

25th MEDICAL & HEALTH RESEARCH WEEK

*“Nurturing Transdisciplinary Collaboration: A Driver to Research
Excellence”*

PROGRAM & ABSTRACT BOOK

21 - 25 August 2023

Organized by

Secretariat of Research & Innovation
Faculty of Medicine, Universiti Kebangsaan Malaysia

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MESSAGE

DEPUTY VICE CHANCELLOR (RESEARCH AND INNOVATION) UNIVERSITI KEBANGSAAN MALAYSIA



*Bismillahirrahmanirrahim
Assalamualaikum warahmatullahi wabarakatuh*

I am delighted and deeply grateful to be here today as we begin the Annual Medical and Health Research Week. This event represents a significant step in our collective pursuit of research excellence.

First and foremost, I want to express my sincere gratitude to all of you for joining us today. Your presence signifies not only your dedication to progressing medical and health research but also your confidence in the strength of collaboration to inspire innovation and change lives. By working together, we hold the potential to significantly influence the future of healthcare.

The theme chosen for this year's event, "Nurturing Transdisciplinary Collaboration: A Driver to Research Excellence," captures the essence of what we aim to achieve. We recognize that the challenges in the field of medical research are multifaceted and often extend beyond a single discipline. By collaborating, merging disciplines, and sharing expertise, we can directly address these challenges and bring about significant positive transformation.

In my capacity as the Deputy Vice-Chancellor of Research and Innovation Affairs, my responsibility lies in cultivating an atmosphere that promotes and sustains collaboration. I firmly believe that by embracing transdisciplinary collaboration, we can unlock the full potential of our research community, driving innovation, and achieving research excellence. By breaking down conventional barriers and advocating for the exchange of ideas, we open doors to new perspectives, fresh insights, and groundbreaking discoveries.

While the journey to research excellence may have its obstacles, I firmly believe that by embracing collaboration, we can overcome any obstacles that come our way. Together, we have the capacity to transform lives, shape the future of healthcare, and leave a lasting legacy for generations to come.

To conclude, I want to express my heartfelt appreciation to all of you for your dedication, enthusiasm, and unwavering commitment to medical and health research. Your presence here today is a testament to the collective pursuit of excellence that defines our community. Let us embark on this week-long celebration with open minds, hearts full of curiosity, and a shared commitment to nurturing transdisciplinary collaboration. Together, we can achieve remarkable advancements, ignite a spark of inspiration in the next generation of scientists, and create a future where research excellence knows no bounds. With that, I hereby announce the commencement of the 25th Medical & Health Research Week.

Thank you and all the best to all participants.

Prof. Dato' Dr. Wan Kamal Mujani
Deputy Vice-Chancellor (Research & Innovation Affairs)
Universiti Kebangsaan Malaysia

**MESSAGE
DEAN
FACULTY OF MEDICINE
UNIVERSITI KEBANGSAAN MALAYSIA**



Assalamualaikum warahmatullahi wabarakatuh

As the Dean of Medicine, I am honored to address this esteemed gathering, filled with brilliant minds and passionate individuals dedicated to advancing medical research and healthcare. I extend my warmest welcome to all of you who have gathered here to celebrate the spirit of collaboration and its role as a driver to research excellence. Your presence is a testament to your unwavering commitment to the pursuit of knowledge, innovation, and the betterment of human health.

The theme chosen for this year's event, "Nurturing Transdisciplinary Collaboration: A Driver to Research Excellence," resonates deeply with our shared vision for the future of medicine. In a rapidly evolving healthcare landscape, we recognize that the challenges we face require a collaborative approach that transcends disciplinary boundaries.

As the Dean of Medicine, I am privileged to witness firsthand the remarkable achievements that arise from embracing transdisciplinary collaboration. The power of collaboration lies in its ability to bring together diverse perspectives, expertise, and experiences. When we foster an environment that encourages open dialogue, mutual respect, and the sharing of knowledge, we unlock the potential for groundbreaking discoveries and innovative solutions.

As we navigate the complexities of medical research, we must remember that collaboration is not a mere choice but a necessity. By harnessing the collective wisdom of diverse minds, we have the potential to transform the landscape of healthcare, revolutionize patient care, and make a lasting impact on society.

Throughout this week, we have meticulously crafted a program that offers a range of interactive workshops, enlightening sessions, and engaging discussions. I hope that these activities will not only stimulate intellectual curiosity but also foster meaningful connections among colleagues from various disciplines. I encourage every one of you to actively participate, exchange ideas, and seize this unique opportunity to build new partnerships that extend beyond the confines of this event. Let us utilize this platform to forge lasting collaborations, inspire one another and drive research excellence in the field of medicine.

In closing, I express my deepest gratitude to every one of you for your unwavering commitment to medical research and for your presence here today. The achievements we celebrate during this week would not be possible without your dedication, expertise, and collaborative spirit. Together, let us embark on this Annual Medical and Health Research Week with enthusiasm, an open mind, and a shared commitment to nurturing transdisciplinary collaboration. May this week inspire us to reach new heights, break new ground, and create a brighter future for medical research and healthcare.

Prof. Dr. Abdul Halim Abdul Gafor
Dean
Faculty of Medicine
Universiti Kebangsaan Malaysia

MESSAGE

**DEPUTY DEAN (RESEARCH & INNOVATION)
FACULTY OF MEDICINE
UNIVERSITI KEBANGSAAN MALAYSIA**



Assalamualaikum Warahmatullahi Wabarakatuh and Salam Sejahtera,

A very warm welcome to the Annual Medical and Health Research Week. It is with great pleasure and excitement that I stand before you as the Deputy for Research and Innovation and the Director of this incredible program, which promises to be a week of inspiration, collaboration, and celebration of research excellence.

I want to extend my heartfelt gratitude to every one of you for joining us on this exciting journey. Your presence here today signifies your commitment to pushing the boundaries of knowledge and your dedication to making a positive impact on the field of medical research.

Over this week, we have prepared a diverse array of engaging activities, thought-provoking workshops, and enlightening sessions. Our goal is to provide you with a platform to exchange ideas, share insights, and foster connections that transcend disciplinary boundaries. Through these interactions, we hope to inspire collaboration, ignite creativity, and pave the way for groundbreaking discoveries.

This event is not merely a gathering of brilliant minds; it is an opportunity to foster a culture of collaboration and innovation. It is an invitation to embrace the power of diverse perspectives, challenge conventional thinking, and collectively drive research excellence. Together, we can create a ripple effect that extends far beyond this week, positively impacting the lives of individuals and communities worldwide.

To our university lecturers and young enthusiastic scientists, this week is an invaluable opportunity for growth, mentorship, and networking. Embrace the chance to connect with seasoned researchers, engage in meaningful discussions, and absorb the wisdom and experiences shared during this event. Seize this opportunity to fuel your passion, expand your horizons, and contribute to the collective pursuit of research excellence.

Finally, I want to acknowledge the incredible efforts of our organizing committee and volunteers who have worked tirelessly to bring this event to fruition. Their dedication, creativity, and attention to detail have laid the foundation for a truly remarkable week ahead. Ladies and gentlemen, let us embark on this Annual Medical and Health Research Week with open minds, eager hearts, and a shared commitment to nurturing transdisciplinary collaboration. Together, we can build bridges, create synergy, and unlock the boundless potential of our collective expertise. I would also take this opportunity to express our deepest gratitude to our platinum sponsor Beacon Precision Diagnostics for their support and generosity to our event.

Thank you for joining us on this exciting journey. May this week be a source of inspiration, connection, and discovery that propels us toward a future of research excellence!

Prof. Dr. Mohammad Nasir Shafiee
Deputy Dean (Research & Innovation)
Faculty of Medicine,
Universiti Kebangsaan Malaysia

**MESSAGE
CHAIRMAN
24TH MEDICAL & HEALTH RESEARCH WEEK
FACULTY OF MEDICINE
UNIVERSITI KEBANGSAAN MALAYSIA**



Warm greetings for the day!

It gives me great pleasure to express my sincere gratitude and welcome all of you to our 25th Medical and Health Research Week 2023, with this year's theme "Nurturing Transdisciplinary Collaboration: A Driver to Research Excellence". This research week is an annual faculty-wide event that celebrates research performed by students, faculty members, and researchers across institutes and local universities.

Understanding the basics of research methodology is the core of producing quality research. Over the course of this week, we have an exciting lineup of topics from renowned speakers and knowledgeable facilitators from various expertise to share their experiences, knowledge and tips in planning and conducting cutting-edge research. I believe that this research week could serve as an excellent platform for the participants of various disciplines to exchange thoughts and ideas, besides providing them the golden opportunity to establish collaborative networks that may benefit their research in near future.

I would like to take this opportunity to express my heartfelt gratitude to Professor Dr. Abdul Halim Abdul Gafor, Dean of the Faculty of Medicine, Professor Dr. Mohamad Nasir Shafiee, Deputy Dean (Research and Innovation) as the advisor of the 25th Medical and Health Research Week, and the top management team of Faculty of Medicine, Universiti Kebangsaan Malaysia for their support to make this event a success. A special thanks extended to all our speakers and facilitators who generously spared their precious time and expertise to make this event a reality.

Many thanks and appreciation go to our platinum sponsor, Beacon Precision Diagnostics Sdn. Bhd. for their generous support. And last but not least, a big thank you to our awesome organising committee for all the hard work, dedication and commitment to excellence for putting this event together! Let's begin this journal of learning and discovery together! Thank you.

Assoc. Prof. Dr. Wong Yin Ping
Chairman 25th Medical & Health Research Week
Faculty Of Medicine
Universiti Kebangsaan Malaysia

ORGANIZING COMMITTEE

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Professor Dr. Mohamad Nasir Shafiee
Deputy Dean (Research and Innovation), Faculty of Medicine

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DEPUTY CHAIRMAN

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Dr. Wong Sok Kuan
Mrs. Siti Noorain Hamid
Mr. Nik Mohd Nashrullah Nik Mohd Fadzil

SMALL GROUP DISCUSSION COMMITTEE

Assoc. Prof. Dr. Mohd. Heikal Mohd Yunus
Dr. Ekram Alias
Mr. Nik Mohd Nashrullah Nik Mohd Fadzil

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Ms. Nur Izyani Abd Razak

SOUVENIERS COMMITTEE

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Mrs. Aznida Hasan

TECHNICAL COMMITTEE

Mr. Muhammad Khaidir Hashim
Mr. Nik Mohd Nashrullah Nik Mohd Fadzil
Mr. Abdul Malek Mohd Yunan

LIST OF SPEAKERS

Speaker	Title
Prof. Emeritus Dato' Dr. Wan Zurinah Wan Ngah	Developing & Submitting a Project Proposal
Assoc. Prof. Dr. Asrul Abdul Wahab	A Step-by-Step Guide to Writing Your Literature Review
Assoc. Prof. Dr. Wan Haslina Wan Abdul Halim	Clinical Trial and Randomization
Assoc. Prof. Dr. Chin Kok Yong	Writing a Scoping Review: Tips and Challenges
Assoc. Prof. Dr. Isa Naina Mohamed	Avoiding & Controlling for Biases
Prof. Dr. Mohd Shahrir Mohamed Said	Ethics in Clinical Research
Assoc. Prof. Dr. Azimatun Noor Aizuddin	Study Designs: Action Research, Case Study, Causal, Cohort, Cross-Sectional, Descriptive
Prof. Dr. Zaleha Md Isa	Study Designs: Experimental, Exploratory, Historical, Longitudinal, Observational, Philosophical, Sequential
Mrs Qurratul Syaheera Ahmad Termizi	Managing your References
Dr. Zuraidah Che' Man	- Sample Size Calculation - Exploratory Data Analysis
Mej Bersekutu (PA) Prof. Dr. Mohd Rohaizat Hassan	- Testing Hypothesis - Chi Square & Other Qualitative Data Analysis
Assoc. Prof. Dr. Azmawati Mohammed Nawi	T-test & ANOVA
Assoc. Prof. Dr. Nazarudin Safian	- Correlation & Regression - Non-parametric Tests - Agreement Analysis & Kappa

LIST OF FACILITATORS

Assoc. Prof. Dr. Azimatun Noor Aizuddin

Assoc. Prof. Dr. Chin Kok Yong

Assoc. Prof. Dr. Jaya Kumar A/L Murthy

Assoc. Prof. Dr. Mohd Faizal Ahmad

Assoc. Prof. Dr. Nani Harlina Md. Latar

Assoc. Prof. Dr. Norliza Muhammad

Assoc. Prof. Dr. Yogeswaran Lokanathan

Dr. Daniel Law Jia Xian

Dr. Ekram Alias

Dr. Fazlina Nordin

Dr. Hanani Abdul Manan

Dr. Noor Akmal Shareela Ismail

Dr. Nurul 'Izzah Ibrahim

Dr. Rizuana Iqbal Hussain

Dr. Wong Sok Kuan

Dr. Zulkarnain Md Idris

TENTATIVE PROGRAM

Module A

21/8/2023 (Monday)	Program	Venue
Moderator: Dr. Ekram Alias		
8:00 am – 8:15 am	Registration and Attendance	Lecture Hall 2, Preclinical Building
8:15 am – 9:15 am	Developing & Submitting a Project Proposal by Prof. Emeritus Dato' Dr. Wan Zurinah Wan Ngah	
9:15 am – 10:15 am	A Step-by-Step Guide to Writing Your Literature Review by Assoc. Prof. Dr. Asrul Abdul Wahab	
10:15 am – 10:30 am	Break	Preclinical lobby, Level 1
10:30 am – 11:30 am	Clinical Trial and Randomization by Assoc. Prof. Dr. Wan Haslina Wan Abdul Halim	Lecture Hall 2, Preclinical Building
11:30 am – 1.30 pm	Writing a Scoping Review: Tips and Challenges by Assoc. Prof. Dr. Chin Kok Yong	
1:30 pm – 2:30 pm	Break and Lunch	
2:30 pm – 4:30 pm	Developing Your Proposal: Hands on Session with Facilitators (Day 1)	BPK Level 5, Preclinical Building

Module B & Opening Ceremony

22/8/2023 (Tuesday)	Program	Venue
Moderator: Dr. Muhammad Luqman Nasaruddin		
8:00 am – 8:15 am	Registration and Attendance	Lecture Hall 2, Preclinical Building
8:15 am – 9:00 am	Avoiding & Controlling for Biases by Assoc. Prof. Dr. Isa Naina Mohamed	
9:00 am – 10:00 am	Ethics in Clinical Research by Prof. Dr. Mohd Shahrir Mohamed Said	
10:00 am – 10:30 am	Break and VIP arrival	Preclinical lobby, Level 1
10:30 am – 10.45 am	Opening Ceremony Singing of National Anthem, Lagu Varsiti Kita & Doa Recitation	Lecture Hall 2, Preclinical Building
10.45 am – 10.55 am	Speech by the Deputy Dean (Research & Innovation) Prof. Dr. Mohamad Nasir Shafiee	
10.55 am – 11.10 am	Speech by the Dean of Faculty of Medicine Prof. Dr. Abdul Halim Abdul Gafor	

11.10 am – 11.30 am	Opening Speech by Deputy Vice-Chancellor (Research & Innovation) Prof. Dato' Dr. Wan Kamal Mujani	
11.30 am – 11.35 am	Research Week Montage video	
11.35 am – 11.45 am	Introduction to Researcher of the Year Assoc. Prof. Dr. Mohd Fauzi Mh Busra	
11.45 am – 11.50 am	Researcher of the Year Montage Video	
11.55 am – 12.10 pm	Award giving and photo session	
12.10 pm – 1.10 pm	Talk by Researcher of the Year	
1.10 pm – 2:30 pm	Break and Lunch	Preclinical lobby, Level 1
2:30 pm – 4:30 pm	Developing Your Proposal: Hands on Session with Facilitators (Day 2)	BPK Level 5, Preclinical Building

Module C:

23/8/2023 (Wednesday)	Program	Venue
Moderator: Assoc. Prof. Dr. Mohd Heikal Mohd Yunus		
8:00 am – 8:15 am	Registration and Attendance	Lecture Hall 2, Preclinical Building
8:15 am – 9:15 am	Study Designs: Action Research, Case Study, Causal, Cohort, Cross-Sectional, Descriptive by Assoc. Prof. Dr. Azimatun Noor Aizuddin	
9:15 am – 10:15 am	Study Designs: Experimental, Exploratory, Historical, Longitudinal, Observational, Philosophical, Sequential by Prof. Dr. Zaleha Md Isa	
10:15 am – 10:30 am	Break	Preclinical lobby, Level 1
10:30 am – 12:00 pm	Poster Presentation	Lecture Hall 2, Preclinical Building
10:30 am – 11:30 am	Managing your References by Puan Quratul Syaheera Ahmad Termizi	
11:30 am – 12:30 pm	Sample Size Calculation by Dr Zuraidah Che' Man	
12:30 pm – 1.30 pm	Exploratory Data Analysis by Dr Zuraidah Che' Man	Preclinical lobby, Level 1
1:30 pm – 2:30 pm	Break and Lunch	
2:30 pm – 4:30 pm	Developing Your Proposal: Hands on Session with Facilitators (Day 3)	BPK Level 5, Preclinical Building

