialties. This study delves into the contemporary landscape of interventional radiological procedures, aiming to assess their efficacy, safety, and evolving role in clinical practice. To provide an in-depth analysis of the latest interventional radiological procedures, elucidating their technological innovations, procedural methodologies, and clinical outcomes. The study aims to highlight the diverse applications and the impact of these procedures on patient care.
Methodology: A systematic review was conducted, encompassing recent literature and clinical studies pertaining to modern interventional radiological procedures. Procedures such as transcatheter embolization, percutaneous ablation, image-guided biopsies, and vascular interventions were analyzed. Emphasis was placed on reviewing technological advancements, patient selection criteria, procedural techniques, and post-procedural outcomes. The review reveals significant advancements in modern interventional radiological procedures, showcasing improved precision, reduced invasiveness, and enhanced patient outcomes. Technological innovations, such as real-time imaging and robotic assistance, contribute to the efficacy and safety of these procedures. The results underscore the expanding role of interventional radiology in managing diverse medical conditions. Modern interventional radiological procedures have evolved as integral components of contemporary medical practice, offering minimally invasive alternatives with improved patient outcomes. The amalgamation of cutting-edge technologies and refined procedural techniques positions interventional radiology as a dynamic and transformative field, shaping the landscape of diagnostic and therapeutic interventions across various medical specialties.

Keywords: Interventional radiology, Technological advancements, minimally invasive procedures, Patient outcomes, Transcatheter interventions.

Digital Health: Digital Transformation in Health Care

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There is dire need to introduce a program in health care technology that trains specialists who may use science and technology in the service of human health and opens the new horizon in prevention, diagnosis and therapy of diseases.
Pilot study was conducted in Pakistan from December 2023 to February 2024 in which results showed that lack of availability of specialists in digital health who would be able to build bridges between engineers and doctors/therapists and between the macro and micro world. Digital Health can be divided into four segments: Trend Health (lifestyle-oriented), E-Health (medicine-oriented), Tech Health (hardware-oriented) and Data Health (data-oriented).

Digital Health Technologists may act as experts in the biomedical, medical technology, pharmaceutical sectors, rehabilitation research and consultancy.

Key Words: Digital Health, Rehabilitation

Theranostics: Dawn of the new era

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Background: The convergence of diagnostics and therapeutics, known as Theranostics, has emerged as a transformative paradigm in healthcare. This integrated approach seeks to optimize patient care by combining diagnostic tools with targeted therapies, allowing for personalized and precise treatment strategies. This study aims to explore the potential of Theranostics in revolutionizing medical practices, with a focus on its application in cancer management. The objective is to assess the feasibility and efficacy of utilizing Theranostics approaches for early diagnosis, monitoring, and tailored treatment of various malignancies. A comprehensive review of literature was conducted to gather insights into the latest advancements in Theranostics. Case studies and clinical trials were analyzed to evaluate the practical implementation of Theranostics techniques in diverse patient populations. Results: The review highlights promising outcomes in Theranostics, showcasing its ability to enhance diagnostic accuracy and therapeutic efficacy. Advanced imaging technologies, biomarker identification, and targeted drug delivery systems have demonstrated substantial improvements in patient outcomes, fostering a more personalized and efficient approach to cancer care. Theranostics represents a paradigm shift in healthcare, offering a promising avenue for personalized medicine. The integration of diagnostic and therapeutic modalities has shown significant advancements in cancer management, promoting early detection, precise treatment, and improved patient outcomes. As we stand at the dawn of this new era, Theranostics holds great potential to redefine the landscape of medical practices and usher in a more tailored and effective era of patient care.

Keywords: Theranostics, Diagnostic, Biomarker, Optimization

Mesh Complications in Hernia Surgery: Understanding Risks, Management, and Prevention Strategies

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The use of mesh in hernia surgery has revolutionized the management of abdominal wall defects, offered reduced recurrence rates and improved surgical outcomes. However, the widespread adoption of mesh repair techniques has also brought attention to the potential for mesh-related complications, ranging from minor discomfort to severe morbidity. This abstract provides an overview of mesh complications in hernia surgery, elucidating their etiology, clinical manifestations, management strategies, and preventive measures.

Mesh-related complications can manifest as early postoperative complications, including surgical site infection, hematoma, seroma formation, and wound dehiscence, or as delayed complications such as chronic pain, mesh migration, adhesion formation, and mesh-related infections. Patient factors, surgical technique, mesh characteristics, and postoperative care practices all contribute to the risk of developing mesh complications.

Effective management of mesh complications requires a multidisciplinary approach, incorporating principles of wound care, infection control, pain management, and surgical revision techniques. Surgical interventions may include mesh removal, debridement of infected tissue, and reconstruction of the abdominal wall using alternative

techniques such as component separation or biological mesh placement.
Prevention of mesh complications begins with meticulous surgical technique, including proper mesh sizing, adequate mesh fixation, and attention to tissue handling and hemostasis. Additionally, perioperative antibiotic prophylaxis, optimization of patient comorbidities, and adherence to evidence-based guidelines for hernia repair can mitigate the risk of postoperative complications.
Furthermore, advancements in mesh technology, such as the development of lightweight and partially absorbable meshes, aim to minimize tissue reaction and improve biocompatibility, thereby reducing the incidence of mesh-related complications. Patient-centered approaches, including shared decision-making, informed consent, and patient education, play a crucial role in mitigating the psychological and functional impact of mesh complications on patients' quality of life.
In conclusion, while mesh repair techniques have revolutionized hernia surgery, mesh-related complications remain a significant concern necessitating careful patient selection, surgical technique optimization, and vigilant postoperative management. This abstract underscores the importance of comprehensive risk assessment, individualized treatment strategies, and ongoing research to enhance the safety and efficacy of mesh hernia repairs and improve patient outcomes.

Key-words: Mesh, antibiotic, prophylaxes, Hernia, Vigilant

Hypoferritinemia without Anemia Among Reproductive age female: Frequency and Determinant

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Hypoferritinemia without anemia among reproductive-age females is a complex clinical entity influenced by various determinants. This condition, characterized by diminished serum ferritin levels without accompanying low haemoglobin concentrations, poses diagnostic and therapeutic challenges. Determinants contributing to hypoferritinemia in this population include dietary factors, genetic predispositions, hormonal fluctuations, and inflammation. The interplay of these determinants necessitates a comprehensive diagnostic approach that goes beyond traditional markers of iron deficiency anemia. Menstrual blood loss, inadequate dietary iron intake, and absorption issues are among the primary determinants, emphasizing the importance of understanding individual patient profiles. Additionally, genetic factors affecting iron metabolism and storage, hormonal influences such as pregnancy and oral contraceptive use, and inflammatory conditions further contribute to the complexity of this condition. Recognition of these determinants is crucial for tailoring effective interventions and preventive strategies. This abstract underscores the need for a holistic understanding of the determinants of hypoferritinemia without anemia in reproductive-age females, highlighting the significance of personalized approaches to diagnosis and management. Further research is warranted to elucidate the intricate interactions of these determinants and refine targeted interventions for optimal patient outcomes.

Keywords: Hypoferritinemia,Anemia,Frequency,Determinents,Hemoglobin

Emerging Allied Health Professional Technologies

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Allied health professionals play a critical role in healthcare delivery, encompassing a diverse range of disciplines aimed at supporting patient care, rehabilitation, and wellness. This abstract provides an overview of emerging technologies poised to revolutionize allied health practice, highlighting their potential impact on improving patient outcomes, enhancing workflow efficiency, and advancing professional development. Telehealth and remote monitoring technologies have emerged as game-changers in allied health, enabling practitioners to deliver care remotely, expand access to underserved populations, and facilitate ongoing patient monitoring. Virtual reality (VR) and augmented reality (AR) applications offer immersive training experiences for allied health students and professionals, allowing for realistic simulations of clinical scenarios and procedural training.
Furthermore, wearable devices and mobile health applications empower patients to actively participate in their care, track health metrics, and engage in self-management strategies, thereby promoting patient empowerment and adherence to treatment plans. Artificial intelligence (AI) and machine learning algorithms hold promise in allied health for tasks such as diagnostic imaging interpretation, personalized treatment recommendations, and predictive analytics for disease prevention and early intervention.
Robotic-assisted rehabilitation devices are revolutionizing physical and occupational therapy, offering precise and customizable therapy modalities to enhance patient recovery and functional outcomes. Additionally, 3D printing technology facilitates the creation of customized orthotics, prosthetics, and anatomical models, providing allied health practitioners with innovative tools for patient care and education. Moreover, blockchain technology is increasingly being explored for its potential to improve data security, interoperability, and transparency in allied health settings, ensuring the integrity and confidentiality of patient health records and facilitating seamless communication across healthcare systems. In conclusion, the integration of emerging technologies into allied health practice holds immense promise for transforming patient care delivery, enhancing professional development opportunities, and addressing healthcare challenges in a rapidly evolving landscape. This abstract underscore the importance of ongoing research, education, and collaboration to harness the full potential of these technologies and optimize their impact on allied health professions.

Keywords: Blockchain,Interoperability,Emerging,Technology,Optimize.

Exploring Key Performance Indicators in Anaesthesia

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In the realm of healthcare, the discipline of anesthesia plays a pivotal role in ensuring patient safety, comfort, and successful surgical outcomes. Key Performance Indicators (KPIs) serve as essential metrics for evaluating the quality, efficiency, and effectiveness of anesthesia care delivery. This abstract aims to provide a comprehensive overview of the key performance indicators relevant to anesthesia practice, encompassing various domains including patient safety, clinical outcomes, resource utilization, and provider satisfaction.
Patient safety stands as a paramount concern in anesthesia practice, and KPIs such as perioperative mortality

rates, adverse events, and medication errors offer crucial insights into the quality of care delivered. Clinical outcomes, measured through parameters like post-anesthetic recovery times, pain management efficacy, and patient satisfaction scores, contribute significantly to assessing anesthesia service quality and patient experience. Additionally, resource utilization KPIs, such as operating room turnover times, anesthesia equipment downtime, and medication wastage rates, offer valuable data for optimizing operational efficiency and cost-effectiveness.
Moreover, provider satisfaction and performance are integral aspects of anesthesia care delivery, with KPIs like provider workload, job satisfaction surveys, and professional development metrics playing vital roles in ensuring a motivated and competent anesthesia workforce. Furthermore, advancements in technology and data analytics have facilitated the development of novel KPIs, such as real-time monitoring of vital signs, automated documentation accuracy, and predictive analytics for adverse event prevention, thus enhancing the precision and timeliness of performance assessment in anesthesia practice.
In conclusion, the implementation and monitoring of key performance indicators in anesthesia practice are essential for ensuring patient safety, optimizing clinical outcomes, maximizing resource utilization, and fostering a conducive work environment for anesthesia providers. This abstract underscores the significance of ongoing research and quality improvement initiatives aimed at refining existing KPIs and developing innovative metrics to further enhance the quality and efficiency of anesthesia care delivery.

Keywords: Anesthesia, KPI, Metrics, Encompassing, Indicators

Advancements in Laparoscopic Surgery: Transforming Minimally Invasive Technique

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Laparoscopic surgery, a cornerstone of minimally invasive surgical techniques, has witnessed remarkable advancements in recent years, revolutionizing the landscape of surgical practice. This abstract aims to provide an overview of the latest innovations and technological advancements in laparoscopic surgery, highlighting their impact on patient outcomes, surgical precision, and healthcare delivery.
The advent of robotic-assisted laparoscopic surgery has ushered in a new era of precision and dexterity, enabling surgeons to perform complex procedures with enhanced visualization and maneuverability. Robotic platforms offer features such as tremor filtration, motion scaling, and stereoscopic vision, facilitating intricate tasks and improving surgical outcomes in fields ranging from urology to gynecology and beyond. Furthermore, advancements in imaging modalities, such as high-definition cameras, fluorescence imaging, and intraoperative ultrasound, have augmented the visualization capabilities of laparoscopic surgeons, allowing for more accurate anatomical delineation, tumor localization, and tissue characterization. Real-time imaging technologies aid in navigation within complex anatomical structures, reduce the risk of intraoperative complications, and enhance the completeness of surgical resections. The integration of augmented reality (AR) and virtual reality (VR) technologies into laparoscopic surgery training programs has revolutionized surgical education and simulation, providing trainees with immersive learning experiences and realistic surgical scenarios. Virtual simulators offer a safe environment for skill acquisition and proficiency assessment, ultimately contributing to improved surgical competency and patient safety. Moreover, innovations in instrumentation and surgical devices, such as advanced energy sources, articulating instruments, and single-port access systems, have expanded the scope and feasibility of laparoscopic

procedures, allowing for smaller incisions, reduced operative times, and enhanced cosmesis. Single-incision laparoscopic surgery (SILS) and natural orifice transluminal endoscopic surgery (NOTES) represent groundbreaking approaches to further minimize surgical trauma and improve patient satisfaction. In conclusion, advancements in laparoscopic surgery have transformed the landscape of modern surgical practice, offering improved patient outcomes, enhanced surgical precision, and expanded treatment options across diverse surgical specialties. This abstract underscore the importance of continued innovation, interdisciplinary collaboration, and surgeon education to further optimize the benefits of laparoscopic techniques and address evolving clinical challenges in the field of surgery.

Keywords: SILS,Orifice, NOTES, Laparoscopic, VR

Synthetic Biology in the era of AI.

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The convergence of Synthetic Biology and Artificial Intelligence (AI) marks a transformative epoch in scientific and technological innovation. Synthetic Biology, the discipline focused on designing and constructing novel biological systems, and AI, an advanced computational paradigm, are combining forces to revolutionize our understanding of life and reshape the boundaries of what is biologically possible. This interdisciplinary synergy is yielding unprecedented advancements in genetic engineering, bioinformatics, and biotechnology. AI algorithms, equipped with the ability to analyze vast datasets, are accelerating the design of synthetic organisms by predicting optimal genetic sequences and metabolic pathways. This collaborative approach not only expedites the development of tailored biological solutions but also enhances our capacity to address complex challenges such as disease treatment, environmental remediation, and sustainable resource utilization. Furthermore, AI's machine learning capabilities are enhancing the efficiency of laboratory processes, automating experimental design, and enabling real-time data analysis. This not only reduces the time and resources required for synthetic biology experiments but also facilitates the exploration of vast solution spaces that were previously impractical. However, the integration of Synthetic Biology and AI also poses ethical and regulatory challenges, demanding careful consideration of issues related to biosecurity, environmental impact, and responsible innovation. As we navigate this uncharted territory, the interplay between Synthetic Biology and AI stands poised to redefine the frontiers of biotechnology and reshape our relationship with the living world. This abstract explores the symbiotic relationship between Synthetic Biology and AI, emphasizing its potential to revolutionize industries, address global challenges, and pave the way for a bio-digital future

Key-Words; Synthetic Biology, Artificial Intelligence, genetic engineering, predictive algorithms, synthetic organisms

LncRNA in Breast Cancer Diagnosis and Prognosis: From Junk to Jewels

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Breast cancer is a leading cause of death among females around the world. The key to cure the disease is its early diagnosis. Despite the advancement of technologies, its early diagnosis is still a challenge. Numerous pathways and small molecules like noncoding ribonucleotides are implicated in breast cancer development and progression. Among these, lncRNAs, have garnered considerable attention due to their role in breast cancer tumorigenesis and metastasis. Once considered junk is now known to have an association with disease pathobiology. Therefore, in the present study expression pattern of 84 different lncRNAs was determined via RT2 array in early and advanced-stage breast cancer patients. Moreover, the effect of chemotherapy was also evaluated to identify prognostic markers in terms of breast cancer. The findings indicate an elevated expression of MALAT1 and PI3K/AKT/mTOR pathway genes in grade II and III breast tissue samples before chemotherapy. Furthermore, the role of MALAT1 in cancer progression was evaluated through silencing in MDA-MB-231 cells. Substantial reductions in the proliferation, growth, and invasion of breast cancer cells were observed upon silencing MALAT1 in MDA-MB-231. The downregulation of MALAT1 significantly decreased the expression levels of the PI3K pathway at both mRNA and protein levels. The study findings highlight the significance of aiming MALAT1 as a therapeutic target against breast cancer

Key Words: Breast Cancer; lncRNA; MALAT1; therapeutic; PI3K pathway

Stem Cells And Nanoparticles For The Treatment Of Defected Cartilage

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Cell-based therapeutic approaches are providing the most promising results to regenerate the deteriorated cartilage tissue. But the hostile micro-environment and other hypoxic conditions at the injured site become challenging for the survival of MSCs and hinder the proliferative potential of MSCs.
Plant mediated green synthesis approach was applied in combination with gold salt to form the eco-friendly and cost-effective nanoparticles. DPPH, TPC, and TFC were carried out to unveil the oxygen scavenging capacity and the antioxidant role of GNPs. GNPs were assessed for their cytotoxic impact through metabolic activity and MSCs viability at different doses Biochemical assays like LDH, SOD, and ALP were performed to analyse the enzymatic changes within cells and the effects of treated agents. This pre-treatment strategy downregulated the NF-B transcriptional factor and all other associated inflammatory cytokines (IL-1, IL-6, and TNF) and modulated the expression of apoptosis (BAX and Caspase-3) and survival (BCL-2) related genes.
These studies further revealed the anti-inflammatory and anti-arthritic effects of the combinatorial therapy of GNPs and hADMSCs in MIA-induced arthritic rat models in contrast to the control and non-pretreated groups. Gross morphological analysis displayed the regenerated and healed cartilage with maintained integrity in treated groups as compared to abraded cartilage visualized in the stress group. Histological analysis accomplished by H and E staining, and Safranin O staining, has portrayed the increased number of chondrocytes at the outer plateau and high proteoglycan content formation in the treated knees than osteo-arthritic knee. Parallel to in vitro results, NF-B pathway analysis depicted a concomitant downregulated pattern of NFB heterodimers (p65, p105) and associated inflammatory markers (IL-1, IL-6, and TNF) in vivo. ELISA carried out on IL1, TNF-, p65, and IKK & IKK markers further reinforced the anti-inflammatory facet of the treated strategy in vivo. This novel combinatorial therapy may be a viable therapeutic approach to treat osteo-chondral defects clinically.

Key-Words; Stem Cells, Nanoparticles, Green Synthesis, anti-inflammatory and anti-arthritis

Strategic Objectives Of WHO Global Action Plan On Antimicrobial Resistance

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With the rise of drug-resistant infections posing a significant global health threat, the WHO has formulated a comprehensive plan to address and mitigate the impacts of antimicrobial resistance. The Global Action Plan encompasses strategic objectives that span across multiple sectors, including human health, animal health, agriculture, and the environment. Key areas of focus include improving awareness and understanding of antimicrobial resistance, optimizing the use of antimicrobial agents, enhancing surveillance and research capabilities, and fostering innovative approaches to the development of new antimicrobial treatments. Furthermore, the plan emphasizes international collaboration, urging countries to strengthen their health systems, regulatory frameworks, and promote responsible antimicrobial use. Implementation strategies involve coordinating efforts across various stakeholders, including governments, healthcare providers, researchers, and the pharmaceutical industry.

Keywords: World Health Organization, WHO, Global Action Plan, Antimicrobial Resistance

Breaking into the world of Nuclear Pharmacy & its applications in hospital setting; A Springboard for Clinical Success

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Modern healthcare is being shaped by developments in medical imaging and therapy, and nuclear pharmacy plays a crucial role in converting innovation into successful clinical outcomes. This talk explores the underlying ideas, applications, and crucial role that nuclear pharmacy plays in the hospital context as it dives into the exciting topic of nuclear pharmacy. We traverse the distinct chances and challenges for professionals looking to enter this specialized field through an enlightening journey. An introduction to the fundamental ideas of nuclear pharmacy is given at the outset of the talk, including radiopharmaceuticals, radio labelling methods, and regulatory issues. After that, we turn our attention to real-world uses in hospital settings, demonstrating how Nuclear Pharmacy drives advances in targeted medicines, personalized medicine, and diagnostic imaging. The presentation's examination of nuclear pharmacy as a launching pad for clinical achievement is one of its main points. We explore how nuclear medicine is a collaborative field, highlighting its interdisciplinary relationships with doctors, radiologists, and other healthcare professionals. Participants will learn how to improve their responsibilities in patient care, research, and the larger healthcare system by developing their knowledge of nuclear pharmacy. With an eye on the future, the seminar ends by discussing new developments, obstacles, and the possibility of further integrating nuclear pharmacy into changing healthcare paradigms. After attending, participants will possess a thorough comprehension of the strategic significance of Nuclear Pharmacy and its potential to function as an agile route towards clinical triumph in an ever-evolving medical field.

Keywords: radiopharmaceutical, medical imaging, Clinical Success

ABSTRACTS OF ORAL PRESENTERS

Karachi Comparative effects of post isometric relaxation and sustained stretching in patients with upper cross syndrome

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Upper Cross Syndrome is a common musculoskeletal disorder characterized by muscular imbalances and postural deviations, predominantly affecting the neck and shoulders, leading to pain, stiffness, and limited ROM. Post-Isometric Relaxation involves muscle contractions followed by relaxation, while sustained stretching consists of maintaining a static stretch for an extended period. These techniques aim to alleviate symptoms and improve muscle flexibility in UCS patients. To compare PIR and SS interventions' impact on pain, range of motion, and functionality in UCS patients. The study involved 30 patients with tightness in their upper trapezius and levator scapulae muscles. Informed consent was obtained, and ethical clearance was granted. The patients were randomly assigned to two groups: Group A received SS, while Group B received PIR. Treatment lasted for 6 weeks with 3 sessions per week. Assessment was conducted using the NPR Scale and ROM measurements via inclinometer at the beginning and end of the study, spanning 18 days. Follow-up was provided after the intervention period. The study found significant reductions in pain intensity post-treatment, with P-values of 0.002 for both PIR and SS. In terms of ROM improvements, both PIR and SS showed increases in cervical flexion and extension. Specifically, in PIR, cervical flexion increased from 34 to 40 degrees, while in SS, it increased from 35 to 38 degrees post-treatment. Both PIR and SS were effective in reducing pain intensity and increasing ROM in patients with tight upper trapezius and levator scapulae muscles. However, PIR demonstrated slightly more effective results compared to SS.

Key Words: Upper Cross Syndrome, Post Isometric Relaxation, Stretching, Pain intensity.

Determining the effects of center based vs tele rehabilitation using an interval and continuous aerobic training among post coronary revascularization patients------ A Randomized Controlled Trial

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Jinnah University for women

A major cause of death and morbidity among non-communicable diseases, cardiovascular disease (CVD) is a widespread worldwide health problem. Thus, the medical community has increasingly resorted to cardiac rehabilitation program as a vital part of comprehensive care as a result of the complex difficulties post-coronary revascularization patients confront.
The main focus of the investigation centers on a crucial comparison: the differences between center-based and

tele rehabilitation, using both intermittent and continuous aerobic training methods.
Four groups of n=20 participants each were created from a total sample size of n=80 participants. These groups have been put on various exercise training regimens including center-based and home-based workout routines that include intermittent and continuous aerobic training techniques.
Findings had provided evidences that center based group intervention were turned out to be significantly better ($p<0.05$) than remote monitoring group in improving six minute walk test. Similarly on RPE and PAR also the effects of center based training group was turned out to be a significantly better than $p<0.05$ than remote monitoring group, however on RPE the effects of Interval-based High-Intensity group was significantly ($p<0.05$) better than Continuous Moderate-Intensity Aerobic Exercise group in center training, whereas on remote monitoring group the effect Continuous Moderate-Intensity Aerobic Exercise group was turned out to be significantly ($p<0.05$) better than Interval-based High-Intensity group.
The results highlight remote monitoring has certain useful advantages, however the study emphasizes the superiority of center-based therapy.

Keywords: Aerobic Exercises, Bypass, Coronary Artery, Cardiac Rehabilitation

Effects Of Muscle Energy Technique In Patients With Tension Type Headache; A Randomized Control Clnicial Trial

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Tension type headache is claimed to be one of top ten disabling conditions in the world. The aim was to determine the effects of muscle energy technique on pain, range of motion at cervical spine and disability related to tension type headache. A randomized control trial was conducted on 48 participants of both genders whose age was 18 to 40 years with complain of tension type at Rehabilitation and Injury Management Department of Medicare International Hospital Gujranwala, from July to December 2019. Participants were randomly selected and allocated into two groups (experimental and control group). The experimental group received both muscle energy technique and myofascial release technique on trapezius and sternocleidomastoid of both sides. The intervention was applied for 6 weeks (3 sessions per week). Assessments were done at baseline, 4th week and 6th week. Numeric pain rating scale (NPRS), Headache disability inventory (HDI), headache impact test (HIT) and cervical range of motion with the help of Inclinometer were tools for assessment. Data analysis was done using SPSS (version 21). The mean age of experimental group was 26.5 ± 5.42 and control group was 27.7 ± 5.70. The experimental group was shown significant improvement in terms of pain and flexion and side flexion range of motion with p-value ≤ 0.05. It is concluded that muscle energy technique is effective treatment for tension type headache; it is associated to disability related to TTH.

Key-words: Muscle energy technique, Myofascial release technique, Trapezius muscle, Sternocleidomastoid muscle, Range of motion

The effects of treadmill training with visual feedback and rhythmic auditory cue on gait and balance in hemiplegic cerebral palsy: A randomized controlled trial

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Asymmetrical gait patterns are a prevalent symptom of hemiplegic cerebral palsy (CP), affecting both walking ability and overall balance.The objective of this RCT was to investigate the impact of treadmill training on balance and spatiotemporal gait parameters in individuals with hemiplegic cerebral palsy through the integration of visual feedback and rhythmic auditory cues (VF+RAC).During the current RCT, 28 children under the age of 18 years with hemiplegic cerebral palsy were enrolled. The study was conducted from January 2023 to June 2023. Treatment group was administered with VF+RAC (n = 14), while the other group was given a control treatment (n = 14). The treatment group received treadmill training with visual feedback and rhythmic auditory cue stimulation, whereas the control group underwent treadmill training without these sensory enhancements. During a period of eight weeks, both groups of participants regularly attended five training sessions per week. Following the intervention, the participants underwent assessment using the Berg Balance Scale, Timed Up test, and spatiotemporal gait parameters.The treatment group exhibited significant improvements in spatiotemporal gait parameters. These alterations in walking patterns resulted in increased stride length, enhanced walking speed, and improved gait stability. VF+RAC group did not exhibit significant improvement in non-paretic single limb support. This suggests that the intervention had varying effects on different aspects of the gait.These findings demonstrate that individuals with hemiplegic cerebral palsy can experience positive outcomes by engaging in treadmill training with VF+RAC, leading to enhancements in both their balance and gait symmetry. According to the study, this intervention could serve as a beneficial treatment modality for individuals with hemiplegic cerebral palsy who are striving to enhance their balance and gait.

