IHEC 2020

UNIVERSITI SAINS ISLAM MALAYSIA
جَامِعَة العُلوم الإسْلامِيَة المَالِيزِيَة
ISLAMIC SCIENCE UNIVERSITY OF MALAYSIA

UNIVERSITAS MUHAMMADIYAH SURAKARTA
UNIVERSITAS MUHAMMADIYAH MAKASSAR
UNIVERSITAS JEMBER
UNIVERSITAS AIRLANGGA
UNIVERSITY of SAN CARLOS

# WEBINAR & ABSTRACT BOOK

# HEALTHCARE IN PANDEMIC ERA:"THE NEW NORMS"

4th USIM INTERNATIONAL HEALTH E-CONFERENCE
in conjuction with the
3rd INTERNATIONAL CONFERENCE ON MEDICINE AND HEALTH SCIENCES (ICMHS)

16th - 17th December 2020

**ORGANISED BY:**

**FACULTY OF MEDICINE AND HEALTH SCIENCES**

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# WELCOME MESSAGE

In the Name of Allah, the Most Beneficent, the Most Merciful.

Welcome to the virtual 4th USIM International Health E-Conference 2020 (IHeC 2020) in conjunction with the 3rd International Conference on Medicine and Health Sciences (ICMHS).
I would like to start by wishing you and your families my personal best, for your health and safety in these difficult times. Covid-19 is causing tragic loss of life; and the measures needed to fight it have turned our world upside down, affecting billions of people from all walks of life. Humanity is facing one of its darkest periods in living memory, a crisis like no other. However, in the wake of this once in a lifetime tragedy, as Muslims, we must always remember that Allah s.w.t has stated “And We will surely test you with something of fear and hunger and a loss of wealth and lives and fruits, but give good tidings to the patient, Who, when disaster strikes them, say, "Indeed we belong to Allah, and indeed to Him we will return." Those are the ones upon whom are blessings from their Lord and mercy. And it is those who are the [rightly] guided.” [Quran 2:155-57]. In turmoil, the international community has come together to help the most vulnerable countries addressing urgent health needs and mitigating the economic impact of the crisis.

These are exceptional times, which requires exceptional action. We must continue to learn, change and adapt in order to continue to thrive. The conference theme and sub-themes capture contemporary issues surrounding COVID-19 on the impact, challenges and while paving the way forward via science and technological advances and policy-decisions that will shape the society in which we operate and which we serve by investigating relevant issues and suggesting some answers, or even asking more questions. The programme assembled are interesting, relevant and varied, both in terms of disciplinary coverage but also in the mix of the scholars.

I have no doubt in my mind that this will be a very memorable experience for those who are attending this conference for the first time. For those of us who are seasoned in the area, it is an opportunity to create an enduring legacy in mentorship for research and dissemination for the early career academics and researchers in our younger faculty and the students present. I hope this will grow to become a regional hub for the exchange of ideas and experiences in your respective disciplines.

Professor Dr Mohamed Ridza bin Wahiddin
Vice Chancellor,
Universiti Sains Islam Malaysia (USIM)

# WELCOME MESSAGE

## From the Dean

In the Name of Allah, the Most Beneficent, the Most Merciful.

It is with great pride and pleasure that I welcome all the participants to the 4th USIM International Health E-Conference 2020 (IHeC 2020) in conjunction with the 3rd International Conference on Medicine and Health Sciences (ICMHS).

The Prophet Muhammad (peace be upon him) said 'Acquire knowledge and impart it to the people.' (Al Tirmidhi). The quest for knowledge has been from the beginning of time but knowledge only becomes valuable when it is disseminated and applied to benefit humankind. In this unprecedented era of COVID-19, this value holds true more than ever. Despite, the hardships we have endured, this has become an opportunity for us to come together and help one another. It is hoped that this conference will be a platform to gather and disseminate the latest knowledge and updates on a wide variety of topics in addressing COVID-19 from public health challenges, economic growth and opportunities, science and technology. Academicians, Scientist, Researchers and Clinicians across disciplines will be able to share and discuss new findings, and their experience in dealing with this pandemic in their own localities. It is envisaged that the intellectual discourse will result in future collaborations between universities, research institutions and industry both locally and internationally. In particular, it is expected that focus will be given to issues on impact on global healthcare and our preparation post-pandemic.

Researchers in USIM have a keen interest to be a part of this global discussion while incorporating the Naqli aspect to all that we do.  Finally, I would like to congratulate the organizing committee for their tremendous effort in organizing and adapting the conference to a virtual format, that is accessible globally, a norm that all of us need to embrace. I would also like to thank all of our co-hosts and sponsors for their continual support and participation. I pray to Allah s.w.t that the conference will be a success.

Prof. Dr. Muhammad Shamsir Mohd Aris
Dean,
Faculty of Medicine and Health Sciences,
Universiti Sains Islam Malaysia

# WELCOME MESSAGE

## From the IHEC 2020 Director

In the Name of Allah, the Most Beneficent, the Most Merciful.

Welcome to the 4th USIM International Health E-Conference 2020 (IHeC 2020) in conjunction with the 3rd International Conference on Medicine and Health Sciences (ICMHS). As we embrace the new norm for conferencing, we have also adapted the webinar format for the course of this conference.

2020 has been a challenging year to say the least. We are all experiencing an unprecedented, once in a lifetime global COVID-19 pandemic. A virus that is not visible to the naked eye, has put the entire world on pause. However, as the saying goes, “the show must go on”. The question before us is where do we go from here and what do we do now?

To address these important questions, it is most fitting that the theme of this year’s conference is “Healthcare in a Pandemic Era: The New Norm”. We have assembled a program that will hopefully shed light on a number of subjects including, public health issues and challenges, discussion of the economic impact, education in health sciences, current understanding of the science behind COVID-19 and the psychosocial impact during and post-pandemic.
Speakers who are experts in their respective fields of interest, from Malaysia and around the world will meet-up virtually to share their knowledge and experience with COVID from their own country and discuss its impact globally.

On behalf of the organising committee, I would like to express my deepest thanks and gratitude to all of our co-hosts for their unwavering commitment and overwhelming participation I would also like to thank all our sponsors for their continual support to the success of this conference. And last but not least, to all the committee members in Malaysia and abroad who have defied all odds and have made this conference a virtual reality.

We truly are a global community and we are all in this together.

Dr. Nor Eyzawiah Hassan
Chairperson,
Organizing Committee 4th USIM IHeC 2020

# CONFERENCE PROGRAMME

## Day 1: Wednesday 16th December 2020

| Time | Activity |
|---|---|
| 0900 | Registration |
| 0900-0935 | **Plenary 1**<br>**Pandemic and Healthcare: Challenges Against an Unexpected Battle, The Way Forward**.<br>Tan Sri Dr Jemilah Mahmood, Ministry of Health Malaysi |
| 1000 | Opening ceremony |
| 1010 | **Welcoming address** |
| 1030 | Officiating Montage |
| 1035 | **Keynote address by Guest of Honour: "Holistic Hospital Preparedness Strategies Against COVID-19: Malaysian Experience in Managing COVID-19"**<br>Datuk Dr Hj Rohaizat Bin Hj Yon, Deputy Director General, Ministry of Health Malaysia |
| 1120 | Morning Tea break/ E-Poster presentation |

## Symposiums

| | **Symposium 1: Challenges and Innovation in Handling COVID-19** | **Symposium 2: Managing Psychosocial Impact During and Post Pandemic** | **Symposium 3: Public Health Issues** | **Symposium 4: Dental Practice and Social Issues** |
|---|---|---|---|---|
| 1135 | | Frontliners Psychological Trauma.<br>*Dr Zul Azlin Razali, USIM* | Risk Communication Strategies During a Pandemic In Malaysia.<br>*Dr Maria Suleiman, Ministry of Health Malaysia* | Dental Challenges During COVID-19 Pandemic<br>*Dr Nor Azura Ahmad Tarmidzi, USIM* |
| 1155 | Improving Science Communication to Create Safer Communities.<br>*Ms. Gea Abigail Ecoy, University of San Carlos* | COVID-19: Effect of Lockdown on Mental Health.<br>*Assoc Prof Dr Amer Siddiq Amer Nordin, University of Malaya* | Implementing Health Strategies in An Emerging Pandemic.<br>*Datuk Dr Norhayati Rusli, Ministry of Health Malaysia* | Infection Control Strategies and Patient Management Protocols to Provide Optimal Dental Care and to Prevent Healthcare Associated Infections (HAIS) in RSGM.<br>*Prof. drg. Dwi Prijatmoko, University of Jember* |
| 1215 | Medical Innovation to Overcome Challenges During the COVID-19 Pandemic using 3D printing Technology.<br>*Dr Mohd Ifwat Mohd Ghazali, USIM* | Adapting to The New Norm: A Daily Routine.<br>*Dr Ahmad Izzat Ahmad Tajjudin, USIM* | Mitigation Responses of the Impact of COVID-19 on Nutrition in Indonesia.<br>*Prof. Dr. dr. Abdul Razak Thaha, M.Sc, Sp.GK , Universitas Muhammadiyah Makassar* | Humanity versus Law: Finding The Balance During A Pandemic.<br>*Dr Muzaffar Syah Mallow, USIM* |
| 1235 | Application of Nanosized Materials for the Treatment of Viral Infection.<br>*Dr. apt. Lina Winarti, University of Jember* | NGO Approach to COVID-19 Among Vulnerable Population.<br>*Dr Abdul Rahman Ahmad Badayai, Mercy Malaysia* | Applying Prevention Strategies for A Pandemic in Islam.<br>*Prof Dr Irwan Mohd Subri, USIM* | Impact of the COVID-19 Pandemic on High Risk Medical Health Professionals: The Solutions.<br>*Dr. Abd. Azis, Sp.U, Universitas Muhammadiyah Makassar* |
| 1255 | Q&A | Q&A | Q&A | Q&A |
| 1330 | Lunch break | | | |
| 1430 | Oral presentation | Oral presentation | Oral presentation | Oral presentation |
| 1630 | COVID-19 Pandemic Modelling in Context: Uniting People and Technology Across Nations.<br>Prof Lisa J White, Oxford University | | | |
| | End Session For Day 1 | | | |

# CONFERENCE PROGRAMME

## Day 2: Thursday 17th December 2020

| Time | Activity |
|---|---|
| 0830 | **Plenary II**<br>Introduction |
| 0835 | **Understanding COVID-19 Based on Current Evidence.**<br>Assoc Prof Dr Noor Fadzilah Zulkifli, USIM |
| 0905 | **COVID-19: The Infinite War?**<br>Dr Lo Ying-Ru Jacqueline, WHO Representative to Malaysia, Brunei Darussalam and Singapore |
| 0935 | **Pharmacy Education in the Philippines: Resilience and Response to COVID-19.**<br>Dr. Gerard Lee See, University of San Carlos |
| 1005 | Morning Tea break/ E-Poster presentation |