Module D

24/8/2023 (Thursday)	Program	Venue
Moderator: Dr. Wong Sok Kuan		
8:15 am – 8:30 am	Registration and Attendance	Lecture Hall 2, Preclinical Building
8:30 am – 9:15 am	Testing Hypothesis by Mej. Bersekutu (PA) Prof. Dr. Mohd Rohaizat Hassan	
9:15 am – 10:00 am	Chi Square & Other Qualitative Data Analysis by Mej. Bersekutu (PA) Prof. Dr. Mohd Rohaizat Hassan	
10:00 am – 10:15 am	Break	Preclinical lobby, Level 1
10:15 am – 11:00 am	T-test & ANOVA by Assoc. Prof. Dr. Azmawati Mohammed Nawi	Lecture Hall 2, Preclinical Building
11:00 am – 11:45 am	Correlation & Regression by Assoc. Prof. Dr. Nazarudin Safian	
11:45 am -12:30 pm	Non-Parametric Tests by Assoc. Prof. Dr. Nazarudin Safian	
12:30 pm – 1:15 pm	Agreement Analysis & Kappa by Assoc. Prof. Dr. Nazarudin Safian	
1:15 pm – 2:30 pm	Break and Lunch	Preclinical lobby, Level 1
2:30 pm – 4:30 pm	Developing Your Proposal: Hands on Session with Facilitators (Day 4)	BPK Level 5, Preclinical Building

Module E

25/8/2023 (Friday)	Program		
8:45 am – 9:00 am	Registration and Attendance		Lecture Hall 2, Preclinical Building
9:00 am –12:00 pm	Proposal Presentation		
	Moderator: Dr. Mohamad Fairuz Yahaya	Dr. Suerialoasan Navanesan	
	(Group 1 – 8) Lecture Hall 1, Preclinical Building	(Group 9 – 16) Lecture Hall 2, Preclinical Building	
12:00 pm – 12:30 pm	Prize Giving and Closing		Lecture Hall 2, Preclinical Building
12:30 pm – 2:45 pm	Lunch		Preclinical lobby, Level 1

LIST OF ABSTRACT

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2	C2	Clinical Characteristics And Outcomes Of Covid-19 Patients During 2021 Wave at Hospital Canselor Tuanku Muhriz	<u>Nalini P</u> ¹ , Aaron I ¹ , Petrick P ¹ , Najma K ¹ , Cheong XK ¹ , Lau CL ² , Rozita H ³ , Zetti Z ⁴	18
3	C3	Primary Laryngeal Amyloidosis Mimicking As Laryngeal Cancer	<u>Nurdiana B</u> ^{1,2} , Yong DJ ¹ , Nadhirah MS ²	19
4	C4	Cancer-Associated Thrombosis Among Solid Cancer Patients- A Cross-Sectional Study in Two Tertiary Centres	<u>Lailatulema A</u> ^{1,2} , Ibtisam MN ³ , Fuad I ⁴ , Sivakumar P ^{1,2} , Guan Yong C ^{1,2} , Sharifa Ezat WP ^{2,5} , Nor Rafeah T ^{1,2}	20
5	C5	Lyre Sign: Do Not Be Fooled!	<u>Nurdiana B</u> ^{1,3} , Chew WJ ² , Arthur W ² , Mohd Razif MY ³	21
6	C6	Analysis of osteoporotic hip fractures: Identifying treatment gaps in a tertiary center centre in East-Coast Malaysia	<u>Nur Khadijah MJ</u> ^{1,4} , Isa NM ¹ , Sabarul Afian M ² , Juzaily Fekry L ² , Nur Azree K ³ , Norliza M ¹	22
7	C7	Comparison of Cortical Auditory Maturation Between Children with Cochlear Implants Vs Normal Hearing Children Attending Mainstream School	<u>Nabihah R</u> ¹ , Noor Dina H ¹ , Asma A ¹ , Khairul Farhah K ² , Rosnah I ³ , Wan Fazlina WH ⁴	23
8	C8	Language abilities and associated risk factors of school-aged children with cleft lip and palate	Hasherah MI ^{1*} , <u>Lim Hui H</u> ¹ , Eh Yee L ¹ , Yazmin AR ¹ , Goh Bee S ²	24
9	C9	A Decade Under the Knife: Analysis of Sharp Injuries in Homicidal Deaths at Hospital Canselor Tuanku Muhriz, Kuala Lumpur.	<u>Wan Mohammad Hafiz WR</u> ^{1,2,3} , Nazariah AR ³ , Azuriah A ³ , Mohamed Swarhib S ^{1,3} , Faridah MN ^{1,3}	25
10	C10	Comparative Analysis of Ambient Outdoor Temperature and Interior Cabin Temperature of a Sedan Car in Shaded and Direct Sun-exposed Parking Spaces in Malaysia	<u>Wan Mohammad Hafiz WR</u> ^{1,3} , Chee Ming Y ² , Muhammad Azrul AA ² , Nur Aisyah MZ ² , Loh Bi J ² , Mohamed Swarhib S ³ , Faridah MN ³	26
11	C11	Disability and Post-Traumatic Stress After Lower Third Forearm Fracture: Comparisons Based on Gender and Hand Dominance	<u>Rui Fen T</u> ^{1,2} , Siaw Chui C ¹ , Nor Afifi R ¹ , Mohd Iskandar MA ²	27
12	C12	Insights into Cardiac Troponin I Analysis: Preliminary Study Highlights Using High-Sensitivity Assay in Postmortem Investigations	<u>Wan Mohammad Hafiz WR</u> ^{1,2,3} , Izzatul 'Aliaa B ^{1,2} , Mohamed Swarhib S ^{1,2} , Faridah MN ^{1,2}	28
13	C13	The Impact of Overcrowding Towards Door-To-Antibiotic Time Among Sepsis Patients Presented to Emergency Department of a Tertiary Academic Hospital	<u>Evelyn Chau Yi Wen</u> ¹ , Afliza AB ¹ , Aireen Z ¹ , Siti Norafida A2, Ida Zarina Z ¹ , Dazlin Masdiana S ¹	29
14	C14	Does binocular vision status determine dyslexia? A comparison between a sample of dyslexic and non-dyslexic children in Kano, Nigeria	<u>Ismail SM</u> ^{1,2} , Mizhanim MS ¹ , Bariah MA ¹ and Eki O ³	30

15	C15	Covid-19 Prevention Practices Among Hospital Raja Perempuan Zainab II (HRPZ II) Staff and Associated Factors	<u>Nor Aishah MS</u> ¹ , Mohd Rizal AM ²	31
16	C16	The Malay Version of Arthritis Impact Measurement Scale 2- Short Form: Convergent Validity and Test-Retest Reliability Testing	<u>Jia Min L</u> , Siaw Chui C	32
17	C17	Measuring Lateral Pinch, Three-Jaw-Chuck Pinch, and Tip-to-Tip Pinch Strengths of the Dominant Hand using Different Forearm Positions	<u>Nur Asriza Syazwani MA</u> , Siaw Chui C	33
18	C18	Removal of A 10-Year-old Neck Mass: Excision of True Facial Artery Aneurysm	<u>Theresa Chiu Hoong T</u> ¹ , Sai Guan L ^{1,2} , Mohd Razif MY ^{1,2}	34
19	C19	Prevalence Of Actual Medication Errors and Its Associated Factors Among All Medication Errors Reported In Melaka Hospital	<u>Eliza A</u> ¹ , Mohd Rizal AM ²	35
20	C20	Optometry Clinic Appointments Drop Out: What Could Be the Factors?	<u>Siti Aisyah J</u> , Mizhanim MS, and Norlaili A	36
21	C21	Adaptive Behaviour Skills among Preschool Children: Gender and Parental Education Level Relationship	Masne K, Nor Afifi R, <u>Nurul Amira MF</u> , Salwina WI, Marhani M	37
22	C22	Primary mediastinal yolk sac tumour mimicking lung cancer	<u>Wong YP</u> , Tan GC	38
23	C23	Adaptive Behaviour in Preschool Children: Analysis based on Sociodemographic Characteristics	Nor Afifi R, Masne K, Nursyuhada AM	39
24	C24	Relationship between cholesterol and mortality in the NSTEMI population: analysis from NCVD-ACS registry	<u>Tg Mohd Ikhwan TABS</u> ¹ , Shamsul Azhar S ¹ , Sazzli K ^{2,3} , Gunavathy S ³ , Kien Ting L ³ , Nazarudin S ¹ , Wan Azman WA ^{3,4} , Shawal M ⁵	40
25	C25	Machine learning techniques for Type 2 Diabetes Mellitus risk factor prediction: A review	<u>Muhammad Faid MR</u> ¹ , Mohd Rizal AM ² , Kurubaran G ^{2,3} , Nazarudin S ² , Khairul Nizam AM ¹ , Feisul Idzwan M ⁴ , Lance AW ⁵	41
26	C26	Burden Among Caregiver of Children With Autism Spectrum Disorder (ASD)	<u>Dilenkumar T</u> ^{1,2} , Ezura MMM ¹	42
27	C27	Private Hospitals Compensation Practices For Clinical Specialists In Malaysia	<u>Faiz D</u> ^{1,2} , Perema Kumari SP ² , Geetha S ² , Nur Fatin Nabila MN ¹ , Syed Sa ³ , Mohd Rizal AM ¹	43
28	C28	Fat Injection Laryngoplasty: Strategies for Optimal Vocal Fold Augmentation	<u>Noor Shairah MB</u> ^{1,3} , Nadhirah MS ¹ , Mawaddah A ¹ , Adzim Poh YW ² , Marina MB ¹	44
29	C29	The Effect of Enhanced Respiratory Care with Early Mobilization (E-RECOVER) on Cognitive and Depression Amongst Patients with Covid-19	Nor Azura A ¹ , Nur Ayub MA ² , Suriati Sani ³ , <u>Chu Ming C</u> ¹ , Petrick P ³ , Wan Asyraf WZ ³ , Mohd Rizal AM, Katijjahbe MA ^{2,6}	45
30	C30	Comparison of Motor Proficiency among Typical Preschool Children with Different Socio-demographic Characteristics in Selangor, Malaysia	<u>Yuan Hui K</u> , Masne K, Nor Afifi R	46

31	C32	Immunoglobulin G4 and its Clinical Significance in Rheumatoid Arthritis	<u>Li Fen T</u> ¹ , Sakthiswary R ² , Syahrul Sazliyana S ² , Asrul AW ³ , Suraya A ⁴ , Rosnah S ⁵	47
32	C33	Validity, Reliability, Responsiveness and Minimal Clinical Important Difference of the Unsupported Upper-limb Exercise Test in Measuring Upper Limb Function After Median Sternotomy	Nur Ayub MA ¹ , Doa EA ^{2,3} , Mohd Ramzisham AR ¹ , Suriah A ^{1,4} , Azri I ¹ , Nurdyana I ^{1,4} , Colin R ^{3,4} , Alistair R ³ Hairilfaizi H ¹ , Muhamad Ishamudin I ¹ , Mohd Rizal AM ⁶ , Katijjahbe MA ^{1,4} .	48
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34	P2	Optimization of Sampling Techniques in Collecting Nasal DNA Samples	Anika T ¹ , Farah Dayana Z ² , Noor Akmal SI ¹	50
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36	P4	Exploring Drug Targets for Porphyromonas gingivalis associated AD through CMap and molecular docking: PLK2 an interest?	<u>Kumarendran B</u> , Ahmed H, Ahmad TS, Nurrul Shaqinah N	52
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CASE REPORT: Necrotising Otitis Externa with Base of Skull Osteomyelitis Masquerading as an Otitis Externa: A Cautionary Tale

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ABSTRACT

Introduction: Necrotising otitis externa (NOE) is uncommon. It should not be missed in elderly or immunocompromised patients presenting with severe otalgia that has failed to respond to medical therapy. It can masquerade as otitis externa.

Objective: We discuss a case of a 70-year-old woman with underlying multiple comorbidities who was diagnosed and treated for necrotizing otitis externa.

Method: A case report.

Case Report: A 70-year-old female, a chronic smoker with poorly controlled diabetes mellitus and hypertension, presented with a 2-month history of left otalgia and persistent otorrhea. The pain score was 8/10 and otorrhea was haemopurulent without fishy malodour. There was no improvement despite multiple clinic visits and antibiotics given. Subsequently, she developed fever, vomiting and headache over 3 days and presented to the emergency department. On examination, there was left tragal tenderness. Otoscopy revealed a large polyp originating from the external auditory canal (EAC). Facial and lower cranial nerves (IX, X, XI, XII) were intact. HRCT scan of temporal bones revealed soft tissue densities occupying the entire left EAC, middle ear cavity and mastoid air cells. The Aural polyp was biopsied and cultures grew *Pseudomonas aeruginosa* sensitive to Ceftazidime and Ciprofloxacin. After completing 3 weeks of intravenous Ceftazidime, there was a significant improvement and the aural polyp regressed in size. She was discharged with another 3 weeks of oral Ciprofloxacin.

Conclusion: NOE is a potentially fatal ear infection. Clinicians should have a high index of suspicion when dealing with patients who are immunosuppressed or have multiple co-morbidities presenting with excruciating otalgia and otorrhea not responding to empirical oral antibiotics.

Keywords: Necrotising Otitis Externa, Malignant Otitis Externa, Otitis Externa, *Pseudomonas Aeruginosa*

Clinical Characteristics and Outcomes Of Covid-19 Patients During 2021 Wave at Hospital Canselor Tuanku Muhriz

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ABSTRACT

Introduction: Since the emergence of the COVID-19 pandemic, the 2021 Wave proved to be quite challenging with increased mortality. However, there are limited studies in Malaysia concerning this period.

Objective: This study aimed to determine the clinical characteristics and outcomes of COVID-19 patients admitted to Hospital Canselor Tuanku Muhriz (HCTM), Malaysia from March 2021 to November 2021.

Methods: This was a retrospective, cross-sectional study designed to include all COVID-19 subjects aged 18 years or above admitted to HCTM. The data was collected from the clinical notes and electronic medical records. The primary outcome studied was all-cause in-hospital mortality.

Results: 809 subjects including 477 males and 332 females were included in this study of which 252 patients (31%) died. Multivariable regression revealed that subjects with older age, lymphopenia, unvaccinated status, highest oxygen requirement within 24 hours of admission and high 4c mortality score had a higher odds ratio (OR) of death.

Conclusion: These findings could be used as a guide to identify subgroups of patients with a high risk of mortality early and treat them accordingly

Primary Laryngeal Amyloidosis Mimicking As Laryngeal Cancer

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ABSTRACT

Objective: We report a case of a 60-year-old male presented with persistent and progressive hoarseness and intermittent hemoptysis for 2 years.

Method: Case Report

Results: Examination revealed dysphonia with the main component of roughness. Otherwise, there was no audible stridor and no cervical lymphadenopathy palpable. Endoscopic examinations revealed smooth surfaced lesions over the bilateral false cord obstructing the true cord. The patient underwent endoscopic laryngeal surgery and histopathological examination confirmed the diagnosis of laryngeal amyloidosis. There was no laboratory or radiological evidence of systemic involvement. His symptoms improved after the surgery but unfortunately, he defaulted to follow-up after 6 months.

Conclusion: Patients presented with long-standing dysphonia must not be taken lightly. Every patient diagnosed with laryngeal amyloidosis shall be screened for systemic involvement which carries higher morbidity and mortality. Early diagnosis and prompt treatment may reduce the risk of recurrence.

C4

Cancer-Associated Thrombosis Among Solid Cancer Patients- A Cross-Sectional Study in Two Tertiary Centres

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ABSTRACT

Introduction: Cancer-associated thrombosis (CAT) can be contributed by prolonged immobilisation, advanced stage, chemotherapy drugs and surgery.

Objective: This study was conducted to determine the incidence and clinicopathological profiles of thrombosis amongst solid cancer patients at two tertiary hospitals in Kuala Lumpur.

Methods: A cross-sectional study was conducted at Hospital Canselor Tuanku Muhriz (HCTM) and Hospital Kuala Lumpur (HKL) among patients aged ≥ 18 years. Data on patients' demographics, cancer parameters, and thrombotic events were collected following informed consent and were analysed.

Results: A total of 232 patients were recruited. The mean age was 57.6 years (SD=13.67). Majority (86.2%) of the patients had ECOG performance status 0-1, 96.6% were newly diagnosed cases while 45.3% were at Stage 4. A total of 24 (10.3%) patients developed CAT with two cases of arterial thrombosis. Of the remaining 22 patients, six had pulmonary embolism (PE) only, one PE and lower limb (LL) thrombosis, one PE and upper limb (UL) thrombosis, while four UL and three LL only thrombosis. Six had abdominal thrombosis, and one cerebral thrombosis. Ten patients had BMI $\geq 27.5\text{kg/m}^2$ and 17 had ECOG 0-1. Eight of the patients with CAT had lung/pancreatic cancer, while 50% had adenocarcinoma histology. CAT occurred in ≤ 3 months after diagnosis among fourteen patients. Sixteen were treated with anticoagulation, either low molecular weight heparin and/or direct oral anticoagulant.

Conclusion: Our study showed that patients with under/overweight BMI, higher ECOG performance status, lung/pancreatic cancer, and adenocarcinoma subtype had tendency to develop CAT. Further analysis on the predictive risk factors would be beneficial.

Lyre Sign: Do Not Be Fooled!

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ABSTRACT

Introduction: Head and neck paragangliomas, or glomus tumours, are highly vascular tumours arising from paraganglionic tissue. They most commonly arise from distinct locations, including the carotid bifurcation, the jugular fossa, the tympanic cavity, and the vagus nerve. The carotid body is the most common site for these tumours to arise, and these carotid body tumours characteristically splay the internal and external carotid arteries. This typical sign is known as the 'Lyre Sign'.

Objective: We report a rare high-grade B cell lymphoma in a patient positive Lyre sign on a scan mimicking a carotid body tumour or paraganglioma.