Key-words: Cerebral Palsy, Gait patterns, Visual feedback, Treadmill trainings

The Effect Of Body Awareness Therapy On Balance And Coordination In Stroke.

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Stroke is the second leading cause of mortality above the age of 60 years and beyond, the fifth main cause of mortality between ages 15 years to 59 years. Its occurrence remains high, with 13.7 million annual incident cases globally. Cerebrovascular accident (CVA) decreases sensorimotor functions by causing irreversible impairments to the nervous system, and usually affects intellectual, cognition balance and physical function. Body Awareness Therapy is a physiotherapeutic restorative approach in which the patient has to focus on the body by turning the individual concentration to both doing and what is experienced by the body. Body and mind simultaneously work together.The primary objective is to identify the effect of body awareness therapy on balance and coordination in stroke. The secondary objective is to identify body awareness therapy for cognition in patients with stroke.

Research study was RCT. Sample size 26, including both males and females. Those individuals who fulfilled the inclusion criteria were included in this study through convenient sampling. The randomization was done through sealed envelope method. From which 13 were included in the experimental group and 13 were included in the control group. Both groups received conventional physical therapy but experimental group received additional body awareness therapy. Duration of the intervention is 5 days a week for two weeks. To determine the effectiveness of interventions in a study, a self-assessed questionnaire, the berg balance scale, mini-mental state examination, and coordination tests (equilibrium-coordination test and non-equilibrium coordination test) are used.Both groups showed significant results, but when we compared the groups, no significant improvement in balance and coordination but significant improvement in cognition is seen.The effect of body awareness therapy shows improvement in cognition.

Key-words; Balance, body awareness therapy, cognition, coordination, stroke

Comparative Effects Of Neuromuscular Training And Mobilization With Movement On Pain, Range Of Motion, Balance, And Function In Footballer With Ankle Sprain

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Ankle sprains are common in football, there is a need to critically evaluate and compare the effectiveness of different rehabilitation strategies. The current reliance on traditional methods may not be optimizing the recovery process, and exploring alternative interventions could lead to more efficient and tailored rehabilitation protocols. Addressing this gap is crucial not only for individual player well-being but also for the overall success and competitive edge of football teams. The objective was to compare the effects of neuromuscular training and mobilization with movement interventions on pain, range of motion, balance, and function in footballers. A Randomized clinical trial was conducted at Pakistan Sports Board Lahore from May to October 2023 through non-probability convenient sampling technique, 36 footballers aged 18-28, engaged in sports activity for a minimum of one year with weekly training durations of 16-20 hours, participants who sustained grade I and II ankle sprains were included. Participants equally divided into two groups (A=Neuromuscular Training and B=Mobilization with Movement) via lottery method. Data was analysed though SPSS ver. 25. The study compared the effects of neuromuscular training (Group A) and mobilization with movement (Group B) interventions in individuals with ankle instability. Both interventions demonstrated statistically significant improvements (<0.05) in Numeric Pain Rating Scale (NPRS), dorsiflexion, plantarflexion, Star Excursion Balance Test (SEBT), Functional Ankle Instability (FAI), CAIT, and the 20m sprint test. The mean differences post-intervention was significant, highlighting the efficacy of both interventions in addressing pain reduction, range of motion, balance, and functional outcomes. A study concluded that both neuromuscular training and mobilization with movement interventions yielded statistically significant improvements in multiple outcomes, with a particular emphasis on enhanced balance and Functional Ankle Instability in Group A.

Keywords: Ankle Instability, Mobilization with Movement, Neuromuscular training

Effects of joint integrity exercises versus mirror therapy on proprioception and functional rehabilitation of upper limb in hemineglect stroke survivors

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Upper limb motor dysfunction was a major challenge for a physical therapist to deal with hemineglect stroke. Different interventions were used to enhance the sensory integration and motor function hemineglect stroke. The objective was to compare the effects of joint integrity exercises and mirror therapy in proprioception and functions of upper limb in hemineglect stroke. This study registered on clinicaltrial.gov (NCT03827135). Non-probability convenient sampling technique used to collect the data. After randomization data was divided into two equal groups, Group A and Group B. Sessions were held 3 days a week. Assessment tools were Fugl-Meyer Assessment, Revised Nottingham Sensory Assessment, and Motor Assessment Scale at baseline 0 week, at 3 weeks, and after 6 weeks. SPSS v.21 used to analyse the data. Mean age was 53.86±3.48 and 52.36±4.81 for Group A and B respectively. Post-treatment P-value of the sensation component of FMA. U.E, motor component of the wrist joint, and RNSA < 0.05, showing that joint integrity exercises were more effective on the sensory component of U.E and motor component of the wrist joint while MAS score showed mirror therapy more effective on the motor component of the upper extremity. Joint integrity exercises were more effective on the sensory component while mirror therapy showed better outcomes in motor function of the upper limb in hemineglect stroke patients.

Keywords: Joint integrity, proprioception, mirror therapy, hemineglect, stroke.

Comparison and validation of extended ICF core set for Stroke in Post acute Stroke Rehabilitation

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Introduction of ICF framework for specific neurological conditions in our settings is much needed as improvement with Neurological Rehabilitation can be enhanced with active participation of patient. Therefore, the first step to implement and to introduce ICF framework in terms of ICF Core set in our settings is to validate their use first. Since Stroke places a huge disease burden on our population we will initially validate only 2 categories of ICF Corset for stroke i.e. “Activity and Participation” to determine patient functional level and his disability. The objective was to validate Extended ICF corset for stroke in Functional assessment of post-acute stroke patients and to compare Extended ICF CORSET for Stroke as assessment tool with standardized functional Assessment tool for stroke. It was a Validation cross-sectional study, semi structured questionnaire based on ICF categories of “Activity and Participation” & FIM was administered. Data was analysed using SPSS version 22, Concurrent

validity was analysed using Spearman's rank correlation coefficient to asses correlation between number of problem categories of "Activity and Participation" and FIM total score. The Inter-rater reliability of ICF core sets of "Activity and participation" component between 3 raters was 0.84, 0.78 and 0.89 respectively, p-value was found to be significant in all three reliability scores. The value of Pearson's correlation between ICF corsets and FIM was -0.737. It was concluded that the comprehensive ICF core sets for stroke can be used as a valid assessment tool to asses' functional status of post-acute stroke patients.

Keywords: Extended ICF Core sets, FIM scores, Standardized assessment tool

Correlation of Balance and Developmental Coordination Disorder among different level of autism in children

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Autism spectrum disorder (ASD) and developmental coordination disorder (DCD) are neurodevelopmental disorders and both are associated globally. One of the main motor control problems in children with DCD is deficient balance control. However, Balance and DCD correlation with autistic children depends on the fact that in which 'Level of Autism' children is falling. The objective was to determine the correlation of Balance and Developmental Coordination Disorder among different level of autism in children. It was cross sectional study design. The data was collected from Rising sun institute for special children. The duration of study was five months after approval from IRB and sample size was 99 children. The balance was assessed by Paediatric balance scale. The parent reported Developmental Coordination Disorder Questionnaire (DCDQ07) was used. We asked the questions to from parents and filled out the questionnaire by ourselves. At the end of the data collection process, we counted the total score of the questionnaire. A total of 99 subjects were recruited for this study. Among the subjects 40 were male and 58 were female. The statistics shows that balance is weak positively correlated with Development coordination disorder having value of 0.360 and negatively correlated with level of autism having of -0.241. And the development coordination disorder is negatively correlated with level of autism having value of -0.433. The study concluded that with increase in balance stability there is less chances of developmental coordination disorder. In higher level of autism there are more disturbances in balance and more chances of DCD

Keywords: ASD, DCD, Levels of autism, DCDQ-07 and DSM-5

Collaborative Virtual Reality Environment – An Advancement Of Digital Technology In Physical Therapy- A Narrative Review

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Collaborative Virtual Environment is an emerging progression of Virtual Reality technology in which multiple persons can interact with each other in an artificially created environment. Virtual Reality has been incorporated for diverse use in different disciplines of health sciences. This narrative review aims to explore the practices of Collaborative Virtual Reality technology in the Physical Therapy and rehabilitation.A literature review was conducted on different databases including PubMed, Google scholar, CINAHL and IEEE using keywords. Different articles were sorted and critically reviewed. Collaborative virtual reality environment is incorporated in Physical Therapy for treatment of various health conditions with better outcomes and improved quality of life. With the continuous evolving technology, the profession of Physical Therapy has been revolutionized. Growing inter disciplinary collaboration can overcomes the hurdles in the adoption of Collaborative Virtual Reality Environment.

Key-words: Collaborative Virtual Reality Environment, Exergaming, Physical Therapy, Review, Virtual Reality,

Effects of Instrument assisted Fascial Abrasion technique versus Myofascial Release technique in patients having Cervicogenic Headache: A Randomized clinical study

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Cervical muscle and fascial impairment cause headache and physiotherapy interventions can affect on these myofascial components. The objective was to compare the effects of instrument based Fascial Abrasion and myofascial release technique in patients having Cervicogenic headache. This randomized clinical trial (RCT) conducted at District Headquarter (DHQ) and Rafiqa hospital Sargodha, Pakistan from January to April 2022. The trial was registered with NCT05249647. Non probability sampling technique was conducted on total 44 patients and randomized by using lottery method. Group A was treated with Instrument assisted Fascial Abrasion and Group B was treated with Myofascial release technique. Conventional treatment was hot pack given to both groups. Numeric Pain Rating Scale (NPRS), Neck disability index (NDI), Medical outcome study-36 (MOS-36) and measuring tape was used to assess outcome measures. It was observed that NDI to group A pre-treatment

session had median (43.00) while post treatment had median (6.00) ($p<0.01$). Group B pre-treatment session had median (40.00) while post treatment had median (7.00) ($p<0.01$). MOS-36 (physical functioning) to group A pre-treatment session had median (40.00) while post treatment had median (100.0) ($p<0.01$). MOS-36 to group B pretreatment session had median (55.00) while post treatment had median (95.00) ($p<0.01$). Between groups analysis showed significant results ($p<0.01$.Cervicogenic headache patients treated with Instrument assisted Fascial Abrasion technique had better effects in decreasing pain, disability and increasing range of motion than Myofascial Release technique.

Key words: Cervicogenic headache, Instrument assisted Fascial abrasion technique, Myofascial release technique, Neck disability index, Numeric pain rating scale.

Innovative Online Stroke Rehabilitation Algorithm: Conceptualization, Design, Implementation, and Initial Pilot Study Findings

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This chapter provides a comprehensive overview of the innovative clinical algorithm designed for stroke rehabilitation. It explores the rationale behind its development, considering the unique needs and challenges faced by stroke patients and healthcare providers. Key components and functionalities of the algorithm are discussed in the context of its integration within the broader stroke rehabilitation framework. The study aims to develop an online stroke rehabilitation algorithm for the early physical activity of stroke patients in ongoing rehabilitation. A quasi-experimental design will be employed at a private Rehabilitation centre from October 2022 to October 2024. The newly developed online algorithm will be tested against conventional treatment for diagnosed stroke patients aged 20 to 65. The Stroke Physical Activity Questionnaire (SPAQ), utilizing the Barthel index and a stroke-specific quality of life questionnaire, will be developed. Participants will be enrolled through convenient sampling, and the algorithm's validity will be assessed through pretest and post-test questionnaires. Ethical considerations, participant confidentiality, and informed consent are prioritized. Data collection occurs in three phases: enrolment and assessment, pilot study, and full-scale treatment, with SPSS software used for analysis.Statistical analysis indicates a significant improvement in early rehabilitation aspects, including mobility and activities of daily living ($p < 0.05$). The online management system correlates positively with increased adherence to exercises and more comprehensive engagement in rehabilitation.The pilot study suggests that integrating an online management system with a carefully crafted clinical algorithm positively influences early physical activity in stroke patients, potentially enhancing their overall quality of life.

Key words: SPAQ, BI, SSQOL, ADLS

Comparative Effects Of Dry Needing And Cross Friction Massage On Pain, Mobility And Functional Status In Plantar Fasciitis; A Randomized Clinical Trial

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The study aimed to determine the comparative effects of dry needling and cross friction massage on pain, mobility and functional status in Plantar Fasciitis. A randomized clinical trial was conducted on 48 patients fulfilling the inclusion criteria. The participants were randomized and allocated through lottery method and were assessed using the Pain Scale for Plantar fasciitis (PFPS) for pain. Foot functional index (FFI) for functional status and Foot Health Status Questionnaire (FHSQ) for mobility and foot health, before and after the intervention. The collection was done from Health City hospital, Tabba clinic and Liaqat Physiotherapy clinic Lahore. Each group received one treatment i.e., dry needling or cross friction massage over a period of 8 weeks. The data was then analysed using SPSS 22 to study the comparative effects of the treatment Results: Results indicated that the data was non parametric. The individuals of both therapy groups dry needling (group A) and cross friction massage (group B) showed improvement in FFI, PSPF and FHSQ ratings. Across group comparison done through Wilcoxon T Test and the within group comparison through Mann Whitney test showed that the improvement in pain, mobility and functional status in Group was A better than Group B with $p<0.001$. This study found that dry needling and Cross friction massage are both beneficial in reducing pain and improving mobility and functional status. Dry needling, however, is more efficient in providing relief and long terms effects in terms of pain, mobility and functional status than Cross friction massage when the two groups are compared with one another.

Keywords: Cross friction massage, Dry needling, Functional status, heel pain, Mobility, Pain, Plantar Fasciitis.

Association Between Pain And Disablity In Patients With Mechanical Low Back Pain-A Comparative Analysis Of Intervention With Kinesiotaping And Dry-Needling

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Dry needling is the most widely used method by nurses in the management of low back pain by identifying early trigger points and non-trigger point points. Another mainstream operation utilized for the administration of musculoskeletal pathologies is Kinesio taping.The objective was to find the association of pain and disability for Kinesio taping group and Dry-needling group in patients with mechanical low back pain.A Randomized control trial was conducted at Rawal General and Dental Hospital and Al-Nafees, hospital in Islamabad from January 2020 to October 2021 with non-probability convenience sampling technique. Thirty patients aged 18 to 75 years were included. There were two groups of patients i.e., 15 patients in the Kinesio taping group and 13 patients in the Dry needling group. Pain Rating Scale and Roland-Morris Disability Index Questionnaire (RMDQ) were

assessed at baseline, two weeks post-intervention and four weeks post-treatment. Chi-Square Test was use to find association.Before treatment, there were no differences between the groups for PNRS and RMDQ. Both DN and KT produced significant improvements (PNRS and RMDQ) after two weeks and four weeks of treatment ($p<0.05$). However, Statistical analysis. Results showed that there is no association between pain and disability in patient with non-specific low back pain. ($p>0.05$). Kinesio taping is as effective as Dry-needling in managing back pain. When treating back pain adding Kinesio taping and Dry-needling to your exercise program can make a significant contribution in pain but association between pain and disability is not significant.

Keywords: Dry needling, Kinesio Tape, Mechanical Low back pain, Disability, Analog Pain Scale, Physiotherapy

Effects of Myofascial Release on Pain and Quality of Life in Patients with Fibromyalgia

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Fibromyalgia is described as a chronic syndrome of pain in widespread area of the body that is associated with persistent fatigue and generalized morning stiffness. There is just moderate evidence that myofascial release can be beneficial for fibromyalgia symptoms. The objective was to investigate the effects of myofascial release technique on pain and quality of life in fibromyalgia patients.A Quasi-experimental study was conducted to investigate the effects of myofascial release technique on fibromyalgia. 28 patients aged between 25 to 45 years of both genders were divided in two groups of 14 each. Group A was treated with myofascial release therapy and the passive stretching and the group B was treated with passive stretching alone. McGill Pain Questionnaire was used to assess the pain and Revised Fibromyalgia Impact Questionnaire was used for the evaluation of quality of life. Pre- and post-treatment score of pain rating index on MPQ was 46.76 ±10.47 and 23.79 ± 7.43 for experimental group and 43.36 ± 12.7 and 30.0 ± 9.89 for control group respectively. ($P>0.05$). Pre- and post-treatment FIQR score was 52.9 ± 13.6 and 33.02 ± 13.75 for experimental group and 57.77 ± 23.04 and 46.59 ± 19.37 for control group respectively. The difference in the means of post-treatment scores of the two groups for FIQR was significant. ($p=0.042$).The application of myofascial release as a treatment method for fibromyalgia, when compared with passive stretching alone, did not demonstrate significant improvement in alleviating pain among such patients. However, myofascial release therapy unveiled a positive impact by improving the overall quality of life for fibromyalgia patients.

Key-words: Fibromyalgia, myofascial release, quality of life

Barriers for Audiology, Speech, and Language Therapy Services to Cochlear Implant Recipients

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With the rise in cochlear implant use among children with hearing impairments, understanding the challenges in providing effective audiology, speech, and language therapy services is crucial. These services are vital for the successful integration of cochlear implant recipients into mainstream society, particularly in terms of language acquisition and social-educational outcomes. This study aimed to find out Barriers of audiology, speech, and language therapy services to cochlear implant. cross-sectional survey design was employed, involving 74 participants selected through non-probability convenience sampling. The study utilized a structured questionnaire covering demographics, availability of audiology, speech, and language therapy services, and specific issues related to cochlear implant use. Data were analysed using the Statistical Package for the Social Sciences (SPSS) software, version 20.0.Among participants, 58.1% were aged 25-35 years; 67.6% were female. Educational levels varied, with 33.8% holding graduate degrees. Key barriers identified included distance to services, cost, and scheduling difficulties. 66.2% agreed that health insurance was a significant challenge, and 52.7% faced difficulties due to the unavailability of nearby speech therapists.The study highlights the critical need for accessible and tailored speech and language therapy services for cochlear implant recipients, especially in rural areas. Addressing these barriers requires concerted efforts from healthcare providers, policymakers, and community leaders to enhance the rehabilitation outcomes for cochlear implant recipients.

Keywords: Cochlear Implants, Rehabilitation Services, Audiology, Speech Therapy, Accessibility, Rural Healthcare.

Predictive Accuracy of Strength of Wrist Flexors Measured Through Manual Muscle Testing Versus Hand-Held Dynamometer in Young Healthy Females

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Manual muscle testing and hand held dynamometry are used to assess the strength of muscles. This study focused the exploration of subjectivity of grading with respect to quantitative measurement of strength to detect deficit or differences in wrist flexors of young females. The objective was to determine the predictive accuracy of grade four and five of manual muscle testing at different percentages of quantitative strength deficit of wrist flexors in young healthy females. In this cross-sectional study 300 young healthy females in the age group of 18-39 years participated. The participants were selected from the University of South Asia, Lahore, and Association of Fatima Jinnah Old Graduates, Lahore during the duration of May to June 2019 through non probability convenience sampling. The strength of wrist flexors of the participants was measured by manual muscle testing and hand held dynamometry. The positive and negative predictive values of strength deficit in wrist flexors was measured by using 2*2 table. The NPV was maximum at 20 percent deficit 81.32% (95%CI, 75.03%- 86.31%) for dominant wrist flexors and 80.87% (95%CI, 74.56%- 85.91%) for non-dominant ones. The PPV was highest at 10 percent strength deficit. For dominant wrist flexors it was 56.78 percent (95% CI, 47.77%- 65.36%) and for non-dominant side it was 51.28 percent (95% CI, 42.33%- 77.35%).The Positive predictive value was greater with strength deficit of 10% and Negative predictive value was greater when strength deficits of 20% was considered as weak.

Keywords: Muscle strength, Dynamometry, Manual muscle testing, Diagnostic measures, Positive Predictive Value, Negative Predictive Value.

Comparative Analysis of Conventional Neck Exercises with and without Scapular Corrective Exercises on Pain, Cervical Range of Motion, and Disability in Patients with Forward Head Posture

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Long-term usage of digital gadgets like a Smartphone or laptop can alter the alignment of the spine and result in uncomfortable postures like rounded shoulders or the forward head posture. The objective was to determine the effects of conventional neck exercises with and without scapular corrective exercises on pain, cervical range of motion, and disability in patients with forward head posture.In this randomized controlled study, 50 subjects with FHP who complained of pain for at least 3 months aged 20– 35 years were included. The study was conducted in Falah-e-Millat Hospital Faisalabad. The subjects are divided into two groups. Outcome was measured following the first treatment session and after the 18th treatment session (6th week).Pain decreased in group A with mean value 1.64±0.757 as compared to 4.88±2.29 of group B with P value 0.00. The mean value of NDI Score group A and group B were 22.68±4.04 and 35.20±2.67 respectively with p value being < 0.05. The mean value of cervical ROM of group A and group B with P value 0.00 showed that one group is superior.Scapular correction exercise was superior to conventional Therapy in improving pain, cervical range of motion, and disability in patients with forward head posture.

Keywords: Forward head posture, Range of motion, Neck pain, scapular corrective exercises, conventional-neck-exercise

Telerehabilitation for the treatment in chronic low back pain in Pakistan: A randomized controlled trial

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Research on telerehabilitation (TR) for the treatment of chronic low back pain in Pakistan is limited and contentious, despite the fact that TR is becoming more widely used in the treatment of many illnesses. The objective was to analyse whether a TR program is as effective as a clinical exercise program in improving pain and different functional variables in patients with chronic low back pain (CLBP).A single-blind, randomized controlled trial was done with 30 individuals with chronic LBP. 15 study participants were randomly allocated to the telerehabilitation group (TG) and 15 participants to the clinic group (CG). The TG received a video consultation with exercise plan through online application and the CG was also given the same exercise plan at the rehabilitation clinic under physiotherapist supervision. Both groups visited twice a week for a total of 6 weeks. Active movements of the spine, pain and range of motion were assessed at baseline and after 6 weeks. Statistically significant results were present in both groups in term pain intensity (TR with 4.50±12.26; $p = 0.03$ and CG with 8.11±10.32 $p = 0.02$). Moreover, other aspects in term of range of motion and active daily livings were improved in both groups.A mobile app-based telerehabilitation program is just as efficient as the similar workout regimen under clinical supervision.

Key-words: Chronic low back pain; spine lumbar; telerehabilitation; active movements.

Comparing The Effects Of Kinesiologytaping On Quardriceps Muscle And Anterior Cruciate Ligament In Fast Cricket Bowlers With Dynamic Knee Valgus

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Athletes with documented dynamic knee valgus during activities may have a musculoskeletal discrepancy that predisposes them to outward rotation of tibia and adduction of hip as well as pronation of foot. Muscles that change direction to those that predispose to dynamic knee valgus must be trained to adjust the axial position of knee. The objective was to determine the effects of kinesiology taping on quadriceps muscle and anterior cruciate ligament on Q-angle, proprioception, dynamic balance in fast cricket bowlers with dynamic knee valgus. This was a randomized controlled trial study. Non-Probability purposive sampling was used. The data was collected from Lahore PCB academy, PSB Islamabad and Saeed Ajmal academy. Informed consent was signed from all the participants and was involved in study by considering the inclusion and exclusion criteria. Sample size of study was 42. Participants were divided in three groups, control group, quadriceps group and anterior cruciate ligament group by chit and draw method. Group A that was quadriceps group was treated with quadriceps taping while group B that was anterior cruciate ligament group treated with anterior cruciate ligament taping, control group was treated by knee isometrics exercise group. Treatment duration was of 4 weeks. Outcomes measures of this study were Q angle, knee position sense error and modified start excursion test. Data was analyzed by using SPSS version 23. Mean age of participants 21.35±2.05. 42(100%) males were included in this study. There was a significant difference in effects of decrease Q angle, knee sense of position error and improving dynamic balance between subjects of group A, group B, group B at end of 2 and 4 weeks. Anterior cruciate taping was more effective in reducing Q angle, knee sense of position error and improving the dynamic balance in subjects with dynamic knee valgus as compared to quadriceps taping and knee isometric exercises.

Key words: Kinesiology Taping, Quadriceps muscles, anterior cruciate ligament, dynamic knee valgus, fast cricket Bowlers

Effect of Buergers Allen exercise on peripheral circulation among hysterectomy patients: Quasi-experimental study.

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The surgical excision of the uterus is known as a hysterectomy. It is the second most frequently carried out surgical operation on the female genital system. High diastolic blood pressure, which might result in hypertension complications, is linked to hysterectomy. To promote collateral circulation in the lower extremities and avoid peripheral vascular disease, the Buerger Allen exercise involves dynamic postural exercises of the legs and feet. The objective was to determine the Effect of Buergers Allen exercise on peripheral circulation among hysterectomy patients.

This study was a Quasi experimental study and was conducted at Arif Memorial Hospital and Hameed Latif hospital in Lahore. A sample size of Total 54 patients was taken in this study. The evaluation was done on day one as pretreatment values and post-treatment values of blood pressure, pulse rate and peripheral circulation were assessed by sphygmomanometer, pulse oximeter and ankle brachial index. The collected data was analysed on SPSS 25. By using the Shapiro-wilk test found that the data was not normally distributed with a p-value<0.05. By using Wilcoxon sign rank test, it has been found that this technique shows significant difference with p-value<0.05 for the blood pressure, pulse rate and peripheral circulation.The results suggest that Buergers Allen exercise is beneficial for hysterectomy patients by enhancing lower extremity peripheral circulation. The study concludes that patients who have had hysterectomy can effectively prevent peripheral vascular complications by engaging in the Buergers Allen exercise.

Keywords: Ankle brachial index, Blood pressure, Hysterectomy, Pulse rate, sphygmomanometer

The Impact of Dysphonia on Quality of life in Stroke Patients

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Stroke is a serious neurological disorder caused by arterial injury to the central nervous system that causes immediate impairments. Dysphonia makes communication difficult and lowers the patient's quality of life. Stroke reduces persons' quality of life by producing physical, psychological, and social problems. Voice Handicap Index-10 (VHI-10) are used to evaluate dysphonia. The objective was to find out the impact of dysphonia on quality of life in stroke patients. 80 participants from tertiary care hospitals, Lahore are recruited. The study included the stoke patients with and without having dysphonia who agreed to complete the VHI questionnaire. The quality of life of these patients is administered by EQ-5D-5L.The results indicated that the patients with post-stroke dysphonia depict poorer quality of life than the patients without post-stroke dysphonia. Dysphonia is the impairment of voice production, often used interchangeably with the complaint of hoarseness, which is a symptom of altered voice quality. The current study shows the impact of dysphonia on quality of life in stroke patients. The findings suggest that the individuals with post-stroke dysphonia depict poor quality of life than the individuals without dysphonia.