## Symposiums

| | **Symposium 5: Medical Science of COVID-19** | **Symposium 6: Education in Health Sciences: Lessons from a Pandemic** | **Symposium 7: Economics impact during a pandemic** | **Symposium 8: Impact of COVID-19 locally** |
|---|---|---|---|---|
| 1045 | The Update on Medical Management of COVID-19: Current & Future Perspectives.<br>*Dr Alif Adlan bin Mohd Thabit Hospital Sungai Buloh, Ministry of Health* | COVID-19 Pandemic: A Paradigm Shift in Delivery of Dental Education.<br>*Dr Faizah Abdul Fatah, USIM* | Casemix System: Managing Resources and Information During COVID-19 Pandemic.<br>*Prof Dato' Dr Syed Mohamed Al-Junid, Kuwait University* | Agromedicine: Farmers health and Safety During COVID-19 Pandemic.<br>*Dr Supangat, M. Kes., University of Jember* |
| 1105 | Challenges in Vaccine Production in a Pandemic.<br>*Mr Leon Cruz, CCM Duopharma* | Key Strategies to Ensure Safe Education Environment in The Clinical Setting.<br>*Prof Dr Muhammad Shamsir Muhammad Aris, USIM* | Economic Impact of COVID-19 to Healthcare System.<br>*Prof Dr Maznah Dahlui, University of Malaya* | Convalescence Plasma Therapy For COVID-19: Is it Effective?<br>*Dr Angga Mardro Raharjo, University of Jember* |
| 1125 | Laboratory Diagnosis of COVID-19: Current Issues & Challenges.<br>*Assoc Prof Dr Noor Zetti Zainol Rashid, UKM* | Building Resilience in Medical Education: Lesson Learned from the Pandemic.<br>*Dr. Suhaila Sanip, USIM* | Economic Impacts of Pandemics: What History Taught Us.<br>*Dr Amirah Azzeri, USIM* | Promoting Nurses Wellbeing During COVID-19 Outbreak Through Work Arrangement Model.<br>*Dr Nurfika Asmaningrum, University of Jember* |
| 1145 | Enhancing COVID-19 Prevention Strategies.<br>*Assoc Prof Dr Nurul Azmawati Mohamed, USIM* | Alternative Learning Strategies in Health Sciences.<br>*Dr Rahman Omar, USIM* | Willingness-to-pay and Ability-to-pay for COVID-19 Preventions and Treatments: Are We Ready?<br>*Dr Mohd Hafiz Jaafar, USIM* | Effects of Snakehead Fish Extract Consumption on COVID-19 Patients.<br>*Dr H. Iwan Setiawan Adji, Universitas Muhammadiyah Surakarta* |
| 1205 | Does Lockdown Affect Health Information Seeking Behavior of COVID-19 Preventive Measures Among Indonesians? A Google Trends Analysis.<br>*Antonius Nugraha Widhi Pratama, University of Jember* | Q&A | Q&A | Q&A |
| 1225 | Q&A | | | |
| 1300 | Lunch break | | | |
| 1400 | Oral presentation | Oral presentation | Oral presentation | Oral presentation |
| 1600 | E-poster viewing | | | |
| 1630 | Awards and Closing Ceremony | | | |

# CONFERENCE PROGRAMME

| Day 2: Thursday 17th December 2020 | | | | |
|---|---|---|---|---|
| **Time** | **Activity** | | | |
| | **Symposiums** | | | |
| | **Symposium 9: Practical efforts in Responding to COVID-19** | | | |
| 1045 | Challenges in Managing PPE and Clinical Pharmacy Services at A COVID-19 Referral Teaching Hospital. *Dr Budi Suprapti, Airlangga* | | | |
| 1105 | Screening in Non-Communicable Disease and How Community Pharmacist can Play A Role During Pandemic COVID-19. Dr Elida Zairina, Airlangga | | | |
| 1125 | Swabbing for COVID-19: Is it All in The Nose? *Dr Nor Eyzawiah Hassan, USIM* | | | |
| 1145 | Staying Safe in A Pandemic: Perioperative Care *Dr Razrim Rahim, USIM* | | | |
| 1205 | Challenges to Effective Pandemic Responses and Determining Priority Measures to Prepare for The Future. *Dr Febi Dwirahmadi, University of Jember* | | | |
| 1225 | Q&A | | | |
| 1300 | Lunch break | | | |
| 1400 | Oral presentation | Oral presentation | Oral presentation | Oral presentation |
| 1600 | E-poster viewing | | | |
| 1630 | Awards and Closing Ceremony | | | |

# SPEAKERS

SPEAKER

**Tan Sri Jemilah Mahmood**
Special Advisor to The Prime Minister of Malaysia On Public Health

## Plenary 1:
## PANDEMIC AND HEALTHCARE: CHALLENGES AGAINST AN UNEXPECTED BATTLE, THE WAY FORWARD

The COVID-19 pandemic has highlighted the structural weaknesses in our health systems that go beyond healthcare provided in hospitals and clinics. It has damaged livelihoods through disrupted economies, bred pandemic fatigue and deepened social and economic inequalities including the digital divide, which all translate to a great opportunity to reset. The way forward towards building a more resilient future involves addressing all these challenges through a whole of society approach. We do not exist in a social vacuum and therefore, we need partnerships from the government to the private sector to civil society organisations and the common man. If there is one thing that COVID-19 has taught us is how interconnected we are, and how important it is to develop a culture of compassion, empathy and community responsibility as part of our health system, alongside shifting to more sustainable practices.

Tan Sri Dr. Jemilah Mahmood is currently the Special Advisor to the Prime Minister of Malaysia on Public Health, and began her mandate in April 2020. She is also a member of the Government of Malaysia's Economic Action Council and is actively engaged in the COVID-19 response.Prior to this, she was the Under Secretary General for Partnerships at the International Federation of Red Cross and Red Crescent Societies (IFRC) in January 2016 until June 2020.  Her other international positions included being the Chief of the World Humanitarian Summit at the United Nations in New York, and the Chief of the Humanitarian Response Branch at the United Nations Population Fund.  She is an accomplished humanitarian and well known as the founder of MERCY Malaysia, a Malaysian humanitarian organisation working globally.

SPEAKER

**Datuk Dr Hj Rohaizat Bin Yon**

Deputy Director General of Health (Medical)Ministry of Health Malaysia

# Keynote :

# HOLISTIC HOSPITAL PREPAREDNESS STRATEGIES AGAINST COVID-19:MALAYSIA EXPERIENCE IN MANAGING COVID-19

COVID-19 was first made known to the world in December 2019, and by January 2020, the pandemic was declared a major public health issue by the WHO. Malaysia's first imported case was in January 2020, and by February 2020, Malaysia had its first locally transmitted case. There are four possible situations or trends to this COVID-19 pandemic. Malaysia is probably in situation 2 or 3, where there is a fluctuation of the number of positive cases. In the meantime, another form of challenge was faced by Malaysia: the shifting of the federal government. Malaysia was lucky in the sense that all the structural healthcare framework to face this pandemic was already in place and the political situation did not affect our efforts to contain the pandemic. A timeline is given on what happened in Malaysia in terms of the political developments, the waves of the pandemic, and the various levels of control movement orders (CMO). At one point, the number of cases was minimal and the pandemic was contained before the number of cases increased back again (third wave). Even though this was obviously worrying, Malaysia managed to perform much better compared to the predicted number of cases made by foriegn authorities. Malaysia had utilised the 'Whole of Society and Whole of Government' approach during this time. Another major strategy was preparing the healthcare infrastructure to face this pandemic. Various restructuring of the hospital and public health system were made where the priority was the management of COVID-19, but at the same time, ensuring the general healthcare of Malaysians were not affected. In terms of CMO measures, there are various opinions on how best to implement this. Every country in the world has taken different measures, but what is important is that we learn from each other. Malaysia's approach to manage this pandemic can be summarised as Surveillance and Public Health Intervention, Diagnostic and Testing, Movement Control Order, Evidence-based Approach, Risk Communication, and Isolation and Treatment. Another major consideration is the wellbeing of healthcare workers (HCWs). HCWs are important as frontliners to manage this pandemic. Steps to ensure the safety and mental wellbeing of HCWs is of paramount importance. Equally important is the role played by the 'backliners': the people tasked with the planning and formulation of strategies to contain this pandemic. Together, the frontliners and backliners play a vital role in the war against COVID-19.

Datuk Dr Hj Rohaizat Bin Hj Yon retired on 10th June 2020 as the Deputy Director-General of Health (Medical), MOH. Reemployed on short term contact at the same post since 6 August 2020. A medical doctor by profession and also a Public Health Specialist with subspecialty in health management, health economics and financing. Obtained Master Degree in Health Planning and Doctor of Philosophy (PhD) in Public Health majoring in Health Financing, Health Economics and Casemix.  Written more than 60 publications and have completed more than 80 health related presentations at national and international level. Together with various Division in MOH, lead and authored the first comprehensive book on the development of health services in Malaysia existed during pre-independence, entitled 'Health in Malaysia: Achievements and Challenges'. Also one of the authors of the first Malay Version of Health Economics book, in collaboration with Dewan Bahasa and Pustaka, UKM, USM and United Nation University (UNU). It is the first book in Bahasa Malaysia that utilizes local data.  Apart from being a member of various professional associations at national and international levels, had involved in research activities. Have served the government for more than 33 years at various levels, and have extensive experience in various MOH position in hospital and health services planning and management including the healthcare delivery and financing reform - Served 16 years at various position in Medical Programme and 14 years in the Planning Division, with experience, exposure and involvement which are required to manage the ProtectHealth Corporation Sdn Bhd and Peka B40. He involved in managing Crisis and Disaster, including Covid-19,  managing the epidemic COVID-19, Influenza H1N1, Chemical Pollution (Sungai Kim Kim), Teluk Kok, Fire HSAJB, Flood (Kuala Krai Hospital), SARS and others. He was also involved in health planning, participated in National Healthcare Financing, Healthcare Reform and National Health Plan, Healthcare Delivery/ Hospital Reform, Hospital and health services management, Planning, implementation and evaluation of various ICT projects, Experince in managing corporate entities, board member of National Sport Institute, for the 4th Term (2019) and 5th Term (2020-2021), MAIWP Healthcare Sdn Bhd (2017-2018), Protect Health Malaysia (PHM)  – co-op member of Interim Management Team (2017-2019) ProtectHealth Corporation Sdn Bhd – co-op member of Interim Management Team (2017-2019).

**Ms. Gea Abigail Ecoy**
Lecturer
University of San Carlos, Philippines

## Symposium 1:
## IMPROVING SCIENCE COMMUNICATION TO CREATE SAFER COMMUNITIES

Science communication is a vital aspect of managing health crises particularly in the Covid-19 pandemic. Health care professionals and scientists are at the forefront of the world's battle with the virus and one of the many responsibilities is health promotion. This task must be undertaken with the realization that science must be shared to the public, not just contemplated by the academics. Faced with fearmongering and fake news, scientists and health care professionals must step up to the podium, engage society and leave the metaphorical "ivory tower" to create a safer world for all, particularly in their communities and circles of influence. Various multilevel initiatives were led by the Department of Pharmacy in University of San Carlos to educate students, organizations and the communities in Cebu, Philippines on Covid-19 prevention and management. The department has initiated webinars, community extension services, health information initiatives and worked with various organizations. The speaker gathered and presents the lessons obtained from the campaigns through different perspectives. Leadership and communication principles empower students and professionals to become more active science communicators engaged in community development, not only for Covid-19 crisis but for other crucial health concerns. Success in scientific communication requires adaptability, empathy, leadership and partnership to produce correct and comprehensible materials and programs that not only educate but also improve lives.