Method: Case Report

Report: A 65 years old male hypertensive who presented with 6 months of massive unilateral neck swelling with obstructive symptoms. The patient was also noted to be malignant hypertension resistant to three antihypertensives. The clinical and radiological investigation pointed to a diagnosis of a carotid body tumour with the typical signs of splaying of the internal and external carotid artery. However, the biopsy revealed a high-grade B cell lymphoma that was subsequently responsive towards chemotherapy.

Conclusion: We presume this is the first-ever report of a high-grade lymphoma causing Lyre sign. All tumours causing Lyre sign on radio-imaging are not all carotid body tumours. The importance of this case is that clinical and imaging studies pointed to a possible paraganglioma, which may have resulted in incorrect treatment.

C6

Analysis of osteoporotic hip fractures: Identifying treatment gaps in a tertiary center centre in East-Coast Malaysia

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ABSTRACT

Introduction: Hip fracture is the most detrimental and costly complication of osteoporosis. It entails pain, impaired mobility and loss of independence for the patients.

Objectives: This study aimed to ascertain the predominant characteristics and outcomes as well as identify treatment gaps in post-osteoporotic hip fracture management at Hospital Sultanah Zahirah, located in East-Coast Malaysia.

Methods: This was a retrospective study investigating medical records of patients aged 50 years old and above admitted to this tertiary centre for hip fracture due to low-grade trauma in 2021.

Results: The study included a total of 64 patients [females 45(70.3%) and 19(29.7%) males]. The most prevalent types of fractures were femoral neck fractures 37(57.8%) followed by trochanter 27(42.2%). Only 5(7.8%) patients underwent bone mineral density assessment. The number of patients who underwent surgical intervention was equal to those being managed conservatively, 32(50.0%) each. Although vitamin D and calcium were essentially important in osteoporosis management, calcium was prescribed to a mere 13(20.3%) patients upon discharge and 18(28.1%) during follow-up. As for vitamin D, all of the patients were prescribed calcitriol but only 11(17.2%) were prescribed upon discharge and 16(25.0%) during follow-up. Few patients received anti-osteoporosis medications 5(7.8%). Follow-up revealed that within one-year post fracture, 4(6.3%) patients had passed away.

Conclusion: This study emphasized the urgency to re-evaluate the clinical management of osteoporotic hip fractures, aiming to prevent future fractures. The implementation of Fracture Liaison Services in healthcare institutions has the potential to significantly improve the existing standard of care.

C7

Comparison of Cortical Auditory Maturation Between Children with Cochlear Implants Vs Normal Hearing Children Attending Mainstream School

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ABSTRACT

Background: The cortical auditory evoked potential (CAEP) test is an objective and non-invasive method of assessment to quantify the development of central auditory pathways in normal hearing and implanted children.

Objectives: We aimed to assess the auditory growth and learning abilities of children with cochlear implants attending mainstream school. The P1 wave latency value of the CAEP was compared between the normal-hearing children and the implanted children. We intended to investigate the association of auditory speech perception with academic performances among children with cochlear implants (CI).

Methods: This was a quasi-experimental design- post-test with control. 60 children aged 7-12 years old with cochlear implants and normal hearing peers attending mainstream schools were recruited and divided into two groups; intervention (n=30) and control groups (n=30). Auditory and speech performances of the intervention group were performed using CAPS-II and SIRS. The P1 wave latency value of CAEP was measured to attain and compare the cortical auditory maturation of both groups. A validated Parent's questionnaire and Screening Instrument for Targeting Education Risk (SIFTER) were used to assess the subjects' educational performance. The correlation between auditory speech perception with academic performances among children with CI was assessed.

Results: The P1 wave latency value of the CAEP in implanted children was prolonged compared to normal hearing peers. The overall educational performances with SIFTER and parental assessment of CI children placed in mainstream schools showed comparable to their peers. Most of the CI children had achieved high scores in every domain in educational performance which corresponded to the expected high CAPS II and SIRS scores after cochlear implantation. There was no significant correlation between auditory speech perception with academic performance among children with CI.

Conclusion: CAEP is a useful test to quantify the development of central auditory pathways in implanted children. Cochlear implantation improves auditory speech perception as well as the academic performance of these children, putting them on par with their normal-hearing peers.

C8

Language abilities and associated risk factors of school-aged children with cleft lip and palate

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ABSTRACT

Introduction: Previous research on children with cleft lip and palate (CLP) reported unequivocal findings, with the majority of studies suggesting persistent language deficits in early childhood. While expressive language deficits improved with age, receptive language skills were consistently lower than peers. The impact of persistent language deficits amongst school-aged children with CLP is warranted.

Objectives: This was a cross-sectional study, aimed to determine the language abilities and explore the associated risk factors in Malay speaking children with CLP in Malaysia.

Methodology: 52 Malay speaking children with CLP aged 7 to 12-year-old participated in this study. Language skills; namely grammar comprehension, reading comprehension and listening comprehension and sentence repetition: subtests from the Malay Preschool Language Assessment Tool were used to measure receptive and expressive language skills while the adapted Subway–School–age Language & Assessment Measures was used to assess narrative skills.

Results: Findings revealed that 14 (26.92%) school-aged children with CLP demonstrated language deficits. Children with CLP performed significantly poorer in reading comprehension ($p = 0.031$) and narrative ($p = 0.026$) skills. It was found that the age significantly influenced total receptive language score ($\beta = 0.421$, $p = 0.003$) and total expressive language score ($\beta = 0.477$, $p = 0.000$).

Conclusion:

Findings suggested that children with CLP may continue to have persistent language deficits into their school-age years. Recommendations for regular monitoring of language performance especially for those from younger age groups is warranted to help maximize school attainment.

C9

A Decade Under the Knife: Analysis of Sharp Injuries in Homicidal Deaths at Hospital Canselor Tuanku Muhriz, Kuala Lumpur.

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ABSTRACT

Introduction: Homicide refers to the unlawful act of causing the death or injury of another individual. Sharp injuries play a significant role in cases of homicide. Understanding the patterns and characteristics of sharp injuries is crucial for the investigation of homicidal deaths.

Objective: This study aimed to investigate the demographic and pattern of sharp injuries in homicidal deaths, specifically focusing on the different types of sharp injuries such as stab wounds, incised and slash wounds.

Methods: In this study, homicidal deaths that were brought to the Forensic Unit at Hospital Canselor Tuanku Muhriz, were examined retrospectively between January 2009 and December 2018. Data were collected from the autopsy reports and death registries, including information on the cause of death, injury pattern, site of injury, and demographic characteristics.

Results: Results revealed an increased prevalence of homicidal deaths among males compared to females. The majority of cases involved young adults, followed by adults. Stab wounds constituted the largest proportion (56.9%) of all sharp injuries, while slash wounds accounted for 22.4%. The neck and chest were the most frequently injured sites, accounting for a 24.1% incidence rate. The leading cause of death was attributed to stab wounds targeting the chest area (22.4%), followed by stab wounds to the abdomen.

Conclusion: These findings provided valuable insights into the demographic trends and patterns of sharp injuries in homicides, eventually enhancing our understanding of the pattern and relevance of sharp injuries in homicides and providing valuable contributions to forensic investigations.

C10

Comparative Analysis of Ambient Outdoor Temperature and Interior Cabin Temperature of a Sedan Car in Shaded and Direct Sun-exposed Parking Spaces in Malaysia

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ABSTRACT

Introduction: Hyperthermia-related fatalities resulting from vehicular entrapment in extreme heat have gained attention as a critical forensic issue. In these cases, individuals, particularly children, are inadvertently left behind or trapped in vehicles exposing them to elevated temperatures, leading to potentially fatal outcomes.

Objective: The study aimed to analyze temperature differentials between ambient outdoor and interior cabin vehicle temperatures in two parking scenarios, which had the potential risks associated with vehicular heat entrapment, particularly concerning hyperthermia-related deaths.

Methods: The temperatures were recorded for 4 different days between 0900H and 1700H in the month of May in the Cheras area. Analysis of ambient outdoor temperature and interior vehicle temperature was done in two different scenarios, i.e., vehicles in shaded parking spaces and vehicles in open parking lots, by using a similar sedan car.

Results: The results of the study revealed a significant temperature difference between vehicles parked in shaded parking spaces and those parked in exposed areas, in which the vehicle parked in shaded parking spaces had lower interior temperatures throughout the day when compared to the vehicle parked in exposed areas. A T-test was performed and showed a significant difference between the two parking spaces ($p < 0.05$).

Conclusion: In brief, parking vehicles in shaded areas significantly reduces the risk of hyperthermia development compared to areas exposed to sunlight, highlighting the importance of utilizing shaded areas to mitigate the risk of hyperthermia-related incidents in vehicles during hot weather conditions.

C11

Disability and Post-Traumatic Stress After Lower Third Forearm Fracture: Comparisons Based on Gender and Hand Dominance

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ABSTRACT

Introduction: Lower third forearm fracture, one of the most common upper limb injuries, can impact patients' physical and psychological functions.

Objective: This presentation aimed to report differences in upper limb disability, wrist-specific disability, and post-traumatic stress among patients with lower third forearm fracture based on gender and hand dominance with data extracted from an ongoing randomized controlled trial.

Method: Patients with lower third forearm fracture that was referred 2-4 weeks after open reduction internal fixation were asked to complete three questionnaires, i.e., Quick-Disabilities of the Arm, Shoulder and Hand (Quick-DASH) Outcome Measure for upper limb disability, Patient-Rated Wrist Evaluation (PRWE) for wrist specific disability, and Impact of Event Scale-Revised (IES-R) for post-traumatic stress.

Result: Twenty-five participants with an average age of 50.28 ± 12.00 years old were recruited from 1-7-2021 to 30-6-2023. Participants were predominantly male ($n=13$; 52.0%) with non-dominant hand fractures ($n=13$; 52.0%). Women scored higher than men in Quick-DASH (64.58 ± 7.78 vs 56.47 ± 8.79), $t(23)=-2.443$, $p=0.02$ and IES-R (27.25 ± 21.97 vs 12.92 ± 7.35), $t(23)=-2.192$, $p<0.05$. No difference was observed in PRWE between both genders. Participants that injured their dominant hand scored higher PRWE (68.92 ± 9.40) than those that injured their non-dominant hand (61.89 ± 5.45), $t(23)=2.312$, $p=0.03$. No differences were seen in Quick-DASH and IES-R between participants that injured their dominant hand and those that injured their non-dominant hand.

Conclusion: Women experienced more upper limb disability and post-traumatic stress than men after a lower third forearm fracture. Wrist-specific disability became more pronounced when the dominant hand was injured.

C12

Insights into Cardiac Troponin I Analysis: Preliminary Study Highlights Using High-Sensitivity Assay in Postmortem Investigations

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ABSTRACT

Introduction: Cardiovascular-related deaths account for a significant portion of global mortality, necessitating ancillary postmortem investigations. In cardiac patients, high-sensitivity cardiac troponin assays have shown remarkable diagnostic performance, aiding in the early diagnosis of acute coronary syndrome. However, limited studies have explored the application of high-sensitivity assays in postmortem analysis, highlighting the need for further investigation.

Objective: This study aimed to highlight the preliminary study of postmortem analysis of high-sensitivity cardiac troponin I.

Methods: In this cross-sectional study, all of the cardiac and non-cardiac death cases among Malaysian that were brought into the Forensic Unit, HCTM, were collected for six months i.e. between July 2022 and December 2022, in which postmortem high-sensitivity cardiac troponin levels were performed for analysis. The descriptive and nonparametric statistical analyses were done.

Results: Preliminary results showed a significant difference in the troponin levels between cardiac and non-cardiac deaths. Cardiac deaths have a higher median high-sensitivity troponin I level compared to non-cardiac deaths, 6148.9 pg/ml vs 665.2 pg/ml, respectively ($p < 0.05$). Also, there was a significant elevation of high-sensitivity cardiac troponin in cardiac cases with acute myocardial infarction compared to that without acute myocardial infarction ($p < 0.05$).

Conclusion: These findings suggest that high-sensitivity troponin levels may be used as a valuable biomarker for distinguishing acute myocardial infarction. Further research with a larger sample size is warranted to validate these findings and explore the potential of troponin levels in improving the diagnosis in postmortem cases.

C13

The Impact of Overcrowding Towards Door-To-Antibiotic Time Among Sepsis Patients Presented to Emergency Department of a Tertiary Academic Hospital

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ABSTRACT

Background: To increase sepsis survival, emergency physicians aimed for early sepsis recognition, fluid resuscitation and antibiotics initiation. The latest Surviving Sepsis Campaign 2021 recommends antibiotics administration within 1 hour with septic shock and within 3 hours for probable sepsis. However, early management of sepsis is affected by ED overcrowding.

Objective: This study aimed to determine the relationship of ED overcrowding towards the management and outcome of sepsis patients presenting to ED.

Methods: This was a prospective cohort study conducted among sepsis patients presented to the ED of a tertiary university hospital from 18th January 2021 to 28th February 2021. ED overcrowding status was determined using National Emergency Department Overcrowding Score (NEDOCS) scoring system. Sepsis patients were identified using SOFA score and their door-to-antibiotic time (DTA) was recorded. Secondary outcomes were hospital length of stay (LOS) and in-hospital mortality. The association between ED overcrowding and DTA time were analysed using the Pearson chi-square test.

Results: A total of 170 samples were recruited. Only 11.1% (N=19) received antibiotics within 1 hour and 60% (N=102) within 3 hours of ED presentation. We found no significant relationship between ED overcrowding and DTA time ($p=0.989$). There is also no improved mortality ($p=0.375$) or reduced LOS ($p=0.22$) in patients with DTA time <1 hour. However, the mortality rate increased among patients presented during overcrowded ED shifts ($p=0.041$).

Conclusion: Although ED overcrowding has no significant association with DTA time, an increased in-hospital mortality rate was found independent of the DTA time among sepsis patients. Therefore, future studies should explore other determinants that affect the quality of care among sepsis patients in ED.

Keywords: Sepsis, ED Overcrowding, Door-to-antibiotic time, In-hospital mortality, Length of hospital stay

C14

Does binocular vision status determine dyslexia? A comparison between a sample of dyslexic and non-dyslexic children in Kano, Nigeria

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ABSTRACT

Introduction: Dyslexia is a worldwide neurodevelopmental disorder characterised by difficulties in reading and language processing. Recent research suggests that visual factors, such as binocular vision (BV) status, may play a role in the aetiology of dyslexia. This study aimed to investigate the potential relationship between BV status and dyslexia in a sample of children from Kano, Nigeria.

Objective: To compare BV parameters between dyslexic and non-dyslexic children in Kano, Nigeria.

Methods: The study was conducted at the Aminu Kano Teaching Hospital, Kano, Nigeria. Forty-four children were recruited in this study. The BV status of each participant was assessed using standardised clinical tests, such as visual acuity, stereopsis, accommodation function, vergence function, and ocular movement.

Results: Twenty-two dyslexic and 22 non-dyslexic children (age and gender-matched) (mean age=11.7±1.7 years) participated in this study. Analysis revealed that dyslexic children have a higher prevalence of accommodative insufficiency (45.5%) compared to non-dyslexic (18.2%). The combination of convergence insufficiency and accommodation problem was slightly higher in the dyslexic group (36.4%) than their counterpart (27.3%). Exophoria was also associated with dyslexia. Specifically, dyslexic children exhibited reduced stereopsis, vergence, accommodation and Development-EyeMovements compared to the non-dyslexic group ($p > 0.05$).

Conclusion: BV between the two groups was significantly reduced in amplitude of accommodation, which is an important component of reading. High visual deficits between the two groups suggest the importance of incorporating comprehensive vision assessments as part of the diagnostic and therapeutic protocols for dyslexic children. Early detection and management of visual deficits could potentially enhance the effectiveness of the dyslexia educational system.

Keywords: Dyslexia, school children, binocular vision, visual assessment, accommodation.

C15

COVID-19 PREVENTION PRACTICES AMONG HOSPITAL RAJA PEREMPUAN ZAINAB II (HRPZ II) STAFF AND ASSOCIATED FACTORS

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ABSTRACT

Introduction: In the face of the COVID-19 pandemic, healthcare workers are on the frontlines and they are at risk due to exposure to pathogens, long working hours, psychological problems, fatigue, stress, and occupational stigma and violence. Indeed, it is a great challenge for healthcare workers to always have an positive attitude and good practices, especially in COVID-19 prevention practices to avoid infection.

Objective: The study was to determine the COVID-19 prevention practices among Hospital Raja Perempuan Zainab II (HRPZ II) staff and associated factors.

Methodology: A cross-sectional study was conducted with a total of 332 respondents. The instrument used a questionnaire. A multivariable logistic regression model was used to identify significant associated factors.

Result: The findings showed 55.4% of HRPZ II staff have good COVID-19 prevention practices and several factors such as education level ($p=0.008$), clinical staff ($p=0.014$), working period ($p=0.007$), status of having been infected with COVID-19 ($p=0.025$) and attitude towards COVID-19 ($p<0.001$) had a significant association with COVID-19 prevention practices among HRPZ II staff.

Conclusion: Attitude towards COVID-19 was the most significant association factor of COVID-19 prevention practices among HRPZ II staff. The hospital management should emphasize supervision and training to increase the level of awareness and to improve the attitude toward the implementation of prevention measures. These can ultimately increase the level of COVID-19 prevention practices among hospital staff.