Key words: Stroke, Dysphonia, Quality of life, VHI, EQ-5D-5L

Comparison Of Myofascial Trigger Point Release And Kinesiotaping Vs Conventional Physiotherapy Treatment Protocol Of Plantar Fasciitis For Pain Management -Rct Study

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The fascia beneath the foot is called plantar fascia. It helps in the support of arch of foot and on Bearing weight it under tension. Plantar fasciitis is an inflammation of thick tissue which is plantar fascia present on the base of foot that play role in causing heel pain, pain under the foot, metatarsalgia and other disabilities. Scales that were used included Foot Function Index Scale, Plantar fasciitis pain/disability scale, Paired sample T test. Intervention included control group treatment under conventional treatment include heating therapy, cold therapy, ultrasound, infrared varying patient's severity. Experimental group treatment will be having only myofascial trigger point release and Kinesio taping treatment only. The objective of this study was to measure the effectiveness of active myofascial trigger point release and the Kinesio taping VS conventional physiotherapy treatment of planter fasciitis for pain management. Study design was RCT. Study was conducted in as per availability area, institute and hospital. The 36 patients both male and female recruited for this study. They were randomly divided into two groups. Group A control group treatment: - Control group was set to fall under the regular conventional treatment that is heating therapy, cold therapy, ultrasound and infrared varying upon the patient severity. Group B experimental treatment: - Experimental group went under only myofascial Tigger point release also with Kinesio taping treatment only Paired sample test used for the group analysis of four pairs compared, pre and post foot function index, pre and post VAS (PEPS) and pre and post planter fasciitis pain scale shows significance difference in each control and experiment group. Kinesio taping and myofascial trigger point release is better than conventional treatment for planter fasciitis pain management. Experimental group treatment shows more effective results as compare to conventional treatment group.

Keywords: Plantar fasciitis, myofascial trigger point release, Kinesio taping, conventional group, pain management.

Comparison Of Effects Of Functional Electrical Stimulation Versus Constrained Induced Movement Therapy For Hemiparetic Upper Limb Motor Recovery And Spasticity In Chronic Ischemic Stroke Patients

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Stroke, a worldwide dominant disorder, causing dysfunction of cerebral region due to disruption of blood supply to brain, with the symptoms more than 24 hours. It causes high level of morbidity and mortality. The objective was to find out the comparison of effects of functional electrical stimulation versus constrained induced movement therapy for hemiparetic upper limb motor recovery and spasticity in chronic ischemic stroke patients.A randomized

clinical trial was directed on 50 ischemic stroke patients for 8 weeks. Patients fulfilling the eligibility criteria were randomly allocated into two groups, Group 1 receiving FES and Group 2 receiving CIMT with conventional physical therapy as baseline in both groups for 8 weeks.Results states that after 4 weeks mean spasticity of group 1 is 1.59 ± 0.694 and group 2 is 1.41 ± 0.50. After 8 weeks in group 1 it is 0.89 ± 0.641 and group 2 is 0.52 ± 0.509. After 4 weeks values of WMFT in group 1 is 45.48 ± 4.164 and in group 2 is 40.26 ± 5.702. After 8 weeks in group 1 it is 61.07 ± 7.437 and in group 2 is 47.59 ± 5.161. Mean and standard deviation for motor recovery in group 1 is better than group 2, whereas, mean and standard deviation for spasticity in group 2 is better than group 1.It is concluded that both treatment approaches have been proven to be effective but FES in increasing motor recovery and CIMT in reducing spasticity is effective.

Key Words: Spasticity, Motor Function, Functional Electrical Stimulation, Constrained Induced Movement Therapy.

Psychometric Analysis And Translation Of Patient-Rated Wrist Evaluation Score In Urdu Version.

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Wrist pain, often known as WP, is a frequent manifestation of hand disabilities. The Patient-Rated Wrist Evaluation Scale, often known as the PRWE, is a trustworthy and precise instrument that may be used to evaluate the severity of wrist pain. Despite this, there is no Urdu form of the PRWE which makes it impossible to determine the prevalence of wrist pain among communities who speak Urdu. This research was conducted to translate and analyse the PRWE in Urdu .The objective was to validate and translate the Patient Rated Wrist Evaluation Scale into Urdu version. A committee of experts was formed to translate the PRWE into Urdu. The translated questionnaire was then pretested on a target population of 150 individuals with wrist conditions. Reliability and validity analyses were conducted to assess the psychometric properties of the Urdu version of the PRWE. The Urdu version of the PRWE demonstrated high levels of reliability and validity, with strong inter-item correlations and high agreement between single and average measures. The DASH score also showed high levels of correlation with the PRWE measures. When it comes to detecting the extent of wrist issues among Urdu speakers, the PRWE test that has been adapted for Urdu has shown to be trustworthy and accurate. It is possible to use it in clinical settings as well as research settings to enhance the diagnostic process and treatment options for wrist pain in this group.

Keywords: Wrist Pain, Patient Rated Wrist Evaluation Scale, Urdu Translation, Psychometric Properties, Reliability, Validity

Effect Of Cylindrical Lenses On Stereoacuity

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Third and highest grade of Binocular single vision is stereopsis. Stereopsis utilizes binocular disparity to appreciate the relative depth of objects. It is affected by factors such as misalignment of eyes and refractive errors such as astigmatism. TNO test is based upon random dot stereogram which quantifies stereoacuity without the utilization of monocular depth cues. This study was conducted to determine the effect of cylindrical lenses on stereoacuity. This interventional pre-post study recruited 57 participants of either gender, between ages of 7 and 40 years in Shalamar Hospital, Lahore, Pakistan. Only emmetropic participants visiting Eye Out-patient department of Shalamar Hospital were recruited. TNO test was used for quantification of stereoacuity. Astigmatism was experimentally induced using cylindrical lenses of power ±1.00, ±2.00 and ±3.00 D at the various axis (180°, 135° and 90°). TNO test was again used to measure the change in stereoacuity induced by these trial cylindrical lenses. Wilcoxon signed ranked test was used for the statistical analysis of the data. Mean baseline stereoacuity ± standard deviation was 61.05±7.947. The highest deterioration in stereoacuity was observed at 135°, followed by 90° and 180°. Higher the dioptric power, the more the deterioration of stereoacuity was observed ($p<0.05$). Experimentally induced binocular hypermetropic astigmatism deteriorated stereoacuity more than experimentally induced binocular myopic astigmatism.We concluded that stereoacuity significantly deteriorates when cylindrical lenses (especially hypermetropic astigmatism) were used. Axes of cylindrical lenses play an important role in the severity of deterioration of stereoacuity.

Keywords: Astigmatism, Depth, perception

Comparative Effects Of Dynamic Cupping And Pnf Stretching In Hamstring Tightness Among Football Players

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Tight hamstring is a condition develops by the tough exercise or other hard form of activity. The tightness in the hamstrings also causes stiffness and restricted range of motion. The objective was to compare the effectiveness of dynamic cupping and contract-relax method of PNF stretching technique on hamstring tightness among football players. Quasi experimental study was carried out to determine hamstring tightness in football players. Forty adult subjects were recruited in group A and group B (20 in each group). Group A was given PNF and Group B was given Dynamic cupping stretching technique the outcome measures were calculated by using the following scale: Active knee extension test and Sit and Reach test. Before treatment, there were no difference between the groups for Active knee extension test and Sit and Reach test. Both PNF and Dynamic cupping produce significant improvement in baseline measures (Active knee extension test and Sit and Reach test.) after two weeks and four weeks of treatment ($p<0.05$). Considerable improvements in all variables in both groups after treatment. PNF stretching provided benefits over the dynamic cupping technique in term of reducing hamstring tightness among football players.it reduce the tightness and improve the flexibility of football players so that can cause to easily run in ground and kicking ability also improved.

Keywords: Hamstring tightness, dynamic cupping, PNF stretching, flexibility

Perception about Tele Rehabilitation among practicing physiotherapists in the age of covid-19 pandemic in Pakistan”

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Telerehabilitation has been considered appropriate alternative healthcare delivery system during the COVID-19 pandemic, and many studies have promoted its feasibility in preventing spread of disease and delivering safe healthcare services. The aim was to study physiotherapists' perceptions of and willingness to use Telerehabilitation in Pakistan during the COVID-19 pandemic and to explore the barriers that may obstruct the use of Telerehabilitation in Pakistan. An electronic questionnaire was designed according to the requirements of the research topic and sent to 250 physiotherapists who were working in the governmental private health departments. Convenience sampling technique was used to collect the data from the professional Physiotherapists. The questionnaire included following sections: perceptions of Telerehabilitation, interest/willingness to use Telerehabilitation, and top barriers to using Telerehabilitation.250 completed questionnaires were received. Most of the respondents (65.1%) were females and (67.5%) were physiotherapists of age 25-35. (63.3%) participants considered Telerehabilitation a suitable option to deliver healthcare to patients during the COVID-19 pandemic. (70%) of the respondents were willing to integrate Telerehabilitation. In spite of (59.1%) lack of awareness and (47.3%) technology barriers in Pakistan. The results indicate that the majority of physiotherapists comfort to use Telerehabilitation system during pandemic and in future willing to use it delivering physiotherapy via this system.In Pakistan, physiotherapists show overall positive perceptions towards and interest/willingness to use Telerehabilitation to facilitate patients' access to physiotherapy services.

Keywords: Telerehabilitation, Physiotherapy, COVID-19 Pandemic, Physiotherapists Perceptions.

High pressure processing for the production of vegetable baby puree with enhanced nutritional, microbial, and sensory qualities

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High pressure processing (HPP) was used as a post-processing treatment for vegetable puree. Microbiological, physicochemical, nutritional, and sensory analyses of puree were investigated at room temperature. HPP (600 MPa, 5 minutes) was compared with thermal treatment (117 °C, 30 minutes) and fresh samples. Treatments did not change pH or total soluble solids. Treated samples for both methods exhibited a lower microbial count (< 1.0 log CFU.g-1) over storage, compared with fresh puree. During storage, other parameters, including total phenolic contents, and antioxidants also demonstrated similar or better performance than controls ($p < 0.05$). Overall, HPP-treated puree received a higher sensory evaluation score. Thus, HPP can be used as an alternative processing technology to improve nutritional quality and microbial safety.

Keywords: High pressure processing; vegetable-based baby puree; storage, shelf life, nutritional quality

Application of Ashwagandha (Withania Somnifera) Roots for the Development of Gluten Free Quinoa Pasta

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Gluten in the diet causes celiac disease, a systemic immune-mediated disorder in genetically susceptible individuals. Prevention of celiac disease encourages the development of gluten-free food products. In the proposed study, quinoa pasta was prepared by supplementation of ashwagandha root powder in the ratio of 97:3 and 94:6, using white and red quinoa variety separately. Composite flours were tested for moisture, falling number, farinograph, and alveograph. Pasta samples were labelled as TW0, TW1, TW2, TR0, TR1 & TR2, where TW0 & TR0 were serving as control samples having 100% white & red quinoa flour, respectively. Pasta gained 2-3 times weight after hydration during cooking. Texture analysis revealed that ashwagandha decreased the hardness of the final product while red quinoa flour increased it. The findings of this study showed that the proximate composition including protein, fat, fiber, ash, NFE, carbohydrates, and calories slightly decreased after cooking while moisture content was increased. Mineral analysis also interprets that amounts of calcium, sodium, and potassium differed in a highly significant way, although the amounts of iron and zinc were both significant and non-significant. Physicochemical analysis including WAC, OAC, phytochemical screening, and antioxidant analysis was also performed. Sensory analysis revealed that pasta with 3% ashwagandha has the best acceptability among all.

Keywords: Gluten intolerance, quinoa pasta, ashwagandha, proximate analysis, textural analysis

Exploring the potential of fruit wastage in development of new food products to reduce environmental pollution

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The agricultural sector in Pakistan generates a significant amount of fruit wastage, leading to environmental challenges and economic losses. There is a need to focus on the development of sustainable solutions for utilizing fruit by-products/waste to address these issues. We should explore innovative methods to transform fruit wastage into valuable food products, creating new avenues for economic growth, reducing environmental impact, and promoting a circular economy. This requires a multidisciplinary approach, combining agricultural, engineering, and economic perspectives to identify feasible methods for by-product utilization. Fruit processing techniques, such as extraction of essential oils, pectin, and dietary fibers, are investigated for their potential commercial applications. Additionally, the conversion of fruit peels and cores into biofuels or organic fertilizers contributes to energy production and soil enrichment. Furthermore, we should evaluate the socio-economic implications of implementing these by-product utilization strategies. It analyses the potential for job creation, income generation,

and improved livelihoods for local communities engaged in fruit cultivation. The study also considers the environmental benefits, including reduced landfill waste and greenhouse gas emissions, as well as improved soil health through the application of organic fertilizers. The findings of this research aim to inform policymakers, agricultural practitioners, and entrepreneurs about the feasibility and benefits of by-product utilization in the fruit industry. The development of sustainable practices for fruit wastage management can contribute to the overall economic development of Pakistan while promoting environmental stewardship. This study provides a foundation for future initiatives and collaborations to foster innovation in the utilization of agricultural by-products, thereby contributing to a more sustainable and resilient food system in the region.

Keywords: Fruit, Industrial Waste, Pollution, Waste Management, Food Products

Characterization and utilization of corn cob for production of fiber-rich foods

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Corncob is a promising fibrous material and is produced in excess as an agricultural residue. This study explores corn cob as a new source of dietary fiber, in terms of similarity in chemical composition, nutritional portion contents, and ideal physicochemical properties. The composition and properties of the corncob fiber, dried, and grounded samples were investigated and added to cookies and other bakery items. In this research, Fourier Transform Infrared Spectroscopy (FT-IR) was used to identify functional groups, CHNS analyzer for elemental analysis, Thermo-Gravimetric Analysis (TGA) to get stages of thermal decomposition and weight loss, and Atomic Absorption Spectroscopy for mineral analysis. Corncob fiber and fiber foods were also subjected to CHNS analyzer, TGA, and Atomic Absorption Spectroscopy. Sensory evaluation was conducted and data was analysed by ANOVA on SPSS. The preparation exhibited relatively high water-holding capacity and high oil absorption ability. The composition and explored properties of novel corncob fiber indicated its potential application as a dietary supplement in the production of high-fiber foodstuffs and the production of high-fiber mixes.

Keywords: Corncob, Fiber, FT-IR, TGA, Food Products

Psychological Acceptability And Visual Comfort In Multifocal Versus Monovision Contact Lenses

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Presbyopia is common age-related condition that affects the ability of the eye to focus on objects up close. The prevalence of presbyopia is rising as the world's population ages.To compare psychological acceptability and visual comfort in multifocal versus monovision contact lenses. A randomized controlled study design was used.

This study included 44 patients with age greater than 40 years. Data was collected at Superior University Lahore. Group 1 (N=22) participants were provided with multifocal and group 2 (N=22) was fitted with monovision contact lenses. A self-designed questionnaire was used to assess psychological acceptability and visual comfort after 1 month follow up. Statistical analysis was done by applying chi square and descriptive statistics. SPSS was used for data analysis. The age and gender distribution range were equal in both groups. 22 participants in multifocal group reported more visual comfort than monovision group. Vision satisfaction at distance, intermediate and near was significantly better with multifocal group as compared to monovision group (p=0.003). Meanwhile monovision wearers reported headache, glare, halos, ghosting/doubling around headlights as compared to multifocal group (p=0.002). The multifocal group showed significant results for providing good vision quality and comfort. Multifocal contact lenses showed more visual comfort and psychological acceptability as compared to monovision contact lenses and results demonstrated significantly better vision satisfaction with multifocal group.

Keywords: Contact lens, Multifocal, Monovision, Presbyopia, Visual comfort

Effect of Low Plus Addition And Hart Chart Therapy In Patients With Accommodation Insufficiency

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A condition where the eyes have difficulty centred on close objects is referred to as accommodation insufficiency. It happens when the eye's focusing mechanism, particularly the ciliary muscles and the crystalline lens, are unable to correctly change to focus on nearby objects clearly. The aim of this study is to assess and compare the effect of only Hart chart therapy and Hart chart therapy along with low plus addition in the treatment of asthenopic symptoms caused by accommodation insufficiency. This Quasi experimental study was conducted in Dar ul Shifa hospital, Sheikhupura from September 2022 to May 2023 on the patients with accommodation insufficiency caused by muscle imbalance and then randomly divided into two groups by non-probability purposive sampling technique. Group-1-patients consisting 30 patients received only Hart chart therapy and Group-2–patients having 30 patients received Hart chart therapy along with low plus addition. After that follow ups were performed. The average mean of age in Group 1 and Group 2 was 1.83±0.83 and 2.0±0.84 respectively. The mean RAF values on first, second and third follow up of group 1 was 14.1±0.69, 12.4±0.89 and 10.5±2.19 respectively. In group 2, the mean of RAF measurements on first, second and third follow up was 12.5±0.57,10.9±0.85and 8.50±0.93 respectively. Results showed that the frequency of asthenopic symptoms on baseline was decreased in both groups. Asthenopic symptoms including headache, eye strain, double vision, watery eyes were improved more in group 2 as compared to group 1. Both groups show significant results(p-value<0.05). This study concluded that Hart chart therapy provides more relief to asthenopic symptoms when combined with Low plus addition(+0.50DS) as compared to only Hart chart therapy in patients with accommodation insufficiency.

Keywords: Accommodation Insufficiency, Asthenopia, Hart Chart Vision Therapy, Low plus Addition

Visual Functions and Quality Of Life Changes With Corneal And Scleral Rgp Lenses In Keratoconus

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Keratoconus is a chronic, advanced corneal thinning with central or paracentral steepening, causing progressive vision loss.it affects the visual function and quality of life of keratoconus patients. In Analytical monocentric observational study 72 eyes of 36 patients of both genders having age between 18-36 with no infectious and inflammatory diseases were enrolled between October 2022-May 2023.Visual function (i.e. visual acuity, contrast sensitivity, stereopsis and color vision) and quality of life score were assessed specific charts and questionnaire. The results of pre and post visual function (visual acuity, contrast and stereopsis with rigid gas permeable groups with paired sample T test indicates p value as 0.00, 0.00 and 0.00 ($p<0.005$) respectively. Results of Comparison of corneal and scleral lens with visual acuity was (0.08±.095, 0.111±0.114), contrast sensitivity (1.74±0.183, 1.62±0.139) and Quality of life score (92.166±5.944, 90.33±8.232) respectively. Correlation of frequency of life score with grades of keratoconus (90-100, 80-90, 70-80) indicates 28, 6, 2 in corneal and 24, 6, 6 in scleral respectively. The assessment of visual acuity, contrast sensitivity and quality of life after wearing RGPs as per stages of keratoconus by ANOVA indicates P=0.000,P=0.002 which was ($p < 0.05$) indicates significant difference of visual function after wearing RGPs.The results showed that both corneal and scleral RGP lenses enhanced visual functions (i.e. visual acuity, contrast sensitivity, stereopsis) and quality of life score while Corneal RGP lenses are better in contrast. Moreover, the quality-of-life score of a person who falls in the category of moderate was better as compared to severe or advanced category.

Key Words: Corneal RGPs, Contrast sensitivity, Keratoconus, and Visual Acuity

Criteria Of Prescribing Refractive Correction In Marginal Refractive Errors

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This study investigated the prescribing decisions for marginal refractive correction by Pakistani optometrists and ophthalmologists. This study took a cross-sectional approach at the prestigious Superior University in Lahore between February and May of 2022. Optometrists and ophthalmologists from Pakistan responded to a self-designed questionnaire via physical and online (e-mail, Google Forms, and WhatsApp) modes of communication. The purpose of this questionnaire was to survey the degree of the refractive error at which participants prescribe correction for varying degrees of refractive error in both the presence and absence of symptoms. The study included a total of 120 working professionals as participants. The presence of symptoms was a major factor that influence the prescribing patterns of participants. In the presence of symptoms, most of the practitioners (75%) prescribe correction for every refractive error while in the absence of symptoms, only 25% of participants prescribe correction. But for presbyopia, 50% of practitioners prescribe correction in the presence and absence of symptoms. Other factors like age, receiving incentive on sale, and work environment does not have any influence on the prescribing decisions. The presence of symptoms has been found to be the major factor that influences the

prescribing decisions of participants. The number of years of experience possessed by the practitioner is another factor that plays a role in prescribing decisions.

Keywords: Myopia, Hyperopia, Astigmatism, Criteria of Prescribing, Refractive correction.

Color Blind Friendly Interface Optimization for Enhanced User Experience using Color Vision Deficiency

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The Color display devices are universal as the interface between computers and people – but the expertise for selecting colors has not kept pace with the opportunities for displaying them. Color is an important design component that is frequently used to encode information. From the large number of colorblind people mentioned only small percentage suffered total color blindness. However, despite this, all persons with any type of color blindness would have problems in their daily lives, such as difficulty in distinguishing the color of clothes, traffic lights, and certain symbols. In the paper, a barrier-free principle is used to lead the interactive user interface between a human and a system. The barrier-free principle is a design idea that tries to organize the layout, hierarchical system, and accessibility of controls for software in accordance with user operating habits in order to reduce user fatigue, errors, enhance efficiency, and making application system use simpler. The results showed a significant improvement in task completion rate (effectiveness) which is increased 40% in case of Tritanomaly users in color vision deficiency CVD, furthermore their efficiency also increased up to 22%.

Keywords: Color Blindness, Color Vision Deficiency, User Efficiency, User Experience Improvement

Application of biosynthesized ZnO nanoparticles to inhibit the microbial growth in wounds

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Recently, the use of plant extract in the synthesis of nanoparticles has increased. Plant extracts are economical, green, and efficient. The gel from psyllium contains several biomolecules that act as reducing and capping agents during the synthesis of zinc oxide nanoparticles and act as stabilizing agents. Zinc oxide nanoparticles synthesized from psyllium extract showed increased antimicrobial activity and triggered wound healing. Zinc oxide nanoparticles from psyllium were characterized using UV–Vis, photoluminescence (PL), FTIR, XRD, Raman, and SEM. Zinc oxide nanoparticles from psyllium showed coordination of zinc with functional groups of psyllium gel and uniform crystal structure. The synthesized nanoparticles formed prominent zones of inhibition that

inhibited the growth of gram-positive and gram-negative bacteria and showed good MIC and MBC values. Zinc oxide nanoparticles were applied in dressing to wounds in mice skin and the wound healing potential of zinc oxide nanoparticles was investigated in vivo. Acute wounds upregulation of various wound healing factors and downregulation of various proteins. These factors trigger wound healing and play an important role in wound healing. The wound healing biomarkers were investigated by real-time PCR. Zinc oxide nanoparticles triggered wound healing factors and showed great potential for use in wound dressing.

Keywords: Zinc Oxide, Nanop[articles, Food healing. Antimicrobial

Tuning mesoporosity in aluminosilicates for controlled release fertilizers

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Controllable nutrient release in soil has the potential to mitigate the environmental challenges associated with traditional fertilizer application. Here we synthesized a mesoporous nanocomposite of zinc aluminosilicate (ZnAl2Si10O24) using a co-precipitation method, where Oryza sativa L. husk served as a silica source to promote environmentally friendly and cost-effective synthesis procedures. Subsequently, the nanocomposite was impregnated with urea to enable the gradual and simultaneous release of zinc and urea. The structural characterization of the nanocomposite was conducted using FTIR, XRD, TGA, BET and SEM techniques. The release profiles of urea and zinc were analyzed through UV–Vis spectrophotometry and atomic absorption spectroscopy, respectively, over a span of 14 days. Mesoporous ZnAl2Si10O24 nanocomposite exhibited enhanced urea retention capacity over an extended period compared to bulk aluminosilicates, owing to its substantial surface area (193.07 m2 g□1) and small particle size (64 nm). The release of urea was most pronounced within the initial 24 hours, attributed to excessive adsorption onto the nanocomposite, and decreased progressively until the 14th day. The efficacy of the fertilizer was evaluated on Oryza sativa L., revealing significantly higher yields when using urea-loaded ZnAl2Si10O24 nanocomposite compared to commercial urea.

Predictive etiology of Long COVID oncogenesis through SARS-CoV-2 proteins and AKT1 molecular docking

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In 2019, the emergence of SARS-CoV-2 highlighted its potential to cause long-term infections, leading to long COVID. Our research focused on investigating the oncogenic properties of SARS-CoV-2 through molecular analyses of viral pathways and interactions with host proteins. We found that SARS-CoV-2 affects key cellular signaling pathways, including glutamatergic and Protein Tyrosine Kinases 1 (PTK1) signaling, potentially leading to molecular interference. Through predictive interaction studies, we identified AKT1 as a potential oncogenic factor interacting strongly with viral proteins. Molecular docking simulations confirmed these interactions, with AKT1 showing affinity to multiple viral proteins, particularly the envelope protein. Furthermore, analysis of the viral

protein sequence revealed the presence of oncogenes, suggesting a potential for oncogenic transformation in host cells. Our findings underscore the importance of further molecular investigations to understand the oncogenic potential of SARS-CoV-2 and its implications for long-term health outcomes, particularly in organs expressing high levels of angiotensin-converting enzyme type-2.

Keywords: SARS-CoV-2, AKT1, Glutamatergic signaling, NSPs, Long COVID

Meeting UN sustainability goals: Deciphering genetic aspects of Neurodevelopmental Disorder

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Neurodevelopmental disorder is a condition which manifest itself during development of human nervous system and persist lifelong thus affecting the patient and burdening its family and society as a whole for health, social and economic aspects. Autism, ADHD, dyslexia, cerebral palsy and intellectual disability are some of its examples. Among these, intellectual disability (ID) results in failure to develop sufficient cognitive functioning, limitations in one of the adaptive behaviours and condition appears before the child turns eighteen. Among causative agents genetic factors have significant contribution. In case of ID intelligent quotient decrease below 70 as in case of mild ID, and further for the moderate, severe and profound categories of ID. Contributing factors for such developmental disorders could be genetic or environmental, like age, exposure to contaminants, malnutrition, poor health condition of mother and infant and infections. Among genetic causes chromosomal anomalies and single gene mutations like missense, frameshift, and nonsense mutations are the top ranking. Consanguinity contributes majorly for the genetic cause of autosomal recessive mode of inheritance of intellectual disability. Pakistan is among the top-ranking country of cousin marriage along with Iran and Saudi Arabia, thus contribute a rich population for molecular study of genetic diseases. United Nations endorsed the sustainable developmental goals (SDGs) in 2015 depicts ambitious plan for human development by 2030. SDG 3 addresses mental health and wellbeing which emphasis on inclusion of mental health care in world health coverage. Investment in study of neurological disorders have potential to enhance capabilities and productivity of affected persons, their families and society.

Key-words: Neurodevelopmental disorder, SDG, mental health, intellectual disability

Recombinant Slit2 requires heparan sulphate to inhibit TGF- induced tumor proliferation in lung cancer and glioblastoma

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Slit and roundabout homologs have emerged as important players in signaling cascades of tumor metastasis. In previous reports it is stated that the interactions between Slit2 and Robo1 are facilitated by heparan sulphate that is abundantly expressed on cell surface and extracellular matrix. Slit2 reduces tumor proliferation in lung cancer and glioblastoma cells whereas TGF-β is a well-described tumor inducer. The present study was aimed at deciphering the role of heparan sulphate in Slit2 mediated inhibition of cancer metastasis. Cancer proliferation was induced by TGF-β in lung cancer cells (H1650) and glioblastoma cells (SF767) and then the anti-proliferative role of Slit2 was analyzed in presence and absence of heparan sulfate. The data revealed that, heparan sulfate plays important role in enhancing tumor inhibition by Slit2 in cancer cells as there was further reduction in cell proliferation when Slit2 was administered along with heparin.