Gea Abigail Ecoy is devoted to education and service to her community. She is a registered Filipino pharmacist and an Assistant Professor in the University of San Carlos, Cebu City, Philippines, where she also received her BS Pharmacy degree with Latin honors. In 2019, she graduated from Chulalongkorn University, Thailand, with a master's degree in Biomedicinal Chemistry, as a recipient of the ASEAN scholarship granted by the university. She specializes in cancer cell biology, protein drugs and natural products. Aside from academic pursuits, she currently serves as the Vice-President of Young Pharmacists Group (YPG)-Cebu Chapter and the training director of a National Youth Commission-accredited, youth-led NGO, Cebuano Youth Ambassadors. She recently received a scholarship from the YPG for the University of Washington Global Health E-Learning: Certificate Course on Leadership and Management in Health.

She is also the co-founder of the university's debate society in her undergraduate years and has received multiple awards for public speaking. Today, she uses her experience in training young people in leadership and effective communication. Thus, in response to the local Covid-19 crisis, Ms. Ecoy has been dedicated in scientific communication specifically for lay people, organizing seminars for Covid-19 education, pharmacists' role in global health, HIV management for health care professionals and students. She worked on creation of Covid-19-related infographics together with YPG-Cebu and coordinating community health promotion activities with various organizations.

SPEAKER

**Dr Mohd Ifwat Mohd Ghazali**
Lecturer
Universiti Sains Islam Malaysia, Malaysia

## Symposium 1:
## MEDICAL INNOVATION TO OVERCOME CHALLENGES DURING THE COVID19 PANDEMIC USING 3D PRINTING TECHNOLOGY

The current state of the world is in the critical mode as it is being struck by an invisible army known as coronavirus disease 2019 (COVID-19). The effect of the virus is harsh as it causes severe acute respiratory syndrome which can lead to death. Reported death tolls around the world have reached 1.15 million and rapidly increasing. This pandemic not only disrupting the health of the world but also plummeting the world economy into a spiral of uncertainty. The pandemic causes the restriction of the world economy by limiting the movement of people which as a result halted the manufacturing industry. One of the most affected industries due to the pandemic is the healthcare industry which provides essential items such as medical supplies including medical devices to hospitals or medical centers. This constraint and shortage of supplying valuable commodities have led to the innovation of ideas. One of the alternatives is using additive manufacturing technology or better known as 3D printing technology to combat the shortage issues. The unique capability of the technology is it can manufacture products that can be readily used for healthcare purposes. In other words, 3D printing technology can be compared to a miniaturized manufacturing factory where the technology can manufacture complex customize designs that can be utilized depending on the need of the healthcare personal.Several innovative products that uses 3D printing include personal protective equipment, medical devices, swab-based devices, and even personal accessories. This technology is vital in helping and supporting medical personal, in particular, the frontliner in preventing the spread of COVID-19. Here in the symposium a more thorough discussion on how medical innovation is transformed by utilizing 3D printing technology as a part of overcoming challenges during COVID-19**.**

Mohd Ifwat Mohd Ghazali is currently working as a Senior Lecturer in the Applied Physics Programme at Faculty of Science and Technology, USIM. He received his Bachelor of Physics at the University of Malaya in 2011 and did his MSc and Ph.D. from Michigan State University, the USA in 2015, and 2019 respectively under the Electromagnetics Research Group (EMRG). His main research area is exploring the capabilities of additive manufacturing technology as a tool in the fabrication and manufacturing of devices. Among his research are Terahertz (THz) devices, Microwave and Millimeter-wave devices, material science, and sensors that have been fabricated using additive manufacturing methods. He won numerous awards including local and international for the utilization of additive manufacturing research. Currently, he is working on two additive manufacturing projects that are related to COVID-19 which are 3D printed emergency devices (Ventilator) and 3D printed nasal swab. Both projects involve the use of additive manufacturing technology, in particular, Formlabs technology. His motivation is the show the advantage of additive manufacturing technology in helping to combat the global pandemic.

SPEAKER

**Dr. Lina Winarti**
Lecturer
University of Jember, Indonesia

# Symposium 1:
# APPLICATION OF NANOSIZED MATERIALS FOR THE TREATMENT OF VIRAL INFECTION. A LITERATURE REVIEW

The SARS-CoV-2 virus infection that causes the COVID-19 outbreak is currently a health threat to humans. The COVID-19 outbreak is becoming a cause of death on a large scale. Drugs and vaccines for this infectious infection are not yet available; hence the treatment used is symptomatic and supportive. Several existing antiviral drugs are used to treat COVID-19. Antiviral drugs have several limitations, such as limited intracellular uptake, which can be overcome by utilizing nano-sized materials. The idea uses nano-sized materials (nanoparticles) as a delivery system for the treatment of viral infections is the unique characteristics of small particle sizes that lead to the entry of cells and ease of surface modifications for more selective. This article aims to provide an overview of nanoparticles focusing on lipid-based and polymer-based as an antiviral drug delivery system for therapy against coronavirus. Various types of lipid-based and polymer-based nanoparticles have been studied for antiviral formulations and can be used as nanocarriers to deliver antiviral drugs. Lipid polymer hybrid nanoformulations show better results than lipids or polymers alone. Nanoparticles formulation offers an innovative solution to various problems related to delivering antiviral drugs to combat viral infections.

Lina Winarti was born and raised in Yogyakarta, Indonesia. After earning a bachelor's degree in pharmacy in 2003 from Gadjah Mada University, she takes a pharmacy professional education. She works at Central Java as a pharmacist in community pharmacy from 2005-2006. In 2006 she decided to pursue as a lecturer at the University of Jember. Her career continues until now. Lina completes her Doctoral degree in pharmacy science in 2018 with a dissertation entitled 'Self Nanoemulsifying Drug Delivery System (SNEDDS) Formulation for Oral Protein Delivery.' Currently, her research is mostly done in the field of nanoparticle formulations.

SPEAKER

**Prof Lisa J White**

Universiti of Oxford, United Kingdom

## Symposium 1:
## COVID-19 PANDEMIC MODELLING IN CONTEXT: UNITING PEOPLE AND TECHNOLOGY ACROSS NATIONS

Historically, the policymakers in low- and middle-income countries (LMIC) have used the services of modellers from high-income countries (HICs), which often caused an issue of relevancy of provided expertise to local contexts. To avoid such situation, the COVID-19 International Modelling Consortium (CoMo Consortium) has adopted a participatory approach to provide decision-making support to policymakers, using evidence from epidemiological and economic models adapted to each country's context. The CoMo Consortium has developed an age-structured, compartmental SEIRS (susceptible-exposed-infectious-recovered-susceptible) model to estimate the trajectory of COVID-19 based on different scenarios and to assess the potential impact of the various NPIs, as well as treatments and vaccines, when they become available. A user-friendly, web-based interface enables training on and use of the model by member modelling groups, while dashboards and visualisation tools allow policymakers to see the predicted impacts of different NPIs in real time. In March 2020, a small group of researchers at the University of Oxford together with academic colleagues at Cornell University have initiated a platform, focused on the epidemiological and economic modelling support to the countries with limited resources and research capacity. Within less than seven months this initiative has grown to a multinational consortium that brought together public health experts, clinicians and policy makers from more than 40 countries across Africa, Asia, and South and North America. One of the key features of the consortium is a close collaboration between CoMo consortium technical teams, country modelling groups and national ministries of health and other policymakers. This approach allows the consortium to tailor the modelling process and outputs to each particular country context. In addition to providing the modelling support, the consortium takes a special consideration to the capacity building of country modelling groups, allowing the country teams to get technical support from the consortium and share the knowledge and experience with other countries with similar issues or context. As opposed to an on-line tool alone, this symbiosis of experts, both from LMICs and HICs, and technology has shown to be very effective in providing the modelling services to many countries. As a result, a number of country modelling groups have successfully collaborated with their governments and their proposed models were applied as one of the key tools supporting national policy decisions.

Big Data Institute, Li Ka Shing Centre for Health Information and Discovery, Nuffield Department of Medicine, University of Oxford. Professor Lisa White is a mathematical modeller with a focus on global health and policymaking. Her work combines within- and between-host infection models with multi-strain/species modelling to consider the characterisation, emergence and spread of antimicrobial drug resistance and its containment. Her modelling work is participatory, with models for malaria, COVID-19 and other diseases being developed in close collaboration with national control programs, international decision-makers, funders and donors.

SPEAKER


**Dr Zul Azlin Razali**
Psychiatrist
Universiti Sains Islam Malaysia, Malaysia

## Symposium 2:
## FRONTLINERS PSYCHOLOGICAL TRAUMA

Front-liners are generally understood as the health care workers that deal directly with the victims of any disaster or plague. However, in Covid-19 pandemic, it is argued that other professions are as important as the health care providers in keeping the public safe dan well such as teachers, cleaners, public servants, and supermarket employees. Given the experiences of countries hit by the virus, including Malaysia, it is expected the front-liners would suffer from mental health consequences. Severe distress, anxiety, depression and insomnia are some of the manifestations that have been reported. Speaker also draws from his experience while volunteering as medical officer for Kuala Lumpur International Airport (KLIA) Health Office during the first Movement Control Order (MCO). Several factors that have been implicated in research are presented in this symposium. The unprecedented situation has raised questions regarding the nature and determinants of mental health promotion. The steps that have been taken, such as mental health and psycho-social support (MHPSS), and the ways that have been proposed to alleviate the psychological impact are also discussed here. The pandemic does not seem to show any signs of slowing down, and there are many ways we can support our front liners.

In the early days of his career as a psychiatrist, Dr. Zul Azlin Razali would not have thought that he would write a novel. Majnun, his first novel, is part of the quest in mental health advocacy through a creative channel. But if you ask him again why he becomes a novelist, he would probably say, “Writing is therapeutic, a bibliotherapy.” He believes that public should be engaged in many different ways. His first solo non-fiction book, Depresi: Terpuruk Rasa Ingin Mati, was published in 2018 and currently in its third printing. He also wrote an academic book, Medical Wisdom: ArRuqyah AshShariyyah, and several other academic papers that discuss on the authentic religious belief on demonic possession and its relationship with mental illnesses. In 2016, he found Green Crescent Malaysia, an affiliate of International Federation of Green Crescents, which plays active role in raising awareness about various types of addiction. These days, he truly misses playing football and hiking with friends. If he is not seeing patients or giving lectures, you might find him in his ‘cave’ writing more fictions.