C16

The Malay Version of Arthritis Impact Measurement Scale 2- Short Form: Convergent Validity and Test-Retest Reliability Testing

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ABSTRACT

Introduction: Arthritis Impact Measurement Scale 2-Short Form (AIMS2-SF) is a disease-specific instrument that is used to measure the impact of arthritis on an individual. The Malay version of AIMS2-SF (MAIMS2-SF) is a newly translated and culturally adapted instrument. Its usage among the Malaysian population, typically individuals with arthritis, requires comprehensive psychometric testing.

Objective: To determine the convergent validity and test-retest reliability of MAIMS2-SF for use among individuals with arthritis in Malaysia.

Methods: This cross-sectional study recruited participants using convenient sampling method. Participants were Malaysians with a diagnosis of arthritis who can speak and understand the Malay language. Participants completed the MAIMS2-SF and Malay version of Disabilities of the Arm, Shoulder and Hand (MVDASH) Outcome Measure for convergent validity testing. After 7 to 10 days, participants completed the MAIMS2-SF again for test-retest reliability testing.

Results: There were 153 participants for the convergent validity testing and 69 participants for the test-retest testing. Negligible to high correlations were found between the MAIMS2-SF and subscales of the MVDASH with Pearson's Correlation Coefficient ranging from 0.203 to 0.786. The highest correlations were found between the Symptom domain of MAIMS2-SF with the Sports module of MVDASH. The MAIMS2-SF showed good to excellent test-retest reliability with Intraclass Correlation Coefficient ranging from 0.83 to 0.97 and Minimal Detectable Change ranging from 27.39% to 39.41%.

Conclusion: MAIMS2-SF has convergent validity and test-retest reliability to be used among individuals with arthritis in Malaysia. As a culturally adapted instrument, its usage can benefit both clinical and research field relevant to arthritis management in Malaysia.

C17

Measuring Lateral Pinch, Three-Jaw-Chuck Pinch, and Tip-to-Tip Pinch Strengths of the Dominant Hand using Different Forearm Positions

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ABSTRACT

Introduction: The American Society of Hand Therapists has recommended a standardized position for pinch strength measurement. Despite this recommendation, clinical observation and literature search still found different possible ways of measuring pinch strength, especially in relation to forearm positions.

Objective: To determine if there is a difference in the respective lateral pinch, three-jaw-chuck pinch, and tip-to-tip pinch strengths as measured using different forearm positions, i.e., supination, neutral, and pronation, respectively, for the dominant hand.

Methods: This cross-sectional study recruited 30 undergraduate students of the Faculty of Health Sciences, Universiti Kebangsaan Malaysia based on the criteria: (1) no upper extremity neurological conditions or dysfunctions; (2) no previous exposure to grip or pinch strength measurement; and (3) not an occupational therapy or a physiotherapy student. Each type of pinch strength was measured in three trials using B&L Engineering Pinch Gauge. There was a 15-second rest period between each trial and a 5-minute rest period between each type of pinch. Data was analyzed using One-Way Repeated Measures ANOVA or Friedman Test based on the normality of data.

Results: Three-jaw-chuck pinch and tip-to-tip pinch showed significant differences between different forearm positions for the dominant hand. The difference in three-jaw chuck pinch strength occurred between: (1) supination and neutral, $p=0.011$; and (2) supination and pronation, $p<0.001$. The difference in tip-to-tip pinch strength occurred between: (1) pronation and supination, $p<0.001$; and (2) pronation and neutral, $p<0.001$.

Conclusion: The same forearm position needs to be used when measuring three-jaw-chuck pinch and tip-to-tip pinch strengths of the dominant hand.

Removal of A 10-Year-old Neck Mass: Excision of True Facial Artery Aneurysm

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ABSTRACT

Introduction: True aneurysms of the facial artery are extremely rare, with only 6 cases reported so far. Aneurysms are predisposed to spontaneous expansion and risk of rupture, making elective surgical excision the ultimate treatment choice. Among the few cases reported so far, the sizes of the reported facial artery aneurysms ranged from 1.5 to 5 cm, the median age is around 60. True aneurysm often associated with long standing cardiovascular disease leading to atherosclerosis. Other aetiologies such as arteriovenous malformation and congenital syphilis have been reported. We hereby presenting a case of left facial artery aneurysm with underlying arteriovenous malformation.

Case Report: A 70-year-old female presented with left neck painless swelling for the past 10 years which was gradually increasing in size. It was also associated with lower lip swelling which bleeds intermittently. There was no history of trauma. On examination, a pulsatile mass measuring 5x5cm noted over the left submandibular region. There were also prominent vessels seen over the lower lip without contact bleeding. Angiogram showed arteriovenous malformation over the lower lip which was mainly supplied by branches of external carotid artery. Left facial artery aneurysm measuring 5cm x 4cm x 3cm. There was also synchronous small aneurysm noted in the cavernous and clinoidal segment of right internal carotid artery which was treated conservatively by the neurosurgical team. Sublingual and submandibular branches of arteriovenous malformation was embolised with Polyvinyl alcohol (PVA) and coil a day prior to surgery. She then underwent excision of left facial artery via open surgical approach. The stump of facial artery was ligated and the aneurysm was removed entirely. Blood loss was minimal. Patient recovered well without post-op complication.

Conclusion: Among our literature reviews, there were only one case of true facial artery aneurysm that was treated conservatively and it resolved spontaneously. Complication rates of embolisation have been reported which include local inflammation, bleeding, necrosis of skin, neurologic complications, and even aneurysmal rupture. Surgical excision are the treatment of choice because of their potential for expansion and rupture.

PREVALENCE OF ACTUAL MEDICATION ERRORS AND ITS ASSOCIATED FACTORS AMONG ALL MEDICATION ERRORS REPORTED IN MELAKA HOSPITAL

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ABSTRACT

Introduction: Medication error (ME) is any preventable event that may lead to inappropriate medication use or patient harm. It is categorized into Actual and Near Miss. ME increases patient morbidity, mortality and health care costs.

Objective: This study was conducted to determine the prevalence of Actual ME and its related factors among all reported ME at Melaka Hospital in 2021.

Methods: This is a retrospective study using secondary data from the Medication Error Reporting System (MERS), Department of Pharmacy and Human Resource Unit, Melaka Hospital. ME categorical data and its related factors are presented as frequency (f) and percentage (%). Comparisons were made using Pearson's χ^2 -test. All statistical analyses were performed using IBM SPSS version 25. The level of statistical significance is set at $p < 0.05$ and the confidence level is 95%.

Results: 3.2% of incidents reported were Actual ME. Actual ME prevalence has a significant association and is influenced by health personnel who have a diploma level of education and below ($p < 0.001$, OR 6.437); never involved in ME incident ($p < 0.001$, OR 6.065); and in pharmacy and medical related departments $p < 0.01$, OR 4.301 and 3.289). Demographic factors such as gender, age and race of a healthcare worker have no significant association with the prevalence of Actual ME.

Conclusion: Systematic risk assessment and profiling of health personnel, instilling the importance of patient safety and expanding the use of technology can reduce Actual ME and help improve the quality of health services in hospitals.

Optometry Clinic Appointments Drop Out: What Could Be the Factors?

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ABSTRACT

Introduction: Clinic appointment dropout is a significant issue that hinders the effective delivery of healthcare services.

Objective: This retrospective study aims to investigate the factors associated with clinic appointment dropouts and their impact on patient care. The study utilized data from paper-based health records (PBHR) of the Optometry Clinic, Faculty of Health Sciences, UKM over a 5-year inactive period from 2014-2018.

Methods: The analysis included a comprehensive examination of patient demographics, diagnosis, management plan, and appointment characteristics. Various statistical techniques, including the chi-square test, were employed to identify significant predictors of appointment dropout and evaluate the time-to-dropout.

Results: The findings revealed several crucial factors influencing clinic appointment dropout rates. First, patient demographics such as the location of patients' residences were found to be associated with differential dropout rates ($p=0.028$). Second, patients' diagnoses, particularly binocular vision problems, were significant predictors of appointment dropout ($p=0.015$). Third, the period of follow-up appointments showed varying effects on dropout rates ($p=0.003$). Lastly, management plans also had significant associations, such as refractive error prescription ($p=0.004$), consultation ($p=0.000$), topical eyedrop prescription ($p=0.019$), and visual therapy ($p=0.031$).

Conclusion: Understanding the determinants of clinic appointment dropout can inform healthcare providers and policymakers in implementing targeted interventions to mitigate this issue. By employing a comprehensive retrospective analysis, it sheds light on the multifaceted nature of this problem and highlights the importance of addressing it for the efficient functioning of the healthcare system and to improve overall healthcare outcomes.

C21

Adaptive Behaviour Skills among Preschool Children: Gender and Parental Education Level Relationship

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ABSTRACT

Introduction: The topic of development of the adaptive behaviour skills of preschool children has been a widely discussed topic among researchers locally and abroad. Yet, there is still a lack of studies in Malaysia that researched the difference in adaptive behavior skills performance between the preschool children based on their parental education level and gender.

Objective: The objectives of this study are to describe the profile of adaptive behavior skills performance among preschool children based on Skala Kemahiran Adaptif, to explore the relationship between the parental educational level and the adaptive behavior skills among preschool children in Malaysia, and to compare the adaptive behavior skills performance between preschool children based on their gender.

Methods: This study used a secondary data obtained from an existing thesis that used Skala Kemahiran Adaptif, a newly developed assessment kit developed by a team of researchers in Malaysia that has 4 main domains of the adaptive behaviour skills, namely motor, communication, social and activity of daily living skills. IBM SPSS Statistic Version 24 was used to analyze the data obtained.

Results: The result obtained showed no significant correlation between the adaptive behavior skills and the parental education level as they have a weak correlation (correlation efficient < 0.3). There is no significant differences in the adaptive behavior skills between gender as well as a small effect size ($r < 0.3$) for all four domains.

Conclusion: The adaptive behavior skills performance of preschool children are not affected by their parental educational level or by their gender.

Primary mediastinal yolk sac tumour mimicking lung cancer

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ABSTRACT

Introduction: Yolk sac tumours are highly malignant germ cell tumour that mostly occur in the gonads. Extragonadal yolk sac tumour are rare. Here, we described a primary mediastinal yolk sac tumour that was thought to be a lung cancer involving the mediastinum.

Case Report: A 38-year-old man presented with history of abdominal pain for 2 weeks, accompanied by intermittent backache and dyspnea on exertion. He had loss of weight and appetite. There was no history of fever or chest pain. B-hCG (1.3mIU/L) and carcinoembryonic antigen (0.78ng/mL) were not elevated. CT scan revealed a well-defined lobulated mediastinal mass, measuring 17.6 x 8.9 x 13.2 cm and caused mass effect to the surrounding structure, including the lung. The differential diagnoses include a mediastinal germ cell tumour, lymphoma or lung cancer with mediastinal infiltration. A biopsy was taken. Microscopically, the tumour was composed of sheets of malignant cells with some vaguely formed glands, accompanied by abundant necrosis. The malignant cells have hyperchromatic and pleomorphic nuclei and eosinophilic cytoplasm. Immunohistochemically, these cells were positive for alpha fetoprotein and glypican-3. The TTF1 and Napsin A immunohistochemistry were negative. It was diagnosed as primary mediastinal yolk sac tumour, following which an alpha fetoprotein serology was performed and found to be markedly raised (>202,000ng/mL, normal level: 1-9ng/mL).

Conclusion: The diagnosis of primary mediastinal yolk sac tumour can be challenging due to their variable morphological features and unusual location. Histologically, the tumour may have variable patterns, such as microcystic, glands, solid, festoons, papillary and the characteristic Schiller-Duval bodies.

C23

Adaptive Behaviour in Preschool Children: Analysis based on Sociodemographic Characteristics

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ABSTRACT

Introduction: Adaptive behaviour is critically important in preschool children as evidence of this skill's mastery links to success in formal school transition and later school achievement. Various sociodemographic factors have been studied associated with children's adaptive behaviour performance. However, little evidence has been found focusing on Malaysia's typical preschool children population.

Objective: This study aims to determine the profile of adaptive behaviour among preschool children in Malaysia and to identify the adaptive behaviour performance among preschool children based on the preschool location, household income and parents' education level.

Method: A cross-sectional study was conducted based on secondary data with 250 children aged 4-6 years old in selected areas in Selangor, Malaysia was utilized. Demographic data form and Vineland Adaptive Behaviour Scale -3 forms were used in this study.

Results: The results show that adaptive behaviour domains scores of preschool children in urban areas are significantly higher than those in rural areas (p -value<.05). Interestingly, the household income shows no significant difference between groups in the adaptive behaviour domains scores of preschool children (p -value>.05). The adaptive behaviour domains of the preschool children based on the mothers' and fathers' education levels also did not show any significant difference scores between groups (p -value>.05).

Conclusion: In conclusion, urban and rural areas play significant roles in adaptive behaviour performances among preschool children. The outcome of this study hopes to be beneficial for professionals in planning effective strategies for developing adaptive behaviour in preschool children to prepare them for later school years.

C24

**Relationship between cholesterol and mortality in the NSTEMI population:
analysis from NCVD-ACS registry**

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ABSTRACT

Introduction: Cardiovascular diseases (CVD) are the leading cause of death worldwide. High cholesterol levels are a significant modifiable risk factor for CVD. Previous research has shown an inverse relationship between cholesterol and mortality in CVD patients, known as the "cholesterol paradox".

Objective: This study investigates the possible relationship between total cholesterol and mortality rates in patients with NSTEMI (non-ST-elevation myocardial infarction).

Methods: This cross-sectional study utilized a nationwide database from the NCVD-ACS registry. The study used consecutive sampling, where patient records between January 2006 and December 2015 that met the inclusion and exclusion criteria were included. The exposure of the study was total cholesterol on admission, which was classified into four groups based on quartiles (Q1, Q2, Q3 and Q4). The outcome was hospital mortality from all causes. The study used multilevel analysis to examine the association between the cholesterol group and the mortality rate, adjusting for potential confounding factors.

Results: The study included 3291 cases of NSTEMI patients (mean age 55.6 years; 79.7% male), with 111 deaths from all causes occurring during hospitalization. The analysis found a U-shaped relationship between cholesterol levels and mortality rates. As compared to the Q2 group, moderate cholesterol levels (4.50–5.36 mmol/L), the adjusted odd ratio for the Q1, Q3, and Q4 groups is 2.15 (1.15–4.03), 2.01 (1.01–3.98) and 2.15 (1.08–4.26), respectively.

Conclusion: The study found an association between cholesterol levels and hospital mortality in patients with NSTEMI. Further study is needed to shed light on this finding.

C25

Machine learning techniques for Type 2 Diabetes Mellitus risk factor prediction: A review

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ABSTRACT

Background: Type 2 Diabetes Mellitus (T2DM) is a globally prevalent chronic disease that keeps increasing the healthcare burden costs worldwide. Machine learning (ML) has been significantly proven to aid medical professionals in disease predictions. This caused a demand for modern techniques in medical fields, due to their ability to handle large datasets.

Objectives: This study focuses on systematically reviewing the use of multiple ML methods used for T2DM prediction. The gaps in the literature on the use of ML in predicting T2DM also will be concentrated on.

Methods: A systematic review search was conducted through Google Scholar, Scopus, Web of Science, and PubMed. Inclusion criteria were articles listed within the last 5 years, original studies written in English, and studies focused on "T2DM" disease only.

Results: Popular machine learning techniques used were Logistic Regression, Naïve Bayes, Decision Tree, Random Forest, Support Vector Machine, Artificial Neural Network, and k-Nearest Neighbour. All ML models were evaluated separately with their corresponding risk factors. Even though one ML technique was superior compared to others, the risk factors were different. However, there were insufficient study areas in Southeast Asian countries, as there are differences in demographics and culture that affect the risk factor of T2DM prediction.

Conclusion: The study emphasises the need of utilising machine learning in healthcare practises to reduce patient burden and enhance long-term health outcomes for those with T2DM. By making educated decisions and putting preventive measures into place, the medical community is better equipped to delay the spread of disease.

Keywords: Diabetes Mellitus, Machine Learning, Risk factor prediction, Healthcare burden.

Burden Among Caregiver of Children With Autism Spectrum Disorder (ASD)

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ABSTRACT

Introduction: The number of children with Autism Spectrum Disorder (ASD) is increasing worldwide. Caregivers assume a key role in the survival, development, and wholesome growth of children with ASD may experience burdens related to the well-being of themselves.

Objective: This study assessed the level of burden among caregivers of children with ASD and the sociodemographic factors associated with it.

Materials and methods: This cross-sectional study involved 356 caregivers recruited from online support groups from December 2022 to April 2023. Caregivers of children with ASD aged 18 and below were included. Zarit Burden Interview 22 used to assess the level of caregiver burdens.

Results: The majority of caregivers were female (84.0%) and Malays (74.2%). Nearly 82% of caregivers experienced a significant burden with a mean score of 35.38 (SD 16.08). The multiple linear regression analysis found 5 statistically significant sociodemographic factors associated with caregiver burden, which were caregivers' education level, household income, ethnicity, occupation, and medical problems in children with ASD. Caregivers' education level, ethnicity and occupation status were significant in all burden domains and overall burden level except the Financial Burden and Loss of One's Life Burden Domain. Household income and medical problems in children with ASD were significant to Financial Burden domain. Caregiver education level, ethnicity and occupation were statistically significant to Loss of One's Life Burden domain.

Conclusion: The caregivers in this study had significant burden associated with their sociodemographic factors such as education level, income, occupation status, ethnicity, and medical problems in their children with ASD.