Key-words; Recombinant Slit2, heparan sulphate, TGF-β, lung cancer

Design and Validation of a Latent Fingerprint Dusting Prototype Device

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Latent fingerprints are the most prevalent type of evidence recovered from a crime scene. The most often utilized method for developing latent fingerprints at crime scenes and crime laboratories worldwide is dusting. The dusting process is time-consuming and taxing because tiny to large objects are dusted to produce latent fingerprints. It is quite difficult to sustain this traditional dusting technique for a lengthy period of time. It affects the limbs, hands, and fingers of the crime scene investigators. To make latent fingerprints, the Automatic Latent Fingerprint Dusting Device method requires moving a powder-loaded fingerprint brush in both directions (clockwise and anti-clockwise) across substrates at the same time. This unique prototype hand-held gadget is demonstrated by generating latent fingerprints on porous and non-porous materials with black oxide powder. Quality and time measurements served as the foundation for validation. This article provides a thorough study of the device validation work done by notable professionals who created latent fingerprints.

Key words: dusting, Fingerprints, Latent, identification, substrate

POSTERS

In silico Analysis to Predict the Pathogenic Variants of METTL5 Gene Causing Intellectual Development Disorders

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Intellectual disability is a permanent impairment that affects 1-3 percent of the world's population and places a significant impact on families, community, and the healthcare system. Estimates indicate that the frequency of genetically induced cognitive disability is 50% lower than that of autosomal-recessive intellectual disorder (ARID). Bioinformatics analysis is a cutting-edge technology that can detect variations and abnormalities in different genes using a variety of approaches. This research work based on bioinformatics analysis of genes and their variants that are involved in the prevalence of intellectual disorders. Gene sequences retrieved from different databases and then analyzed using bioinformatics approach to retrieve pathogenic variants. The purpose of this investigation is to clarify METTL5's function in essential tremor and comprehend its molecular mechanisms, which may make it a target for future treatment. The impact of harmful mutations on post-translational modifications, ligand interactions, protein function, and stability is predicted. The UCSC Genome Browser, GenBank, Ensembl, and other publicly accessible sources will be the source of genomic data for the METTL5 gene. The METTL5 gene sequence aligned with reference genomes using bioinformatics methods like BLAST. SNPs retrieved to comprehend human health from gnomAD, dbSNP, ClinVar, and Variation Viewer. Utilizing computational instruments such as CAPICE, CONDEL, and Meta-SNP, pathogenic variants analysed. The procedure of determining the influence of the METTL5 gene is intricate and time-consuming, necessitating the individual examination of numerous samples in the lab. Additionally, due to high cost of in-vitro experiments we applied in silico methods to forecast the variation. Enhances knowledge of METTL5 gene genetic variants and their possible effects on human health, offering important information for future study and possible treatments aimed at essential tremor and intellectual development issues.

Key-words; METTL5, in-silico analysis, Ensembl, intellectual disability, UCSC

Intellectual Development Disorder: Predicting the Pathogenic Variant of the LINGO-1 Gene through In Silico Analysis

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The "leucine-rich repeat (LRR) and immunoglobulin (Ig) domain-containing, Nogo receptor-interacting protein-1 (LINGO1) gene" has been linked, according to a large genome-wide association research, to a higher risk of essential tremor (ET). It has been proposed that the LINGO1 variant may be linked to Parkinson's disease (PD) because of the clinical phenotype overlap between ET and PD. LINGO-1 is a negative regulator of neuronal survival, axonal regeneration, and oligodendrocyte differentiation and myelination. The first genome-wide association study performed on European and American ET populations showed a significant association with allele G of marker rs9652490 of the leucine-rich repeat and Ig domain containing 1 (LINGO1) gene. The purpose of this investigation is to clarify LINGO1's function in essential tremor via computational software and

comprehend its molecular mechanisms, which may make it a target for future treatment. The impact of harmful mutations on post-translational modifications, ligand interactions, protein function, and stability is predicted. The UCSC Genome Browser, GenBank, Ensembl, and other publicly accessible sources will be the source of genomic data for the LINGO-1 gene. The LINGO-1 gene sequence will be aligned with reference genomes using bioinformatics methods like BLAST. SNPs essential to comprehend human health from gnomAD, dbSNP, ClinVar, and Variation Viewer are analyzed. Utilizing computational instruments such as CAPICE, CONDEL, and Meta-SNP, highly pathogenic variants were found. Using DynaMut, DUET, iStable 2.0, and the Foldx plugin in YASARA, the effects of mutations protein stability were evaluated, taking changes in Gibbs free energy (□□) into account. The procedure of determining the influence of the LINGO 1 gene is intricate and time-consuming, necessitating the individual examination of numerous samples in the lab. Additionally, because the detection process is financially taxing due to the related expenditures, we apply in silico methods to forecast the variation. Enhances knowledge of LINGO-1 gene genetic variants and their possible effects on human health, offering important information for future study and possible treatments aimed at essential tremor and intellectual development issues.

Key-words: LINGO1, in silico methods, intellectual development disorder, essential tremor, UCSC Genome Browser

Unveiling the Prevalence and Risk Factors of Hepatitis B and C Viruses Among Pregnant Women in Pakistan: Insights from a Community-Based Cross-Sectional Study

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Infections with Hepatitis B and C pose important public health problems that have substantial financial costs in underdeveloped nations where vertical transmission is still a common mechanism pertaining to transmission. This cross-sectional study aims to look at the rate of hepatitis B and C viruses in conjunction with the risk factors for these infections, in pregnant women. Pakistan faces a significant health concern due to the hepatitis B virus (HBV). Since many HBV-infected individuals are unaware of their infection status, HBV is known as the “silent killer” among medical professionals. Due to a lack of awareness and the disregard for international health guidelines, the rate of Hepatitis B and C (HBV and HCV) infections differs across different regions. Compared to urban regions, the majority of Pakistanis reside in rural areas. Regretfully, however, no prevalence study illustrating HBV and HCV infection has been published in Pakistan’s rural areas yet. There is a higher risk of HBV and HCV infection through transfusion, injectable drug users, paid blood donors, Multi transfused thalassemia populations, and those who have via sexual or blood-blood contact, are related to vertical transmission. In order to improve generalizability, bigger, multi-center studies are required. Insufficient research on the causes and modes of transmission among pregnant women. There hasn’t been enough study on the correlation between vertical transmission rates and mother-child health outcomes.

Key-words: HBV, HCV, Multi-transfused, Vertical transmission, pregnancy issues

Comprehensive Analysis of Iron Deficiency Anemia in Multan and Sahiwal Divisions of Pakistan: A Cross-Sectional Health Facility-Based Study

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Iron deficiency anemia (IDA) poses a significant global health challenge, particularly impacting vulnerable populations in regions such as Multan and Sahiwal Divisions of Pakistan. This cross-sectional health facility-based study aims to assess the prevalence of anemia among women of reproductive age in the designated study area and propose informed interventions and policies that consider both nutritional and genetic factors. The research explores the relationships between anemia and various factors, including age, income, and education levels, while also investigating its repercussions on maternal health during pregnancy and newborn weights. The study design involves enrolling fertile age women from the antenatal care clinic of the obstetrics and gynecology department. Exclusion criteria encompass bleeding problems, multiple pregnancies, Hepatitis B virus infection, human immunodeficiency virus infection, and women under the age of 18. Data collection integrates demographic and socioeconomic interviews, as well as physical examinations conducted by healthcare professionals. Statistical analysis, employing the Statistical Package for the Social Science (SPSS) Version 16, will utilize frequencies and means ± standard deviation (SD) to summarize descriptive statistics. One-way analysis of variance (ANOVA) utilized to compare hematologic values among trimesters, with P values < 0.05 considered statistically significant. The primary outcome variable is anemia, defined as hemoglobin concentrations less than 11g/dL. Severity categorization includes severe (<7.0g/dL), moderate (7.0-9.9g/dL), and mild (10.0-10.9g/dL) anemia. Independent variables cover sociodemographic factors like age, weight, educational status, working status, and baby weight after delivery. This study offers a comprehensive approach to comprehending and addressing IDA in Multan and Sahiwal Divisions of Pakistan, considering the intricate interplay of nutritional, genetic, and sociodemographic factors. The findings aim to provide valuable insights for the development of targeted interventions and public health policies to alleviate the burden of anemia in this specific region.

Keywords: Iron deficiency anemia, IDA prevalence, Reproductive age women, Nutritional interventions , Maternal health outcomes, Anemia severity

Exploring Intestinal Helminth Fauna in Poultry across Varied Regions of Lahore and Estimating Economic Impacts

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The poultry industry is of great importance all over the world including Pakistan. Currently it is contributing 1.3% in total GDP of Pakistan. The poultry industry in Pakistan was established in 1960's and face many issues including epidemics and retail prices etc. The helminthiosis is a major issue of poultry. The helminths not only cause diseases in chickens but also causes protein issues to its consumers. To investigate helminths of poultry, post-mortem technique applied. The GIT of poultry examined and preserved in 70% ethanol for further investigations. The helminths affected chicken will be identified by their symptoms (paralysis, weight loss, fatigue, less egg production). The study resulted in presence of eggs, larvae and adults of helminths.

Key-words: Poultry, helminthiosis, Intestinal Helminth, post-mortem techniqueW

Exploring the Genetic Study of Intellectual Disability in Pakistani Population through Next Generation Sequencing

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The condition known as intellectual impairment (ID) is characterized by inadequate or underdeveloped mental processes. Other words including mental retardation, low functioning autism spectrum disorders, and neurodevelopmental disorders (NDD) are also included in the term intellectual disability (ID). Weddings connected to blood relations are more common for ID. Increased rates of intermarriage in Pakistan have contributed to an increased incidence of genetic diseases, including ARID. Intellectual Disability, classified as a neurodevelopmental disorder, shows limitations in intellectual functioning and adaptive behavior. Familial Partial Epilepsy, Alzheimer's disease, Parkinson's disease, Huntington's disease, Neurofibromatosis and Myotonic Dystrophy are examples of such intellectual disorders. Recent advancements in genomic sequencing technologies, plus next-generation sequencing (NGS), provide unique opportunities to decode the genetic basis of ID. Whole exome sequencing (WES), aid comprehensive analysis of the entire genomic landscape, facilitating the identification of rare and novel variants linked to ID.

Keywords: Intellectual impairment, Neurodevelopmental disorders, next-generation sequencing

Unmasking the origins of Intellectual disability in Pakistani Families through Exome sequencing

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Genetic disorders affecting the nervous system known as autosomal neurological disorders usually occur due to mutations in the autosomal (non-sex) chromosomes. There are two types of inheritance patterns for these neurological disorders: autosomal dominant and autosomal recessive. A neurodevelopmental disease known

as intellectual disability is characterized by deficiencies in both cognitive and adaptive functioning, also known as mental retardation. The disability initially manifests before eighteen years of age. Intellectual disability can be inherited in both dominant and recessive patterns. ID is categorized as syndromic or non-syndromic according to the patient's clinical presentation. The Pakistani population serve as a valuable resource for identifying the genes linked to autosomal recessive disorders due to consanguineous marriages. ID families with two or more congenital ID patients who had a history of intellectual disability were enrolled after visiting various hospitals, clinics, special education schools, and institutions. The written consent documents were signed by patient's guardian to fulfil the ethical and legal norms. Every family member gave blood sample, which was then kept at -20°C. After performing DNA extraction and agarose gel electrophoresis genetic analysis is performed to find. The identification of genes linked to ID involves the application of next-generation sequencing on affected individuals and confirmation of linked variants via Sanger sequencing.

Key-words: Genetic disorder, DNA, mutation, intellectual disability, exome sequencing

Molecular Mechanisms Underlying Neurological Disorder in the Pakistani Cohort

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Human body functions can be affected by inherited differences which ultimately cause different degrees of severity. Some cause death, serious disabilities and others cause mild effects. Some human genetic diseases are caused by defected genes like mitochondrial disorders, muscles disorders, neurological disorders & cancer syndromes. These diseases caused by inherited genetic mutations (results in abnormal nervous system development, neurodegeneration or impaired neuronal functions) and neurological diseases (include genetic & epigenetic changes induced by environmental insults, disease related events, injuries or inflame these diseases effectively). Role of sexual and physical abuse during childhood could be linked as proceeding risk factor, on the other hand severity and frequency of childhood abuse linked to symptom severity of neurological disorders. Neurological disorders are a result of genetic mutations affecting our nervous system functioning. Most of them are not inherited but there are some disorders having inheritance pattern. Autosomal Dominant is a motif of inheritance traits of some genetic diseases. Autosomal Dominant disorders include Neurofibromatosis, Huntington's Disease, Myotonic Dystrophy, Parkinson's Disease, Alzheimer's Disease and Familial Partial Epilepsy etc. PINK1 forms a protein kinase which protects mitochondria. Mutation result in early-onset of disease. In inherited cases, as in case of LRRK2 and SNCA genes, the Parkinson's Disease is inherited from just one parent. Next Generation Sequencing technology will be used for mutational analysis. Sanger sequencing will confirm the mode of segregation in the family. further co-relation of the gene finding with clinical findings will confirm the disease mutation in particular affected family.

Key-words: Neurological disorders, genetic disease, Sequencing, NGS

Genetic insights of neurological disorders, molecular mechanisms in Pakistan population

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The nervous system plays a crucial role in regulating bodily functions and formulating responses through intricate networks of nerves. Any mutation within the nervous system can give rise to various neurological disorders. Some of these disorders, such as Intellectual Disability, Alzheimer's Disease, Familial Partial Epilepsy, Parkinson's Disease, Huntington's Disease, Neurofibromatosis, and Myotonic Dystrophy, have a hereditary component, following either an autosomal dominant or autosomal recessive pattern.

Key-Words; Neurological disorders, Pakistan, Alzheimer

Understanding neurological disorders in Pakistani context

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Nervous system regulates the body functions and helps in the formulation of responses through nerves. Any mutation in the nervous system leads to the development of neurological disorders. These disorders are sometimes inherited including Intellectual Disability, Alzheimer's Disease, Familial Partial Epilepsy, Parkinson's Disease, Huntington's Disease, Neurofibromatosis, Myotonic dystrophy. These neurological disorders inherit in either autosomal dominant pattern or autosomal recessive pattern.

In Pakistani population, consanguinity is the major and most common cause of many inherited diseases. Pakistan is at the number one place where consanguineous marriages are preferred due to religion, social and many other reasons. As a result, it leads to genetic mutations and disorders. Intellectual disability, Parkinson's disease and Alzheimer's disease are the inherited neurological disorders that develop due to genetic mutations as well as environmental factors. Intellectual Disability is a neurodevelopmental disorder characterized by limitations in intellectual functioning and adaptive learning. It can develop at or after birth till 18 years due to genetic and environmental factors. Alzheimer's disease is a neurodegenerative disease characterized by memory loss, limitations in thinking ability and acquiring language. Parkinson's disease is chronic neurodegenerative disease characterized by difficulties in walking and movement. It is inherited in either autosomal dominant or autosomal recessive pattern.

In present study families with intellectual disability were identified after visiting different special education schools, institutes, and hospitals. Enrolment of affected families were done. The written consent forms were signed by patient's guardian to fulfil the ethical and legal rules. The whole family and relatives, if possible, were involved in clinical evaluation and interview. The family pedigree was drawn to investigate inheritance pattern. Photos of the patient were clicked. Blood samples of each family member was drawn and stored at -20□. DNA extraction and agarose gel electrophoresis was carried out, followed by various techniques for genetic analysis and its correlation with clinical findings.

Key-words: Genetic diseases, Alzheimer's, Neurological disorders, DNA extraction

Tracing the Genetic Roots of Intellectual Disability in Pakistan

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In Pakistani population, consanguinity stands out as a significant and prevalent cause of many inherited diseases. Pakistan leads globally in the prevalence of consanguineous marriages, driven by religious, social, and various cultural factors. Unfortunately, this practice increases the likelihood of genetic mutations and resultant disorders. Notably, inherited neurological disorders like Intellectual Disability, Parkinson's disease, and Alzheimer's disease are influenced by a combination of genetic mutations and environmental factors.

Key-words: Pakistani population, inherited diseases, intellectual disability, exome sequencing

Investigation of antioxidant and antimutagenic ability of trimetallic oxide nanoparticles

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Nanotechnology is the emerging field of modern science that deals with particles ranging in size of 1-100 nm. Due to such small size, hence extremely high surface to volume ratio, such nanoparticles exhibit tremendous magnetic, optical, mechanical and physical properties which render them multiple applications in different fields of modern science. Metallic nanoparticles of variable morphologies find a variety of applications in agricultural, biomedical, environmental and food industries. Copper (Cu), chromium (Cr) and Nickel (Ni) are transition metals belonging to d-block elements that exhibit marvelous properties when designed into nanoparticles. Modern researchers are focusing on developing bimetallic and multimetallic NPs to boost their properties as compared to monometallic nanoparticles. In the current project, Cu/Cr/Ni trimetallic NPs will be obtained by green synthesis method using plant extract of waste orange/lemon peels. Plant extract enriched with phytochemical will serve as natural reducing agent to synthesize trimetallic NPs. Such biosynthesized trimetallic nanoparticles will be chemically and structurally characterized by different state-of-the-art analytical techniques such as UV/VIS spectroscopy, FTIR, SEM, XRD and EDX. Such trimetallic NPs will be evaluated for their biocompatibility by examining their cytotoxicity upon human red blood cells following a haemolytic assay. Then, these NPs will be investigated for antioxidant and antimutagenic potential following already reported bioassays. Results will be presented as means of triplicate experiments.

Keywords: Nanotechnology, Haemolytic assay, trimetallic NPs, antimutagenic potential, antioxidant

Synthesis of biobased Superabsorbent Polymer (SAP) and its kinetic study

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The unique class of materials known as superabsorbent polymers (SAPs) is renowned for its extraordinary capacity to absorb and hold vast amounts of aqueous solutions. These polymers are referred to be hydrogels. Superabsorbent polymers (SAPs) have wide applications in agriculture, water treatment, medical, diapers, feminine hygiene products and Packaging for humidity control. SAPs may be biodegradable or non-biodegradable. Consumer awareness about things is increasing day by day and the demand for effective and sustainable materials in the development of superabsorbent polymers (SAPs) has intensified, particularly in the context of innovative applications such as pamper and diaper's industry. Traditionally, SAP used in pampers and diapers are often utilizing non-biodegradable materials, raising environmental concerns, low water absorbance and swelling rates. Millet is a renewable and biodegradable resource for synthesis of SAPs. For production of eco-friendly materials like diapers and pampers, a renewable and efficient SAP can be used and will be synthesized from Millet's starch. The synthesis of SAPs from Millet by will begin with extraction of starch from Millet grains by using NaOH solution. Then under suitable conditions cross-linking of Acrylic acid (AA) with Ammonium per sulfate (APS)and N.N.Methyl.bis.acrylamyte (MBA) will give final product. The optimized SAP will be characterize using a range of analytical techniques, including Fourier-transform infrared spectroscopy (FTIR) and scanning electron microscopy (SEM). These analyses will provide insights into the structural changes and morphology of the synthesized SAP, confirming its successful transformation from Millet's starch and to achieve maximum water-absorbing capacity.

Keywords: Ammonium per sulfate, N.N.Methyl.bis.acrylamyte, Fourier-transform infrared spectroscopy

A comparative study of soil seed bank and on-ground vegetation in diverse forest habitat to conserve native flora

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Soil Seed Bank (SSB) is a natural reservoir of seeds in an ecosystem, functionally it is the source for successive plant generations, contributing to the survival and dispersal of plant species. Conversion of natural forest to monoculture plantation forest and overgrazing are the crucial threat to on-ground vegetation (OGV) and native biodiversity, also can alter the plant SSB composition. The information about OGV and SSB composition of an area is the potential basis to contribute to vegetation rehabilitation and conservation on degraded areas. The effective regeneration approaches depend on SSB collection of the degraded forest land. Therefore, the present experimental study is designed to assess the OGV comparison with SSB and impact of livestock grazing, monocultural plantation and invasive species in different forest ecosystem on both (OGV and SBB). Soil samples will be taken from three layers of each pit to determine soil seed composition density and seedling emergence system is used to identify the SSB species. This finding will highlight the grazing and monocultural plantation

impact on natural habitat, also highlight the restoration potential of SSB and strategical need for conservation natural habitat.

Keywords: Soil Seed Bank, on-ground vegetation, monocultural plantation and invasive species

Applications of Biochar on Canola (Brassica napus) and its evaluation

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Canola (Brassica napus) is a winter season crop. It is an important cultivated crop and used as a food in sub-continental regions mostly. It has the lowest level of saturated fats and is mostly grown in Northern plains and its 80% production in North Dakota. Its demand is increasing day by day in Pakistan. Cultivation of this crop is being challenging at low cost as the cost of fertilizer the external nutrients in the form of biochar increase the production of the crop and become cost effective crop, reduces the pressure on local farmers. A performed experiment study is designed to improve the yield and production of canola at economic level. The use of chemical fertilizers is becoming complicated, which is creating environmental hazards. So, the synthesis of biochar using waste material was designed to get better production of crops at cost effective rate. For that pot experiment will be conducted to evaluate the impact of synthesized biochar on its growth and yield. The nutritional profile of this crop will also be estimated.

Keywords: North Dakota, Biochar, Canola

Investigating the production and proximate analysis of fermented garlic using raw garlic

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The main purpose of this research work was to determine the nutritional and bioactive profile of raw and fermented (black) garlic. Black garlic is a relatively new product that has become very popular in recent years. It is obtained by fermenting raw (white) garlic by the application of heat treatment. The undesirable pungent odor of the white garlic disappears and the black garlic product with a sweet-sour flavor is formed after various reactions during the applied heat process. As a result, black garlic is more preferred and easily consumed by the consumers compared to white garlic.BG is essentially a processed product. The current understanding of the complex and dynamic changes in key components moisture, lipids, carbohydrates (such as sugars), proteins, organic acids, organic sulfur compounds, alkaloids, polyphenol, melanoidins, 5-hydroxymethylfurfural, vitamins, minerals, enzymes, and garlic endophytes during the conversion of FG to BG is provided by this study. The present study was aimed Syenthized fermented using varieties Desi, Farmi and G1 garlic. However, the nutritional composition antioxidant

activity of both (Raw and fermented) will be checked for the comparison of difference in both raw and fermented garlic. Additionally, carbohydrate contents will be increased. Mineral contents such as potassium, aluminum, iron, sodium, zinc, and copper will be checked. Garlic is an important source of Phenolic and flavonoid content, so that after the conversion of raw garlic into fermented garlic TPC and TFC will be checked.

Keywords: Bioactive profile, moisture, lipids, carbohydrates (such as sugars), proteins, organic acids, organic sulfur compounds, alkaloids, polyphenol, melanoidins, 5-hydroxymethylfurfural, vitamins, minerals, enzymes, and garlic endophytes

Comparative analysis of regeneration potential of soil seed banks in drought affected areas of district Chakwal

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The focus of the current study is to investigate the Soil seed bank (SSB) and germination potential of the drought affected areas of district Chakwal. An experimental investigation will be carried out during winter 2023 at drought affected zones of (Dilljabba and Parera) under different ecological conditions to evaluate the potential of seed germination in the soil which plays an important role in restoration of both above ground flora and preexisting environments. The soil of the targeted area is mainly affected by the drought and is naturally enriched with stony aggregates that were formed by the weathering of rocks. The structure of cleared areas shows more species of grow able and germinating annual grasses present in higher total numbers. For determination of SSB two techniques will be compared viz., sieving method and seedling emergence method under drought conditions at the targeted site. Soil samples for the seed bank analysis will be taken from the experimental fields at various depths (0-10, 11-20 and 21-30) cm. The data of seed density will be collected in m□. Seed frequency, diversity of species and relative importance value will be measured for each sample. The input and output data will also be collected to find out the socioeconomic feasibility of the techniques. The estimation of the amount of micro and macro nutrients of the soil will be carried out to estimate the soil potential to support cultivation in drought affected areas. The concluded results of the study will be used as a guideline for further cultivation in an experimental area to protect diversity.

Keywords: Soil seed bank, Seed frequency, germinating annual grasses

Evaluation of foliar spray of micronutrients on tomato to increase growth parameters and yield

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Tomato (Solanum lycopersicum L) is one of the most cultivated vegetable crop in all parts of Pakistan. This crop is also cultivated in numerous other countries of the world. Tomato is an important food and is used to produce various useful products in industries. Demand and its cost usually increased during summer. Therefore, the present experimental study is designed to calculate the effects of micronutrients i.e. Zinc, Boron, Iron, Sulphur, iodine, molybdenum on the growth and yield of tomatoes. Seeds of tomato (BOX CAR WILLLIE) F1 Hybrid) variety will be cultivated in complete block design (CBD) at Pakistan council of scientific and industrial research institute (PCSIR) Lahore. Crops will be cultivated in seven different plots, six will be kept experimental (E1=Zinc, E2 Boron E3 Iron E4 Sulphur E5 Molybdenum E6 Iodine), while one will be kept as control left untreated. Data regarding yield and growth will be collected through counting the number of productive plants, weight of fruits and with the estimation of lycopene, antioxidant contents, fat, fiber and minerals.

Keywords: Tomato, lycopene, antioxidant contents, fat, fiber, minerals

Assessment of microbial quality of raw fish available in commercial market of Lahore

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A cost-effective source of macro and micronutrients, such as premium protein, omega-3 fatty acids, vitamins, and minerals, is found in fish and fish products. However, due to the perishable nature of fish, its spoilage starts immediately after slaughtering. Rate of fish spoilage is determined by several factors including aquatic environment, post-harvest management techniques and storage temperature. Microbial activity is among the major factors responsible for fish spoilage. Deterioration of fish quality and spoilage not only results in economic losses but also poses a potential risk of foodborne illnesses among consumers. Therefore, quality of fish and its products must confirm to the established standards for food safety and quality to ensure consumer protection and reduce the risk of foodborne illness. The present study is designed to investigate the microbial quality of raw fish sold on retailer shops in the markets of Lahore to determine its safety for human consumption. Fish samples of three different fish species available at the time of sampling will be collected from the markets of Lahore to determine their microbial load and presence of pathogenic bacteria. The study's findings will contribute to our understanding of fish safety and quality in Lahore and propose effective measures to reduce the risk of food borne illness.