**Assoc Prof Dr Amer Siddiq Amer Nordin**
Psychiatrist
University of Malaya, Malaysia

## Symposium 2:
## COVID-19: EFFECT OF LOCKDOWN ON MENTAL HEALTH

The year 2020 has been unprecedented with the introduction of Covid-19 which has affected many, if not all, parts of the world. The initial fear and impact of an infection with very little knowledge on its cure has been, lately, replaced with the consequences of the many strategies to contain this infection. One of the strategy which many countries have attempted is a lockdown or in Malaysia, Movement Control Order. Among the leading issue of this initiative is the impact of Covid-19 towards the mental health of the global population. This presentation will attempt to describe about why mental health is important and the effects of having poor mental health during this period. It is hoped that with this awareness and knowledge, better strategies can be put in place to avoid more devastation from this unseen virus.

Dr Amer Siddiq Amer Nordin is an Associate Professor in Psychiatry, Director of the Centre for Community Engagement and Sustainability (UMCares) and the Chief Coordinator for Universiti Malaya Centre for Addiction Sciences (UMCAS) in Universiti Malaya.Dr Amer Siddiq graduated with his medical degree from the University of Otago in New Zealand. He returned home to Malaysia and served with the Ministry of Health before pursuing his speciality training in Universiti Malaya. He proceeded to a doctoral degree in his alma mater, University of Otago, Christchurch School of Medicine, New Zealand. His doctorate work studied the effect of depression, smoking addiction, particularly nicotine addiction where he is a certified smoking cessation specialist. His research work in this area has led to a number of copyrights. His team developed SCOPE, one of 3 accredited training to become a smoking cessation provider in Malaysia.Dr Amer is also the committee member of the National Mental Health Promotion Board, chaired by the Minister of Health. He is also the technical advisor to the ministry in mental health, tobacco control and health literacy. He has consulted to the World Health Organisation Regional Office (WHO) and UNICEF Malaysia for mental health. For the WHO he has also consulted for smoking cessation. Locally, he is the consultant for Befrienders Kuala Lumpur and the Subang Jaya Warriors, a local group advocating for better mental health and suicide prevention.Dr Amer publishes widely in both academic journals and the mass media. His most reputable publication was in Lancet Oncology IF 35.386. He is a regular in all local televisions TV3, Bernama TV and Astro TV, and radio stations BFM 89.9 and Era among them, sharing his knowledge on mental health. He is also regularly invited to share about his expertise to governmental agencies and the private sector for both mental health and tobacco control matters. In view of his work, he has been highlighted as 1 of 8 mental health advocates to watch by Malaysian Tatler Magazine.

**Dr Ahmad Izzat Ahmad Tajjudin**
Psychiatrist
Universiti Sains Islam Malaysia, Malaysia

# Symposium 2:
# ADAPTING TO THE NEW NORM: A DAILY ROUTINE FROM THE MENTAL HEALTH PERSPECTIVE

Coronavirus disease (Covid-19), which first surfaced in the Hubei province in November 2019 has truly establish itself as a global pandemic with myriad of health, social and economic complications. The incidence of mental illnesses such as depression and anxiety have increased during Covid-19. There have also been reported increases in stress, addiction and sleep disturbance among the global population. There are a number of biological, pscychological social factors factors causing mental health impact due to this pandemic. Disrupted routines seem to be an associative factor in causing mental health problems during the current pandemic. Keeping a regular routine is important in order to maintain a sense of normality, controllability and predictability. Keeping a daily routine also serves to promote a good mental well being. The World Health Organization and other institutions have drawn up guidelines on how to live with the current pandemic. This presentation's aims are to highlight the mental health impacts during the Covid-19 and convey the guidelines given on how to establish a sense of routine during this pandemic.

Dr Ahmad Izzat bin Ahmad Tajjudin graduated from University College Cork Ireland, in 2003 and obtained his postgraduate psychiatry membership with The College of Psychiatrist Ireland in 2016. He has worked in Ireland for 14 years before returning to serve Malaysia under Universiti Sains Islam Malaysia as a Medical Lecturer in Psychiatry. Dr Ahmad Izzat Ahmad Tajjudin has contributed variety of paper and book publication in the areas of Psychiatry. His special interest includes Old Age Psychiatry and Early Intervention Psychosis.v

**Dr Abdul Rahman**

Ex-Officio (MHPSS) MERCY, Malaysia

## Symposium 2:
## NGO APPROACH TO COVID AMONG VULNERABLE POPULATION

The current pandemic of coronavirus (COVID-19) is a particularly rare situation and the future remain uncertain. The COVID-19 has affected people from many countries and apparently caused death world wide. The coronavirus has affected every single aspect of our lives; education, economic, physical health, and mental health and to name a few. All of these changes during the pandemic not only affected people physically, but also psychologically. It is understandable during the pandemic crisis people may be feeling anxious, worried, afraid, uncertain, and depressed due to the social media and news coverage regarding the spreading of the virus. Thus, with a proper continuous psychosocial response from NGOs and agencies during the pandemic crisis would prevent future mental health problems and build resilience in community. Therefore, the Mental Health and Psychosocial Support Unit (MERCY Malaysia) has taken a big step in responding to the needs of the community especially the psychosocial support including hotline and helpline, online one to one counseling and psychotherapy sessions, training the community, online Psychological First Aid (PFA), parents focused training (for parents with special needs children), caregiver for geriatric training, mental health and well-being workshops, adolescent resilience and well-being workshop, awareness video on mhpss, and the most important part in the efforts of providing the mental health and psychosocial services is the collaboration and coordination with other government agencies and private sectors.

Dr. Abdul Rahman Ahmad Badayai is a Senior Lecturer (Developmental Psychology) at Centre for Research in Psychology and Human Well-being, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia and also the HEAD (Consultant Developmental Psychologist) at PsiTra Klinik Psikologi and Konsultansi (PKPK), Universiti Kebangsaan Malaysia. His expertise is in developmental problems, delays and disablities including special needs children, at-risk children and youth, family and parenting, resilience, conflict resolutions and management. He is also Certified Interpersonal Psychotherapist (IPT USA). Currently, he is active in conducting training in child development, managing children behaviors, and parenting. He is also the Ex-Officio of MERCY Malaysia and actively engage in humanitarian relief work under Mental Health and Psychosocial Support Unit (MERCY Malaysia) and has involved in several missions; Earth-quake in Pidie-Jaya Acheh, Indonesia, Refugees Relief Team in Cox's Bazaar Bangladesh, Attapue, Laos, Rakhaine Myanmar, PFAider at Pasir Gudang river toxic pollution, Flood Mission in Kelantan, and Flood Mission in Johor, and also leading a team for mental health and psychosocial support services (MHPSS) for COVID-19 pandemic under PKPK UKM Bangi. Under the MHPSS MERCY Malaysia, he actively conducting Psychological First Aid (PFA) training to various agencies and organizations. On top, he is also working closely with UNHCR Malaysia in providing training, psychological and counseling services to refugees and asylum seekers in Malaysia.

**Dr Maria Suleiman**
Public Health Medicine Specialist and Head of Sector of Disaster, Outbreaks, Crisis and Emergency
Ministry of Health Malaysia, Malaysia

# Symposium 3:
# COVID-19: RISK COMMUNICATION AT MINISTRY OF HEALTH MALAYSIA

Risk communications is one of the core capacities essential in the early detection and rapid response to public health emergencies. Public health emergencies are defined as much by their health consequences as by their causes and precipitating events. During the COVID-19 outbreak, risk communication is one of the six approached in managing COVID-19 in Malaysia. Crisis emergency risk communication (ERC) is an important response to public health emergencies. ERC is under the purview of the National Crisis Preparedness and Response Centre (CPRC) which was established under the 9th Malaysia Plan effective management of disasters, outbreaks, crises and emergencies (DOCE) (2005 – 2010). CPRC serves as a part of the overall strategies in preparedness of related to health. CPRC together with Corporate Communication Unit (CCU), Health Education Division (HED) and Institute for Health Behavioural Research (IHBR) coordinates risk communication following the risk management plans. The objective of risk communication is to help disseminate risk communication information, to reduce the tension and anxiety of the people, to assist and support the MOH's efforts in disseminating authentic and accurate information and to increase access to authentic and accurate information to the public. Various communication strategies had been outlined which include risk communication plan, communicating the risk to all stakeholders including the event-affected & vulnerable population and community engagement & empowerment. Community engagement is the process of supporting communities to consider themselves partners in an outbreak response, and to have ownership in controlling COVID-19. Transparent, factual and consistent information from a credible source is shared through daily press statement and regular press conference. Sentiments issues are analysed and risk communication delivered through all means of media including social media as well as the MySejahtera Application which is the digital passport for COVID-19.

Dr. Maria Suleiman is Public Health Medicine Specialist and Head of Sector of Disaster, Outbreaks, Crisis and Emergency  at Ministry of Health Malaysia. She obtained her Medical Degree (MD) in 1990 and subsequently received her Master in Community Health in 1996 at the National University of Malaysia. Her main interest is in epidemiology field in surveillance, preparedness and response. She had helped in management of outbreaks and disaster namely the H1N1 2009 Pandemic, Intrusion in Tanduo, Lahad Datu, Sabah in 2013 and Mount Kinabalu Earthquake in 2014. Her recent involvement was the management of Malaysian Field Hospital in Cox's Bazaar, Bangladesh and Sungai Kim Kim chemical contamination in 2019. She is currently involved with the management of Pandemic COVID-19 at the Ministry of Health, Malaysia.She is also actively involved in research field with numerous publications of research to name a few are Social and Toxicological Analyses of an Outbreak of Tetrodotoxin Poisoning from Consuming Horseshoe Crabs in Sabah and Case Report: Paralytic Shellfish Poisoning in Sabah, Malaysia. She had been an invited part time lecturer at University Malaysia Sabah and Kota Kinabalu Allied Health Science College.

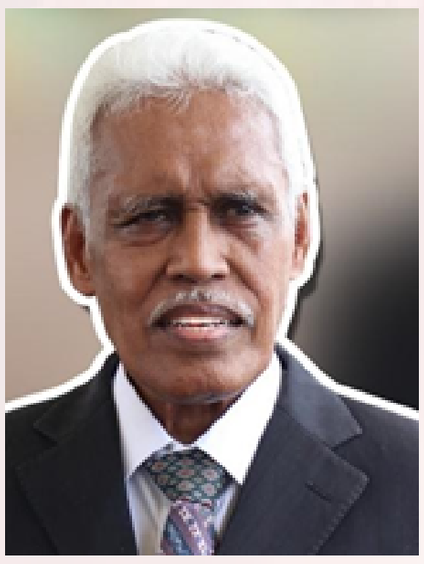
**Datuk Dr Norhayati Rusli**
Director of Disease Control Division
Ministry of Health Malaysia, Malaysia

## Symposium 3:
## IMPLEMENTING HEALTH STRATEGIES IN AN EMERGING PANDEMIC

The emergence of a new viral pandemic was, is and remains a matter of when, rather than if. Among the prime candidates are those caused by influenza viruses. The SARS and MERS outbreaks in the past two decades highlighted the threat posed by animal coronaviruses before the unprecedented COVID-19 assault started. Indeed, this COVID-19 pandemic is much more than a health crisis, with profound social and economic consequences. Currently, there is no clear indication of the timeline for this pandemic. Until then, many things will never be the same again. This COVID-19 pandemic definitely has transformed the world at work or school, the international trips we used to make, the way we interact with strangers etc. Most nations in the developed countries had worked for years to prepare for such an event and had produced pandemic preparedness plans at all levels. However, the pandemic did not turn out as expected. Therefore, flexibility is key; with a myriad of complex factors to consider when trying to strike a balance between overcoming the COVID-19 pandemic and restoring the socio-economic impact caused by it.