PRIVATE HOSPITALS COMPENSATION PRACTICES FOR CLINICAL SPECIALISTS IN MALAYSIA

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ABSTRACT

Introduction: Fee-for-service (FFS) has been the main payment method for clinical specialists around the world. However, several payment schemes for doctors, particularly specialists, such as salary, pay for performance and blended remuneration of these models have been researched and used as a mechanism to increase the level of quality and value of healthcare services in the health sector.

Objective: This study explores the existing compensation practice offered to private clinical specialists by private hospitals in Malaysia.

Method: This research is largely qualitative comprising interviews with 15 private clinical specialists and 4 hospital administrators working in private hospitals.

Result: The informants comprised physicians (paediatric and internal medicine), surgeons (ENT, orthopaedics, surgery, and O&G), and ancillary services (radiology, anaesthesiology, and emergency medicine). Their working experience as clinical specialists ranged from two to 30 years with a mean of 9 years. The hospital administrators each had more than 20 years of experience as managers and administrators. Our study discovered four existing compensation practices which are 1) FFS, 2) salary-based, 3) salary-based with incentives and 4) pool system. Majority of the clinical specialists were under the FFS payment system.

Conclusion: There are limited payment models offered to clinical specialists in Malaysia. While the salary-based payment method is relatively new among clinical specialists in Malaysia, more private hospitals are willing to explore the potential of other payment methods provided strong support from the policymakers.

Fat Injection Laryngoplasty: Strategies for Optimal Vocal Fold Augmentation

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ABSTRACT

Introduction: Injection laryngoplasty is a procedure performed by otolaryngologists to treat glottic insufficiency caused by vocal fold immobility or atrophy, leading to dysphonia, dysphagia, and aspiration. We will discuss our center's surgical techniques using autologous fat graft as injectate for managing patients with glottic insufficiency.

Objective: To describe the technical aspects in performing an effective autologous fat injection laryngoplasty (FIL).

Methods: FIL is performed using direct laryngoscopy under general anesthesia. Autologous fat graft is harvested from a body part with high panniculus adiposus eg: periumbilical area, using VoicInject lipo harvesting set. The microlobular fat is centrifuged to purify it. Platelet-rich fibrin (PRP) is prepared from the patient's whole blood and mixed with the purified fat in a 20% PRP/80% fat ratio. The fat/PRP mixture is emulsified by pushing it back and forth between 2 separate 10 mL syringes connected by a three-way connector. About 2.5ml of the fat/PRP mixture is then injected at the submucosal area of the paraglottic space using a VoicInject injection needle (ID 1.6mm) to achieve at least 20% overmedialization of the vocal fold. Patients undergo 3 days of voice rest postoperatively.

Results: Significant and prolonged alleviation of glottic insufficiency symptoms. We share a case of a patient with presbylarynx presented with worsening voice fatiguability, which was not resolved despite undergoing office-based injection laryngoplasty with Juvederm. FIL was then performed. Post operatively, there are improvements in both objective (maximum phonation time: 16s > 17s) and subjective (Voice handicap index-10: 30 > 20; Visual analogue score voice: 7 > 3) assessments.

Conclusion: Vocal fold augmentation via FIL is an effective treatment for managing glottic insufficiency. Combination with platelet-rich plasma (PRP) may have the potential to enhance fat tissue variability, reducing the need for repeated augmentation.

C29

The Effect of Enhanced Respiratory Care with Early Mobilization (E-RECOVER) on Cognitive and Depression Amongst Patients with Covid-19

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ABSTRACT

Introduction: Coronavirus disease (COVID-19) had been proven to have a negative impact on cognitive and depression, even in the acute phase. However, there is a scarcity of these information amongst COVID-19 patients in middle-income countries.

Objective: Our study aimed to investigate the effect of enhanced respiratory care with early mobilization (E-RECOVER) on cognitive function and depression level amongst COVID-19 patients in a local tertiary teaching hospital in Malaysia.

Methods: In this pilot prospective cohort observational study, we recruited 44 patients of COVID-19 with a mean age of 63.50 ± 16.05 years from the COVID ward at the Hospital Canselor Tuanku Mukhriz, Universiti Kebangsaan Malaysia. All participants completed at least 3 consecutive days of comprehensive E-RECOVER package that supervised by physiotherapist in ward. Patients' level of cognitive and depression were assessed using the Montreal Cognitive Assessment (MoCA) and Patient Health Questionnaire (PHQ) respectively at the baseline and post-intervention prior to discharge.

Results: Majority of the participants were at category 2 of COVID-19 severity (40.90%), followed by category 3 (31.80%) and 4 (25.00%). On admission, patients had low MoCA score of cognitive (22.00 (1.00-30.00)) and high PHQ-9 score of depression level (7.00 (0.00-23.00)). At discharge, there were significant improvement in cognitive level of MoCA (+3.00 (0.00-6.00), $r = 0.5835$, $p < 0.001$) and depression level of PHQ-9 (-2.00 (-13.00-0.00), $r = 0.5204$, $p < 0.001$) amongst patients who received E-RECOVER package. There were no adverse events observed during the study.

Conclusion: Our findings suggest that E-RECOVER has potential benefit in improving cognitive function and depression level amongst patients, and it is safe as a rehabilitation guideline in treating COVID-19 patients.

C30

Comparison of Motor Proficiency among Typical Preschool Children with Different Socio-demographic Characteristics in Selangor, Malaysia

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ABSTRACT

Introduction: Gross and fine motor skills in children may develop and refine through interactions with the environment since early childhood. The motor skills development is essential for children to acquire complex body movement but can be influenced by the socio-demographic characteristics of the children.

Objective: This study aimed to establish the profile of motor skills proficiency and comparison based on gender, living area and household income among 4 to 6 years old typical preschool children in selected area in Selangor, Malaysia.

Methods: This was a retrospective cross-sectional quantitative study based on the secondary ordinal data of motor skills proficiency evaluated through Bruininks-Oseretsky Test of Motor Proficiency Second Edition (BOT-2) and socio-demographic data of 250 pre-schoolers. Mann-Whitney *U* Test and Kruskal-Wallis *H* Test were used in data analysis to compare motor skills proficiency between genders, living areas and household income.

Results: There was a significant difference ($p=.015$) in Manual Coordination between different household income groups, whereby children from lower household income group had better performance than higher household income. None of other significant difference was identified in the comparison between genders and living areas.

Conclusion: This study demonstrated that better development on Manual Coordination of preschool children with lower household income in Malaysia. Further research could be performed to determine the specific activities performed by preschool children from different household income backgrounds in exploring their relationship between household income and motor skills proficiency.

Immunoglobulin G4 and its Clinical Significance in Rheumatoid Arthritis

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ABSTRACT

Background: Recent studies showed serum Immunoglobulin (Ig) G4 was significantly elevated in the rheumatoid arthritis (RA) population. IgG4 accounts for 4-6% of total IgG in a healthy human. The relationship of IgG4 the disease activity, severity and the European League Against Rheumatism (EULAR) treatment response in RA remains elusive.

Objectives: We conducted this study to investigate the relationship between serum IgG4 levels and the disease activity in RA, the severity of radiographic joint damage, the degree of functional disability and the EULAR treatment response to DMARD therapy.

Methods: We recruited 174 patients with RA from our rheumatology clinic and their serum IgG4 were measured using ELISA test. All subjects were assessed for their disease activity based on DAS28, radiographic joint damage based on Modified Sharp Score (MSS), functional capacity based on Health Assessment Questionnaire–Disability Index (HAQ-DI) and treatment responsiveness using the EULAR response criteria.

Results: The mean serum IgG4 level was 60.23 ± 30.08 mg/dL. Study showed that serum IgG4 had significant positive correlations with disease activity ($r=0.406$; $p<0.001$), ESR ($r=0.155$; $p=0.041$), CRP ($r=0.269$; $p<0.001$), joint damage ($r=0.195$; $p=0.012$) and functional disability ($r=0.909$; $p<0.001$). Subjects with elevated IgG4 (IgG4 >86 mg/dL) had significantly higher ESR, CRP, HAQ-DI, DAS 28 and poorer EULAR treatment response compared to the group with non-elevated IgG4. On multivariate analysis, only HAQ-DI (OR =4.229, 95% CI 1.302,15.751, $p=0.018$) and DAS28 (OR =3.743, 95% CI 1.062,13.193, $p=0.040$) remained significantly associated with elevated serum IgG4.

Conclusion: Serum IgG4 shows potential as a promising biomarker of disease activity and functional disability in RA.

C33

Validity, Reliability, Responsiveness and Minimal Clinical Important Difference of the Unsupported Upper-limb Exercise Test in Measuring Upper Limb Function After Median Sternotomy

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ABSTRACT

Introduction: The Unsupported Upper Limb Exercise Test (UULEX) is a performance-based test and can be used to evaluate upper limb performance (function and endurance) following cardiac surgery via median sternotomy.

Objective: The aims of this study were to examine the reliability, validity and responsiveness of UULEX as well as to determine the minimal clinical importance difference (MCID) in individuals following median sternotomy.

Methods: A total of 56 participants following median sternotomy completed the UULEX test and other measures of upper limbs (UL) function, and health-related quality of life at baseline (pre-operatively), prior to discharge, at 4-6 weeks and 3 months post-operatively. The validity was evaluated using correlation. The responsiveness using Friedman one-way repeated measure. Reliability was evaluated using intraclass correlation coefficients (ICCs). Distribution-based calculation was used to calculate the minimal clinical important difference (MCID).

Results: The median (IQR) for the UULEX was 18.7 (12.1) at baseline; prior to discharge was 9.6 (8.8), 17.4 (11.2) at four weeks and 23.8 (12.2) at three months respectively. *Validity (construct):* fair to moderate correlation with other UL function measure and health related quality of life (spearman r all above 0.3). *Reliability:* The UULEX had excellent test-retest reliability (ICC = 0.86). Strong responsiveness overtime was demonstrated with large effect sizes (Cohen's $d > 0.8$) at prior to discharge time points. The MCID of the UULEX was calculated between 2.4-6.1 in minutes

Conclusion: The UULEX is valid, reliable, responsive with known MCID in measuring upper limb function after median sternotomy. This test can be used to quantify important functional limitations of upper limb function and trunk in this population.

P1

A Systematic Review of the Anti-Aging Effects of *Centella asiatica*: Current Evidence and Future Perspectives

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ABSTRACT

Introduction: *Centella asiatica*, commonly known as Gotu Kola or Indian Pennywort, has a long history of use in traditional medicine and has gained attention in recent years for its potential anti-aging effects. This systematic review aims to critically evaluate the existing literature on the anti-aging properties of *Centella asiatica* and provide an overview of its mechanisms of action, efficacy, and potential applications in skincare. The review highlights the promising anti-aging effects of *Centella asiatica*, including its ability to improve skin elasticity, reduce the appearance of wrinkles, and enhance collagen production.

Objective: This study is being carried out to determine the effect of anti-ageing on skin based on current evidence and to explore its potential for future use.

Methods: A systematic search was performed on PubMed, Scopus, and Web of Science databases using keywords related to *Centella asiatica*, anti-aging, skin aging, wrinkles, elasticity, and collagen. Relevant articles published up until 2023 studies conducted on human subjects, in vitro, and ex vivo models were included. Animal studies, case reports, and articles not available in English were excluded.

Results: Studies that met the inclusion criteria were included in this review (n=7). The studies focused on various aspects of anti-aging effects, including collagen synthesis, antioxidant activity, inhibition of matrix metalloproteinases (MMPs), and improvement of skin elasticity and wrinkles.

Conclusion: *Centella asiatica* has a promising rejuvenating effect on the skin by reducing signs of ageing, increasing elasticity, and stimulating collagen production.

Optimization of Sampling Techniques in Collecting Nasal DNA Samples

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ABSTRACT

Introduction: The nasal microbiota possesses the ability to modulate the immune response, thereby potentially influencing the susceptibility and severity allergic rhinitis. Accurate identification of nasal bacteria relies heavily on the sampling methods employed during the collection of nasal samples. Swabs have proven to be an efficient and non-invasive means of obtaining samples of the nasal mucosal microbiota.

Objective: The objective of this study is to assess and compare the efficacy of different swab sampling methods in terms of DNA concentration, with the aim of identifying the most effective approach for obtaining high-quality DNA samples.

Methods: Nasal samples were prospectively obtained from individuals diagnosed with allergic rhinitis. The swab tip was inserted into the middle meatus and gently swirled it around the inferior turbinate region. This process was repeated 4 to 5 times until the swab fibers became moist, ensuring maximum collection of the target analytes. The swabs were stored in two different mediums: phosphate-buffered saline (PBS) versus Amies gel, as well as dry swabs. The effect of different swab sizes was also examined. Subsequently, DNA extraction from the swabs was performed and the DNA concentration in the extracted samples was measured.

Results: The DNA concentration was higher for dry swabs (10.8-13.9) ng/μl compared to PBS (1.4-6.5) ng/μl, for PBS vs Amies there was no significant difference. Big swabs had higher concentration (2.6-5.9) ng/μl than smaller ones (1.4-3.8) ng/μl.

Conclusion: The big dry swabs without any media provided a better DNA yield and concentration.

P3

Comparative Study on Different Types of Methods in Blood Feeding *Aedes aegypti* for Colony Establishment

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ABSTRACT

Introduction: Blood-feeding is crucial in mass-rearing mosquitoes to establish and maintain mosquito populations for control measures studies. An effective artificial blood-feeding method is required instead of using live animals in blood-feeding mosquitoes, which poses several challenges.

Objective: The study was conducted to compare the effectiveness of artificial methods with direct feeding using live animals in blood-feeding *Aedes aegypti*.

Methods: 20 female mosquitoes were sugar-starved for 24 hours before blood feeding. The Digital Thermo Mosquito Blood Feeder (DITMOF), Hemotek membrane feeding devices, and mice (control) were used to feed each mosquito group. Each method had six replicates and the blood-feeding rate and number of eggs produced were recorded.

Results: The mean blood feeding rate (i.e., number of engorged females) using DITMOF was recorded as the highest at 17.66 ± 1.75 , followed by mice (17.33 ± 1.37) and the Hemotek system (7.83 ± 2.79). The mean number of eggs produced using DITMOF was recorded as 641, compared to the mice (440 eggs) and the Hemotek system (360 eggs). The blood feeding rate of DITMOF shows no significant difference with mice however it shows a significant difference in the number of eggs produced ($p < 0.05$).

Conclusion: The DITMOF device has been shown to be a more effective method in blood-feeding *Ae. aegypti* with a comparable blood feeding rate with mice (control) and yield more eggs. Hence, its effective blood-feeding mechanism guarantees adequate production of viable eggs for mosquito colony establishment.

P4

Exploring Drug Targets for *Porphyromonas gingivalis* associated AD through CMap and molecular docking: PLK2 an interest?

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ABSTRACT

Introduction: This study addresses the intriguing connection between *P. gingivalis*-associated Alzheimer's Disease (AD) and periodontal disease, aiming to identify potential drug molecules. The focus lies on gene expression analysis, molecular docking, and dynamic simulations.

Objective: The goal is to predict and assess drug candidates for *P. gingivalis*-associated AD. Gene expression data from the CMap database guide drug prediction. Molecular docking and dynamics simulations evaluate drug-target interactions.

Methodology: Utilizing CMap, gene expression patterns specific to *P. gingivalis*-associated AD are sourced. Drug candidates with negative mean scores, indicating therapeutic potential, are selected. Molecular docking with AutoDock Vina and PyRx assesses drug-protein binding. Dynamics simulations via iMOD examine protein-drug complex stability.

Results: CMap identifies candidates with negative scores, suggesting potential reversal of *P. gingivalis*-associated AD effects. Docking reveals drug binding efficacy to target proteins. Dynamics simulations confirm stable protein-drug complexes, endorsing drug viability.

Conclusion: This study provides insights into potential *P. gingivalis*-associated AD interventions. Predicted drug candidates show promise, offering targeted therapy potential. Experimental validation is crucial for confirming efficacy and safety, paving the way for novel *P. gingivalis*-associated AD treatments and enhanced molecular understanding.

P5

The Effect of Squalene and Tocotrienol-rich Fraction on Oxidized-LDL-Induced Human Umbilical Vein Endothelial Cells in the Development of Atherosclerosis

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ABSTRACT

Introduction: Atherosclerosis is a chronic inflammatory condition that results in the formation of atherosclerotic plaque. Current treatment by using statin has been associated with many side effects. Squalene and tocotrienol-rich fraction (SQTRF), is known to possess anti-oxidant and anti-inflammatory properties and hence may have the potential to be an alternative in the treatment of atherosclerosis.

Objective: This study was conducted to elucidate the positive effect of SQTRF on ox-LDL-induced-human umbilical vein endothelial cells (HUVECs).

Methods: 50µg/ml of ox-LDL was used to induce the atherosclerotic model of HUVECs. Then HUVECs were treated with 50µM of SQTRF and subjected to migration and angiogenesis assay where the area of wound closure and total branching length were analyzed respectively.

Results: HUVECs treated with 50µM of SQTRF had shown a higher percentage area of wound closure and total branching length in comparison to the control group, which indicates the ability of SQTRF in inducing the migration and tube formation of the cells.

Conclusion: SQTRF has the potential to be used in the treatment of atherosclerosis at the early stage characterized by endothelial barrier dysfunction, where migration and tube formation of cells are essential for the repair process.

Variants Emergence of SARS-CoV-2 Based on Evolution and Structural Analyses

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ABSTRACT

Introduction: Global COVID-19 data sharing aids genomic surveillance and variant tracking. Regional variant tracking is vital as it allows the identification of novel mutations in SARS-CoV-2.