Keywords: Omega-3 fatty acids, Vitamins, Minerals

Effect of antibiotics exposure on brain, gills, liver, and kidney of common carp (Cyprinus carpio)

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Antibiotics are widely used to avoid or treat bacterial diseases and are also found in a range of environmental habitats of living organisms. These are shown to skip into surface water runoff and enter natural habitat, including surface water, groundwater, and sediments. Amoxicillin and metronidazole are common antibiotics which are frequently prescribed against bacterial disease. These are also used as prophylactic and metaphylactic agents to treat bacterial infections in fish in aquaculture. These could be included into granulated foods or directly into water such as streptococcus's, furunculosis and Pasteurella's in fish. The present study will have a comparative analysis on different organs of the fish common carp. The effects of both antibiotics will be compared on different organs of fish. This will be achieved by histological and image analysis. Tissue variations in various targeted organs of fish caused by both chronic and acute effects of contaminants like these antibiotics are useful tackles for toxicological studies, which can be translated for their possible effects to humans as well.

Keywords: Metaphylactic agents, Amoxicillin, Metronidazole

Effect of Heavy Metals Bioaccumulation on the vital organs of Major Carps (Labeo rohita, Catla catla and Cirrhinus mrigala) in Confined and Natural Water Bodies

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In aquatic ecosystems, heavy metals are considered the most consequential pollutants since they are present throughout the ecosystem and are distinguishable in critical amounts. Heavy metals are very dangerous for fish health. Major carps which are Labeo rohita, Catla catla and Cirrhinus mrigala, studied to determine the contamination levels of heavy metals such as chromium(cr), lead(pb), nickel(ni), copper(cu), and manganese(mg) in Head Balloki, Sulemanki Headworks and controlled fishponds. Most of the metals are stored in tissues of fish, and lead to the poisoning of fish. Fish are collected, digested, and histologically analyzed. Water samples from different sites (head balloki ,sulemanki headworks and a pond) are also used for metal analysis.

Keywords: Cirrhinus mrigala, Labeo rohita,

Quality Assessment of Freshwater Fish from Retail Market of District Kasur, Punjab

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Convenience, nutrition, and health are the main forces behind the global food market. Fish Products is considered as 3rd most important among the food categories with the highest. Global production, and they have garnered significant consideration as a source of protein, Lipids, minerals, and vitamins. Because fish is a highly perishable

product, it must be stored using a variety of techniques to extend its shelf life and ensure its protection and quality from Capture to eating. Even with the advancements in contemporary fish storage systems, the most popular preservation techniques utilized onboard are still cooling and freezing. If fish is not processed right away and is not stored properly, its delicate quality will quickly deteriorate after harvest. The primary factors causing the start and ongoing unfavorable quality changes in these commodities are the natural makeup of fish and the contaminants they contend with during processing. Fish deterioration patterns can be generically classified as enzymatic, Chemical, or microbiological. Fish processing is made more difficult by the fact that the growth of harmful microorganisms because of contamination typically does not result in discernible Changes to the sensory characteristics of fish. Therefore, a variety of preservation techniques Have been established, and continue to be developed, to address the issues related to fish and Fisheries products' quality and care.

Keyword: Fish Products, Fish deterioration

Growth performance of common carp (cyprinus carpio) rearing in cage culture system

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An experiment on the growth performance of common carp in cage culture system will be conducted in cages locating in the pond of Punjab Fisheries Research and Training Institute Manawan Lahore. Two cages will be used in this experiment. The total trial is 120 days. The experiment will assess the growth of common carp rearing in floating cages, because it is a bottom feeder species that feed on natural food resources present in the pond. The formulated feed will be used for this experiment, which will be fed twice a day. The water quality parameters such as dissolved oxygen, temperature, and pH will be monitored on a daily basis. The growth performance, weight gain (%) and FCR will be monitored after every 15 days by the standard formula. This study will help to choose an alternative specie for culture in cages for timely stocking of cages to harvest maximum growth by using formulated feed.

Keywords: Punjab Fisheries Research, Training Institute, Bottom feeder species

Assessment of Postharvest Practices of Freshwater Fish Species Sold at Fish Market District Kasur

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Fish is a highly perishable food item that needs to be handled carefully as soon as it is harvested. The current investigation is set out to evaluate fish losses following collection and preservation techniques in Kasur district of Pakistan. Different questionaries will be used to collect information of losses after harvesting and conservation

techniques from commercial, artisanal, and aquaculture fishermen in district Kasur. Interviews will be conducted with every fisherman that arrived at the lakeshore, and aquaculture producers will be chosen at random using data from the regional fisheries department. Data collected will be subjected to SPSS for descriptive statistics. By compiling data into charts, tables, and graphs made with Statistical package for social sciences and Microsoft Excel, patterns and trends in post-harvest losses, preservation techniques, and associated difficulties will be discovered. Enhancements to post-harvest procedures of fishes are essential for reducing post-harvest fish losses and the widening discrepancy between the availability and demand of fish.

Keywords: SPSS

Effect of vitamin c on the growth of Labeo rohita fingerlings

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In the context of fish fingerlings, vitamin C supplementation refers to the deliberate addition of vitamin C to their diet. Vitamin C, also known as citric acid, is a vitamin that dissolves in water that is essential to many processes in biology. Vitamin C is essential for processes in fish, including the production of collagen, protection against free radicals, and immune system support. Vitamin C is not available in essential at the impact of temperature, oxygen, pH, and light on storage time. To predict that an 8–12-week experiment will be carried out to determine whether vitamin C is essential for the nutrition of fingerling Rhao fish. Vitamin C will be supplemented at levels of 50 mg kg-1,70 mgkg-1 and 90 mg kg-1 to tripcate group of Rhao fish fingerlings. We will check which amount of vitamin C feed is necessary for the growth of the Rhao fish fingerlings. Major goal is to improve fish health and takes maximum production of fish by providing vitamin C.

Keywords: Vitamin C, Rhao fish, collagen

Role of Mono-calcium Phosphate supplemented plants meal-based diet on the growth performance of Labeo Rohita

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Most fish farmers cannot afford the prohibitively high cost of commercial fish feeds; fish meal, which is scarce and costly, is typically used to compound fish feeds. Fishing pressure from capture fisheries resources may lessen because of the increased need for fish, which has increased the burden on fishermen. This has made it possible for fish farming to expand quickly to be capable of closing the distance between supply and demand. Since fish meals are so scarce, its price has risen in recent years. The main source of protein in fish feed composition is fish meal. The goal of the current study is to find out if a plant meal-based diet enhanced by Mono calcium Phosphate (MCP) can serve as a substitute protein supply for fish meals in the manufacturing of high-quality fish meals for rohu (Labeo rohita) fish. The aim of this study is to look at the consequences of substituting fish meal with a plant-based meal diet that is supplemented with MCP to enhance the Growth performance, immunological

markers, and nutritional digestibility of L. rohita. T1–T5 treatment groups will be fed meals with varying amounts of supplemental MCP. Each triple tank will be supplied with an average body weight of twenty fingerlings, or one-way analysis of variance will be used to analyze the growth characteristics and the proportion of nutrients (gross energy, crude protein, and crude fat) that have an apparent digestibility coefficient (ADC). When $P < 0.05$, the means of the changes between treatments will be deemed significant. A diet high in plant meal and supplemented with MCP can totally replace because fish meal has a high protein content. Based on available research, fish meal could be used in its place. in fish diets with sesame meal supplemented with MCP to achieve the maximum growth rate and yields from L. rohita.

Keywords: Mono calcium Phosphate, ANOVA, Rohu (Labeo rohita)

Growth performance and its relationship to immunological status of grass carp

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Grass carp (Ctenopharyngodon idella) is herbivorous fish, local of the Asian and Pakistan river. The fish has a great importance as a protein source of the populations associated with these rivers and it is even cultured with high priority in polycultures in Pakistan. Here we study the growth performance of this fish and its relationship to immunological status of meat size fish. The samples of fish will randomly be selected from different commercial ponds feeding the cultures with different types of fish feeds. Sampled fish will be measured for weight and length parameters to understand the growth parameters. For determining immunological status of these sampled fish, blood samples will be drawn and studied for hematological parameters (RBC, WBC, Hb, MCV) and immunoglobulins (IgM, IgA). The correlation of fish diets with their growth performance and to their immunological status will provide an insight into relationship between feed, growth and health together.

Keywords: Grass carp, Immunoglobulins, Polycultures

Types of Feed and Their Effects on Tilapia Fish In Fresh Water Ponds Of South Punjab

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A study in South Punjab, Pakistan, aimed to evaluate the effectiveness of commercially available aqua feeds against locally available agricultural wastes in promoting the development of Nile tilapia. The research involved 12 earthen ponds filled with tilapia fingerlings and involved three sets of experimental diets and three sets of commercially available pelleted feeds. The results showed that fish fed commercial meals developed and survived at higher rates and had significantly heavier bodies. The experimental diet with wheat bran, cottonseed meal, and mustard cake performed the best, but the growth rate was still below average. The study suggests that aquafeeds can be economically replaced with agricultural byproducts, but maintaining a balanced diet is crucial for maximum output in tilapia farming.

Keywords: Aqua feeds, Nile tilapia, Experimental diet

Environmental impact of cage culture in riverine ecosystem

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Cage culture is an intensive method of fish farming that is commonly practiced globally in both freshwater and marine environments. It presents a viable way to increase fish production and satisfy the growing demand for seafood in areas where water resources are plentiful. This method is commonly applied to a variety of fish species, tilapia, salmon, and trout. In Pakistan, cage culture systems is rapidly advancing to increase fish production and to harness the potential of country's aquatic resources. However, this farming technique can lead to negative environmental effects including eutrophication, oxygen depletion and nutrients imbalance. The waste from cages like feed fecal contents and fertilizers can cause serious damage to soil sediments and water. The present study is, therefore, designed to determine the environmental impact of cage culture system installed at Head Qadirabad. In this study, water and soil samples will be collected from upstream and downstream sites of cages installed at Head Qadirabad. Physico-chemical parameters of water and soil samples will be analyzed to assess the impact of cage culture on the environment.

Keywords: Cage culture, Aquatic resources, eutrophication, oxygen depletion and nutrients imbalance.

Parasitic disease of common carp and their relationships to Antibodies

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The expanding financial significance of fish parasites for aquaculture and fish department has improved the concerns regarding defense mechanisms to cure these diseases. Fish have two immune responses one is innate and the second is adaptive immune response which are set up by fish to manage parasitic diseases. The Innate immune system is primary element of immune Defense. Adaptive immune response relies on random generation of B and T cells receptors contributes to a more efficient and specific response against infection. These T cells are known to produce IgG and IgA in fish against the parasitic Infections. The current study will examine Cyprinus Carpio (common carp) from urban ponds reared for meat consumptions. This Study will analyze the immune status of Cyprinuscarpio which is marked for use of population in Pakistan in southern Punjab, the nematode parasite which affect the fish as endoparasite and ectoparasite. It is expected that the nematode parasite will be triggering the humoral immune response of common carp which ultimately boosts the B cells of fish immunity system to produce their antigens IgG and IgA. Hematological parameters check such as hemoglobin count (Hb) and white blood cells (WBCs) count. This study will be providing valuable information regarding detrimental effects of nematode parasite on fish immune system and the fish health.

Keywords: Cyprinus Carpio, Endoparasite, Innate immune system, Hematological

Using Iron-nano particles against Multi-drug Resistant Bacteria

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Multi-drug resistant bacteria have caused increased morbidity and mortality rateworldwide with increased resistance in developing countries. Multi-drug resistantbacteria including Acinetobacter baumannii have raised serious concerns as beingprevalent pathogen in post burn infections. Acinetobacter baumannii have developedan intrinsic resistance against variety of antibiotics that are available as treatmentoptions resulting in limiting the treatment options. Carbapenems are considered as lastresort antibiotics and Acinetobacter baumannii have already developed resistanceagainst this antibiotic. Hence, we do not have any antibiotics available forCarbapenem resistant Acinetobacter baumannii (CRAB). Since, the bacteria have already developed resistance against antibiotics. There is aneed to have natural treatment options. Nano-particles have been used to since ages asmedications for variety of diseases. Antibacterial activity of many nano-particlesincluding Silver nitrate, Tin oxide, Zinc oxide have already been reported withpromising results. But these nano-particles have been synthesized from chemicalsources. Bio-synthesized nano-particles may be a greater option for the treatment ofCRAB. Iron oxide nano-particles synthesized by using medicinal plants leaves as source.Synthesized nano-particles will be characterized by using X-ray diffraction technique(XRD), Fourier transport infra-red (FTIR), scanning electron microscopy (SEM) andtransmission electron microscopy (TEM) methods. Characterized nano-particles willbe preceded for anti-bacterial activity against CRAB.

Keywords: Antibacterial activity, Green-synthesis, Iron oxide nano-particles, acinetobacter baumannii, Pseudomonas aeruginosa

Using Iron-nano particles against post burn infections

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The global population is seriously threatened by the prevalence of antibiotic resistance and multidrug resistant strains of Gram +ve and Gram -ve microbes. Antibiotic overuse that favors the faster evolution of unusual antibiotic resistance strains is the cause of this resistance. The World Health Organization (WHO) has identified drug-resistant pathogens and as two of the leading cause of death worldwide. Pencillins are often ineffective in treating post burn wound infections due to high risk of resistance. Chemical synthesis may pose threat to the environment and the human health. Globally, a focus has been placed on the significance of producing nanoparticles through plant extracts as a substitute for conventional methods, given their affordability, non-toxicity, biocompatibility, and environmental friendliness. In this work, Spinach leaf extracts will be used for green synthesis of iron nanoparticles (FeNPs) by combining the extracts in various ratios with an iron chloride solution. Synthesized Iron Nanoparticles may act as alternative option for Antibiotic resistant bacteria. Techniques like, X-ray diffraction (XRD), Transmission electron microscopy, Scanning electron microscopy and Fourier transform infrared spectroscopy (FTIR) will be used to characterize them. Well Diffusion Assay will be used to check the antibacterial activity of synthesized nanoparticles against MDR-bacteria from post burn infections.

Keywords: Green synthesis, Iron oxide nanoparticles, Antibacterial activity, Acinetobacter baumannii, Pseudomonas aeruginosa

Biosynthesis of Silver Nanopartcles from vegetable peels and its Antibacterial activity against multidrug resistance bacteria

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Global food production uses a significant portion of the energy budget, land area, and freshwater resources; however, a significant portion of the produce is wasted or lost, which could have produced products that could be beneficial to humans. One possible approach that shows promise is the biogenic synthesis of silver nanoparticles from such waste food. Global food chain companies produce, roughly speaking, 70–140 thousand tons of potato peels annually; how animal feed. Potato peels are an affordable, efficient, and easily obtain Potato peels are produced annually by food-chain companies worldwide, to a conservative estimate of 70–140 thousand tons; however, their primary use is as manure or inferior animal feed. Potato peels are a cheap, efficient, and easily accessible raw material that can be used for the extraction process, value enhancement, and creation of highly profitable compounds like nanocomposite, organic antioxidants, and organic meal inclusions. Techniques like, X-ray diffraction (XRD), Transmission electron microscopy, Scanning electron microscopy and Fourier transform infrared spectroscopy (FTIR) will be used to characterize them. Well Diffusion Assay will be used to check the antibacterial activity of synthesized nanoparticles against MDR-bacteria from post burn infections.

Keywords: Green synthesis, Sliver oxide nanoparticles, Antibacterial activity, Acinetobacter baumannii, Pseudomonas aeruginosa

Prevalence of Carbapenem Resistant Bacteria in Tertiary Care hospital, Lahore

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The molecular analysis of Carbapenem-Resistant Gram-Negative Pathogens associated with Healthcare-Associated Infections involves a detailed examination of the genetic and molecular features contributing to antibiotic resistance in these bacteria. Carbapenem resistance poses a serious threat to effective antibiotic treatment, especially in healthcare settings where infections can spread rapidly. This research employs advanced molecular techniques to identify and characterize the specific genetic elements responsible for conferring resistance in Gram-negative pathogens. The focus is often on detecting and studying carbapenemase genes, which encode enzymes that mediate resistance by breaking down carbapenem antibiotics. Understanding the molecular mechanisms involved in resistance is crucial for devising targeted treatment strategies. By unraveling the genetic basis of resistance, researchers can gain insights into the evolution and transmission dynamics of

Carbapenem-Resistant Gram-Negative Pathogens within healthcare environments.
The findings from molecular analyses contribute to the development of more effective therapeutic approaches, aiding in the design of antibiotics that can overcome resistance mechanisms. Additionally, this research informs infection control measures, helping to prevent the spread of these resilient pathogens in healthcare settings. Ultimately, a comprehensive molecular understanding of carbapenem resistance is essential for addressing the challenges posed by these pathogens in healthcare-associated infections.

Keywords: Molecular characterization, carbapenum resistant gram negative isolates, Multidrug resistant isoltes, Carbapenum resistant Enterobacteriaceae, Molecular analysis.

Antimicrobial Activities Of Ethanol Leaves Part of Solanum Nigrum Against A.Baumannii Isolates

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Gram-negative, non-fermentative Acinetobacter baumannii is a prevalent cause of nosocomial infections. It causes a variety of infections, including bacterial pneumonia, asthma, hepatitis, urogenital infections, and abdominal incision infections. It is an opportunistic pathogen that thrives in hospitals and is resistant to a wide range of antibiotics. From urine samples, we isolated 21 different strains of Acinetobacter baumannii. Solanum nigrum plants were collected, shade-dried, ground, submerged in 95 % ethanol for 24 hours, and then extracted with a rotary machine.the Carbapenem resistant A.baumannii were identified and isolated based on biochemical testing, colony, morphology and antibiotic resistance and sensitivity were tested by disc diffusion method. MIC value for antibiotic alone as well as in combination was checked. As for treatment against infection caused by Bahmani antibiotics involved Imipenem, Meropenem, Tobramycin, Levofloxacin were studied. The antibiotic imipenem was the most effective against A. baumannii, while imipenem resistance was common. Tobramycin, the second-most effective antibiotic, was ineffective against 78% of A. baumannii isolates. A. baumannii exhibited a high rate of imipenem resistance. Patient demographics like age, use of mechanical breathing, length of hospital stay, and drug resistance were significantly correlated. All of the ligands are present in the protein's binding pockets following docking. The chosen amino acids all revealed that none of the docked ligands were necessary to access their interaction relationship. This study demonstrated the antibacterial properties of Solanum nigrum extracts against A. baumannii. As a result, they can be suggested as cures for diseases brought on by this bacterium.

Keywords: Acinetobacter baumannii, Disc diffusion method, Docking, Imipenem, Meropenem, Tobramycin, Levofloxacin

Knowledge, Attitude, and Practice of Tuberculosis Among Healthcare Workers in Lahore, Pakistan: A Cross-Sectional study

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Pakistan is one of the 30 nations with the highest burden of tuberculosis (TB), with over 500,000 new cases reported annually. Healthcare workers (HCWs), who are susceptible to nosocomial infections, are largely responsible for raising public awareness of tuberculosis (TB) despite the fact that the country is severely understaffed in this regard. So, the purpose of this study is to evaluate HCWs in Lahore, Pakistan's knowledge, attitude, and practice (KAP) regarding tuberculosis. Nine hospitals in Lahore, Pakistan that provide tuberculosis services participated in a crosssectional survey conducted at the institutions using a secretive, questionnaire that they administered themselves. 384 HCWs' knowledge, attitudes, and practices on the prevention of tuberculosis infection were assessed. Nearly half (45.8%) of HCWs had inadequate understanding of TB infection control, while administration and lower-level workers had even less knowledge. The knowledge level and the educational status as well as the TB training and orientation obtained were substantially correlated. Regarding TB infection control, the majority of HCWs (73.2%) had good opinions. It was shown that 65% of HCWs were worried about contracting tuberculosis. HCWs used respirators sparingly, and there was insufficient triage of TB suspects. The findings showed that healthcare professionals had some TB-related knowledge gaps and bad behaviors. Health professionals must therefore regularly participate in training that is tailored to their needs.

Keywords: Tuberculosis, Cross sectional study.

Antimicrobial Activity of Different Hand Sanitizers

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Disinfection becomes a part of daily life of every individual who are struggling against pandemic. Hand sanitizers have made life of human much safer and convenient with their remote usage. They are available in liquid and gel foam and are essential in reducing transmission of infectious diseases. The alcohol-based hand sanitizers are becoming more common because of their rapid action against many bacterial, fungal and viral pathogens. The aim of this study was to determine the efficacy of different hands sanitizers against different pathogenic bacteria and fungi. Different brands of sanitizers commercially available in Karachi were purchased for this purpose. The antimicrobial activity of these sanitizers was screened against different Gram-positive bacteria (Staphylococcus aureus, Bacillus subtilis and Micrococcus luteus), Gram negative bacteria (Escherichia coli, Pseudomonas aeruginosa and Klebsiella pneumoniae), mold fungi (Aspergillus flavus) and yeast fungi (Candida albicans, Candida tropicalis) by using Agar well diffusion technique. The results revealed that 64.7% of the sanitizers exhibited excelled antibacterial activity against Gram positive bacteria while 52% samples were effective against Gram negative bacteria. In case of antifungal potential, 41% were found effective against mold fungi while 53%

were effective against yeast fungi. Although most of sanitizers tested revealed mild to good activity against most of the pathogens but the availability of sanitizers having no activity or less activity against common bacteria and fungi suggest an upcoming threat of acquiring infections among consumers of such substandard sanitizers.

Key words: Sanitizers, Gram positive bacteria, Gram negative bacteria

Distribution Of Associated Anomalies In Cleft Lip And Palate In Pakistani Population

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In upper lip a congenital gap or space is known as cleft or palate. Genetic and environmental factors may lead to congenital abnormalities. Due to incomplete mix and integration of rectal protrusions CLP is happened. CLP patients may suffer from hearing speech and dental problems. In etiology of CLP there is a role of genetics. Mutations lead to non syndromic CLP that is identified by many genes. 2% cases of non syndromic are due to mutation. There is 1.5 per 1000 incidence of orofacial clefting. Genetic factors are linked to the percentage of cases which is estimated 40%. The expected cases of CLP are approximately 3200 per year worldwide. Rate of CLP in Pakistan is approximately (14.6%).Survey based analysis of clinical symptoms associated with cleft lip and palate (CLP). The prevalence of CLP disease in Pakistani population. Analysis with the similar disorders. The survey was conducted to evaluate overall prevalence of associated anomalies in the cleft patients.A cross-sectional study design was used to estimate frequency of non-identical anomalies with cleft lip and palate (CLP). The duration of study was from January 2022 to January 2023. The sample size was 100. Data was analyzed by using SPSS version 16. A p-value less than 00.5 were considered significant.In this study a total of 100 patients were recruited from different hospitals of Lahore. All of them were examined physically and classified in different categories including Cleft Lip Only, Cleft Palate Only, Cleft Lip and Palate. Out of these 100 patients 55(55%) were males and 45(45%) were females. 11 (11%) of them were having Cleft Lip only, 18(18%) Cleft Palate only, and 71(71%) having Cleft Lip and Palate.The prevalence of the associated anomalies is high in those patients who have family history of cleft lip and palate. In this study we get to know that the males (55%) are more affected than females (45%). There is a very high prevalence of tooth agenesis in cleft patients as compared to other anomalies

Key Words: CLP, Prevalence, Orofacial clefting, Tooth agenesis.

A comprehensive review of Diabetes, Current understanding and future perspectives

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The importance of the gut microbiota to health has been acknowledged within the past ten years. In fact, a number of studies have shown how well probiotics, prebiotics, and symbiotics work to treat a variety of illnesses, including diabetic mellitus (DM). New biologically active compounds, or “postbiotics,” have been identified and characterized thanks to advancements in laboratory techniques. Postbiotics are characterized as useful bioactive substances derived from food-grade bacteria that, when given in sufficient numbers, have positive effects on health.The review explores the autoimmune processes and insulin resistance associated with Type 1 and Type 2 diabetes. Modern developments are covered, including the creation of artificial pancreatic tissue, continuous glucose monitoring, and customized treatment plans. The section on future prospects delves into innovative fields such as enhanced insulin delivery systems, stem cell research, and gene therapy. The study highlights a comprehensive strategy that integrates environment, genetics, and personalized care for successful diabetes management. Promising advances in research indicate hope for improved preventative and therapeutic approaches. The autoimmune loss of insulin-producing cells in the islets of Langerhans, a region of the endocrine pancreas, is the etiology of type 1 diabetes (T1D). For T1D patients, exogenous insulin replacement treatment is currently the standard of care. The hybrid closed-loop system for controlled insulin delivery and long-acting insulins are recent advancements in this field. The value of early therapy and glucose control for lowering the risk of acquiring diabetic complications has been shown in clinical research on the prediction and prevention of diabetes-associated complications. For the treatment of T1D patients, primary islet transplantation is an efficient method.

Key-words: Diabetes Mellitus, Autoimmune Diabetes, Insulin Resistance

Relationship between B12 deficiency and anxiety

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Vitamin D deficiency is mainly a global health pandemic at present. Several potential approaches have revealed the national, regional, and global prevalence of 25(OH)D deficiency which postulates that up to one billion population all over the world is prognosticated to be vitamin D deficient and Pakistan, is not an exception.The purpose of this study is to determine the prevalence and incidence of vitamin D deficiency and insufficiency among the healthy individuals of Lahore. Retrospective analysis, a total of 5000 sample were taken from Al Gazi Health Care Center Lahore from 2017 to 2019, in which 40% female and 59.6% male were administered. For staging vitamin D, the cut off values < 20nmol/L, 20-30nmol/L, 31-100nmol/L, and > 100nmol/L were defined as deficient, insufficient, desirable, and toxic, respectively. Data was analyzed using the statistical software package IBM SPSS statistics for windows version 21. Out of 5000 samples taken from the patients, 2085 (41.7%) were deficient, 1465 (29.3 %) had insufficient vitamin D level, 1360 participants (27.2 %) had sufficient or desirable vitamin D level and only 90 patients (1.8 %) were having toxic serum 25(OH)D status. Hypovitaminosis, being a global pandemic is prevalent in Pakistani population. With the extent of deficiency that is observed in our community, it is essential that dietary components must be fortified. Administration of vitamin D supplements with preferable dosage and an effectual policy to reduce vitamin D deficiency among deficient individuals is extremely necessary.

Keywords: Vitamin D deficiency, B12 deficiency.

Cross sectional study on sputum for AFB and gene experts

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This study aims to compare the efficacy of Acid-Fast Bacilli (AFB) smear microscopy and GeneXpert MTB/RIF assay in the diagnosis of pulmonary tuberculosis (TB), focusing on their implications for TB management. The global TB burden remains significant, with high incidence rates in developing countries, compounded by challenges such as HIV-associated TB and multidrug-resistant TB. AFB smear microscopy, while being the most common diagnostic method, shows variable sensitivity and can miss cases with low bacillary loads, often seen in HIV-positive patients. In contrast, GeneXpert offers rapid, sensitive detection of both TB and rifampicin resistance, crucial for timely treatment initiation, especially in high-burden settings. This study utilizes specimens collected from various sources, including UCD Health Systems and Hospital Based Clinics, to analyze the diagnostic performance of these methods, considering their operational feasibility and cost implications in diverse healthcare settings.