Datuk Dr. Norhayati binti Rusli is the Director of Disease Control Division, Ministry of Health Malaysia and was appointed as a Board Member of SOCSO representing the Ministry of Health Malaysia. She obtained her Bachelor of Medicine from the University of Malaya and subsequently a Master of Public Health from Universiti Kebangsaan Malaysia.Datuk Dr. Norhayati binti Rusli is a Public Health Physician and has been appointed as the first Health Officer of Kuala Lumpur International Ariport (KLIA) Health Office before joining the Disease Control Division, Ministry of Health Malaysia. During her service at KLIA Health Office, she contributed to several achievements for KLIA Health Office and among others is the recognition of the World Health Organization (WHO) as the first International point of entry in Malaysia that complies with all the requirements of health capacity and capability under the International Health Regulation (IHR) 2005. Besides, she also actively involved in coordinating preventive and control measures of infectious diseases at the point of entry such as during the Severe Acute Respiratory Syndrome (SARS) epidemic 2003, pandemic influenza in 2009. After joining Control Disease Division KKM, she continued her excellence in contributing to the good image of Malaysia internationally. Among her great contributions are, Malaysia's recognition as one of the countries that has successfully met all health needs under the IHR, 2005 by WHO and she is also one of the pioneers of the ASEAN Emergency Operation Centre (ASEAN EOC) network initiative that has been praised at the WHO level in Manila and Geneva and subsequently set an example for other WHO regional countries. She is also actively involved in managing preparedness, and response to the epidemic and national disaster in Malaysia such as Sg Kim Kim chemical contamination (2019), Measles outbreak in Kelantan (2019), Polio outbreak in Sabah (2019) and Pandemic COVID-19 in 2019 – 2020.

SPEAKER



**Prof. Dr. dr. Abdul Razak Thaha**
Chairperson of the ATENSI (Indonesian Telemedicine Association)
University of Muhammadiyah Makassar.

## Symposium 3:
## MITIGATION RESPONSES OF THE IMPACT OF COVID-19 ON NUTRITION PROBLEMS IN INDONESIA

The COVID-19 pandemic is health and threatens food security and nutrition for millions of people around World. Indonesia, with an occupied population of 267 million, is also facing the same threat.ObjactiveThis article aims to analyze the impact of the COVID-19 pandemic on nutrition problems in Indonesia and mitigation efforts in response to overcoming this problem. The article is based on literature review and analysis of secondary data related to Covid-19 and nutritional problems. Economic growth slowed down in Q1 (2.97%) and contracted in Q2 2020 (-5.32%). In Q2 2020, household consumption grew Y-onY by -5.51%. Early May 24% of workers quit work. Of the 76% who kept working, 64% decreased their income; 63.9% of companies have closed. Until June 2020 22% still closed and 1.6% permanently closed. 24% of households facing food shortages and 30% of households report eating less. The poverty rate increased from 9.22% (March 2019) to 9.78% (March 2020) and is estimated to be 10.34% in September 2020. The World Bank estimates that the economic impact of Covid-19 will increase wasting of children under five and maternal and child mortality.The mitigation response to the handling of Covid-19 is 695.12 trillion rupiah. Social safety net programs among others conditional cash transfer (PKH), non-cash food, direct case transfer, Bansos rice, pre-employment cards, wage subsidies, micro-business support, electricity subsidies, As of early August 2020, most social protection programs have reached estimated target coverage. Nearly 90% of households in the bottom 40% reported benefiting from at least one relief measure. Covid-19 is believed to have increased nutritional problems, especially toddlers and pregnant women. However, with a good social safety net program that has achieved the target, it is estimated that nutrition problems will not be as severe as previously thought.

Prof. DR. Dr. ABDUL RAZAK THAHA, MSc., SpGK., was born in Tual, Maluku on March 23, 1949. He obtained Drs. Med and doctors from UNHAS Makassar, MSc. in applied nutrition from SEAMEO Tropical Medicine and Public Health and Doctorate from FKM UI in 1995 with the title Cum Laude. Then obtained license as a Clinical Nutritionist in 2004. Starting his career as a teaching assistant in 1973, and lecturer for biology and genetics courses in 1977 at the Faculty of Medicine, UNHAS and was promoted to Professor in Nutrition in 2001. In 1982, he founded the nutrition department at the Faculty of Medicine, UNHAS. Established the UNHAS Nutrition and Food Study Center in 1995 and became the Head of the Study Center until 2004. Founded the Department of Nutrition, FKM UNHAS in 1998 and became the Head of the 2005 FKM UNHAS Nutrition Science Study Program. In 2003-2006 he became Dean of FKM UNHAS and 2006-2010 became Director of the UNHAS Postgraduate Program. During his career as a researcher, he has conducted researches and publications and written several books in the field of nutrition, especially in the fields of micronutrients, fetal nutrition, early childhood growth, maternal-child health and health-nutrition policies and programs. The studies and intervention programs that he undertakes in collaboration and are funded by many parties, including UNICEF, WHO, World Bank, ADB, JICA, CIDA, UNDP, AusAid, and JTZ. Become members and / or administrators of various professional organizations including: IDI, PDGKI, IAKMI, IAGIKMI, PDGMI, PDUI, PERDAWERI as well as the Indonesian Doctors College and the Indonesian Clinical Nutrition College. Became Chairman of the PB IDI Expert Council 2012-2018. Currently, he is the Chairperson of IGI (Indonesian Nutrition Institute) and General Chair of PP PPERDAWESI (Association of Indonesian Anti-aging, Wellnes, Aesthetics and Regenrative Doctors. Chairperson of the ATENSI (Indonesian Telemedicine Association) Trustee. arts and has been the Chairman of the Makassar Arts Council for 2 periods (10 years). The awards that have been received are Satya Lencana 30 Years Civil Servant from the Government of the Republic of Indonesia (2007), Alumni Achieving 50th Anniversary of FKUH from the Faculty of Medicine, UNHAS (2008), and Community Health Education Institution Figures from AIPTKMI (2008). M. Kodyat Award from PB IDI on 12 November 2015 as an Award for outstanding scientific achievements in the field of medicine.

SPEAKER

**Prof Dr Irwan Mohd Subri,**
Lecturer
Universiti Sains Islam Malaysia Malaysia

## Symposium 3:
## APPLYING PREVENTION STRATEGIES FOR A PANDEMIC IN ISLAM

A new type of Coronavirus known as COVID-19 has invaded the world, including Malaysia. According to the World Health Organization (as of November 1st, 2020), COVID-19 has caused the deaths of 1,192,644 victims around the world. This article discusses the prevention strategies for a pandemic in Islam especially Movement Control Order that has been enforced by the Malaysian government to curb the COVID-19. This article uses the method of document analysis with reference to several books, journals, websites and Youtube. The findings of the study found that the Movement Control Order complies with the maslahah or benefits according to Shariah of Islam in order to protect the health and lives of the public from COVID-19 in Malaysia.

Dr Irwan Mohd Subri holds a Bachelor in Islamic Shariah (1996) from Al-Azhar University, a Masters in Islamic Studies (2001) from the National University of Malaysia and a PhD in Fiqh and Usul al-Fiqh (2011) from the International Islamic University of Malaysia. Dr Subri is currently a lecturer at the Faculty of Shariah and Law, University Sains Islam Malaysia. Dr Subri is and has been a Shariah advisor to a number of institutions including Hong Leong Islamic Bank. He has published a large number of articles in journals, authored a number of books and has attended a number of international conferences in his specialised field of Islamic Studies. He is also the recipient of various awards. He is currently the General Director (Acting) of International Fatwa and Halal Centre (iFFAH) and Director of Institut Pengurusan dan Penyelidikan Fatwa Sedunia (INFAD).

SPEAKER

**Dr Nor Azura Ahmad Tarmidzi**
Oral & Maxillofacial Surgeon
Universiti Sains Islam Malaysia, Malaysia

# Symposium 4:
# 'DENTAL CHALLENGES DURING COVID-19 PANDEMIC'

At the end of year 2019, the whole world is astounded by a series of pneumonia of unknown viral origin which later was named as COVID-19. Since then, the virus has spread throughout the world and World Health Organization have declared it as Public Health Emergency of International Concern. Due to its airborne mode of transmission, dental practice has greatly affected by COVID-19 where most of dental procedure will definitely involves dissemination of droplets and aerosols. Fear towards COVID-19 is because of it is novel, thus not knowing how the true nature of the virus and currently there is no available vaccine in preventing this disease. Many new guidelines have been developed by various dental organization and specialty in order to adapt to the new norm. The content of the guideline mainly focuses on classification of dental procedure, screening of patient, treatment priority, enforcement of infection control and precaution to take in prevention or limiting the airborne transmission of the viruses. This new norm definitely changed the dynamic of dental practice worldwide.

Dr Nor Azura Ahmad Tarmidzi was graduated in Doctor's Of Dental Surgery (DDS) , Universiti Sains Malaysia (USM) and further her study in Master Of Clinical Dentistry (MClinDent) Oral and Maxillofacial Surgery at Universiti Malaya. She's currently a senior lecturer and Head Of Department, Department Of Oral & Maxillofacial Surgery, Pathology and Medicine Oral Surgeon, Faculty Of Dentistry, Universiti Sains Islam Malaysia (USIM). Beside teaching and clinical works, she also active in conducting researchs and innovations, and produce publications. She also involved in volunteer field such as Dental Community Service for Homeless at Chow Kit: As Organizer and Volunteer (collaboration with Dentistry for the Needy) in 2017-2019, Dental Community Service for Rohingya Refugees: As Team leader and volunteer (collaboration with Dentistry for the Needy & Human Aid & IMARET) (2017-2019) ,Seam Reap, Cambodia (Muslim Care) in October 2019 and SEED society, Chow Kit 2017. The awards that have been received along her career are Excellent Service Award 2018, Golden Heart Award 2018, The Star(Yayasan Gamoda), 3rd place in oral presentation during Malaysian Association of Maxillofacial Surgeons (MAOMS) Conference 2013, Second Place for Oral Presenter on research paper in 1st International Dental Conference IIUM, Best Poster Presentation MDA Scientific Convention and Trade Exhibition 2018 and won Gold medal in I-Nova 2016, i-Reka 2017 and Bronze medal in NRIC 2017 for innovation project "Dentolight".