Objective: The project analysed the distribution and evolution of SARS-CoV-2 lineages in Negeri Sembilan using a time series analysis of viral samples sequenced SARS-CoV-2 from GISAID database.

Methods: 416 quality-assured SARS-CoV-2 sequences from Negeri Sembilan COVID-19 cases (Jan2021-June2022) and reference genome; hCoV-19/Wuhan/WIV04/2019 (WIV04) were studied from GISAID. Gene annotation used VIGOR (version 4.1.2), SNPs were extracted from GISAID and phylogenetic tree was constructed using the UPGMA method from whole completed genome sequences aligned with MAFFT, following the Maximum Composite Likelihood (MCL) model, uniform site rates, and a 1000-time bootstrap via MEGA X and visualize through iTol.

Results: Phylogenomic analysis identified 20 lineages from Negeri Sembilan, seven currently circulating. GRA, GK and O are major GISAID clades, with the GRA clade making up 60.4% of viruses. From GRA clade, 24.7% comprises Malaysian BA.1.1 lineage. A time series analysis showed that AY.79 (30% of total samples) was the primary lineage from July21 – Jan22. The lineage BA.1.1 recorded a spike of cases from Dec21 – Mar22. Sub-lineages from Malaysian (BA.2.40.1, BA.2.57 and BA.2.9) emerged from Apr-22 onwards. Viral evolution of SARS-CoV-2 suggests regionally tailored sub-lineages. Post-Oct21 lockdowns saw increased sequenced samples with Delta (B.1.617.2) and Omicron (BA.1.1, BA.2.40.1, BA.2.57 and BA.2.9) variants prevalent in Seremban and Tampin districts.

Conclusion: SARS-CoV-2 evolves at regional levels. Continuous data submission vital for tracking the evolutionary progress of SARS-CoV-2.

P7

Future Development for Quality of Life Research on Head and Neck Cancer Patients: Application from 10-year Bibliographic Analysis

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ABSTRACT

Introduction: Improving the quality of life (QoL) is paramount following a diagnosis of head and neck cancer (HNC), leading to numerous studies in this field.

Objective: This bibliometric study explores the patterns and distributions of recent scientific works that focus on the QoL of the HNC population, aiming to assess the hotspots research area in future as a guide for new researcher, the potential collaborative countries for policy makers and also the potential higher need countries with high cases and mortality rate.

Methods: Data and bibliometric information were extracted from the Web of Science Core Collection (WOS-CC) and analyzed before visualized using R-package (Biblioshiny in bibliometrix package) and VOSviewer, respectively. The author's keywords were overlaid to visualize the current important keywords. Then, the number of multiple countries production were analyzed to illustrate the most collaborative countries. Lastly, the number of publications for each country were compared to GLOBACON database using the mortality and prevalence rate of HNC cases.

Results: From WOS, 444 articles were found and analyzed. Using the author's choice keywords from those articles, the significant relevant area for future development for this field were involve survivorship, dysphagia, malnutrition, pain, anxiety and oral health. The countries with the highest number of publications with multiple research centers involved were United Kingdom (n=10), United State (n=9) and Germany (n=7). There are few countries with high mortality and prevalence without any publications which included Russia, Cameroon, Kenya, Papua New Guinea and Afghanistan.

Conclusion: The new researcher in this field must focus more on recent topics and shall not reinventing the new wheels. The target countries for the policy makers in the higher need countries shall target to more collaborative partners to engage more powerful collaboration and potential existing of experts.

Projecting Non-Communicable Diseases attributable to Air Pollution under different Climate Change Scenarios-A Systematic Review

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ABSTRACT

Introduction: Climate change is a global issue with significant consequences to air quality and human well-being.

Objective: This review aims to investigate the projection of non-communicable diseases (NCDs) attributable to air pollution under different climate change scenarios.

Method: This systematic review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 flow checklist. Three databases (Web of Science, Ovid MEDLINE, EBSCOhost) were searched for articles published from 2005 to 2023.

Results: There were 709 potentially relevant articles identified from the three databases. A total of 15 duplicate articles were found and removed, leaving 694 articles. We removed 516 articles during the screening; the remaining 64 articles proceeded to full-text retrieval for further assessment and eligibility. A total of 53 articles were excluded for various reasons. Only (n=11) articles were finally included in the review and were evaluated using a modified scale of a checklist designed for assessing the quality of ecological studies. The main finding of the study reveals that under the 'best-case scenario' mortality of NCD attributable to air pollution were projected to reduced. In contrast, the 'worst-case' scenario projected an increment of mortality for NCD attributable to air pollution.

Conclusion: Projections for Burden of Diseases (BoD) of NCD attributable to air pollution can be influenced by population size, population aging, and social deprivation.

Intrinsic Motivation: Excursion for DistinctionNOOR SUHAILA AB, NUR FARIHIN R, NAFISAH AR, FAIZ D*Department of Public Health Medicine, Faculty of Medicine, Universiti Kebangsaan Malaysia, Jalan Yaacob Latif, Cheras, Kuala Lumpur***ABSTRACT**

Introduction: Motivation theories are used to analyse, explain, and affect human behaviour. Intrinsic motivation refers to engaging in an activity for sheer enjoyment or personal satisfaction whereas extrinsic motivation engages in an activity to obtain external rewards.

Intrinsic Motivation: The comprehension of intrinsic motivation will significantly assist in propelling the quest for excellence in any field. The Cognitive Evaluation Theory explains how controlling rewards and communications tends to undermine intrinsic motivation in comparison to informational rewards and communication.

Excursion for Distinction: Different stages of an individual's life are associated with diverse journeys. During early years, it is crucial to support student learning and education, while also incorporating hobbies to inspire individuals. However, as they mature, the focus shifts towards fulfilling career and personal needs.

Healthcare Setting: The performance of the health sector relies heavily on the motivation of its workers, given the labor-intensive nature of healthcare delivery. As a leader, it is vital to enhance one's dedication to achieving excellence. Highly intrinsically motivated healthcare professionals, are more likely to find satisfaction in their roles, resulting in higher levels of commitment and loyalty to the organization. This focus can contribute to improved health outcomes and a more efficient and effective healthcare system.

Discussion: When intrinsic motivation is acknowledged and embraced, it makes it easier to develop courage for people to strive for uniqueness and personal development. This promotes strong organizational culture, inspires creativity, and ultimately boosts the value that is provided by the organization as a whole.

P10

Accelerated Stability Study and Quality Assessment of a Subcritical Water Extract of *Zingiber Officinale* Roscoe (Ginger) Health Supplement

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ABSTRACT

Introduction: Ginger demonstrates its ability to safeguard against oxidative stress and inflammation in ageing and degenerative disease development. However, the bioactive compounds present in ginger are vulnerable to degradation. To preserve these compounds and achieve the desired therapeutic effects, it is crucial to encapsulate them.

Objective: The objective of this study was to assess the stability and quality of ginger capsules during health supplement development.

Methods: The capsules were subjected to a temperature of $40\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ with a relative humidity of $75\% \pm 5\%$. The samples were then analyzed at regular intervals (0, 3, and 6 months) over a period of six months. The analysis included active compounds assay, physical, heavy metal, and microbiological analysis.

Results: The analysis revealed trace amounts of heavy metals in the preparation, although remained within acceptable limits. Moisture loss was observed to be higher at month 3 and month 6 compared to the baseline. The disintegration rate of the capsules was higher at month 3 compared to month 0, and significantly increased at month 6 compared to month 3. Regarding microbiological analysis, all microbial counts are within acceptable limits with the absence of *Escherichia coli* and *Salmonella*. In terms of the active compound assay, a significant decrease in 6-gingerol amount was observed at month 6 compared to month 0 and month 3. However, there was a significant increase in the 6-shogaol amount at month 6 compared to month 0.

Conclusion: The ginger preparation demonstrates good characteristics and quality for health supplement.

P11

LINKAGES BETWEEN OCCUPATIONAL SAFETY AND HEALTH (OSH) IN HOSPITALS AND SUSTAINABILITY: AN OVERVIEW

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ABSTRACT

Introduction: Occupational Safety & Health (OSH) is a crucial aspect of any workplace, including hospitals. Hospitals are a unique environment where employees are exposed to a range of hazards, including infectious diseases, chemical exposures, and ergonomic risks. Therefore, it is essential to establish and maintain OSH programs in hospitals to protect employees' health and safety.

Objective: To ensure and maintain a healthy and safe working environment, hospitals should constantly identify and prevent all factors that could provoke work-related injuries and diseases.

Methods: The research is conducted on the material of several documents in the sphere of OSH and sustainability and reviewing studies on the effectiveness of programs on OSH and sustainability outcomes.

Results: There are several components of an effective OSH program in hospitals where it involves hazard identification and risk assessment. Hospitals should regularly assess their work environments to identify potential hazards and implement controls to reduce risks. Another critical component of OSH in hospitals is training and education. Hospital employees should receive regular training on workplace hazards and how to protect themselves. Sustainability is also becoming an increasingly important issue in hospitals. Hospitals consume vast amounts of resources, including energy, water, and materials, and generate significant amounts of waste. Therefore, hospitals must develop sustainable practices to reduce their environmental impact and improve their long-term viability.

Conclusion: OSH and sustainability are both critical issues in hospitals. Effective OSH programs can help protect employees from workplace hazards, while sustainable practices can reduce hospitals' environmental impact and promote long-term viability.

Keywords: Occupational safety and health, Sustainability, Hospitals.

Specialist Behaviour: The Loose Value of Mindless Life

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ABSTRACT

Introduction: Mindfulness is the awareness of one's thoughts, emotions, and surroundings in the present moment, which leads to emotional regulation, stress reduction, and enhanced well-being. Mindfulness practice offers numerous benefits, not only to the individual in his or her capacity as a person, but also to organizations.

Methodology: A keyword search was performed in the search engine using the English key topic terms "mindfulness" AND "behavio*r" AND "specialist*" OR "professional*." Document screening was performed, and 15 articles were retained for full review. Two themes were developed for further discussion.

Result: Mindful behaviour can be cultivated among medical and health specialties through intention and meditation. Intention is the deliberate orientation of consciousness towards the present moment, which motivates, directs, anchors, and instills conscious reaction. Besides that, Meditation can also substantially enhance a patient's safety culture, competency, and empathy development.

Conclusion: Establishing a clear objective, translating one's purpose into concrete acts, using reminders or cues, and communicating one's intentions to others are all ways one might put one's intention into action. Muslim prayer (salat), yoga, MBSR, and relaxation breathing are all mindfulness meditation practices. Mindfulness improves patient management and organization quality, preventing medico-legal and misdiagnosis, enhancing patient health, and managing outbreaks and disasters. In addition, empathy growth through self-awareness helps people understand themselves and others. Thus, mindfulness meditation improves patient care through empathy and safety.

Keywords: meditation, mindfulness, mindlessness, specialist behaviour, intention

P13

Cost Analysis of Respiratory Illnesses Inpatients in HCTM: A Comparison between SARI and AEBA

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ABSTRACT

Background: Respiratory infections are the leading cause of hospitalisation worldwide, and viruses cause the overwhelming majority of respiratory tract infections. This study compares the costs of severe acute respiratory infection (SARI) and acute exacerbation of bronchial asthma (AEBA), the two most common acute respiratory illnesses admissions.

Method: A cross-sectional study was conducted in Medical Wards of Hospital Canselor Tuanku Muhriz (HCTM), Cheras, Malaysia from 1 August till 31 December 2022. Simple random sampling identified 17 SARI and AEBA inpatients. Medical records of these inpatients were collected from Medical Record Department and entered into Microsoft Excel. Administrative departments provided additional financial and human resource data. Activity-based and step-down costing performed. Total cost was computed by adding direct and indirect/overhead costs. Indirect patient cost was excluded.

Results: Out of these 17 patients for each AEBA and SARI, AEBA hospitalised more younger patients than SARI. Both groups had statistically equivalent demographic and clinical features. Average SARI treatment cost is RM1,587.11, while AEBA RM1,214.41. SARI patients spent RM113.89, RM104.51, and RM57.78 more on consumables, medications and laboratory & imaging than AEBA patients. The average length of stay (ALOS) for AEBA is 3.5 days, while SARI is 6.3 days. SARI patients needed longer respiratory assistance and antibiotics or antivirals. Overhead costs also contribute to cost differences.

Conclusion: AEBA inpatient admissions are cheaper than SARI. Targeted treatments like high-risk immunisation, hand hygiene campaigns, routine disinfection of public items, and public education campaigns can minimise SARI cases and eventually healthcare costs.

P14

Retirement Village in Malaysia -Aging Gracefully And Preserving Independence

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ABSTRACT

Introduction: The existing healthcare infrastructure, retirement homes, and other facilities intended for the elderly and retired population, as established by both public and private entities, are found inadequate in meeting the comprehensive needs of the elderly. Over the past ten years, retirement villages have gained popularity and acceptance among the elderly population. It is imperative to clarify that the notion of a retirement village does not serve as a facility for the provision of care for disabled or neglected senior citizens. Rather, it is a setting where measures are implemented to enhance the standard of living for the elderly.

Objective: The aim of this study is to explore the relevance of retirement villages for senior citizens in terms of their advantages and disadvantages in Malaysia.

Methods: This study implemented a comprehensive literature review on retirement villages that have been carried out in Malaysia and other counties.

Results: The notion of a retirement village encompasses three social trends: the medicalization of ageing, the emergence of positive-ageing institutions, and the enhancement of lifestyle. A retirement village is one of the options for senior citizens that provide senior-appropriate housing, as well as services and facilities, to meet the requirements of senior citizens. However, the disadvantages are high resident costs, low penetration level, sustainability issues and lack of policy and legal support.

Conclusion: Even though the industry is still in its infancy and faces several difficulties, the retirement village market has expanded gradually in Malaysia and a sustainable legal framework would encourage more developers and stakeholders, particularly the elderly to participate in the project, as they would be more confident in its sustainability. The establishment of a legal framework is imperative in safeguarding the rights of residents and facilitating the operator in acquiring legal recognition.

P15

Exploring the Link between *Porphyromonas gingivalis* and Alzheimer's Disease: A Comprehensive Review of Human and Animal Studies

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ABSTRACT

Introduction & Objective: This study aims to investigate the association between *Porphyromonas gingivalis* (*P. gingivalis*) and Alzheimer's disease (AD). The main objective is to conduct a comprehensive meta-analysis to determine whether *P. gingivalis* infection is linked to the development and pathogenesis of AD.

Methods: A systematic search was performed on PubMed, identifying relevant studies from inception to January 18, 2023. After applying inclusion criteria, 27 studies were included for analysis. A random-effect meta-analysis calculated the pooled odds ratio (OR) and hazard ratio (HR) to assess the association between *P. gingivalis* infection and AD. Additionally, a qualitative synthesis of 20 animal studies focused on inflammation and animal models.

Results: The meta-analysis revealed a strong positive correlation between *P. gingivalis* and AD. Infected individuals had a higher likelihood of developing AD, with a pooled OR of 2.45 (CI: 1.80-3.33). The HR analysis showed an increased risk of AD development, with a ratio of 1.06 (CI: 1.06-1.11). Animal studies primarily utilised a murine model, highlighting the inflammatory effect, while other animal species were underrepresented.

Conclusion: This meta-analysis provides evidence supporting the association between *P. gingivalis* and AD, suggesting its potential role in AD pathology. Further research is needed to understand the underlying mechanisms and therapeutic implications of *P. gingivalis* in AD. Diversifying animal models beyond murine models would enhance our understanding. Addressing oral health, particularly targeting *P. gingivalis* infection, may have implications for AD prevention or management. Future investigations should explore therapeutic interventions targeting *P. gingivalis* for AD prevention or treatment.

P16

Malaysian Medical Council (MMC): Successful Acquisition of National Specialist Register (NSR)

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ABSTRACT

Introduction: Organizational change involves implementing modifications in organization's structure, processes, or culture to improve efficiency, foster innovation, and adapt to emerging challenges. Malaysian Medical Council (MMC) is a regulatory body for medical practitioners in Malaysia who has embarked on transformative organizational change since enforcement of Medical Act 1971 (Amendment 2012), which mandated MMC to regulate specialists and steer the management of National Specialist Register (NSR). This study aims to explore change management strategies, challenges, and outcomes in relation to this significant transition.

Methodology: Qualitative study through in-depth interviews with top management of MMC.

Result: Successful change strategies in taking over NSR management require strong leadership, comprehensive planning, clear communication with stakeholders, and employee involvement and training. The transformation involves multiple stakeholder engagements and two phases of Memorandum of Agreements (MOA) between MMC and Academy of Medicine Malaysia (AMM) in relation to administration, finance, human resource, and technologies. The functions were also handed over gradually starting from employee training rotations, absorption of AMM officers, relocation of NSR office and development of specialist registration module in the new Medical Register Information and Technical System (MeRITS). Challenges include organizational communication, system adaptation, data management, human resource and financial sustainability, and lack of technological infrastructure and expertise. In future, MMC aspires to develop a user-friendly portal that integrates all organization functions accessible via mobile phones. This will enhance organization's efficiency and elevate user experience.

Conclusion: Malaysian Medical Council's organizational change highlights strategic planning, stakeholder engagement, and visionary leadership for successful transformations in complex regulatory environments.