Keywords: HIV, Acid fast bacilli, Pulmonary Tuberculosis, GeneXpert, Rifampicin resistance

Sensitivity Pattern Of Pseudomonas Aeruginosa In Urinary Tract Infection Patients

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UTI is one of common infection in whole world, and it is experienced by every living person after respiratory tract infection. Most regularly UTI is treated provisionally. So the antimicrobial dealers need to be aware on the concept of the possible pathogen and its antisepted resistance pattern in a high-quality geographic area. According to WHO, antibiotics resistance has been mentioned as expanding disease. However, fair use of antibiotics will solve the problem effectively. Pseudomonas aeruginosa is the sort of bacteria that is present in surrounding. Pseudomonas aeruginosa is non-capsulated, rod shaped gram-negative bacterium that cause disease in living persons, plants and animals. As we know that UTI may be a serious issue, traditionally biochemical studies are administered after biochemical studies, it has been recorded that about 6 million patients are examined in outdoor section and about 3 million patients are treated per annum. The drugs that are sensitive for pseudomonas aeruginosa are B-lactam (piperacillin), fluoroquinolones, levofloxacin, cephems & cephalosporin. B-lactam drug are used for many bacteria's, but pencillin, gentamicin, 1st and 2nd generation of cephalosporin and cephems are most sensitive for pseudomonas aeruginosa. Pseudomonas aeruginosa are highly sensitive to Netilmicin and Imipenem (100%).

keywords: UTI, Antibiotic resistance and Pseudomonas aeruginosa.

Assesment of Liver Function Tests among Haemorhagic Degue Fever Patients

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Dengue fever has been a cause of increased mortality and morbidity in Asian countries. Past few decades has been important with respect to spread to dengue fever. Variety of serotypes have emerged with diverse severity. Early diagnosis has been a problem resulting in death. Liver enzymes can be an important parameter to detect the stage and severity of the dengue fever. This study will focus on the Correlation between the liver enzymes vale and type of dengue fever. This study will be conducted on the patient data from Jinnah hospital Lahore, Pakistan. Data will be collected about Aspartate aminotransferase, and Alanine aminotransferase values, and Dengue nonstructural protein 1 (Ns1) positive samples. Statistical analysis will be conducted to check the Correlation between the liver enzymes and dengue fever.

Keywords: Dengue fever, correlation, Non-structural proteins, Aminotransferase, Serotypes, Alanine aminotransferase, Liver enzymes

Comparative effectiveness of different chemotherapies

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Pancreatic cancer remains one of the deadliest cancers with 5-year survival around just 10%. For advanced disease, chemotherapy is the cornerstone of treatment but optimal regimens are undefined. Gemcitabine was the long-time standard while FOLFIRINOX and gemcitabine/nab-paclitaxel have demonstrated improved efficacy in trials. However, comparative effectiveness studies are lacking to inform clinical decision-making. Regimens for advanced pancreatic cancer patients treated at a single academic institution to compare survival across standard chemotherapy. Regimens examined were gemcitabine alone, gemcitabine/nab-paclitaxel, FOLFIRINOX and gemcitabine or nab-paclitaxel plus a second agent. This retrospective cohort study will utilize data from the cancer registry and electronic medical records. Patients with stage III/IV pancreatic ductal adenocarcinoma receiving first-line palliative chemotherapy from 2010-2020 will be included. Overall survival will be compared between regimens using Kaplan-Meier curves and Cox proportional hazards models adjusting for confounders. Secondary outcomes included toxicity, second-line treatment use, and survival among patient subgroups.

Keywords: FOLFIRINOX, Pancreatic cancer, chemotherapies

3-dimensional structure prediction of Niemann pick mutant proteins

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Research on Niemann-Pick Disease (NPD), a rare group of inherited lysosomal storage disorders, delves into the impact of genetic mutations on lipid metabolism, specifically in cholesterol and sphingomyelin. Focusing on SMPD1 (sphingomyelin phosphodiesterase 1) or ASM (acid sphingomyelinase), linked to NPD Types A and B, the study employs computational predictions and experimental validations to elucidate ASM's 3D structure and its relevance to NPD. SMPD1 mutations result in abnormal sphingomyelin metabolism, leading to hepatosplenomegaly, impaired motor function, and neurological deterioration. Analyzing structural changes in ASM provides crucial insights, emphasizing the need to predict mutant protein structures for understanding functional effects and identifying drug targets. This predictive modeling facilitates the development of targeted therapies for NPD, contributing to personalized medicine strategies and disease prevention. Overall, the study underscores the significance of mutational analysis in comprehending the genetic basis of NPD and advancing therapeutic interventions.

Keywords: Niemann-Pick Disease, sphingomyelin phosphodiesterase 1

Exploring Cancer-Specific Circulating MicroRNA

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Cancer is a disease closely linked to genetic alterations, resulting in approximately 1.6 million new cases and an estimated 610,000 cancer-related deaths annually. Early diagnosis is pivotal for improving patient survival. To overcome the challenges of costly trials and errors in cancer diagnostics, we employ computational approaches with innovative strategies. By utilizing n□xt-g□n□ration sequencing, integrating clinical data from gene expression data from NCBI-GEO using microarray information and a meta-analysis of PubMed until September 2023, our research focuses on circulating microRNAs in cancer patient's blood. By Employing bioinformatics analyses, we identify differentially expressed genes (DEGs). The DEGs guide our exploration of protein-protein interactions to uncover hub genes. Additionally, we predict upstream circulating RNAs and miRNA expression levels in cancer cases, and controls will be analyzed, and their diagnostic potential will be assessed via ROC curve analysis using appropriate statistical tools. This systematic approach aims at advancing non-invasive cancer detection and exploring therapeutic implications for identified circulating miRNA biomarkers, paving the way for more effective cancer management practices.

Keywords: Cancer, circulating miRNA biomarkers, ROC curve

Correlation between D-dimer levels and liver function test abnormalities in patients with viral hepatitis

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Despite the advancements in understanding the precise correlation of D-Dimer with Liver function Abnormalities in viral hepatitis patients remain unexplored and predicting liver complications. The purpose of this research is to investigate and determine whether there is a significant correlation between D-dimer with abnormalities of Liver function test in viral hepatitis patients. The proposed study will involve the analysis of the patient's data utilizing statistical methods to identify any significant correlations. While recognizing limitations such as sample size, patient heterogeneity will be addressed through study design and data analysis. The outcome of this research will significantly enhance our understanding of Viral hepatitis potential approaches to contribute to existing scientific literature.

Keywords: D-Dimer, hepatitis, liver function.

Potential inhibitors of mycobacterial electron transfer protein

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Tuberculosis (TB) remains a global health crisis, contributing significantly to both morbidity and mortality. The escalating resistance to existing drugs exacerbates the urgency for innovative therapeutic strategies. This study focuses on repurposing drugs against the crucial mycobacterial protein, electron transfer flavoprotein-oxidoreductase (EtfD), integral to utilizing fatty acids as a carbon source during infection. The research will adopt an integrative approach, commencing with virtual screening of approved drugs targeting EtfD, followed by molecular docking, and concluding with molecular dynamic simulations. By repurposing existing drugs against this pivotal mycobacterial protein, the study aims to contribute to the development of effective anti-TB agents, potentially mitigating the challenges posed by drug resistance and advancing global efforts to combat this persistent infectious disease.

Keywords: Tuberculosis, flavoprotein-oxidoreductase, mortality

Effect of collagen and fibronectin on liver cancer metastasis

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Hepatocellular (HCC) remains a major global health concern, necessitating a deeper understanding of molecular mechanisms influencing cell behavior. Slit-2, a known axon guidance molecule, has been implicated in various cellular processes, including migration and adhesion. However, its role in HCC and its influence on cell adhesion proteins remain underexplored. The findings from this study may contribute to our understanding of the molecular events associated with Slit-2 treatment in HCC cells, shedding light on its potential as a modulator of cell adhesion. The exploration of Slit-2 in the context of hepatocellular carcinoma provides a basis for future investigations into its therapeutic implications and the development of targeted interventions. The study aimed to investigate the impact of Slit-2 treatment on the expression of cell adhesion proteins in hepatocellular carcinoma (HCC) cell lines.

Keywords: Hepatocellular, cell adhesion, Slit-2 treatment

Role of iron-doped silica nanoparticles in cancer treatment

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Iron-doped mesoporous silica nanoparticles are an appropriate choice for drug delivery systems because of their immense pore volume, tunable pore size, and high surface area. Mesoporous silica nanoparticles, which can be functionalized for tumor targeting, possess a large specific surface area, are inert, and are miniature in size. The porosity of mesoporous silica nanoparticles (MSNPs), which will be extensively researched as nanocarriers for cancer therapy, will be regulated by including iron as a dopant and employing sol-gel techniques. The reactive oxygen species responsive properties of silica nanoparticles (SNs), which will be used for target medication release in cancer treatment, will also be studied. Sol-gel techniques will be used to produce the appropriate porosity. A variety of techniques, including X-ray diffraction (XRD), scanning electron microscopy (SEM) for studying surface morphology, Fourier transform infrared (FT-IR) for examining various functional group peaks, and ultraviolet-visible spectroscopy for examining energy band gaps, will be used to characterize the catalysts. In multidrug-resistant cancer cells, the application of iron doped mesoporous silica nanoparticles will be investigated, where they will show improved cytotoxic effects and effective drug delivery. Iron-doped silica nanoparticles will be used to target drug delivery in cancer treatment by adjusting their porosity.

Keywords: X-ray diffraction, Scanning electron microscopy, mesoporous silica

Impact of glucose on liver cancer metastasis with reference to Slit-robo pathway

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Cancer, the leading cause of death worldwide, highlights liver cancer as a key fighter. In global efforts, the complex role of the SLIT-ROBO pathway, especially its interaction with glucose levels, has not been investigated. This study addresses the research gap, investigating the effects of glucose starvation on the SLIT-ROBO pathway and its mediators of liver cancer metastasis. The theoretical approach involves unraveling the molecular dynamics of SLIT2-ROBO1 down-regulation in liver cancer, emphasizing the uncharted connection with glucose concentrations. Methodologically, human hepatocellular carcinoma cells (HepG2) will be cultured under varying glucose conditions, and SLIT2 expression effects will be assessed through immunofluorescence, immunohistochemistry, and the proliferation assays. Real-time PCR and Western blotting will evaluate gene expression and signaling molecules. This research is significant for its potential to uncover novel therapeutic strategies for liver cancer, providing a nuanced understanding of the interplay between glucose metabolism and the SLIT-ROBO pathway.

Keywords: SLIT-ROBO, human hepatocellular carcinoma cells,

Impact of biogenically synthesised silver nanoparticles on housekeeping gene(s) and their anti-microbial activity in Citrus sinensis plant tissue culture medium

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Citrus sinensis (orange) is a native of Southeast Asia and belongs to the Rutaceae family. It contains a lot of flavanones and polymethoxylated citric acid. Around the world, orange (Citrus sinensis) tissue culture techniques have been utilised to genetically improve a large number of oranges in tissue culture labs to explore the principles behind plant development, cell division, and biochemical processes. Microbial contaminants, however, prevent them from growing, which lowers productivity. Biologically producing silver nanoparticles from experimental plants at a concentration that is safe to use as anti-microbial agents using micropropagation media is the aim of the study. The molecular characterisation of bio-synthesized silver nanoparticles will be accomplished by means of Fourier transform infrared (FTIR) spectroscopy, dispersive x-rays (DTX), and scanning electron microscopy (SEM). In order to accomplish this, Orange explants will be cultured in MS media for the purpose of micropropagation shoots, which will eventually result in an effective shoot length. Different concentration of SNPs will be added to MS media. The length, quantity and chlorophyll content of Orange shoots will be measured and compared with those of the untreated orange plants. The genetic parameter (housekeeping genes) will also be analyzed. According to this research, bio-synthesized nanoparticles will be used as anti-contaminant agents in Orange tissue culture.

Keywords: Citrus sinensis, Fourier transform infrared spectroscopy, Dispersive x-rays

Investigating the Genes Related to Intellectual Disability in Pakistani Population using Next-Gen Sequencing

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The condition known as intellectual impairment (ID) is characterized by inadequate or underdeveloped mental processes. Other words including mental retardation, low functioning autism spectrum disorders, and neurodevelopmental disorders (NDD) are also included in the term intellectual disability (ID). Weddings connected to blood relations are more common for ID. Increased rates of intermarriage in Pakistan have contributed to an increased incidence of genetic diseases, including ARID. Intellectual Disability, classified as a neurodevelopmental disorder, shows limitations in intellectual functioning and adaptive behavior. Familial Partial Epilepsy, Alzheimer's Disease, Parkinson's Disease, Huntington's Disease, Neurofibromatosis and Myotonic Dystrophy are examples of such intellectual disorders. Recent advancements in genomic sequencing technologies, plus next-generation sequencing (NGS), provide unique opportunities to decode the genetic basis of ID. Whole exome sequencing (WES), aid comprehensive analysis of the entire genomic landscape, facilitating the identification of rare and novel variants linked to ID.

Keywords: Intellectual impairment, Neurodevelopmental disorders, Intermarriage

Impact of biogenically synthesised AgNPs on housekeeping gene(s) and their anti-microbial activity in Aloe barbadensis miller plant tissue culture medium

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Aloe barbadensis Miller, commonly known as “Aloe Vera," from the family Asphodelaceae (Liliaceae), is a succulent plant found throughout the world, particularly in tropical regions. Its leaf extracts are rich in enzymes and proteins, which have significant anti-inflammatory and antimicrobial properties. Tissue culture techniques of Aloe vera has been used all over the world for the investigation of mechanisms that are involved in development, division of cells, biochemical processes and genetic variations in growing plant with in tissue culture laboratories. There are some microbial contaminants which reduce the growth rate and required output production. The main purpose of this study is to synthesize biologically formed silver nanoparticles by experimental plants at a safe level of concentration as anti- microbial from micro-propagation media. Silver nanoparticles, synthesized by experimental plant will be assessed for molecular characteristics, like particle size and shape, and the proportion of elemental silver with the help of a scanning electron microscope (SEM), Fourier-transform infrared spectroscopy (FTIR) and an energy dispersive X-ray (EDX). To achieve it, MS media will be used to culture Aloe vera explant for the Micropropagation of shoots at an effective length. MS media will be treated with silver nanoparticles in different concentrations. The measurement of resultant length, as well as chlorophyll content will be carried out along with the comparison of untreated Aloe vera plants. The analysis of genetic parameter i.e., housekeeping genes will also be performed. According to this designed project, biologically produced nanoparticles will be supplied as anti-contaminant agents in Aloe vera tissue culture.

Keywords: Aloe barbadensis, Micropropagation, Dispersive X-rays, Fourier transform infrared spectroscopy

Impact of biogenically synthesised AgNPs on housekeeping gene(s) and their anti-microbial activity in Punica granatum plant tissue culture medium

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Punica granatum, also referred to as pomegranate, is a small deciduous tree and shrub that reaches a height of five to eight centimetres and yields fruit. It belongs to the family Punicaceae.
Plant extracts are considered better than microorganisms since they are simpler to use in the production of nanoparticles. Moreover, during the production of nanoparticles, they might diminish and serve as capping agents. Punica granatum hence functions as both a reducing and capping agent. The main ingredients that can be used to produce silver nanoparticles are the leaves, juice, peel, callus, and bark of the Punica granatum tree. Because of their environmentally favourable nature, silver nanoparticles can be synthesised in a way that is environmentally friendly. The methods that will be applied for analysing silver nanoparticles include Fourier transform infrared (FTIR) spectroscopy, scanning electron microscopy (SEM), and dispersive X-rays (DTX). The

anti-microbial activity of the synthesized nanoparticles will be examined. Measurements of shoot length and chlorophyll content will be performed to monitor physical changes, and genetic data will be analysed to assess the impact of stress on housekeeping genes.

Keywords: Pomegranate, Dispersive X-rays, Fourier transform infrared spectroscopy

Fabrication of metal oxide doped-graphene oxide for solar fuels

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The brewing energy crisis and unprecedented climate change has necessitated the development of alternative renewable source of energy. One approach towards that goal is the generation of organic fuels by the entrapment of light energy. There are many materials available which are useful for that purpose but nanocomposites are widely used owing to their structural and optical properties like CuFe2O4 doped- reduced graphene oxide. The CuFe2O4 doped-reduced graphene oxide is to be prepared by co-precipitation technique and graphene will be converted to reduced graphene oxide by modified Hummer's method. The CuFe2O4 doped-reduced graphene oxide nanocomposite will be characterized by several techniques such as UV, FTIR,scanning electron microscope, X-ray diffraction and photoluminescence technique. Aftermath, the production of solar fuels will be carried out by nanocomposite working as a photocatalyst. The formation of product will be measured by GC-FID and the reduction efficiency will also be calculated as a result.

Keywords: CuFe2O4, Infrared Spectroscopy, Photocatalysis, Nanocomposite

Synthesis of metal oxide nanoparticles for enhanced photocatalysis

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The escalating global population and rapid industrialization have led to a substantial increase in carbon dioxide (CO2) emissions, a major contributor to climate change. To combat this environmental crisis, researchers are turning to innovative solutions inspired by nature. Taking a cue from plants and their ability to use solar energy for photosynthesis, scientists are exploring solar-driven CO2 transformation into hydrocarbons. While photocatalysis has emerged as a promising method for this purpose, challenges such as slow reaction kinetics and limited product selectivity persist. This places a spotlight on CuFe2O4, a metal oxide photocatalyst, as a potential candidate for efficient carbon dioxide reduction. CuFe2O4's distinctive properties, including its inverse spinel configuration and electron conduction characteristics, make it a versatile candidate for various applications. The methodology involves the sol-gel synthesis of CuFe2O4, preparation of a catalyst ink, and detailed characterization through X-ray diffraction (XRD), Fourier Transform Infrared Spectroscopy (FT-IR), and UV-Visible spectroscopy. These techniques promise valuable insights into the multifaceted potential of CuFe2O4, paving the way for carbon dioxide reduction.

Keywords: CuFe2O4, Infrared Spectroscopy, Photocatalysis

Synthesis of high entropy aerogels for efficient photocatalytic carbondioxide reduction

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Aerogel is a thin, highly porous substance that is made from gels in which the liquid component is swapped out for a gas. It is among the lightest solid materials known to exist because of its incredibly low density. Aerogel can have remarkable thermal insulation qualities while having a low density. The concept of high entropy refers to a class of materials that contain multiple elements in roughly equal proportions. In the case of high entropy aerogels, these elements can be metals, non-metals, or a combination of both. The multiple elements create a complex atomic arrangement that leads to unique structural and functional properties. The synthesis of a high-entropy aerogel intended for effective photocatalytic carbon dioxide reduction is the main goal of this research. Metal oxide precursors are carefully mixed in a high-entropy ratio using the sol-gel process to create a special composition that is intended to improve catalytic performance. With meticulous control over the sol-gel process, a homogenous gel containing a uniformly dispersed mixture of metal oxides will be formed. After gelation, a methodical drying process which includes supercritical and controlled air drying maintains the complex aerogel structure, avoiding breaking and guaranteeing peak performance. Characterization techniques, such as SEM, UV-visible spectroscopy XRD, and FTIR, will be employed to analyze the morphology and structural properties of the high-entropy aerogel. The synthesized aerogel will be then subjected to rigorous photocatalytic testing, evaluating its efficacy in the reduction of CO2 under controlled conditions. Gas chromatography is utilized to analyze the resulting gas products, providing insights into the catalytic efficiency of the high-entropy aerogel.

Keywords: Gas chromatography, Aerogel, carbon dioxide reduction, Metal oxide

Synthesisof nano-porous drug carriers for cancer therapy

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For ferroptosis-induced cancer therapy, nanoporous drug carriers based on nanomaterials, such as iron-doped graphene and iron-doped mesoporous silica nanoparticles, have been created. By adding tumor-targeting molecules to the carriers and loading them with anticancer medications and inducers of ferroptosis, nanomaterials can be used to improve the therapeutic potential of these treatments. Specifically, iron-based nanomaterials will demonstrate the potential to trigger ferroptosis by liberating elevated iron concentrations and elevating reactive oxygen species within cells. The goal of developing these nanoparticles will be to enhance the effectiveness of cancer therapy by overcoming medication resistance. All things considered, ferroptosis induction in conjunction with nanotechnology offers a viable approach to the creation of potent cancer therapies.

Keywords: Ferroptosis induction, iron-doped mesoporous, Nanomaterials

Synthesis of metal selenide aerogels for photocatalytic production of solar fuels

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Aerogels are recognized as remarkable materials because of their fine, inorganic superstructure with high porosity. Aerogels are generally characterized by high surface areas leading to increases the amount of available active sites for CO2 adsorption. High porosity of aerogel makes reactant diffusion easier, which lead to higher catalytic efficiency. Effective photocatalysis requires effective charge carrier separation and transport. Optimized structures of copper selenide aerogel can promote fast dynamics of charge carriers, reducing losses through recombination and increasing overall performance. Through sol-gel method, copper slenide aerogel will be prepared and characterization of the prepared aerogel will be done through SEM, TEM, FTIR and UV-visible spectroscopy to analyze the morphology and structural properties of the copper selenide aerogel. Synthesized aerogel will be used as photocatalyst in CO2 reduction.

Keywords: Photocatalysis, UV-visible spectroscopy, Aerogels

Tuning band gap in metal oxide for efficient photoreduction of carbon dioxide

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The efficient reduction potential of carbon dioxide (CO2) into valuable fuels over unique metal doped graphene oxides based substrate is of great interest. Pristine graphene has no band gap. Tuning of band gap in graphene based nanocomposites (NCs) can be monitored by particle size and surface concentration of metal oxide particles dopped on graphene. The Hummer's method will be used to synthesize graphene oxide (GO) and metal oxide (MOx) nanoparticles will be synthesized to produce functionalized MOx/rGO photocatalyst for desirable semiconductor applications. Therefore use of metal doped graphene will offer great opportunities to enhancing the CO2 reduction efficiency. The characterization of catalysts will be characterize by using different techniques like X-ray diffraction (XRD) which shows crystal spectra of GO, scanning electron microscopy (SEM) will be used to study surface topography and morphology of catalyst, photoluminescence (PL) will be used for excitation measurement, FT-IR will be used to investigate different functional groups peaks and UV-Visible spectroscopy will be used to analyse energy band gaps. While sample analysis will be analysed through gas chromatography (GC). The extra ordinary electrical and physical properties of graphene based catalyst as well as its low cost, structural tunnability and eco friendliness makes it alternative approach for economical photocatalytic reduction of CO2 and changes in band structure and optical properties will lead to desired product.

Keywords: Pristine grapheme, Photoluminescence, Nanocomposites, X-ray diffraction

Synthesis of exfoliated reduced graphene oxide for carbondioxide reduction

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Due to its large surface area and single-atom thickness graphene show unusual electrical, mechanical, thermal, and optical properties. As a result, using 2D reduced graphene will present several chances to increase photocatalytic activity. Various techniques will be employed to characterise 2D (rGO). These techniques include Xray diffraction (XRD) which displays the crystal structure of (rGO), scanning electron microscopy (SEM) for studying surface morphology, Fourier transform infrared (FTIR) for examining various functional group peaks and UV-visible spectroscopy for analyzing energy band gaps. A more affordable method will be employed for the photocatalytic reduction of CO2 by using graphene-based catalyst.

Keywords: Xray diffraction, Graphene, UV-visible spectroscopy, Fourier transform infrared

Pakistan's Implementation of "Smart Lockdown" Measures Amid the SARS-CoV-2 Pandemic: Success or setback

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In December 2019, the COVID-19 pandemic started in China and spread worldwide. Precautionary measures were the only viable option to halt the spread because there was no treatment or cure available. The region-wide lockdown was a common strategy implemented globally. Many governments had resorted to sealing borders and limiting transport. When COVID-19 hit Pakistan, the National Command and Operation Center (NCOC) was formed to develop strategies owing to cluster reports and economic challenges. Pakistan's Government imposed varied lockdown types starting in March 2020 in its major cities. Since then, the country has gone in and out of different lockdowns periodically. The purpose of this study was to analyze the effectiveness of three different kinds of lockdown decisions. While using trend line plotting and Pareto analysis of the data available from multiple resources, we proved that "strict/complete lockdown" was the most, effective and "smart lockdown" was the least successful of the three, in terms of disease mitigation. Moreover, we provide the fundamental set of designs for policy effect evaluation for observational data, which includes difference-in-differences, cross-sectional, interrupted time series, and pre/post analyses. provide decision-makers and reviewers conceptual and graphical guidance to identifying the important ways in which the criteria and assumptions behind these designs are frequently broken in the context of COVID-19.

Key-words; COVID-19, Pakistan, Lockdown strategies, Smart lockdown, policy effect evaluation

Correlation of Helicobacter Pylori infection with Variation in Liver enzymes & Uric acid Level in Pakistani population

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Helicobacter Pylori is linked with a variety of hepatic diseases together with non-alcoholic fatty liver disease and bile duct diseases. H.pylori could further lead to inflammation scaring and damage in the liver potentially leading to liver damage. As both serum uric acid (SUA) and liver enzymes, mainly Alanine transaminase (ALT), have been linked to various conditions like elevated blood pressure, cardiovascular disorders, non-alcoholic fatty liver disease (NAFLD). Serum ALT is known as a specific marker for hepatic injury and is predominantly present in the liver. Elevated ALT levels have also been recognized in association with non-alcoholic fatty liver disease (NAFLD).

Keywords: Alanine transaminase, Helicobacter Pylori, serum uric acid

Microbial Assessment and Quality Evaluation of Milk from Lahore and Kasur, Pakistan

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Milk is an important nutritional component of human diet. However, in numerous developing countries such as Pakistan, the quality of milk has become a considerable concern of health for consumers particularly infants and children. The quality of milk is based on the number of physiochemical characteristics, nutritional quality and standards of hygiene. Unhygienic milk production enhances the antimicrobial substances residues in the milk and have been a problem that seeks attention of the researchers. Therefore, the purpose of this research is the assessment of the quality of raw milk of localized area of Kasur and Lahore in Pakistan. This laboratory-based study was conducted on 2 Liters sample of raw milk. The samples collected using simple random sampling technique. The various quality factors tested in different labs of PCSIR i.e., Microbiology lab, Fermentation lab and Dairy lab. For statistical analysis, PCSIR and PSQCA standards used. The total bacterial count, metal detection and various other parameters for quality assessment are checked. This research may cause a significant step for public health concern. Therefore, a proper intervention should be conducted to improve the milk quality.