SPEAKER

**Prof. drg. Dwi Prijatmoko**
Lecturer
University of Jember, Indonesia

# Symposium 4:
# INFECTION CONTROL STRATEGIES AND PATIENT MANAGEMENT PROTOCOLS TO PROVIDE OPTIMAL DENTAL CARE AND TO PREVENT HEALTHCARE ASSOCIATED INFECTIONS (HAIS) IN RSGM.

SARS-CoV-2, the virus that causes COVID-19 is spread primarily between people through respiratory droplets. The virus has been shown to persist in aerosols for hours, and on some surfaces for days. As of September 28 2020, according to the Indonesian Health ministry, 278.722 confirmed cases, and 10.473 conformed death. Dental treatment involves the use of intra oral high speed rotary bur and other dental surgical instruments. Such instruments are potentially produce aerosols contained of respiratory droplets of water, saliva and oral microorganisms including SARS-CoV-2. The aim of the article is to provide an overview as how to prevent Healthcare Associated infections (HAIs) particularly in Jember University Dental Hospital (RSGM), Indonesia.MethodsScientific literature search was conducted to identify information on covid-19 and prevention of cross infection of dental treatment in Dental Hospital setting. The conformed mode of transmission of Coronavirus (Covid-19) appear through respiratory and saliva droplets as well as through close contact between persons. Dental treatment produce respiratory and saliva droplets. Standard precaution needed during pandemic is to involve patient risk assessment before dental procedure, effective management protocols to regulate droplet and aerosol contamination during dental treatments and also effective management protocols for dental instruments and clinical room after dental treatment to minimize the risk of Covid-19 transmission and avoid cross-contamination. RSGM should be updated with the latest news and guidelines in accordance with the regulatory protocol. Effective management protocol to prevent Healthcare Associated infections (HAIS) in RSGM Universitas Jember is to include patient risk assessments, strong regulation to minimize droplet and aerosol contamination during treatment and sterilization of equipment and clinical rooms in regular bases is required.

Professor Dwi Prijatmoko was born in Malang, Indonesia in 1958 and completed his high school in 1976. His DDS degree was obtained from the Dental Faculty of Airlangga University, Indonesia in 1982. He has completed a master's degree in Human Nutrion science at Deakin University, and completed his PhD in Clinical Nutrition at Monash Medical center, Monash University in 1992. As a guest lecture at Monash Medical center for several years and returned to Indonesia. In 2009 he was confirmed as a professor at Dental faculty, University of Jember.Professor dwi Prijatmpoko is a senior lecturer at the Dental Faculty and from 2010 to 2020 he served as director of the Dental Hospital, University of Jember. At this time prof. Dwi Prijatmoko is the director of the Biomolecular Laboratory of the University of Jember.

SPEAKER

**Dr Muzaffar Syah Mallow**
Lecturer
Universiti Sains Islam Malaysia, Malaysia

# Symposium 4:
# WORKERS PROTECTION IN MALAYSIA: FINDING THE RIGHT BALANCE BETWEEN LAW AND HUMANITY DURING A PANDEMIC

In early 2020, people's life all over the world including in Malaysia drastically change with the spread of Novel Coronavirus (Covid-19). Unlike other kinds of known existed viruses which effected the life of mankind, Covid-19 is a new virus where the vaccine is not yet been developed to deal with it. Covid-19 is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in December, 2019 in Wuhan, Hubei, China, and has resulted in an ongoing pandemic. Almost all countries in the world have been infected with such virus including Malaysia. As of 20 September, 2020, more than 30.7 million cases have been reported across 188 countries and territories with more than 956,000 deaths. In Malaysia, more than 10, 000 cases of infection been reported with 130 deaths due to it On March 11, 2020, the World Health Organization (WHO) had no choice except to declared Covid-19 as an outbreak. Due to hazardous nature of such virus, government all over the world including Malaysia has to take tough actions in order to curb the spread of such virus which include the implementation of movement control order which witnessed the closure of many working sectors. New working norms has been initated in many working areas to allow workers to continue with their work and to prevent workers from being infected with Covid-19. Such tough action taken by the government has also effected the income of wokers in all sectors especially those working in the private sectors where their income highly dependent with their continuous daily working activities. The income of this group of people will be severly effected if they unable to go work even for a single day. Inability to get an income can create many problems not only towards the concern worker themselves but also to their family. The spread of Covid-19 and the tough action taken by the government not only effected the life of local workers, but also effected the life of foreign workers. Foreign workers has to accept the new world reality where the working policy which being enjoyed for the last many years will be subjected to changes. Life is more difficult for illegal foreign workers in the country as they not only need to ensure their safety from infection but also faced with the government strict measures taken towards them to ensure they are free from Covid-19 infection. Regardless of their status, international human rights law guarantees everyone the right to the highest attainable standard of health and obligates governments to take steps to prevent threats to public health and to provide medical care to those who need it. This presentation will focus over problems faced by many workers in the country due the spread of Covid-19 and the steps taken by the government to deal with the problems from legal perspective. This presentation will adopted various research methodology approaches which includes identifying all the existing labour laws in the country, examine all the steps taken by the government to deal with the matter from legal point of view and finally examine the balance created through these laws with the principle of humanity.

Dr.Muzaffar Syah Mallow is a senior lecturer at the Faculty of Syariah and Law (FSU), Universiti Sains Islam Malaysia (USIM) since 2010. He received his Doctor of Philosophy from International Islamic University Malaysia (IIUM) in 2009, Master of Comparative Laws (MCL) from Ahmad Ibrahim Kulliyyah of Laws (AIKOL), International Islamic University Malaysia (IIUM) in 2005 and Bachelor of Laws (Honours) from Ahmad Ibrahim Kulliyyah of Laws (AIKOL), International Islamic University Malaysia (IIUM) in 2004. His area of specialization are in law on evidence, criminal law, banking law, land use, planning law and practice, Islamic jurisprudence, and law of banking. He is the member of the Inns of Court Malaysia, a professional membership body established on 10 November 2016. He is also the associate fellow for the Institute of Labour Market Information and Analysis (ILMIA), Ministry of Human Resources Malaysia (MOHR) and associate member of All Women's Action Society (AWAM). He was involved in various consultation with the government, non– governmental organizations (NGOs) and legal firms where he involved in the consultation with the Election Commission (EC) on reforming the election rules and process in Malaysia in 2019. He was also involved in the consultation with the Malaysian Anti – Corruption Agency (MACC) on improving the corruption law in Malaysia in 2019, drafting the ethical code for parent and guardian organized by the National Union of the Teaching Profession (NUTP) in 2017 and consultation with professional on the issue concerning bullying in school organized by the Ministry of Education (MOE) in 2016. He assisted All Women's Action Society (AWAM), the non – profit non – governmental organizations (NGOs) with their programs on creating awareness in the Malaysian society on the issue of sexual harassment as well as assisting them with the draft proposal on Sexual Harassment Bill since 2012. Besides, he was also an advisor in general areas on civil and criminal matters to the legal firm Tetuan Abdul Aziz & Associates, Kuala Lumpur from 2008 until 2015.

**Dr. Abd. Azis**
Lecturer
Universitas Muhammadiyah Makassar, Indonesia

## Symposium 4:
## "IMPACT OF THE COVID19 PANDEMIC ON HIGH RISK MEDICAL HEALTH PROFESSIONALS: HOW TO OVERCOME?"

Since the coronavirus disease (COVID-19) emerged in Wuhan for the first time, it has spread widely throughout the world, including Indonesia. Numbers of diagnosed and inpatients infected by the virus significantly rises from time to time causing healthcare workers to be overwhelmed both physically and psychologically. Given the circumstances, they are required to work under stressful conditions. Not only do they have to be responsible clinically, these healthcare professionals must face multiple roles including administrative, and educational. Therefore, they are at most risk of this deadly infection. In Indonesia alone, the numbers of healthcare professional's mortality until this date has reached over 125 deaths, which sadly may continue to increase if not handled seriously. To overcome the mortality rate and minimize the burden, the health system and sectors related must collaborate simultaneously. Healthcare professionals must carry on its obligation in health centers but with their safety guaranteed. Providing proper protective equipment, reasonable shift schedules, testing and quarantine facilities and many others. In addition, providing consultations for psychological impacts also plays an important role. Healthcare workers caring patients with COVID-19 reported anxiety, depression and stress. Conflicts between duties in the workplace and at home causes psychological stress, being anxious about having to be self-quarantined and far away from family was also reported. Therefore, an integrated and multiple section system is recommended to overcome the impact of the pandemic among healthcare professionals.

Dr. Abdul Azis, Sp.U was born on 17th May 1977. He was graduated from Hasanuddin University and furthered his study in Urology Specialist Doctor Education Program, Faculty of Medicine, Airlangga University. He is now a lecturer at the Faculty of Medicine, University of Muhammadiyah Makassar and the chairman of the Makassar City Hospital Medical Committee. Dr. Abdul Azis is also the PB IDI Coordinator for South, West and Southeast Sulawesi, the PDEI Central Board (Indonesian Emergency Doctors Association), the Secretary II of the IDI South and West Sulawesi Region and the Chairman of KREKI (Indonesian Health Emergency Volunteer Community) South Sulawesi, the Chairman of the Makassar IAUI (Indonesian Association of Urologists) and the Chairman of the MAHTAN Foundation (Unnamed Hijrah Community). Dr Abdul Azis is also one of the prominent figures in Indonesia in combating Covid-19 pandemic. He is the Chairman of the IDI Covid-19 Handling Task Force for the South Sulawesi Region. He involved in South Sulawesi Province Covid-19 Handling Task Force and Makassar City Covid-19 Handling Task Force. He is also the Chairperson of the Makassar City Hospital Covid-19 Handling Task Force.

SPEAKER

**Assoc Prof Dr Noor Fadzilah Zulkifli**
Clinical Pathologist (Hematologist)
Universiti Sains Islam Malaysia

# Plenary 2:
# UNDERSTANDING COVID-19 BASED ON CURRENT EVIDENCE

In late 2019, an outbreak of pneumonia of unknown cause occurred in Wuhan, China. The causative virus has been named as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and the infected disease has been named as coronavirus disease 2019 (COVID-19). Cases were in clusters and develop into larger outbreaks all over the world. The major route of transmission are droplet and close contact with incubation period ranging from 1 to 14 days. This is an entirely new disease that are difficult to reconcile with a single pathogenic principle. The spectrum of clinical presentations varies from asymptomatic infection to severe respiratory failure. The main symptoms include fever, fatigue, dry cough, myalgia, and dyspnoea. Critical patients had respiratory failure, septic shock, and multiple organ failure. Once in the airways, the S protein on the viral surface recognizes ACE-2 receptors and gains access to the host cells, replicates and attack other ACE2-bearing cells in the lungs and other organs, including the blood vessels, gut and kidneys. With the viral infestation, the activated immune system leads to inflammation, pyrexia and pulmonary oedema. The hyperactivated immune response, called 'cytokine storm' in extreme cases, damages various organs, leads to hypercoagulable state and multi organ failure. It also increases susceptibility to infectious bacteria especially in those suffering from chronic diseases. Common clinical laboratory findings include leukopenia and lymphopenia, raised lactate dehydrogenase and creatinine kinase with abnormal liver function. Most patients showed normal serum procalcitonin, but the C-reactive protein and D-dimer were above the normal range. Active research activities is ongoing to gain a better understanding in the pathogenesis of COVID-19 which is important to improve the accuracy of early diagnostic test, developing the vaccine and identifying effective strategy of management.