P17

A REVIEW ON CONTROLLING CHILDREN'S INTERNET USE: A FRAMEWORK FOR PARENTS

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ABSTRACT

Introduction: The integration of digitalization has become a fundamental aspect of a child's upbringing in today's society. With the increasing presence of media and technology in children's lives, parents face the risks associated with their children's internet usage and the ongoing responsibility of managing internet access at home. Recognizing the popularity of digital and online devices among young people, parents must address the issue of internet mediation to mitigate the adverse effects of digital media on children's physical, cognitive, and social well-being.

Objective: This review was conducted to explore the existing frameworks for parental digital mediation in managing children's internet use.

Methods: Literature were gathered from 3 search engines; PubMed, Web of Science and Ovid Medline. Keywords search were performed in the search engines. 19 articles were selected for full review.

Results: Drawing insights from a review of various theories and literature, we propose a holistic approach to parental internet mediation. Firstly, we discuss a transactional framework of parenting that emphasizes the dynamic relationship between parental awareness, parental self-efficacy, and parental mediation, which is influenced by parent-child characteristics. The parenting approach adopted by parents and its impact may vary depending on individual and contextual factors. Therefore, it is crucial to consider these factors systematically when establishing an effective framework for parental internet mediation. Secondly, we examine the behavioural aspects encompassed in the talk, educate, co-view, and house rules (TECH) parenting model, which addresses important behavioural targets for parents managing internet usage among pre-adolescent children.

Conclusion: This contribution offers an innovative and comprehensive methodological and analytical perspective for developing a comprehensive parental framework to regulate children's internet usage.

Healthcare Marketing : The Inverted Industry

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ABSTRACT

Introduction: Healthcare marketing refers to the strategic initiatives and techniques used to sell healthcare organizations, facilities, and services to specified target markets. The concept of the inverted industry in healthcare marketing refers to a shift in focus from traditional marketing practices centered around promoting healthcare services to a patient-centered approach that emphasizes enhancing the overall patient experience and driving service utilization.

Objective: This article aims to highlight the concept of healthcare marketing as inverted industry with the strategies and challenges in implementation.

Method: A comprehensive search was conducted using Google scholar and Pubmed. The articles were searched with keywords “healthcare marketing”, “medical marketing” and “inverted industry”.

Results: The primary objective of healthcare marketing is to generate awareness, enhanced visibility of the services and acquire or retained patients. In the past, healthcare marketing primarily revolved around promoting services and increasing patient volumes. The focus was on highlighting the expertise and capabilities of healthcare organizations and enticing patients to choose their services. However, with the rise of patient-centred care, there has been a paradigm shift toward prioritizing the needs and preferences of patients.

Conclusion: Healthcare marketing in the inverted industry focusing on services requires the adoption of strategic approaches to promote and enhance healthcare services. By leveraging branding, patient experience enhancement, digital marketing, and patient engagement initiatives, healthcare marketers can effectively promote services and improve patient satisfaction.

P19

Ginger (*Zingiber officinale* Roscoe) reduces damaged DNA and improves bone integrity and muscular function in an animal model of ageing.

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ABSTRACT

Introduction: The greatest significant influence on human life span and health is inevitable ageing. One of the distinguishing characteristics of ageing is the gradual decrease of muscle mass and physical function, often known as sarcopenia. Identifying the compounds and their mechanisms that induce increases in muscle mass and function during ageing is crucial to improve human well-being. *Zingiber officinale* Roscoe (ginger) has been shown to possess anti-ageing, antioxidant, and anti-inflammatory properties, which delay the onset of degenerative diseases due to the presence of their active compounds gingerol and shogaol.

Objective: This study aimed to elucidate the effect of ginger extract on damaged DNA, bone integrity and muscular function in an animal model of ageing.

Methods: Sprague Dawley (SD) rats were given either distilled water or ginger extract at a dose of 200 mg/kg body weight (BW) daily via oral gavage for three months when their age reached 3 months (young), 9 months (adult), and 21 months (old) old. Muscle performance, function, and bone integrity were measured at 0, 1.5 and 3 months of ginger treatment using the Weight-loaded Swim Test (WLST) and dual-energy X-ray absorptiometry (DXA). At the same time, damaged DNA was determined by Comet assay.

Results: The ginger-treated group of rats showed a significantly lower body weight throughout the treatment than untreated control rats. Increased bone mineral content (BMC), bone mineral density (BMD), and lean mass plus BMC after 1.5 and 3 months of ginger treatment in both ginger-treated and untreated control young rats. The fat percentage was significantly higher in ginger-treated young rats after 3 months of treatment compared to the untreated control ($p < 0.05$). A similar increase in BMC was observed after 1.5 and 3 months of ginger treatment in both ginger-treated and untreated control adult rats ($p < 0.05$). Ginger treatment for 3 months significantly increased the BMC in adult rats ($p < 0.05$). The BMD was significantly lower in untreated control adult rats ($p < 0.05$), which was increased with 3 months of ginger treatment ($p < 0.05$). The percentage of fats was significantly higher after 3 months of ginger treatment for both ginger-treated and untreated control adult rats ($p < 0.05$). However, no significant change was observed in the old group of rats. The WLST was significantly reduced in untreated young and adult rats, which was increased with ginger treatment after 1.5 and 3 months ($p < 0.05$) in young rats and after 0, 1.5 and 3 months of ginger treatment in adult rats ($p < 0.05$). Damaged DNA was significantly higher in untreated adult rats, as indicated by the increase in tail length, tail DNA percentage, tail moment and olive moment ($p < 0.05$). After 1.5 months of ginger treatment, the tail DNA percentage, tail moment and olive moment in adult rats significantly decreased and increased after 3 months of treatment ($p < 0.05$).

In old rats, DNA damage was improved in ginger-treated rats at 0 months, as indicated by a decrease in tail length, tail moment and olive moment ($p < 0.05$).

Conclusion:

The treatment of *Zingiber officinale* Roscoe in SD rats has shown promising results in reducing DNA damage, improving muscle function, and enhancing bone integrity. This may lead to a decrease in oxidative stress and a delay in the onset of sarcopenia.

Keywords: ginger, DNA damage, bone integrity, muscle performance, ageing, sarcopenia

P20

A Guidebook Development and Validation for Empowering Caregivers in Enhancing Daily Function of Older Adults with Stroke

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ABSTRACT

Introduction: A competent caregiver is important in supporting older stroke patients to enhance their daily function. This contributes to shorter hospital stays, fewer hospital returns, and decreased risks of complications and mortality. However, inconsistent caregiver training from healthcare practitioners, including occupational therapists (Ots), leads to incompetent caregivers.

Objective: This study aims to develop dan validate a caregiver training guidebook for Ots to empower caregivers in enhancing the daily function of older adults with stroke.

Methods: A mixed-method design was used in this study. All Items in this guideline were validated by nine experts in Focus Group Discussion (FGD) and six Ots in cognitive interviews. The expert panels consisting of academicians and clinicians were recruited using purposive sampling. The expert panel was required to rate the guidebook using Cohen Kappa Index (CKI) and Content Validity Index (CVI). The thematic analysis was used to analyze the qualitative study.

Results: The guidebook comprises three parts, encompassing 11 topics and 72 subtopics. It emphasized a structured process, client-centered approach, personalized goal-setting, problem-solving skills, post-discharge support, and user-friendliness for occupational therapists, caregivers, and older adults. A finding of CKI and CVI reported excellent face and content validity, with values of 1.0. The cognitive interview reported the guidebook is comprehensiveness and user-friendly in nature.

Conclusion: The caregiver guidebook's strong validity calls for more research on its real-world effectiveness. With its potential recognized, integrating the guidebook into Malaysia's healthcare, especially in occupational therapy, could enhance elderly care effectively.

Health Gross Domestic Product (GDP): The Idealist Phenomena

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ABSTRACT

Introduction: Malaysia's population's health has advanced to a level comparable to that of certain developed countries. This achievement is due to Malaysia's effective dual healthcare system and the equitable distribution of healthcare financing across the population toward the Sustainability Development Goal (SDG).

Objective: The articles aim to highlight the concept of idealist Health care finances, its impact on health outcomes, and potential areas for future improvement.

Methods: A comprehensive search was conducted from various journal databases such as Google Scholar, PubMed, and Scopus using a keyword "Health Expenditure", "GDP," "Malaysia," and "Idealist" to narrow down the search results.

Results: Malaysia is unique due to its multi-ethnic population as well as its social and cultural diversity. According to the DOSM report, Malaysia, which has a population of 33.57 million people, has achieved a level of health to be proud in 2021. Malaysia's health GDP in 2021 is 4.12% which is below the average global and Asia and Western Pacific Region. However, generally Malaysians' health is better than other developing countries and comparable to developed countries such as Singapore and the United States.

Conclusion: Malaysia has made significant progress in terms of healthcare spending, and it is now on par with developed countries in terms of healthcare implementation and equitable funding distribution. Malaysia can further improve its healthcare system and strive for optimal health outcomes for its people through health education programs, policy formulation, financial budgeting, and community outreach health services to achieve universal health coverage.

Medical Tourism: The Fallacy of Judgement

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ABSTRACT

Introduction: The medical tourism industry has gained popularity in recent years and contributes to global economic growth. Tourists from developed countries benefit the most from this, as the medical services are provided mostly by developing countries at much lower costs compared to their own countries. However, misguided decision-making regarding medical tourism destinations will lead to a fallacy of judgment.

Objective: This article aims to highlight medical tourism's impacts, advantages and disadvantages and contributing factors towards the fallacy of judgement.

Methods: A comprehensive search was conducted using Google Scholar, PubMed and Scopus. The articles were searched with the keywords "medical tourism", "health tourism", "impact", "benefit", "determinants" and "reason". The references were limited to articles within 10 years' time.

Results: Medical tourism has brought positive impacts such as economic benefits and enhanced healthcare quality, but it also resulted in negative outcomes such as brain drain and healthcare access disparities among the population. Meanwhile, the fallacy of judgement cause dissatisfaction, physical harm, or complication arising from ineffective or inappropriate treatments given. Factors that contribute to this include individual experience (through traditional word-of-mouth and social media), enticing advertisements, exaggerated claims and promotions, and inadequate information and regulations that led to unrealistic results and unethical advertisements.

Conclusion: In order to mitigate the fallacy of judgment in medical tourism, tourists need to have awareness and education regarding conducting extensive investigation or information collection about the choice of healthcare facilities, the accreditation status, procedures and treatment desired. This is to ensure they make rational and evidence-based decisions.

P23

The Effect of Acute Aerobic Exercise on Hands-Only Cardiorespiratory Resuscitation Knowledge and Performance

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ABSTRACT

Introduction: Aerobic exercise is well recognised for its multiple health benefits, such as increased cardiovascular fitness and weight reduction. Interestingly, an acute bout of aerobic exercise has also been shown to improve learning and cognitive function. Nonetheless, the relationship between acute aerobic exercise and hands-only cardiorespiratory resuscitation (CPR) learning has yet to be elucidated.

Objective: The purpose of this study was to investigate the effect of acute aerobic exercise on knowledge of cardiorespiratory resuscitation and skill acquisition through learning.

Methods: A total of 50 participants (31.12 ± 5.00 years) were included in this study. They were randomised to either exercise or control groups (non-exercise). The exercise group completed a 30-minute exercise intervention (running on a treadmill at a moderate intensity of exercise). CPR knowledge and skill acquisition were assessed pre-and post-intervention. The mean difference in CPR knowledge and skill score pre- and post-intervention was compared within and between groups using Analysis of Covariance (ANCOVA).

Results: Overall, the CPR knowledge and skills improved from pre-test to post-test for both groups indicating that all participants benefited from their CPR training. However, the improvement of score for knowledge in the exercise group was higher compared to the control group. For score in CPR skills, the exercise group also performed significantly better compared to the control group.

Conclusion: Acute aerobic exercise significantly influenced CPR learning positively. Such results support that acute aerobic exercise may improve cognitive function and learning process.

P24

Investigating B-Hydroxybutyrate's (BHBA) Anti-Inflammatory Potential: Impact on CX3CR1 Expression Levels in LPS-Activated BV-2 Cells

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ABSTRACT

Introduction: Existing studies have demonstrated BHBA's potential in reducing microglial activity, a critical factor in mitigating neuroinflammation. However, a knowledge gap exists regarding BHBA's influence on the expression levels of CX3CR1, a chemokine surface receptor expressed on microglia that regulates its recruitment to sites of inflammation.

Objective: This study aimed to investigate the influence of BHBA on CX3CR1 expression levels in LPS-activated BV2 cells and determine any potential correlations with changes in the release of pro-inflammatory cytokines.

Methods: The viability of the BV2 cells was initially detected with an MTT assay. BV2 cells were treated with indicated concentrations of BHBA, LPS, and the mixture of the two molecules (co-treatment). Griess assay was then conducted to gauge the extent of the inflammatory response of the treated molecules in BV2 cells. Additionally, IBA-1 was also measured to evaluate microglial activation. Moreover, pro-inflammatory cytokine levels including, NF- κ B, TNF- α , and IL-1 β were measured using ELISA in the treated BV-2 cells.

Results: BHBA co-treatment with LPS in BV2 cells demonstrated significant activity (inflammatory) with increased nitric oxide (NO) production, and heightened IBA-1 and NF- κ B levels in comparison to the control, LPS- and BHBA-only treated groups. Contrastingly, no significant changes in CX3CR1 levels for all groups. Despite its active-state, treated BV2 cells in all groups failed to demonstrate changes in the release of pro-inflammatory TNF- α and IL-1 β .

Conclusion: Contrary to previous findings, BHBA co-treatment with LPS, failed to dampen microglial activity. Moreover, BHBA treatment does not influence CX3CR1 expression levels in activated BV2 cells.

Virtual Reality in Medicine – The Evil Technology

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ABSTRACT

Introduction: Virtual Reality (VR) technology has been around for several years and has recently become more accessible to consumers. There has been a growing interest in using VR technology in a variety of healthcare fields especially in curative, rehabilitative, health education, health promotion and outreach program. However, the use of VR technology in medicine has also raised concerns about its potential detrimental impacts on patients and the healthcare system.

Objective: The purpose of this article is to weigh side effects or drawbacks of VR technology in medicine.

Methods: A review of the literature was conducted using electronic databases Google Scholar, PubMed and Scopus. Open access articles produced between year 2000 to 2021 were searched with an emphasis on keywords “virtual reality”, “clinical medicine”, “education”, “drawbacks” and “impact”.

Results: VR in medicine faces significant costs due to expensive hardware, specialized software, and ongoing maintenance. This can hinder widespread adoption and potential benefits in limited resources and smaller facilities, which leading to sub-optimal usage and reduced effectiveness. Cyber sickness arises due to the disparity between visual and vestibule inputs combined with uncondusive environment. This discomfort can limit the duration of VR sessions and render the technology unusable for certain individuals. Overuse of VR can have detrimental effects on psychosocial wellbeing and social interaction. VR also poses concerns over the privacy and security of electronic health information. The incorporation of VR technology into healthcare processes has logistical challenges, including the necessity for specialised networks, training and familiarisation of healthcare personnel, and provider opposition. Replicability of VR in applying learned skills and information to real-world circumstances is difficult and constrained.

Conclusion: It is critical that we take into account any potential negatives and take action to lessen them as we continue to develop and enhance virtual reality technology into healthcare sector.

P26

Whole Exome Sequencing of Pediatric with Relapsed Acute Lymphoblastic Leukemia: A Single-Center Study

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ABSTRACT

Introduction: Relapsed acute lymphoblastic leukemia (ALL) remains the leading cause of cancer deaths among children. The prognosis for relapse in some of those ALL patients who have achieved complete remission is poor.

Objective: Using whole exome sequencing (WES), we aim to identify genetic biomarkers that indicate a high chance of relapse in pediatric ALL.

Methods: Using a QIAGEN AllPrep DNA/RNA Mini Kit, DNA was extracted from bone marrow and peripheral blood samples. On paired blood samples obtained at diagnosis and during relapse for two patients, WES was performed using the Illumina NovaSeq-PE150 platform. Only the relapsed samples from four patients were used in the Panel of Normal (PoN) analysis.

Results: Patient one exhibited 477 somatic mutations with 247 single nucleotide variants (SNVs) and 230 InDels. While patient two exhibited 329 somatic mutations with 143 SNVs and 186 InDels. One pathogenic variant in tumor suppressor genes, *TP53*, was detected in this patient. When pooling both cases, 73 variants were located in coding regions. About 21 genes were found to be deleterious according to SIFT and PolyPhen-2 scores. They both have recurrent somatic SNV of *RPL10*. PoN analysis identified 7,081 somatic mutations, 6,500 SNVs, and 581 InDels in four relapse samples including 20 frameshift deletions and 8 frameshift insertions discovered in coding areas. About 19 alterations were found in relapsed samples. Two of the four patients who relapsed exhibited recurrent somatic SNV of *FCGR3A*.

Conclusion:

RPL10 and *FCGR3A* may be associated with ALL relapses, according to our preliminary data.

P27

Methicillin-Resistant *Staphylococcus aureus* (MRSA) Clonal Type Affects Host Survival in a *Caenorhabditis elegans* Model

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ABSTRACT

Introduction: Recently, methicillin-resistant *Staphylococcus aureus* (MRSA) strains isolated from Hospital Canselor Tuanku Mukhriz (HCTM) showed a ST239-SCCmec type III-SCCmercury to ST22-SCCmec type IV clonal change.

Objective: This study was carried out to investigate the killing effect of different MRSA clones on host survival using a *Caenorhabditis elegans* model.