Key-words: Raw milk, quality test, microbial assessment, nutrition

A Quality Exploration of Fresh and Packaged Orange Juices Available in Local Market

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Orange is a seasonal fruit with different varieties. The fruit processing increase its shelf life. Orange juice is a highly nutritious food for human diet. However, in various developing countries like Pakistan, the quality of juices has become a considerable health concern for consumers especially infants and children. The quality of orange juice depends on the various physiochemical characteristics, nutritional quality and hygienic standards. Unhygienic production of juice accelerates the residues of microbial substances in the juice and have been a major problem that needs a considerable attention of the researchers. This research carried out on orange juices for the analysis of selected physicochemical analysis including pH, microbial content, acidity and total sugars. Therefore, the aim of this study was to compare the quality of various orange juices (fresh and packaged) available in the local markets of Lahore. The samples were collected from different localities of Lahore. The various quality factors were tested in different labs of PCSIR i.e., Microbiology lab, Fermentation lab and Fruit & Vegetables lab. For statistical analysis, PCSIR and PSQCA standards are followed. Total bacterial count, metal detection and various other parameters for quality assessment were checked. This study may cause a significant step for public health concern. Effective measures must be implemented to enhance the quality of orange juice through appropriate interventions.

Key-words: Orange juice, quality test, microbial assessment, nutrition quality

Study of Autosomal Recessive Intellectual Disability in Pakistani Population

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Intellectual disability (ID) known as “mental retardation” represents a major public health concern. It is characterized by a genetic insufficiency in intellectual function and adaptive behavior impacting on social interfaces as well as on mental and practical abilities of affected individuals. ID is classified into syndromic ID and nonsyndromic ID based on the clinical presentation of patients. Syndromic intellectual disability (SID) is combined effect of ID with other physical and behavioral abnormalities. Nonsyndromic ID is generally a pure form of ID which is defined by the presence of ID as the sole clinical feature. Mild Intellectual Disability Individuals with slight intellectual incapacity commonly have an IQ rating ranging from 55 to 70. Moderate Intellectual Disability IQ rankings normally fall in the range of 40 to 55. Severe intellectual disability is characterized by means of IQ rankings between 25 and 40. Profound Intellectual Disability Individuals with profound intellectual disability have IQ rankings beneath 25. Some people may additionally have precise intellectual and developmental issues that have an effect on most effective certain cognitive capabilities.
Pakistani population has been a rich source for recognizing genes causing to autosomal recessive diseases. About 50-60% of all marriages in Pakistan are reported to be consanguineous due to sociocultural and religious reasons. Addressing these problems requires a multi-faceted technique, encompassing policy reforms, instructional tasks, community cognizance campaigns, and greater healthcare infrastructure to create an inclusive society that acknowledges and supports the rights and capacity of people with intellectual disabilities in Pakistan. Investigate genetic factors involved in the affected families. Only those families were included in which the affected patients were brothers and sisters or their blood relatives. Those patients who were not suffering from generalized active infection. Family pedigree (at least three generations) drawn for the validation of mode of inheritance. The photos of the ears, nose, eyes and mouth captured through camera to detect the facial dysmorphism. Five ml blood samples were collected from ID patients, their normal siblings and parents. These blood samples were processed in laboratory for DNA extraction and later to investigate underlying genetic factors.

Key-words: Genetic disorder, DNA extraction, intellectual disability, autosomal recessive

A Worldwide Systematic Review and Meta-Analysis on the Incidence of Urogenital Infections in Infertile Males

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Highlighting the pivotal association between urogenital infections and male infertility, this study is a comprehensive analysis on a global scale. It sets the stage by emphasizing the lack of a consolidated understanding regarding the prevalence of urogenital infections in infertile males, prompting the necessity for a systematic review and meta-analysis. The research aimed to fill this knowledge gap and provide a foundation for informed strategies in addressing the impact of urogenital infections on male reproductive health worldwide by conducting a meta-analysis to determine the global prevalence of urogenital infections in infertile males. By synthesizing existing data, the research seeks to elucidate the extent of this association, providing valuable insights for clinical understanding and public health interventions. Systematic meta-analysis study in already published articles conducted. All included articles reviewed to extract the date and compiled in excel sheet. STATA 14.1 is used for the statistical analysis of the compiled data. Providing a global perspective on prevalence, this systematic review and meta-analysis, utilizing STATA 14.1 for statistical analysis, aimed to consolidate and analyze existing data on urogenital infections in infertile males.

Key-words: male infertility, meta-analysis, STATA

Assessment Of Ocular Surface Problems In Case Of Hyperthyroidism

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Including eye and vision issues thyroid problems can result in a number of structural body and functional changes, which can be detrimental to a patient's well-being. The objective was to Assess the Ocular Surface Problems in Case of Hyperthyroidism. The cross-sectional study involved 46 hyperthyroidism patients at Services Hospital Lahore, with 15 females and 31 males, who underwent eye examinations from Feb to May 2023. In this study, the average age was 28.65±4.52 years with an age range (of 18-41 years). Shows the distribution of ocular diagnoses in hyperthyroidism patients. The study found that 52.17% of participants had dry eye, 15.22% had corneal abrasion, blepharitis, conjunctivitis, 8.70% had proptosis, 4.35% had periorbital cellulitis, and 2.17% with corneal ulcer. Hyperthyroidism patients exhibit ocular surface symptoms. The most common eye symptoms were irritation in 11%, itching in 11%, redness in 21.76%, watery eyes in 11%, and scarring in 11% of subjects. Other symptoms were blurry vision, cranial nerve problems, lid swelling, pain, paralyzed muscle, photophobia, pus, and white eyelash.Based on our findings, it was noted that Hyperthyroidism patients experience ocular surface issues like corneal abrasion, dry eye, infection, severe pain, conjunctival redness, lid redness, irritation, tearing, light sensitivity, diplopia, and blepharitis. Further research is needed.

Key words: Ocular Surface, Schirmer Test, Fluorescein Test, Hyperthyroidism, Thyroid Function Test, Slit Lamp

Knowledge Evaluation Regarding Cortical Visual Impairment In Children Among Eye Care Practitioners

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Cortical visual impairment in children is a condition characterized by normal or minimal ocular morbidity, vision-guided tasks, and motor planning due to retro chiasmal visual tract disorder. The objective was to assess the knowledge about CVI among ophthalmologist's, optometrist's and eye care practitioner's practicing in Pakistan. The study was a cross-sectional study, collected data through a validated questionnaire sent via email and WhatsApp, and physically filled by visiting ophthalmologists, optometrists, and eye care practitioners in various hospitals. The study included 73 eye care practitioners, with 18.3% Ophthalmologists, 59.2% Optometrists, and 22.5% general practitioners, with two excluded due to lack of knowledge about CVI. The study found that practitioners in developed countries were knowledgeable about causes, clinical features, eye examinations, management, and vision improvement knowledge. The study found that 61.3% of participants were aware of the investigation of choice for diagnosing CVI, and 38.4% were aware of leading causes of visual impairment in developed countries, ophthalmologists having a higher knowledge score.Most ophthalmologists, optometrists, and eye care practitioners know about the cause, investigation, management, and prognosis of CVI, emphasizing the need for eye examinations. The study found that a few participants were aware of clinical features, risk factors, and causes of visual impairment, and few examined patients with CVI, despite its high prevalence.

Key words: Cortical Visual Impairment, Knowledge, Ophthalmologist's, Optometrist's, Eye Care Practitioner's

Prevalence Of Work-Related Neck Pain And Disability Among Dentists Working In Lahore

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Dental professionals frequently experience work-related neck pain and disability due to their postures during dental procedures, ranging from mild to severe pain, tingling, numbness, or weakness in their arms and hands. The objective of the Study was to find out the Prevalence of work-related Neck Pain and Disability among dentists working in Lahore. This study was a cross-sectional survey conducted in the different Punjab dental hospital, Lahore medical and dental hospital, Shalamar hospital, Services hospital Lahore, Jinnah hospital, Society hospital, Doctors hospital and Al-Ehsan hospital Lahore with a sample size of 185. The study was conducted in the duration of 6 months and Neck Disability Index was used to report neck pain and disability among dentists. The data was analysed by using SPSS V22.The result showed that out of 185 dentists' majority of participants were females 103 (55.7%), with an average age 25-35 years. Our study showed that 81 (43.7%) dentists suffered from neck pain and the remaining 104 (56.2%) had no neck with a mean of 0.77 ±1.08 (mean±SD). Out of 185 participants, 133 (71.8%) dentists had disabilities and the majority of dentists suffered from mild disability 84(45.4%), with a mean of 2.10+0.98 (mean ± SD).The study concluded that the prevalence of work-related

neck pain and disability was mild among dentists, 81 (43.7%) dentists had neck pain and 133 (71.8%) dentists with disabilities.

Keywords: Neck Pain, Disability, Work Related, Dentists, Posture, Neck Disability Index (NDI)

Prevalence Of Convergence Insufficiency In Student Of Institute Of Health Science Kfueit, Ryk

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When reading or working up close, people with convergence insufficiency experience a strong tendency for their eyes to drift outward (exophoria). Convergence insufficiency symptoms include eye fatigue, migraine, periodic double vision, text moving on the page, difficulty focusing, laziness in studding, and loss of position while studding, and are typically connected to near-related tasks. The aim was to estimate the prevalence of Convergence Insufficiency (CI) among students in the Institute of Health Sciences, Khawaja Fareed University of Engineering and Information Technology, Rahim Yar Khan. The study was conducted on a sample of 300 students from the Institute of Health Sciences, KFUEIT.. Demographic information was collected, and optometric tests were performed to assess convergence abilities. The Royal Air Force (RAF) rule was used to measure the point of convergence, with a convergence distance of 10 cm considered normal. The data was analysed using the statistical package for social sciences (SPSS). Among the gender analysis, 85 males and 109 females demonstrated normal convergence, while 35 males and 71 females had CI. Age-wise analysis revealed variations in convergence abilities, with the “20-22 years” age group showing a higher prevalence of normal convergence. The study concluded that CI is prevalent among students in the Institute of Health Sciences, KFUEIT. The findings highlight the importance of addressing CI as it can affect academic performance and overall well-being.

Keywords: Asthenopia, Binocular vision, Convergence, Refractive Error

Effect of forward head posture on neck pain and balance in computer usesrs

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The ideal head position is when the skull is not tilted, retracted, rotated, or stretched. This is advantageous because it reduces the amount of muscular power required to oppose the propensity of the head to tilt forward, also known as forward head posture (FHP). The most common departure from normal head posture is forward

head posture, which is defined by the head extending forward into the sagittal plane, anterior to the trunk. When compared to age-matched controls, those with neck discomfort usually have FHP. Computers have become an indispensable component of businesses and workplaces. Among computer users, the neck and shoulders are the most prone to acquiring musculoskeletal complaints.The aik was to evaluate the prevalence of neck pain among computer science students due to the forward head posture. To identify balance disturbances or postural control among the computer science students having forward head posture.A Correlational Study was conducted on a sample of 105 computer users. Probability, simple random sampling technique was used in selection of study sample after screening with inclusion & exclusion criteria.Data showed that out of 105 participant's 85.7 percent participants were men while 14.3 percent participants were women. The results showed that the forward head posture was present in 26.7 percent computer users and 45.7 percent participants had neck pain.There was no statistically significant association between forward head posture, neck pain and balance among computer users.

Keywords: Forward Head Posture, Neck Pain, Computer Users, Musculoskeletal, Centre of gravity

Variation in Schirmer's test result in three follow-ups of one week apart after phacoemulsification

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Dry eye disease (DED), also known as dry eye syndrome, or keratoconjunctivitis sicca (KCS), and keratitis sicca, is a multifactorial disease of the ocular surface due to homeostasis of the tear film. Dry eye disease comprises a spectrum of disorders which cause tear □lm instability, hyperosmolarity, chronic in□ammation, and neurosensory abnormalities, all of which lead to chronic ocular surface dysfunction.The study aims to determine the variation in Schirmer's test result in three follow-ups of one week apart after phacoemulsification.This was a Prospective observational case study. This study was conducted at Ibrahim Eye and Medical Center from February 2022 to May 2022. Pseudophakic patients who underwent phacoemulsification (cataract surgery) were included. Schirmer test was assessed the tear film level in three follow-ups after cataract surgery in pre and postoperative follow-ups.One hundred ninety-five eyes of 195 patients were included. 118(60.5%) men and 77(39.5%) women with the mean age 171(116.7%) years were included. Out of 195 eyes were 112(54.4%) right and 83(42.6%) left eye. Dry eyes were found in pre-operative wetting length of Schirmer strip in mm, 1mm to 5mm were 19(9.7%), 6mm to 10mm 91(46.7%), 11mm to 15mm 53(27.2%) and >15mm 32(16.4%). In post-operative 1st follow-up wetting length of Schirmer strip in mm. 1mm to 5mm were 30(15.4%), 6mm to 10mm 109(55.9%), 11mm to 15mm 34(17.4%) and >15mm 22(11.3%). In post-operative 2nd follow-up wetting length of Schirmer strip in mm. 1mm to 5mm were 77(39.5%), 6mm to 10mm 76(39.0%), 11mm to 15mm (30(15.4%) and > 15mm 12(6.2%). Pre-operative and post-operative 111(56.9%) participants had blepharitis and 84(43.1%) had no blepharitis.Dry eye may worsen or developed after phacoemucification.

Key words: Tear film, Dry Eye, Schirmer Test, Phacoemulsification, Pseudophakia.

Assessment Of Nutritional Status In Type Ii Diabetes Mellitus Patients

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Diabetes and malnutrition frequently co-occur. It can be difficult to determine the prevalence of malnutrition among the population in rural areas. Our study's objectives were to evaluate hospitalized patients' nutritional status and risk of malnutrition as well as to determine the key clinical indicators and risk factors for malnutrition. About 308 adults with type 2 diabetes were enrolled in this descriptive cross-sectional study conducted at the Mardan Medical Complex's Outpatient Department. Clinical measurements (weight loss kinetics, eating history, anthropometric measurements) and comorbidities were used to evaluate nutritional status. The MUST Score was used to determine the positive diagnosis of malnutrition. The mean age was 55.1 ± 13.9 years, 308(100%) out of which 155(50.3%) were male and 153(49.7%) were female, out of which 273(88.6%) were unmarried 27(8.8%) was unmarried while the rest 8(2.6%) was widowed. 308(100%) out of which 11(3.6%) had a family history of HTN 185(60.1%) had a family history of DM 112(36.4%) had a family history of HTN+DM+CAD. A total of 308(100%) out of which 240(77.9%) were those who were disease-free and had nutritional intake for >5 days while 68(22.1%) were those who had the disease and had no nutritional intake for>5 days. The total 308(100%) out of which 146(47.4%) was at low-risk 108(35.1%) were at medium risk and 54(17.5%) was at high risk of malnutrition. There was no statistically significant association between gender and overall risk score. Patients with type 2 diabetes mellitus have a significant prevalence of food intake deficits, putting them at high risk for malnutrition.

Keyword; Comorbidities, Diabetes, Nutrition, Hypertension, Cross sectional Study.

Potential Health Benefits of Probiotics in Cardiovascular Disease

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The majority of research on probiotics uses single strains, which are occasionally added to various food products. The effectiveness of probiotic strain mixes is less well understood, particularly if mixing strains leads to lower efficacy because of mutual inhibition between the component strains or to other food additives. There is a long history of linking probiotics to health. Over a century has gone since Tissier first noticed that the gut microbiota of healthy breastfed infants was dominated by rods shaped like bifidobacteria, which were not present in formula-fed infants who had diarrhoea. This observation established the idea that these bacteria were involved in preserving health. Numerous research conducted since then have confirmed this. There is evidence that the microbiota that lives in the human gastrointestinal tract significantly affects an individual's health. Recent research indicates that the pathophysiology of cardiovascular diseases (CVD) may involve an imbalance of microbes in the gut. As a result, several research have examined the possibility of using probiotics to modify gut microbiota to prevent or treat CVD.

Keywords: Probiotics, CVD, Lipid, Cholesterol, Atherosclerosis, Coronary heart disease

A Comparative Study of Preoperative Anxiety Among Adult Surgical Patients Associated with Gender, Educational Level and Pre-Operative Information

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Anxiety is a feeling of fear, dread and uneasiness. Anxiety is one of the major problems of patients during the pre-operative and post-operative process of surgery. The pre-operative anxiety was statistically significant among female patients then control. Pre-operative anxiety is a challenging problem in the care of patients. A low level of anxiety is considered a normal level. Pre-operative anxiety is one of the major causes of pain in post-operative care. Stress is also a contributing factor in the anxiety disorder. A nurse/counselor provides a better environment for the patient.

Keywords: Anxiety, Surgical Patients, Gender, Educational Level, Pre-Operative Information

Determinants of Iron Deficient Anemic Adolescent Girls of Age 15 To 19 Years

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Being an international public health problem, anemia affects both developing and developed nations. Adolescent girls are more susceptible to anemia due to gender stereotypes. Girls are more likely to experience food insecurity and higher iron needs due to rapid growth, and menstruation loss. Teenage girls' anemia and iron deficiency appear to be mostly caused by inadequate dietary iron consumption and inadequate dietary micronutrient intake. During this study of adolescent girls aged 15 To 19 years, there was a predominance of plant-based diets, with fewer fruit, dark-green leafy vegetables, and food derived from animals, 35% of adolescent girls were underweight, and only 4% had a varied diet. Teenagers who already have anemia are more likely to develop it during pregnancy, which can be harmful to both the pregnancy and delivery process. Other studies have revealed that anaemic adolescent girls had stunted growth. Malaria, schistosomiasis, hookworm, and vitamin deficiencies are some other illnesses that can cause anaemia.

Keywords: Anemia, Adolescent girls, 15-19 years age, Stereotypes, Menstruation loss.

Prevalence of Skipping Breakfast among High School Students and its Role on Academic Performance

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The objective of this study was to evaluate the prevalence of skipping breakfast and examine the association of breakfast consumption with children's academic performance. This quantitative study (cross-sectional) was conducted with high school students aged 12 to 18 years. Data was collected from almost 277 students (65 students from the government sector and 212 from the private sector) through a questionnaire to access participants' demographic characteristics on 24-hour recall. In addition, Interviews were also conducted with teachers to obtain information about academic performance and behavior of students. Breakfast skipping affects weight and also on academic performance. We found a positive and statistically significant relationship (p-value: 0.011) between consumption of breakfast and academic performance. Students who consume breakfast daily exhibit superior academic performance as compared to those who do not consume breakfast. Students who eat breakfast regularly or occasionally tend to have a higher or normal body weight compared to those who consistently skip breakfast.

Keywords: Breakfast, academic performance, high school students, 12 to 18 years old.

Mitigation of Salt Stress and Salicylic Acid on Germination of Bitter Gourd.

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This research directs the challenges of suboptimal germination in bitter gourd seeds by investigating the potential benefits of pre-sowing hormonal application. The aim of study was to investigate if the pre-sowing hormonal application could improve the germination rate of bitter gourd. A lab experiment was performed to check germination response at various levels of NaCl and Salicylic Acid (SA). Seeds were soaked in water for 24 hours, then five seeds were placed in each petri dish, fit with Wattman filter paper, treated as Control (distilled water), Salt stress(60mM), SA(10 µM, 20 µM) alone, and with salt stress. Germination of seeds was recorded daily, and different germination related parameters like Germination Index (GI), Final Germination Percentage (FGP), and Mean Germination Time (MGT) were recorded. Morphological parameters including root length, shoot length, fresh weight and dry weight of seedlings were recorded. In GI and FGP, SA (20 µM) showed best results. In MGT and dry weight, the results were non-significant. In root and shoot length, SA (10 µM) showed best results. In fresh weight, control (distilled water) showed best results. SA (20 µM) boosts germination, but MGT and dry weight results are unclear, indicating hormonal responses may vary. SA (10 µM) improves root and shoot lengths, and distilled water is a useful control for fresh weight.

Keywords: Germination Index, Mean Germination Time, Final Germination Percentage, Salicylic Acid.

Comparison of Dietary Modifications and Exercise for Weight Loss in Adults (18-35 years)

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Obesity is a complex disease for which weight loss has been sought all over the world. Obesity is caused by increased food consumption, body fat deposits, and a sedentary lifestyle. According to the Pakistan Demographic and Health survey (PDHS) conducted in 2013, 11% of men and 19% of women in rural Pakistan were obese. Obesity was far more common in cities, with 23 percent of males and 40 percent of women being fat. The objective of this research was to compare the effect of dietary modifications and exercise on weight loss in adults (18-35 years). A survey-based study was conducted among 100 participants randomly selected at gyms, universities, and hospitals falling in the age group 18-35 years. Data was collected using a structured questionnaire and was analyzed using SPSS version 24.0. The 77% of people wanted to lose weight 36% of individuals lost weight through specific dietary patterns. Only 13% of people used supplements for weight loss and 45% of the participants lost weight through dietary modifications while 34% lost weight through exercise. It was concluded that dietary modifications, exercise, and the use of supplements are major techniques followed by people to lose weight. Based on the results, a calorie-restricted balanced diet with an active lifestyle involving regular exercise is recommended.

Keywords: Obesity, Multifactorial Disease, PDHS, Dietary Modifications, Calorie Restricted Diet.

Nephroprotective Role of Plant Extracts Against Streptozotocin-Induced Diabetic Nephrotoxicity

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Kidneys are a very important organ of the human body and can be damaged by many diseases and medicinal drugs. Many potent medicinal plants have been used to cure nephrotoxicity in the body. In this study extracts of leaves and fruits Acacia nilotica and leaves and milk of Calotropis gigantea were used for the reduction of serum albumin, serum urea, serum creatinine, and electrolytes (Na. K). The goal of our study was the nephroprotective role of extracts of A. nilotica and C. gigantea in streptozotocin-induced diabetic nephrotoxicity in Albino rats. Thirty-five female rats were used in the experiment and divided into seven groups (five animals in each group). Nephrotoxicity was induced intraperitoneally by streptozotocin in 50mg/ml/kg body weight of animals while metformin was used as a positive nephroprotective drug. The data has been analyzed by one-way ANOVA and means with standard error. Results showed that the metformin significantly decreased the serum urea, albumin, and serum creatinine in albino rats. The leaf extracts of ethanolic and N- hexane extract respectively were more effective (3.30 ± 1.1 mg/dl and 3.41 ± 1.07 mg/dl) and the water extract respectively were more effective. While its chloroform and water extracts (121.21 ± 16.34 mg/dl and 115.43 ± 12.17 mg/dl) respectively were effective for reduction in serum urea and n- hexane extract (68.23 ± 0.09 mg/dl) decreased serum urea while its n- hexane and ethanolic extract (0.75 ± 0.06 mg/dl and 0.74 ± 0.16 mg/dl), respectively enhanced the properties of A. nilotica and reduces serum creatinine and chloroform extract (0.84 ± 0.31 mg/dl) less effective

to reduce serum creatinine.

Keywords: A. nilotica, C. gigantea, Streptozotocin, Metformin, Albumin.

Role Of Contrast Enhanced Computed Tomography And Fast Scan In Evaluation Of Bowel And Mesenteric Injury In Case Of Blunt Abdominal Trauma

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The third most frequent injury among patients who have endured blunt abdominal trauma is a bowel or mesentery injury. Morbidity and death rates rise as a result of delayed diagnosis. The goal of our study is “comparison of contrast enhanced computed tomography and fast scan in evaluation of bowel and mesenteric injury in case of blunt abdominal trauma.” We included all the patients who underwent FAST SCAN and contrast-enhanced CT of the abdomen and pelvis with MDCT findings of blunt bowel and/or mesenteric injury (BBMI). The data was obtained from radiology department of Services Hospital, Lahore. After informed consent data was acquired from the MDCT and FAST imaging. 140 patients of blunt abdominal trauma were subjected to MDCT and FAST SCAN out of which 74(52.8%) were negative for FAST and 66(47.1%) were positive for FAST scan 60(42.8%) were true positive and 6(4.2%) were false positive. Out of 74 negative patients70 were true negative although FAST proved good for initial assessment of trauma but missed solid organ injury which later on ruled out on MDCT. The present study concluded that MDCT is the superior diagnostic modality in the diagnosis of blunt abdominal trauma. USG can be a valuable initial investigation; however, USG can miss crucial injuries and may lead to inappropriate management in some patients. Hence it is imperative that all USG positive cases should be followed by MDCT. Similarly, MDCT must also be performed in symptomatic patients with negative USG scans and in patients with suboptimal USG scans.

Keywords: Blunt Abdominal Injury, Ultrasonography (USG), Multi-Detector Computed Tomography (MDCT).

Sonographic Evaluation of Normal Liver, Spleen and Kidney Sizes in Healthy Adults

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Different studies were conducted in deferent parts of world so as to determine normal reference values of liver, spleen and kidney sizes. Ultrasonography provides important anatomical details of the organs or viscera to the clinician with low interobserver variability. Objective: To determine the normal liver, spleen, and renal parameters in adult patients with no comorbidities.
Cross-sectional study. Duration: The duration of study about 4 months till this thesis report. A total of 50 study participants (Dept. of Diagnostic Radiology & Imaging, Nishtar Medical University and Hospital in Multan, Pakistan) with more than 17 years of age of either gender underwent ultrasound examination. All individuals with morbid conditions like hypertension (HTN), diabetes mellitus (DM), liver cirrhosis, hydronephrosis, renal

cyst, and liver mass were excluded. Ultrasound scan was performed and longitudinal and transverse sections were obtained of both kidneys (in full inspiration), spleen and liver. Interpretation: Data was analysed by using Microsoft Excel version 2016. Liver and spleen both were larger in males than females and there was just a slight difference in kidney sizes of both genders. BMI was found significantly positively correlated with liver size and spleen in study participants.
Moreover, renal size inversely correlated with age of the individuals.

Keywords: Echogenicity, Hyper echoic, Body mass index

Environmental Factor Contributing in Cardiac Arrhythmia

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Cardiac arrhythmias encompass a range of cardiac rhythm disturbances linked to various cardiovascular conditions, including sudden cardiac arrest, contributing to diminished quality of life and heightened mortality rates. The main objective of the study is to find the major environmental factor contributing in cardiac arrhythmia This observational study was conducted in Benazir Bhutto Hospital (BBH) Rawalpindi, during March-August 2023. All the patients suffering from cardiac arrhythmia were included in the study. Data was collected from 220 patients of both genders. Detailed environmental exposure histories, covering factors such as air quality, occupational hazards, and lifestyle choices, were meticulously documented. Cardiac monitoring and electrocardiographic evaluations were conducted to assess the incidence and severity of arrhythmias. Subsequently, rigorous statistical analyses were applied to the collected data to uncover potential correlations between environmental factors and cardiac arrhythmias. Data was collected from 220 cardiac arrhythmia patients. Increased levels of air pollution were found to be correlated with a 25% higher prevalence of atrial fibrillation (AF) and a 30% increased incidence of ventricular tachycardia (VT). Specific occupational exposures to certain chemicals were linked to a 15% higher prevalence of supraventricular tachycardia (SVT). Lifestyle behaviours such as smoking and excessive caffeine consumption were hypothetically associated with a 20% higher occurrence of premature atrial contractions (PACs) and an 18% higher prevalence of premature ventricular contractions (PVCs), respectively. It is concluded that the occurrence and severity of different cardiac arrhythmias are linked to factors such as air pollution, occupational exposures, and lifestyle choices. Understanding the relationship among these environmental factors can offer valuable insights
into the reasons of cardiac arrhythmias, leading the way for personalized interventions and
preventive measures.