She is a Clinical Pathologist (Hematologist) and Associate Professor of Medicine at the Faculty of Medicine & Health Sciences, Universiti Sains Islam Malaysia (USIM). She is currently the Deputy Dean (Academic & International) for the faculty since January 2019. Before joining USIM, she held the position of Clinical Pathologist at the Kuala Lumpur Hospital. She is a lifelong member of the Asia Pacific Association of Thrombosis and Hemostasis, College of Pathologist Malaysia, Academy of Medicine Malaysia, Malaysian Hematological Association, and the Malaysian Blood Transfusion Association. She has a special interest in medical education and is a member of Malaysian Medical Educators Network (MEdNet). Despite her busy schedule, she is active in research work and has completed more than 20 research projects. She has also published many peer reviewed articles, a few books as well as chapters in book.

**Dr Lo Ying-Ru Jacqueline**
WHO Representative to Malaysia, Brunei Darussalam and Singapore

# Plenary 2:
# COVID-19: THE INFINITE WAR?

On 30 January 2020, WHO declared coronavirus disease 2019 (COVID-19) a public health emergency of international concern, and today, the disease affects nearly all countries around the world. Transmission of SARS-CoV-2 occurs mainly via larger respiratory droplets and direct contact with infected persons depending on environmental, behavioural and host factors. Small airborne droplets and contaminated surfaces may also play a role in transmission in hospitals. The majority of infections are reported from symptomatic patients; however, there are reports of clusters arising from asymptomatic transmission. Several studies are evaluating the proportion of asymptomatic and presymptomatic COVID-19 infections, and subsequently, COVID-19 testing strategies are evolving.  In the early days of the epidemic, new cases were imported. The situation has remained so in Brunei Darussalam. The bulk of new clusters in Malaysia and Singapore are linked to settings such as construction sites, factories, migrant worker dormitories and prisons/detention centres. However, a study from Singapore suggests that the secondary attack rate of household contacts seems to be generally higher than that of work and social contacts, subject to physical distancing and duration of contact.

Dr Lo was appointed WHO Representative to Malaysia, Brunei Darussalam and Singapore in October 2017. In her position as Head of Mission, she leads strategic and policy dialogues with ministries of health and partners. Dr Lo is an infectious disease physician from Hamburg, Germany with over 30 years of experience as a clinician and public health adviser. She started working for the World Health Organization (WHO) in 1998, holding positions at country, regional and headquarters levels. Her focus has been on translating research into implementation. Dr Lo led the introduction of HIV treatment in Asia in the early 1990s. As a global coordinator in Geneva, she led the development of WHO guidelines related to HIV and viral hepatitis and reinvigorated WHO's HIV prevention programme. She later led the introduction of hepatitis treatment in Asia in her position as a regional coordinator in the WHO Regional Office for the Western Pacific. As WHO Representative, she now oversees WHO's support for the COVID-19 pandemic response in Brunei Darussalam, Malaysia and Singapore and the poliovirus outbreak response in Malaysia. She also directs work on noncommunicable diseases and ageing, antimicrobial resistance, and communicable disease prevention and treatment, including immunizations.  Dr Lo gained a wealth of global experience while working in Europe, Latin America, Asia and the Pacific and also visiting African countries and the United States of America on several missions. Since the beginning of her career, Dr Lo's focus has been on improving public health in Asia and increasing the role and visibility of Asian expertise in global health. To support her work, she has raised considerable funds and created a vast network of collaborators.

**Dr. Gerard Lee See**
Lecturer
University of San Carlos, Philipines

# Plenary 2:
# PHARMACY EDUCATION IN THE PHILIPPINES: RESILIENCE AND RESPONSE TO COVID-19

The novel coronavirus (COVID-19) pandemic has disrupted every aspect of the economy and society, more so, the Pharmacy education sector is not spared from the adversity. Many universities in the Philippines offering Pharmacy programs have abruptly transitioned to remote delivery of courses, a delivery model which is far from the customary face-to-face instruction. The rapid transition in the sector of pharmacy education has left teachers and students overwhelmed at one hand, and on the other hand, to look for purpose and opportunity to approach work differently. To present the challenges faced by the teachers in the shift to remote delivery of pharmacy courses. To describe the unified strategies to prepare teachers for the new teaching roles. To share the innovative approaches for remote delivery of Pharmacy courses. Internet access and connectivity, preparation of learning materials, teacher readiness, and course delivery were among the challenges experienced by the teachers of the Pharmacy schools in the Philippines. Pharmacists play a significant role in the supply and management of medicines, essential in fighting the pandemic. In essence, teachers have a collective responsibility to produce a new generation of pharmacists as a sustainable means to support the health system and the development of novel medicines.

Gerard Lee See currently works for the University of San Carlos – Department of Pharmacy as the Graduate Program Coordinator and a university lecturer. He has been working as a pharmacy educator for almost 10 years. He also holds a position as Area-Vice President for the Young Pharmacists Group – Philippines. He obtained his Ph.D. in Pharmaceutical Sciences by research and recently completed his post-doctoral research fellowship, both in Japan. He pioneered the pre-clinical research on novel drug delivery systems for ophthalmic tissues via the lower-eyelid skin. The value of his scientific contributions was recognized twice by the International Pharmaceutical Federation (FIP) awarding him the Best Oral Presentation Award for the Industrial Pharmacy Section consecutively for 2018 and 2019. The Academy of Pharmaceutical Science and Technology, Japan set the distinction of recognizing Dr. See as the first Filipino pharmaceutical scientist to receive the Post-Doctoral Presentation Award in its 44-year history. He was recently recognized by the Philippine Pharmacists Association as the Outstanding Pharmacists in Research for 2020.

**Dr Aliff Adlan**
Internal Medicine Physician
Hospital Sungai Buloh, Malaysia

## Symposium 5:
## THE UPDATE ON MEDICAL MANAGEMENT OF COVID-19

The novel coronavirus (COVID-19) pandemic has disrupted every aspect of the economy and society, more so, the Pharmacy education sector is not spared from the adversity. Many universities in the Philippines offering Pharmacy programs have abruptly transitioned to remote delivery of courses, a delivery model which is far from the customary face-to-face instruction. The rapid transition in the sector of pharmacy education has left teachers and students overwhelmed at one hand, and on the other hand, to look for purpose and opportunity to approach work differently. To present the challenges faced by the teachers in the shift to remote delivery of pharmacy courses. To describe the unified strategies to prepare teachers for the new teaching roles. To share the innovative approaches for remote delivery of Pharmacy courses. Internet access and connectivity, preparation of learning materials, teacher readiness, and course delivery were among the challenges experienced by the teachers of the Pharmacy schools in the Philippines. Pharmacists play a significant role in the supply and management of medicines, essential in fighting the pandemic. In essence, teachers have a collective responsibility to produce a new generation of pharmacists as a sustainable means to support the health system and the development of novel medicines.

Dr Alif Adlan graduated from the Penang University Medical College/RCSI in 2007 with an MBBS BCh BAO degree, and later obtained the membership of Royal College of Physicians in London in 2012. In 2015 he had received his Masters degree in Internal Medicine from Universiti Kebangsaan Malaysia and had completed his gazettement at a Bentong hospital – a district hospital in Pahang. During this tenure, he has produced several publications ie the first reported case of dengue fever in myasthenic crises, and embarked on a multi-centred acute febrile illness study in the western part of the state of Pahang. To date, he is involved in COVID-19 effort in Hospital Sg Buloh, and recently was stationed in Tawau and Semporna, Sabah. He is also involved in collaborative publications in COVID-19 in diagnostics eg the utilisation of PCR from saliva in comparison with nasopharyngeal swab methods. In COVID-19 therapeutics, he is involved in the STORM trial - an open label randomized interventional study evaluating efficacy of corticosteroids vs tocilizumab among COVID-19 patients with high risk of progression.

**Leon Cruz**

CCM Duopharma, Malaysia

## Symposium 5:
## CHALLENGES IN VACCINE PRODUCTION IN A PANDEMIC.

In view of the recent pandemic and the wait for vaccine development globally to end the pandemic has been the topic of the year. Looking back at the challenges involves in developing vaccines. The cost has always been a bigger challenge in developing vaccines as a hefty amount of investment is required in development of vaccines, which may lead to a positive outcome or a negative outcome. This totally depends on the effectiveness of the vaccine developed. The fill and finish of a vaccine can only be carried out in a cleanroom environment, to ensure the vaccines are not contaminated. Types of equipment required for the vaccine fill and finish are tailored to the process involves in manufacturing of vaccines. The supply chain has been a global challenge as vaccines required specific temperatures, deviation in the temperature from the requirement may lead to denaturing of the vaccines, and ineffective vaccination program.

Mr Leon Cruz is the Head of Sterile Production Department at Duopharma Biotech Berhad. He is a Registered Pharmacist with the Pharmacy Board of Malaysia and currently working on the vaccine project for Duopharma Biotech Berhad. He has written 5 international scientific publications and also the author of a book entitled - "Onion as anti-seizure forestalling medication error and polypharmacy"

**Assoc Prof Dr Nurul Azmawati Mohamed**
Clinical Microbiologist
Universiti Sains Islam Malaysia, Malaysia

# Symposium 5:
# ENHANCING COVID-19 PREVENTION STRATEGIES

Coronavirus Disease 2019 (COVID-19) has infected more than 35 million people globally since its discovery in December 2019. For COVID-19 prevention, the World Health Organization recommended regular handwashing with soap, cough etiquette, mask wearing and physical distancing. However, COVID-19 is rather difficult to contain because of its high transmissibility property. Gargling had been reported to have significant roles in the prevention and treatment of respiratory tract infections particularly influenza. In vitro studies showed that most antiseptic gargles such as povidone-iodine, essential oils and hydrogen peroxide were effective against SARS CoV-2, the causative agent of COVID-19. In addition, two pilot in-vivo studies showed that regular gargling with anti-septic formula amongst COVID-19 resulted in reduction of SARS C0V-2 viral load from the nasopharyngeal/throat swabs. High-risk departments in the hospital for example dentistry, otorhinolaryngology and maxillofacial surgery are now recommending anti septic gargling for patients (before seeing doctor) and for healthcare workers. With increasing number of cases nowadays, it is timely to enhance prevention strategies towards COVID-19 by anti-septic gargling.

Associate Prof Dr Nurul Azmawati Mohamed is a Clinical Microbiologist & Senior Lecturer in the Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia. She graduated in 2002 from the University of Sheffield's Medical School. Ten years later, she obtained a master degree in pathology (MPath) majoring in medical microbiology from the Universiti Kebangsaan Malaysia. Her research interest are infection control in the community and antimicrobial- resistant organisms. She has been actively involved in multiple researches related to COVID-19 including laboratory study, clinical trial and community-based.