Methods: Seventeen MRSA strains isolated from HCTM were tested in this study. Ten of these strains were of ST239-SCCmec type III-SCCmercury, while another seven were of ST22-SCCmec type IV. Killing effect of the tested bacteria on *glp-4* was further evaluated using a 5-day liquid medium survival assay. Each strain was introduced to 10 worms in liquid media. Worm survival was monitored and recorded daily for 5 days; the experiment was conducted in triplicates. Worm survival (%) during experiments was plotted against time (day) in Kaplan-Meier plots.

Results: Worms that were introduced to ST22-SCCmec type IV showed lower survival rates compared to worms introduced to ST239-SCCmec type III-SCCmercury strains. Interestingly, most worms infected with ST22-SCCmec type IV were not able to survive until day-5 of the assay; most of the worms died during the first three days of the assay. In contrast, worms introduced to ST239-SCCmec type III-SCCmercury showed better survival, where more worms survived until the last day of the assay.

Conclusion: The recent HCTM MRSA clone ST22-SCCmec type IV appeared to cause faster killing of *C. elegans* host compared to the previously dominant ST239-SCCmec type III-SCCmercury. It remains to be investigated if this observation is also found in the clinical setting.

In Vitro* Inhibitory Activity of Human Milk Isolates of *Lactobacillus* spp. Against *Streptococcus mutans

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ABSTRACT

Introduction: Several studies have demonstrated a diversity of bacterial species in human milk, even in aseptically collected samples.

Objectives: The present study evaluated potential lactic acid bacteria with probiotic properties isolated from mature human milk and their cell-free supernatant in inhibiting the growth of *Streptococcus mutans*.

Methods: Milk samples were collected from 5 healthy women who delivered babies within 3-6 months. The milk sample was cultured on MRS agar under anaerobic conditions. Bacterial isolates were selected and identified.

Results: Out of 10 identified *Lactobacillus* spp. colonies, three isolates designated as strains SUK1, SUK2, and SUK3 were selected and tested their cells and cell-free supernatants against *Streptococcus mutans* ATCC 25175, a causative agent of dental caries. All *Lactobacillus* spp. strains SUK1, SUK2, and SUK3 show the ability to inhibit the growth of *S. mutans* with different efficacies. *Lactobacillus* sp. strain SUK2 and its cell-free supernatant showed higher inhibitory activity against *S. mutans*, followed by strains SUK3 and SUK1 using an agar well diffusion test. The bacterial growth in a single and mixture species confirmed that *Lactobacillus* sp. SUK2 exhibited higher inhibitory activity against *S. mutans* compared to the other strains.

Conclusion: This proves that the inhibition process that occurs against *S. mutans* is caused by the cellular components of *Lactobacillus* sp. and their metabolites, which are secreted extracellularly. Since *Lactobacillus* sp. strain SUK2 has a high potential to inhibit *S. mutans*, the purification of the bacteriocin product, which is a natural antibiotic secreted by *Lactobacillus* sp. SUK2 is important to be evaluated in further study.

P29

Investigating the Efficacy of Antimicrobial Peptides on Clinical *Helicobacter pylori* Strains.

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ABSTRACT

Introduction: *Helicobacter pylori* infection causes chronic gastritis, peptic ulcers, and gastric cancer. Antibiotic resistance in *H. pylori* substantially hinders the efficacy eradication regimens leading to eradication failure in most of the infected patients. Therefore, the discovery of new drugs for *H. pylori* is urgently needed.

Objective: The aim of this study was to investigate the efficacy of antimicrobial peptides (AMPs) in inhibiting the growth of antibiotic-resistance of *H. pylori*.

Methods: Broth microdilution method was used to determine the minimum inhibitory concentration (MICs) of AMPs and antibiotics. Twelve clinical strains of *H. pylori* were tested against three antibiotics such as levofloxacin, metronidazole, and clarithromycin and three AMPs such as human cathelicidin LL-37, human neutrophil peptide-1 (HNP-1), and derivative of L-Cateslytin (D-Ctl). MIC values were determined using growth indicator reagent.

Results: The MICs range of the antibiotics against *H. pylori* strains were as follows: metronidazole 4 - >512 µg/ml, clarithromycin < 0.25 – 128 µg/ml and levofloxacin <0.03125 – 8 µg/ml. The MICs range of AMPs were as follows: cathelicidin (LL-37) 4 - >32 µg/ml, HNP-1 8 - >32 µg/ml and D-Ctl 32 - > 32 µg/ml. MIC₅₀ and MIC₉₀ for metronidazole was 32 µg/ml and 128 µg/ml, respectively. MIC₅₀ and MIC₉₀ for clarithromycin was 8 µg/ml and 32 µg/ml respectively. MIC₉₀ for levofloxacin 8 µg/ml. All AMPs show MIC₉₀ of >32 µg/ml.

Conclusion: AMPs tested in this study show less efficacy against clinical *H. pylori* strains. Further study is needed to understand the mechanism of AMP resistance.

Augmented Reality in Healthcare

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ABSTRACT

Introduction: Technological advancements have made augmented reality (AR) technology more accessible to various industries, including medicine. With the ability to overlay digital information onto the real-world environment, AR offers new solutions to improve the medical field.

Objective: This article aims to explore the application of AR in healthcare services and delivery, its benefits, challenges and limitations.

Methods: A comprehensive literature search was done using Web Of Science, SCOPUS, PubMed and Google Scholar. Keywords used were 'Augmented Reality', 'Health Services', 'benefit', 'limitation', and 'challenges and references were limited to the past ten years.

Results: In recent years, AR has been used in healthcare in various ways, possibly due to improved accessibility. Medical education, the surgical field, patient treatment and care, rehabilitation and therapy are some of the areas under the medical field with various AR integration. Examples include anatomical learning in medical school, wound treatment and monitoring, and clinical procedure training via simulation. It has also been piloted in a few surgical procedures. Enhancing patient engagement and education, optimizing workflow, and improving spatial understanding and visualization are among the benefits of AR in healthcare. Despite advancements in AR technology, there are still limitations to AR implementation, such as technical challenges in integrating AR with current healthcare services and the acceptability and adaptability of AR by the medical community and practitioners. There are also governance challenges, including ethical issues that may arise when using any other technology requiring information gathering from patients and the lack of set guidelines or standards on AR application.

Conclusion: Future advancements in hardware and software, further research, and improved governance will be required to provide more opportunities for incorporating AR technology into healthcare and delivering quality patient care.

P31

Post-COVID-19 Syndrome and Associated Pre-Existing Comorbidities: A Systematic Review

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ABSTRACT

Introduction: Published studies recorded that 30-50% of COVID-19 survivors exhibit persistent post-COVID-19 syndrome (PCS) symptoms for up to one year. Accordingly, current evidence on risk factors associated with PCS is limited and heterogenous, particularly on existing premorbid conditions.

Objective: This review aimed to investigate pre-existing comorbidities associated with PCS development.

Methods: A comprehensive literature search was conducted via PubMed, Scopus, and Web of Science databases for studies investigating previous comorbidities as risk factors for PCS among adults (≥ 18 years old) followed up for at least 12 weeks. The MeSH search terms were post-COVID syndrome, long-COVID, comorbidities, pulmonary, cardiovascular, and metabolic. Observational studies published in English language, up to 31st March 2023 were included. Case reports, reviews, and non-original articles were excluded. Two independent authors evaluated the included studies using the STROBE checklist.

Results: A total of 1473 references were identified and screened, leaving 21 articles for analysis. The identified medical comorbidities significantly associated with PCS were pulmonary ($n = 8$), cardiovascular diseases ($n = 6$), metabolic abnormalities ($n = 5$), and others ($n = 2$). The most common diseases identified were asthma (OR 2.14, 95% CI 1.55-2.96), hypertension (OR 1.64, 95% CI 1.04–2.61), diabetes mellitus (OR 1.11, 95% CI 1.02-1.21), and obesity (OR 1.39, 95% CI 1.32-1.48).

Conclusion: Our review showed that COVID-19 patients with asthma, hypertension, diabetes mellitus, and obesity had higher risks of developing PCS. Hence, patients with these comorbidities required additional attention to allow a more specific medical approach to optimise patients' physical functioning and quality of life improvement.

P32

Effect of Hyaluronic Acid/Collagen-Based Hydrogel to Modulate Pain and Tissue Repair in a Rat Model of Intervertebral Disc Degeneration

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ABSTRACT

Introduction: Intervertebral disc (IVD) degeneration is one of the primary causative factors for low back pain, affecting between 26% to 42% of the population. There is no regenerative nature of current treatment. We propose a biomaterial system using hyaluronic acid (HA) and type II collagen (COLII)-based hydrogel as a potential treatment to promote tissue repair targeting pain.

Objective: To evaluate the efficacy of HA/COLII-based hydrogel in preventing pain behaviour (mechanical allodynia) and determine the disc hydration level by MRI.

Methods: Eighteen female rats (Sprague Dawley) were used in the study, with $n=6$ for each group of sham, non-treated injury and injury with treatment hydrogel 2 mg/ml. We implanted HA/COLII hydrogel (4 μ l) following surgically induced disc injury at coccygeal discs (Co4-Co5 and Co5-Co6) in the rat tail. We assessed the pain behaviour for mechanical allodynia using the von Frey test in rats on pre-operative day 2 and post-operative days 7, 14 and 29. Using MRI on day 29 post-operatively to determine disc hydration.

Results: Data presented von Frey 50% withdrawal threshold was significantly lower in the un-treated injury group compared to the sham group up to 29 days while hydrogel-treated injury group had a significantly higher threshold in comparison to the non-treated injury group on Days 29. T1p analysis of MRI in the hydrogel-treated injury group was higher compared to the non-treated injury group.

Conclusion: The data presented indicate that hydrogel is a potential candidate for the treatment of degenerative discs associated with back pain.

P33

Regeneration of Intervertebral Disc Using Hyaluronic Acid/Collagen-Based Hydrogel in A Rat Model

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ABSTRACT

Introduction: The impaired synthesis of the intervertebral disc matrix involves all its components at different time points. This study aims to evaluate the efficacy of an implantable hyaluronic acid (HA)/type II collagen (COLII)-based hydrogel to promote disc regeneration *in vivo*.

Objectives: To determine that HA/COLII-based hydrogel implantation maintained health status and restored disc height in a surgically induced disc injury in the rat tail of the pain model.

Methods: Eighteen female Sprague Dawley were divided into sham, non-treated injury and injury with treatment hydrogel 2 mg/ml, with $n=6$ for each group. After inducing a disc injury surgically at the coccygeal discs (Co4-Co5 and Co5-Co6) in the rat tail, we implanted HA/COLII hydrogel (4 μ l). Health status of the body weight was monitored on pre-operative day 2, postoperative days 7, 14 and 29. Using a plane radiograph, disc height index was calculated by measuring the height of the disc and adjacent vertebral body on day 29 post-operatively. Ethics approval number UKMAEC-45/2023.

Results: The body weight in rats of injury and control groups was lower than the ones in treatment of 2 mg/ml hydrogel group on days 7, 14, and 29 however; it was not significantly different. Compared to the sham group, a significant increase in the percentage of disc height index of the hydrogel-treated injury group compared to the non-treated injury group.

Conclusion: HA/COLII hydrogel is effective in restoring disc height for tissue regeneration without impairing health status. Hence, suggesting that hydrogel could treat degenerative disc disease-associated low back pain.

P34

Determination of Foxp3+ Tregs in Healthy and Chronic Rhinosinusitis with Nasal Polyps Patients

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ABSTRACT

Introduction: Forkhead-box protein 3 regulatory T cells (Foxp3+ Tregs) has been established as the main mediator in enforcing airway tolerance and immune homeostasis. However, the prognostic relevant of these Foxp3+ Tregs in chronic rhinosinusitis with nasal polyps patients (CRSwNP) remains unclear.

Objective: The study aimed to compare the expression of Tregs subsets in CRSwNP patients and healthy individuals as well as to determine the association between the expression of Foxp3+ Tregs with the clinical characteristics of CRSwNP.

Method: A cross sectional study involving 50 participants was conducted in Hospital Universiti Sains Malaysia, Kelantan between January 2021 and December 2022. Foxp3+ Tregs flow cytometry expression of CRSwNP patients from five fluorochrome color were analysed using FlowJo software and were stratified based on Lund-Kennedy score, Lund-Mackay score and SNOT-22.

Result: We found that there was distinctive pattern of Tregs in the expression level between CRSwNP patients and healthy individuals. CRSwNP patients tend to express significantly lower total Tregs (2.89 ± 1.8) compared to healthy individuals (4.39 ± 2.7). There was no significant difference in total PB Tregs in patients with the atopic (normal and elevated total IgE) and asthmatic status of the patients. In contrast, the level of FoxP3 expression was associated with the Lund Kennedy and SNOT-22 score.

Conclusion: Our study concluded that Foxp3+Tregs play a central role in CRSwNP patients which could maintain immune homeostasis and protect from the aberrant inflammation.

P35

The Modulation of Angiogenic Activity in Gestational Hypertension Human Umbilical Vein Endothelial Cells

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ABSTRACT

Introduction: Hypertension is a major global risk factor for cardiovascular disease and a cause of premature death. The prevalence of pregnancy-related hypertension was found to be 18.6%, while 79.3% of women had gestational hypertension. Affected angiogenesis will increase peripheral resistance and lead to increased blood pressure. In addition, animal and human studies have reported that MMPs play a role in the pathogenesis of damaged vascular and cardiac diseases. Therefore, early intervention and treatment are highly recommended to mitigate potential risks.

Objective: To study angiogenic activity and genes related to angiogenesis in gestational hypertension.

Methods: HUVEC were isolated and used in this experiment. The cells have been differentiated between normal and hypertensive cells based on the criteria of the patients, which is that a healthy pregnant woman will contribute to a normal pregnancy, whereas a woman who has been diagnosed with gestational hypertension will be classified as having a hypertensive pregnancy. A scratch wound assay was used to assess cell migration activity. The tube formation assay was performed to evaluate angiogenic activity, and qPCR was employed to examine the expression of metalloproteinase matrix mRNA (MMPs).

Results: The migratory activity and angiogenic activity in hypertensive pregnancies appeared to be lower than in normal pregnancies. Similarly, for mRNA expression, MMPs, in particular MMP-3 and MMP-10, were lower in hypertensive pregnancies than in normal pregnancies.

Conclusion: This study can contribute towards understanding the processes that occur in hypertension during pregnancy, ultimately improving maternal and fetal outcomes.

P36

A Systematic Review: The Effects of *Centella Asiatica* on Skin Collagen

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ABSTRACT

Introduction: *Centella asiatica* (CA), or Gotu kola, has a history of traditional medicinal use, particularly for skin benefits. Collagen, vital for skin strength and elasticity, is a focus due to CA's impact on its synthesis and maintenance.

Objective: This systematic review aimed to evaluate the effects of CA on skin collagen and its therapeutic potential in dermatology.

Methods: A systematic search across databases (PubMed, Embase, Web of Science) was conducted to find relevant studies until September 2021. Keywords for CA, skin collagen, extracellular matrix, and skin health were used. Human trials, in vitro studies, and animal experiments assessing CA's effects on skin collagen were considered. Study quality was evaluated, and data was extracted.

Results: The initial search found 50 articles; 15 met the criteria. Research designs included randomized trials, in vitro experiments, and animal studies. The outcomes measured collagen synthesis, collagen content, and collagen-related markers such as procollagen and matrix metalloproteinases (MMPs). The finding indicated CA's positive impact on skin collagen. In vitro, CA extracts promote collagen synthesis by increasing fibroblast proliferation and upregulating collagen-related gene expression. Animal trials demonstrated elevated skin collagen from CA extracts applied topically or orally. Moreover, CA appeared to attenuate collagen degradation by inhibiting MMP activity. However, study quality varied; limitations included small samples, short durations, and non-standardized CA extraction. Heterogeneity in CA concentrations and forms across studies complicated direct comparisons.

Conclusion: Available evidence suggests CA's promise in enhancing skin collagen synthesis and integrity. However, well-designed clinical trials with standardized preparations are needed to determine optimal dosage, formulation, and treatment duration.

P38

Establishing Content validity of a Motor Skill Module to Improve Self-Care Skills Among Preschool Children: Focus Group Discussion

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ABSTRACT

Introduction: Motor skills can positively affect independent self-care skills among preschool children. Helping preschool children with motor skills and achieving early independence in self-care skills could facilitate children in obtaining good performance in academic skills. Therefore, the motor skills module was developed to help children improve motor and self-care skills.

Aim: This study aimed to establish the content validity of developing the motor skills module to improve self-care independence among preschool children.

Method: Ten panel experts related to the study include occupational therapists, academicians in occupational therapy, clinical psychologist, speech therapist, teachers and parents were involved in this study. They participated in examining the content validity of the motor skills module. Focus Group Discussion (FGD) was conducted and recorded through online google meet. The recorded file was transcribed into verbatim transcription. Then, the transcript was analysed using thematic analysis.

Findings: Five themes emerged, including: "Comprehensiveness and Completeness" with subthemes content, "Errors" with subthemes words and sentences, "Formatting" with subthemes pictures and content arrangement, "Alternatives" with subthemes materials and resources, and "Remove" with subtheme cover module.

Conclusion: Expert panels suggested improving the module content into two parts: "knowledge" and "Activity". These suggestions were then accepted, and the module was modified accordingly. Finally, the motor skills module has good content validity to improve self-care skills. Further study is needed to include Content Validity Index (CVI) scores, feasibility and the effectiveness of using the motor skills module among preschool children.



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gene variant especially
in individual with
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If consume



46%
chance of increase
risk of another
stroke⁹

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