Keywords: Cardiac, Patients, Air pollution, Environmental, Lifestyle, Behaviours

Etiology, Transmission and Prevention of Nosocomial Infection

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Nosocomial infections, often known as hospital or healthcare-associated infections are illnesses obtained while getting medical treatment that were not present at the time of admittance. They can show up in a variety of settings, including hospitals, long-term care institutions, and ambulatory setups, or even after discharge. If left uncontrolled, these preventive and deadly illnesses not only contribute to patients, misery, but also create significant financial burden. The objective of eliminating intervals has grown more challenging for healthcare authorities and infection control groups as the incidence of nosocomial infections and antibiotic resistance has expanded. Antibiotic resistance in emerging diseases can be readily decreased by following healthy and sound care delivery techniques devised by infection prevention and control committees, limiting transfer of these illnesses using proper antimicrobial usage techniques A systematic search of the literature was performed in PubMed, MEDLINE and Google Scholar. Papers mentioned in this article have been recognized from the authors, databases and complemented by searches on PubMed, Google scholar and internet publications. It included only peer-reviewed, English-language publications. Nosocomial outbreaks can be single- or multi-organism, and causes include fungus, bacteria, prions and viruses. Various sources have been identified, including infected medical devices such as duodenoscopes, reused injection fluids, and health care employees Infection control strategies may be devised with the use of an effective surveillance approach advised by WHO. Training hospital employees in bio-safety, effective management of waste, and healthcare laws, as well as promoting awareness of these prevalent infections among the general public, can all assist to reduce nosocomial infections

Keywords: Nosocomial infections, causative organisms, routs of transmission, determinants hospital setting and prevention

Sonographic Evaluation of Uterine Fibroid with Disturbed Menstrual Cycle

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Uterine fibroids are a major cause of illness in women of a reproductive age. There are many factors involved in the growth and reduction of these common tumours. The most likely cause of fibroids is their effect on a woman's menstrual cycle. For accurate diagnosis numerous diagnostic markers on ultrasound are present which increases the efficacy of ultrasound to diagnose uterine fibroids. To evaluate the different location of uterine fibroids in patient with disturbed menstrual cycle on Ultrasound. The descriptive study was conducted from August to December 2021 at the Ghurki Trust and Teaching Hospital. A total of 97 patient data were collected. All the patients with uterine fibroids due to heavy bleeding, abdominal pain, pelvic pain, disturbance in menstrual cycle undergoing ultrasound were included. Patients with H/O Cystectomy and H/O cyst were excluded. The association of leiomyoma number, volume, location and axial position with menstrual cycle characteristics was also examined. Examination was made on USG machine HD3 Model (2-5 MHz). Around 97 cases were numbered in our inquiries. The maximum frequency of cases was recorded in age cases category of 15-20Years (2.1%), 21-25years (6%),26-30years (14.4%),31-35years (20.6%),36-40years (27.8%),41-45years (17.5%),46-50years (9.2%),51-55years (2%),56-60years (1%) and clinical and sonographic signs Abdominal pain (97cases), heavy bleeding (64 cases), Amenorrhea (30 cases), Polymenorrhagia (65 cases), dysmenorrhea (61 cases). Solid uterine mass 88(90.7%). The frequency of cases diagnosed by ultrasound was 97 (100%) with the sensitivity and specificity around 98% and 96%. Our study has concluded that uterine fibroids effect on menstrual cycle and Ultrasound can more accurately diagnose Uterine fibroids due to its sensitivity and best imaging technique.

Keywords: Ultrasound, Fibroids, Menstrual

Association Of Polycystic Ovaries with Intima Media Thickness of Common Carotid Artery

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Polycystic ovary syndrome, or PCOS, is the most common endocrine disorder in women of reproductive age. The syndrome is named after the characteristic of the cysts which may form on the ovaries, though it is important to note that this is a sign and not the underlying cause of the disorder. The objective of this study was to check the CIMT in PCOs patients by comparing with healthy women that either atherosclerosis more commonly occurs in PCOs patients or in healthy women. A comparative analytical study was conducted at the University Ultrasound Clinic Green Town, Lahore for a duration of 4 months. A total of 300 females of reproductive age were included in this study. 152 women with polycystic ovarian syndrome and 148 healthy controls. The mean age of participants from study was 28 years with a range 19 – 43 years. Mean carotid intima-media thickness in normal women was 0.3 mm + SD 0.09, and the mean Carotid Intima-Media wall thickness in women with PCOS was 0.6, + SD 0.15 mm. Out of 300 study participants 130 (43.3%) were non-obese and 170 (56.7%) were obese. According to the current study, people with PCOS are more likely to have symptoms of early systemic atherosclerosis at a young age, as seen by their higher carotid IMT measurements.

Key words: Carotid Intima media thickness, polycystic ovarian syndrome, obesity, body mass index

Sonographic Evaluation of Endometrial Polyp in Patients with Heavy Menstrual Bleeding and Fertility Issue

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Endometrial polyp (EP), a common gynecologic condition for which abnormal uterine bleeding (AUB) is the most common presenting symptom, is defined as a localized overgrowth of the endometrial glands and stroma around a vascular core that projects from the surface of the endometrium. The aim of this study is to detect the endometrial polyps through ultrasonography in patients suffering from heavy menstrual bleeding and to investigate that endometrial polyp is a cause of heavy menstrual bleeding and fertility issue in females of reproductive age. It was an observational study in Arif Memorial Hospital Lahore and others hospitals which was conducted in 6 months. In this retrospective study of endometrial polyps, the total number of patients taken was 90. In this study we divided the patients into two age groups. Group 1 (18-25) years and Group 2 (26-35) years. Results of this study shows that there is higher frequency of patients with age group 2 (26-35) having endometrial polyps associated with infertility and heavy menstrual bleeding. In this study each and every case has different variables and each variable either relate or not relate with other variable. But there is a higher frequency of the patients from age group 2(26-35 year) with a high ratio of primary infertility, multiple no of polyps with zero or single previous pregnancies and heavy menstrual bleeding, evaluated best on transvaginal ultrasound, with a polyp size from 2-10 cm.

Key Words: Polyps, Pregnancy, Heavy menstrual bleeding, Infertility

Evaluation Of Infarctive Stroke On Computed Tomography

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Infarctive stroke is a brain injury in which a blood clot obstructs the blood flow to the brain. This is also called ischemic stroke. It is not most apparent on diagnostic imaging as having obvious symptoms. It indicates progressive brain injury and is a risk factor for more strokes. To evaluate frequency of infarctive stroke among patients using computed tomography. It was Retrospective observational study. The study was conducted at the Department of radiology in Madina Teaching Hospital Faisalabad from November2021 to May2022. The sample size was 60 patients above the age of 40 years. The selection criteria were focused on individuals with clinically presentation of stroke and the risk factors which leads to stroke like arteriosclerosis. The main variable of interest is the presence or absence of infarctive stroke as determined by computed tomography scans. For data collection a questionnaire was formed which include demographic factors, medical history, and the risk factors such as age, hypertension, and coronary artery disease. Previous medical records. This study was adhered to ethical standard and patient confidentiality. Preliminary findings suggested a significant association between atherosclerosis and the incidence of infarctive stroke. The prevalence of stroke varies across different regions, with age, hypertension, and coronary artery disease identified as significant risk factors. Above 50 years the chances of stroke become double. Computed tomography (CT) play a crucial role to differentiate between infarctive and hemorrhagic stroke . While CT scans can aid in identifying large infarctions relatively quickly, smaller infarcts may not become visible until hours or even days after the stroke. This underscores the importance of timely imaging to ensure accurate diagnosis and appropriate treatment.

Key words: Computed tomography (CT), Infarctive stroke, Preliminary findings, Incidence, arteriosclerosis.

A Study On Facts And Myths About Sun-screen Related To Pigmentation

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Sunscreens are non-toxic and non-allergenic, include organic and inorganic filters; they offer better protection in UVA band. Different formulations and myths of sun screen are present now a day and are confusing to their consumers. Pigmentation, sunburn and skin cancer is the global public health problem, among these physiological changes, can be from either acute or chronic UV exposure. In Pakistan, medical students have good knowledge about sunscreen use but there is gap between knowledge and practice. This conducted study determine knowledge and practice related to hazards of UV radiation among medical students. This data was gathered online using online google survey written in simple English. Population size of 10,000 is noticed, response rate of our survey is 50%, recommended sample size is 150 using Raosoft sample size calculator, SPSS 21.0 is used for analysis. Duration of study was 3 months. A total of 150 respondents were considered and all of them belongs to RYK and both are graduated and undergraduates. Through this work we conclude that almost 90% of the population has knowledge about sunscreen in this era, but still 50% of the population is not using sunscreen because of common myths so are facing skin problems and the other 40% population is using sunscreen but unaware with its correct way of application and its quantity one must need to apply. Study claims

sunscreen role and its correct application as recommended by WHO (World Health Organization) in preventing cancer, pre-aging signs and pigmentation.

Keywords: Sunscreen, Skin cancer, Pigmentation, Solar radiations, Sunburn, Photoaging

Ultrasonographic Evaluation Of Placental Grading In 2nd And 3rd Trimester In Hypertensive Pregnant Women

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One of the most well-known pregnancy problems, hypertensive disorders carry a significant risk for both mother and fetal morbidity and death. In hypertensive mothers, ultrasound is crucial in assessing the placenta. The purpose of this study was to evaluate the utility of Ultrasonographic placental grading as a diagnostic tool for evaluating placental maturity and predicting adverse outcomes in hypertensive pregnant women during the second and third trimesters. A prospective observational study was conducted on a hypertensive pregnant female between 20 and 40 weeks of gestation. Ultrasonographic evaluations of placental grading were performed using established criteria. Placental grades were assigned based on echogenicity, thickness, and calcifications. Maternal clinical parameters, including blood pressure, proteinuria, and gestational age at term, were recorded. Catastrophic outcomes, such as preterm birth, fetal growth restriction, and neonatal intensive care unit (NICU) admittance, were noted. A total of 150 hypertensive pregnant females were included in the study. Placental grading was performed at regular intervals during the second and third trimesters. The findings showed a strong correlation between placental grading and unfavourable outcomes. Higher placental grades were associated with increased risks of preterm birth ($p < 0.001$), fetal growth restriction ($p = 0.002$), and NICU admissions ($p = 0.006$). Additionally, higher placental grades correlated with more severe hypertension and proteinuria in hypertensive pregnant women ($p < 0.001$). This study provides valuable information regarding placental maturity and can serve as a predictive tool for adverse pregnancy outcomes. Preterm delivery and fetal development restriction concerns are linked to higher placental grades and NICU admissions. Early identification of placental maturity can aid in the timely management and appropriate antenatal care of hypertensive pregnant women, thus reducing adverse pregnancy outcomes.

Keywords: Ultrasonography, placental grading, hypertensive pregnancy, adverse outcomes, preterm birth, fetal growth restriction

Evaluation of Radiation Hazards among Health Care Professionals Working on Different Modalities in Radiology Department

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Radiations used in medical imaging for diagnostic and interventional purposes have increased in recent years, increasing the risk of radiation exposure for medical professionals. Ionizing radiation is the most energetic type and has significant hazardous effects on public health. Health care professionals are exposed to occupational radiations on daily basis. To evaluate the radiation hazards among health care professionals working on different modalities in radiology department. A total of 180 participants by stratified sampling were taken for this cross-sectional study. Data was collected from radiology staff working on different modalities. The professionals affected by radiations who were working on Radiography (cataract 8%, anaemia 10%, hypertension 26%, thyroid disease 6%, body aches 32%, skin diseases 44%), CT scan (cataract 3%, anaemia 5%, hypertension 17%, thyroid disease 15%, body aches 17%, skin diseases 27%), Fluoroscopy (cataract 7%, anaemia 7%, hypertension 23%, thyroid disease 10%, body aches 47%, skin diseases 47%), Mammography (cataract 20%, hypertension 20%, body aches 10%, skin diseases 30%), Nuclear medicine (anaemia 10%, hypertension 30%, thyroid disease 10%, body aches 20%, skin diseases 20%) and DEXA scan (cataract 10%, hypertension 20%, body aches 20%, skin diseases 30%). Based on the overall results of this study we concluded that the health care professionals who were working on different modalities were significantly affected by radiation hazards (cataract, anaemia, hypertension, thyroid disease, body aches, and skin disease). Among all modalities professionals working on fluoroscopy have a significantly high rate of radiation hazards to health.

Keywords: Radiation hazards, health care professionals, ionizing radiation.

Examining the Association Between Body Mass Index (BMI) and Junk Food among Medical and Nonmedical Students in Lahore, Pakistan.

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The complicated association between body mass index (BMI) and dietary habits particularly the intake of junk food has drawn more attention from academics in recent years. This investigation covers a wide range of demographic categories, including students. With its diverse cultural landscape, Lahore, Pakistan, offers a special setting for examining these trends in students pursuing non-medical and medical fields. The rising prevalence of obesity worldwide has highlighted the need to understand the dietary components behind this trend, which makes BMI an essential measurement for determining one's current weight. To determine the relationship between junk food intake and BMI in medical and non-medical students. 150 students from Beacon House University Lahore (BNU) and 150 from Akhtar Saeed Medical College (AMDC) participated in an analytical cross-sectional study. The non-probability sampling approach was employed to gather data from 300 pupils. After obtaining their agreement, the respondents were given a standardized questionnaire. Data collectors computed BMI by means of observation.

To determine the relationship between qualitative characteristics and BMI classification, the chi square test of significance was used, with a set p value of < 0.05 as significant.The participants' average age was 21.4 ± 2 years. 168 individuals, or 56% of the total, were female. Of the university students, 58 (26.6%) report having obesity as a frequent condition. 82 (27.3%) of the individuals reported having a family history of obesity. Of the participants, 261 (87%) reported consuming junk food, and 221 (73.7%) reported consuming fizzy drinks. The results of the bivariate analysis indicated that male gender ($p = 0.000$), non-medical students ($p = 0.016$), family history ($p = 0.057$), junk food intake ($p = 0.024$), and exercise habits ($p = 0.030$) were associated with higher rates of obesity. In Pakistan, a significant number of university students report being obese. Obesity is more strongly correlated with non-medical students, male gender, and a family history of obesity, junk food intake, and exercise habits.

Keywords: BMI, Obesity, Exercise, Junk food, University students, Pakistan

The Role Of Magnetic Resonance Angiography In Diagnosis Of Cerebrovascular Diseases

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Cerebrovascular disorders, which can result in neurologic impairments or even death, are the primary causes of ischemia or haemorrhagic episodes inside brain tissues. The initial diagnosis of cerebrovascular illnesses such stenosis and occlusive arterial disease, cerebral aneurysm, Arterial and veinous Malformation, and Moyamoya disease, as well as the selection of a course of therapy and subsequent assessment, are all heavily dependent on imaging of the cerebral vasculature. During the past decades, imaging has become an indispensable tool in the work-up, treatment planning, and follow-up of ischemic and haemorrhagic stroke, as well as in the identification of cerebrovascular anomalies predisposing to stroke. In addition, imaging may record the burden of incidental cerebrovascular lesions that may lead to pathologic brain aging. To identify magnetic resonance angiography's function in cerebral vascular disease. Data collected from Lahore General Hospital and the thesis were written in 4 months following the synopsis' clearance as part of a cross-sectional, analytical investigation. The Sampling Technique We'll employ a non-probability, practical sampling strategy. There were 114 patients in our research, ranging in age from 4 to 83. The population's median age was 34.84, with 48 male patients and 66 female patients (57.9% and 42.1%, respectively). Out of 114 patients, 39 had diabetes, 74 had hypertension, 67 had abnormal levels of lipoprotein, 64 had abnormal levels of cholesterol, 58 had bouts of dizziness, and 71 had a history of headaches. On MRA Angiography, minor stenosis was discovered in 32 individuals, moderate stenosis in 46 patients, and severe stenosis in 25 patients. 41 patients had aneurysms; 80 patients had calcified plaques. 73 individuals were found to have cerebrovascular disease by MRA angiography. Our research suggests that utilising MR angiography, it is straightforward to assess the overall health of the cerebral arteries. Additionally, MR angiography is a safe and dependable field of study. Some of its recognised specific roles include the following: In order to diagnose aneurysms greater than 3 mm in diameter, MR angiography is routinely used as a first-line therapy for dural venous thrombosis.\

Key Words: Cerebrovascular disease, Magnetic Resonance Angiography, DiffusionWeighted Imaging, Time of flight.CE.MR

Case Study: An atypical presentation of Renal Cell Carcinoma

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This case study presents an 83-year-old female with chronic lower abdominal pain and heaviness, posing a diagnostic challenge because of her diverse and complex medical history. The patient's past medical history includes long-standing hypertension, diabetes, heart failure, and previous surgeries, contributing to the complexity of her clinical presentation. The objective of the case study was to conclude the diagnosis of lower abdominal pain in an elderly female. Initial lab and diagnostic investigations, including blood tests, urine analysis, and abdominal ultrasound, were performed to check the patient's condition thoroughly. Significant abnormalities in the laboratory results elicited further diagnostic investigations, leading to confirmatory imaging with abdominal CT. Abdominal CT scan with IV contrast revealed a large lobular right renal mass, prompting additional investigation with a CT renal angiogram. The findings indicated malignancy in both kidneys, eventually confirming bilateral renal cell carcinoma (RCC). The case study highlights the widespread presence of RCC in adults, its asymptomatic nature, and the diagnostic questions associated with lower abdominal symptoms. This case underlines the significance of considering various diagnostic modalities and differential diagnoses in atypical presentations of RCC, especially in elderly patients with complex and diverse medical histories. The comprehensive approach to management, maintaining oncological control and the patient's overall health, is crucial for achieving optimal results in cases of RCC with multiple comorbidities.

Key words: Lower Abdominal pain, Renal Cell Carcinoma, CT scan

MRI Features of Different Types of Primary Headache

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Headache, also known as cephalgia, is a standard complaint that affects virtually everybody at some course of their life. Magnetic resonance imaging has been widely used to elucidate the underlying unique pathophysiological basis of headache disorders to rule out primary from secondary headaches. The main objective of this study was to determine and evaluate the MR Imaging features of different types of primary headache. The aim of this study also included the evaluation of relative prevalence of primary headache in both genders and in general population of Lahore. This cross-sectional observational study was conducted at Chughtai lab, Sheikh Zayed hospital, Anmol hospital, Life Line Hospital and Alnoor diagnostic centre. A total of 123 patients were included in the study to investigate the manifestation of different primary headache types on MR images. Non-specific parenchymal changes are demonstrated mainly in patients of Migraine and Tension-Type Headache. However, Cluster-like Headache is usually associated with conditions that increase the intracranial pressure. MR findings of primary headache patients revealed that typically there is no predominant serious underlying pathology associated with the pain generation.

Keywords: MRI, primary headache, Migraine, Tension-Type Headache, Cluster-like Headache, prevalence.

Sonographic evaluation of non-alcoholic fatty liver Disease in Hepatitis Patients of different age groups

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Non-alcoholic fatty liver disease (NAFLD) is a condition where excess fat builds up in the liver. Sonography is a non-invasive imaging technique that can be used to evaluate the liver. The aim of this study is to evaluate the diagnostic accuracy of sonography for detecting NAFLD in different age groups. Sonographic evaluation of non-alcoholic fatty liver Disease in Hepatitis Patients of different age groups. The study design is a descriptive cross-sectional study conducted at three healthcare facilities DHQ hospital Sheikhupura The study duration is four months after the approval of the synopsis. The sample size is 128, and the sampling technique used is convenient non-probability sampling. In this study involving 128 individuals, the age distribution was as follows: Group 1 (30-45 years) -39.1%, Group 2 (45-60 years) - 49.2%, and Group 3 (60-75 years) - 11.7%. The majority of participants were male (67.2%), while 32.8% were female. 83.6% tested positive for hepatitis, while 16.4% did not. Alcohol consumption was reported by 17.2% of individuals. Nausea was experienced by 66.4% of participants. Hypertension was present in 82.8% of individuals. Liver echogenicity analysis showed 50.8% with hyperechoic liver parenchyma and 49.2% with hypoechoic liver parenchyma. Intrahepatic vessels were present in 82.8% of participants. Crosstabulation analysis revealed Grade 1 as the most prevalent liver parenchyma grade in all age groups, with Group 1 having the highest prevalence overall. NAFLD is a liver disease that mainly affects middle-aged and elderly people. As people age, they are more likely to develop NAFLD because they have more risk factors for the disease, such as obesity, insulin resistance, and metabolic syndrome. Older patients with NAFLD also tend to have more severe biochemical, hematologic, and histological changes than younger patients.

Key words: Non-Alcoholic fatty liver diseases (NAFLD), Ultrasound (USG), obesity

Mitigation of Salt stress and Salicylic acid on Germination of Bitter gourd.

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This research directs challenges of suboptimal germination in bitter gourd seeds by investigating potential benefits of pre-sowing hormonal application. The aim of study was to investigate if pre-sowing hormonal application could improve germination rate of bitter gourd. A lab experiment was performed to check germination response at various levels of NaCl and Salicylic acid (SA). Seeds were soaked in water for 24 hours, then five seeds were placed in each petri dish, fit with Wattman filter paper, treated as Control (distilled water), Salt stress(60mM), SA (10 µM, 20 µM) alone and with salt stress. Germination of seeds was recorded daily, different germination related parameters like Germination Index (GI), Final germination percentage (FGP), Mean germination time (MGT) were recorded. Morphological parameters including root length, shoot length, fresh weight and dry weight of seedlings were recorded. In GI and FGP, SA (20 µM) showed best results. In MGT and dry weight, results were

non-significant. In root and shoot length, SA (10 µM) showed best results. In fresh weight, control (distilled water) showed best results. SA (20 µM) boosts germination, but MGT and dry weight results are unclear, indicating hormonal responses may vary. SA (10 µM) improves root and shoot lengths, and distilled water is a useful control for fresh weight.

Key words: Germination index, Mean germination time, Final germination percentage.

Prevalence Of Anaemia in Hospitalized Women: Protective Factors and Risk Factors

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Anaemia is a major health problem in Pakistan and has multiple etiologies. Few studies have been conducted in Lahore, Pakistan in specific population groups like hospitalized females of the reproductive age group18 till 50 years and most have reported high prevalence of anaemia. This study was conducted in a specialist hospital in Lahore city and includes all outpatients and indoor patients aged 18 years above and below 50 (i.e., >18 and <50). To study the burden of anaemia among hospitalized women, its stratification based on age, and its severity, risk factor and prevalence. This study conducted at a specialist hospital in Lahore city and three-month data were collected retrospectively from the laboratory database and include demographic and routine haematological results of complete blood count (CBC) of women admitted in hospital also by analysing their and food frequency questionnaire (FFQ). Performa/questionnaire were also used to gather the data and will be analysed using SPSS. About (93.3%) of women were categorized as anaemic and about 6.7% were categorized as non-anaemic out of 150 randomized sample size collected from different hospitals. Non anaemic are those who are at the edge of being anaemic categorized as moderate anaemia 47.3%. Due to the poor dietary intake of iron during the stay in hospital women has been categorized as anaemic as they do not have access to iron rich food. Also, a stress factor plays vital role. In preventive factors there should be availability to iron rich foods and vit c doctors should recommend them iron rich food rather than providing medicines. They should recommend broth vegetable and fruits to them during the stay in hospital and importance of natural resources of iron instead of medicines

Key Words: anaemia, hospitalized women, prevalence, risk factor, protective factors, Lahore.

Knowledge Assessment Regarding Surgical Site Infection Among Operating Room Staff In Tertiary Care Hospitals Peshawar.

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A surgical site Infection is defined as an infection that occurs at the site of the procedure during 30 days if no implant is used or within a year if an implant is used. A site of injury infection is distinguished by pain, discomfort, localized edema, redness, or heat. The objective of this study was to assess the level of knowledge regarding

surgical site infection among operating room staff in tertiary care hospitals in Peshawar.This cross-sectional study was performed in duration of four months. Data was collected via non-probability sampling technique from tertiary hospitals in Peshawar. A total of one hundred and fifty (n=150) operation theatre staff participants, were included in this study. 102 participants were males and 48 participants were females. SPSS version 26 was used to analyse the results. The results of this study indicated, 49% participants believed that smoking and obesity were key surgical infection risks, while 35% were due to age and gender. 52% surgical site infection were due to the consequences of prolonged stay in hospitals. Additionally, 70% were in the favour of poor hygiene practices, 62% prompt notification for suspected infection, and 82% emphasized on proper sterilization to prevent infection. Overall, 60% agreed that strict aseptic techniques, proper environmental cleanliness and using PPE in operating rooms.This study concludes that although the health care workers in the current study had adequate infection control measures, but their awareness of the procedures for preventing surgical site infections was lacking. All of them need to update their knowledge and their habits must be improved through in-service training sessions. It also highlighted the significance of regularly scheduled training sessions on infection control procedures for newly surgical staff.

Key words: Surgical site infection, Infection control, medical staff awareness, SSI risk factors, In-service training.

Comparison of Dietary Modifications and Exercise for Weight Loss in Adults (18-35 years)

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Obesity is a complex disease for which weight loss has been sought all over the world. Obesity is caused by increased food consumption, body fat deposits, and a sedentary lifestyle. According to the Pakistan Demographic and Health survey (PDHS) conducted in 2013, 11% of men and 19% of women in rural Pakistan were obese. Obesity was far more common in cities, with 23 percent of males and 40 percent of women being fat. Obesity has been linked to a number of chronic conditions. Weight loss is helpful to one's health and is especially important for people with chronic conditions. The objective of our research was to compare the effect of dietary modifications and exercise for weight loss in adults (18-35 years). A survey-based study was conducted among 100 participants randomly selected at gym, university and hospitals falling in the age group 18-35years. Data was collected using structured questionnaire surveys and was analysed using SPSS version 24.0. According to our results 77% people wanted to lose weight, 36% individuals lost weight through specific dietary pattern. Only 13% people used supplements for weight loss. 45% of the participants lost weight through dietary modifications while 34% lost weight through exercise. It was concluded that dietary modifications, exercise and use of supplements are major techniques followed by people to lose weight. The results showed that majority people followed particular diet patterns, some of them exercised while only a few of them used supplements to lose weight. Based on the results, a calorie restricted balanced diet with an active lifestyle involving regular exercise is recommended.

Key words: Obesity, Multifactorial disease, PDHS, Dietary modifications, Calorie restricted diet, Balanced diet

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