SPEAKER

**Assoc Prof Dr Noor Zetti Zainol Rashid**
Clinical Microbiologist
Universiti Kebangsaan Malaysia, Malaysia

# Symposium 5:
# LABORATORY DIAGNOSIS OF COVID-19: CURRENT ISSUES & CHALLENGES

Various test methods are available for diagnosis of COVID-19. Rapid and accurate tools are essential to identify, isolate and manage SARS-CoV-2 positive patients, and to prevent further spread. Confirmation of diagnosis depends on nucleic acid assays by real-time PCR using respiratory samples. Rapid test kits for antigen detection (RTK-Ag) are also available using respiratory samples. RTK-Ag expedites results for patient management decisions, has lower cost, can be decentralised and conducted in larger scales, but the performance may be lower than that of RT-PCR. Antibody tests using serum or plasma detects host immune response and helps determine previous infection. However, the results would not provide much information during acute stage of illness or inform infectivity status. Serology tests are widely available, comparatively easier to perform, and automated platforms allow large-scale testing in shorter periods. However, their utility may be limited by the test kits' performance and the fact that antibodies appear later during the disease course. Testing strategies or algorithms for testing are built on the purpose of testing; ie diagnostic testing (for symptomatic individuals) vs screening testing (asymptomatic individual exposed to positive patients) vs surveillance testing (epidemiological purposes). The use of diagnostic tests and interpretations of results are based on each method's strengths, limitations and factors that influence test performance. Recommendations on testing and algorithms are frequently updated with available progress and findings on infection and immune response. Other issues and challenges include access to laboratory testing, laboratory biosafety, types of specimen, specimen packing and transport, numerous test developers and manufacturers, test validation, regulatory requirements, testing capacity and scaling up diagnostic services during COVID-19 waves.

Dr Zetti Zainol Rashid is a Clinical Microbiologist, Associate Professor and Head of the Department of Medical Microbiology & Immunology, Faculty of Medicine UKM. She is also the Head of Molecular Biology Unit at Department of Laboratory Diagnostic Services, Hospital Canselor Tuanku Muhriz, UKM Medical Centre. Her research interests are virology & infectious diseases (viral hepatitis, HIV, respiratory viruses), molecular diagnostics and immunisation.  She is involved in managing COVID-19 laboratory services, and in various research in COVID-19.

**Antonius Nugraha Widhi Pratama**
Lecturer
University of Jember, Indonesia

## Symposium 5:
## LABORATORY DIAGNOSIS OF COVID-19: CURRENT ISSUES & CHALLENGES

The government's policies to respond to the rapidly spreading COVID-19 pandemic may influence the community's health-related behaviors, including the information-seeking behavior. This study's primary objective was to compare the popularity of online searches among Indonesians using related terms relevant to COVID-19 preventive measures before and during/after the first Jakarta's partial lockdown. Identification of primary search terms was conducted based on WHO's public advice and Indonesian MOH's relevant information. Three selected terms related to commercial commodities were "masker", "hand sanitizer", and "vitamin" and two terms associated with a healthy lifestyle were "cuci tangan" and "jaga jarak". Term variations for each primary term were identified and checked for the highest hits using google.co.id website, limitted to all search, country: Indonesia, and between 30 January and 4 October 2020. The primary terms were entered to Google Trends to retrieve the term popularity during the period of 30 January-9 April 2020 and of 10 April-30 September 2020, representing the period before and during/after the first Jakarta's partial lockdown. The results show that "masker" and "vitamin" remained the two most popular terms before and during/after the lockdown. The term "jaga jarak" reached its highest peak three days before the lockdown and then decreased and levelled off afterwards. Only two search terms resulted in statistically significant differences of popularity across all 34 Indonesia's provinces before and during/after the lockdown, namely "vitamin" ($p<0.001$) and "cuci tangan" ($p=0.001$). The term "vitamin" was less popular during/after the forced lockdown, with mean difference d -13.7 (95% CI 17.8, -9.6), while "cuci tangan" gained more popularity, with d 10.8 (95% CI 4.8, 16.7). In conclusion, this study demonstrates that the community's health information-seeking behaviour about the preventive measures for the on-going pandemic can be affected by the government's action to force a lockdown.

Antonius is a lecturer at Faculty of Pharmacy, UNiversitas Jember, Indonesia. He graduated from Universitas Sanata Dharma, Yogyakarta, IDN, with bachelor degree in Pharmacy in 2005 and pharmacist degree in 2006. He continued to live in Yogyakarta where he worked as an NGO staff and a freelance programmer until early 2009. He moved to Jember and started to become a pharmacy lecturer in 2009. He graduated in 2015 with master degree in Public Health from Curtin University, WA, AUS funded by AusAID Scholarship. His research interest is on Pharmacy Public Health, Pharmact Practice & Pharmacoepidemiology. He can be contacted at anton.farmasi@unej.ac.id.V

**Dr Faizah Abdul Fatah**
Lecturer
Universiti Sains Islam Malaysia, Malaysia

# Symposium 6:
# COVID-19 PANDEMIC: A PARADIGM SHIFT IN DELIVERY OF DENTAL EDUCATION

The COVID-19 pandemic crisis has affected many sectors such as healthcare systems, educational institutions and the global economy. Dental education also faces a significant impact because dental programs have a relatively high practical component around 45 to 50% of total student learning time (SLT). Furthermore, dental discipline faces a greater risk of transmission since most of the treatment involved is an aerosol generated procedure (AGP). Since March 2020, all dental schools were closed due to movement control order (MCO) and the teaching strategy had shifted to virtual dental curriculum. New perspectives on face-to-face theoretical learning strategies, changes in assessment methods and restructuring of clinical activities to comply with established guidelines result in a shift towards the online learning and assessment process. The reopening of the faculty in stages can be done in an orderly manner that involves careful planning and implementation by the faculty. These measures are taken to ensure compliance with the guidelines set by the authorities and the support system for students and staff is also strengthened. This process is very necessary to ensure the safety of all parties in the face of this pandemic. Besides, good linkages and collaboration between faculty and other parties such as quality units, higher education providers, professional bodies and related organizations are very important to ensure the welfare of students and staff are maintained. The synergy between all these parties is very important in determining the quality of education delivered is not affected.

Dr Faizah Binti Abdul Fatah was born on 24th May 1979 and studied her high school at Sekolah Menengah King George V. She graduated in Doctors Of Dental Surgery (DDS), Universiti Kebangsaan Malaysia and further her study at Newcastle University in Master Of Science in Restorative Dentistry.  She was starting her carrier as Dental Officer with Ministry Of Health Malaysia from 2003-2009. She is currently senior lecturer and coordinator for Conservative Dentistry and Operative Technique and Applied Dental Materials beside her role as Deputy Dean Academic And International for Faculty of Dentistry, Universiti Sains Islam Malaysia (USIM).  She also has experience as Clinical Coordinator (2012-2018), Coordinator Of Dental Materials And Dental Technology (2013-2015) and Deputy Director Of USIM Specialist Clinic (Dental) (Apr-Dec, 2018). Beside that, she also involved in researches and innovations and produced publications. The awards that she received for her achievement's are Excellent Service Award (2008,2014&2019), Gold Medal at 6th Exposition on Islamic Innovation (i-INOVA) 2015 (2015) , Bronze Medal at 27th Interntional & Innovation Exhibiton 2016 (ITEX 2016)  and Silver Medal at IADR Seoul, Korea (2016)

**Prof Dr Muhammad Shamsir Muhammad Aris**
Professor in Obstetric and Gynaecology
Universiti Sains Islam Malaysia, Malaysia

## Symposium 6:
## KEY STRATEGIES TO ENSURE SAFE EDUCATION ENVIRONMNET IN THE CLINICAL SETTING

"He who studies medicine without books sails an uncharted sea, but he who studies medicine without patients does not go to sea at all"— William Osler (1845-1919)The First reported case of Covid-19 in Malaysia was on 25th January 2020 and on 6th February, Malaysia reported its first local transmission. On 18 March, Malaysia began the implementation the movement control order (MCO) and several announcements of extension until 12th May 2020. Several adjustments and announcements were made in term of Conditional MCO (CMCO) or Enhanced MCO (EMCO) up until 6th December 2020. Malaysia is currently experiencing the 3rd waves of the Pandemic.To conduct an effective teaching & learning activity for clinical years (in USIM from year 4 to year 6) is very challenging. Competency is one of the upmost importance when the students learn from following or emulating their clinical lecturers with real patients.This presentation will discuss on the strategies that our faculty has embarked in ensuring competency of our students whilst making sure a safe educational environment for both our patients and students.

Prof Dr Muhammad Shamsir Mohd Aris is currently the Dean for Faculty of Medicine & Health Sciences, USIM. He is a practicing Obtetricians, Gynaecologist & Reproductive Medicine Consultant. He is also a visiting consultant for Hospital Port Dickson, Negeri Sembilan and Hospital Sultan Haji Ahmad Shah (HOSHAS), Temerloh.Graduated with a B. MedSc (UKM) in 1990 and also MD (UKM) in 1993. Attained his Specialist training also with UKM where he was conferred with Masters in Obstetrics & Gynaecology (MOG) in 2001. Subsequently had his Reproductive Medicine sub-specialty training in UKM and Harold Wood Hospital, UK in 2006.Had been an academician for the past 21 years with an earlier career with Faculty of Medicine & Health Sciences in UNMAS (University Malaysia Sarawak) from 1999 to 2011. Moved back to West Malaysia to join USIM from 2011 until now. He had experienced working with the Ministry of Health from 1993 to 1999 where his postings included Hospital Sultanah Aminah (HSAJB), Johor Bahru, Klinik Kesihatan Nabawan, Pensiangan, Hospital Duchess of Kent (HDOK), Sandakan and Hospital Umum Sarawak,Kuching.

SPEAKER

**Dr. Suhaila Sanip**
Lecturer
Universiti Sains Islam Malaysia, Malaysia

## Symposium 6:
## BUILDING RESILIENCE IN MEDICAL EDUCATION: LESSON LEARNED FROM THE PANDEMIC

Resilience is a personal capacity to respond positively to adversities. The current COVID-19 pandemic has brought upon unprecedented challenges to medical education and practices across the globe and made resilience as one of the key determinants to persevere in this long-winded battle. Although these challenges have affected medical students and academics in various ways, common challenges include social isolation, having to switch from offline to online teaching and assessment, the need to be able to use educational technologies, and managing uncertainties. Medical education governing bodies are also affected because they have to provide guidelines and recommendations for good practises that conform to the evolving modes of teaching and learning deliveries. Literature on medical education has highlighted several constructs of resilience that are seen as contributing to overall personal wellbeing. Medical students with higher levels of resilience were less likely to experience depression and burnout, have higher social support, quality of life, and a greater understanding of their educational climate. Social support is associated with social resilience, an important factor for successful interpersonal connection between friends, colleagues, patients, and other healthcare professionals before, during and after the pandemic. Providing support to increase the resilience of the academics are as important as providing it to the students. Facilitating both students and academics to improve their resilience skills throughout their careers will contribute to having a workforce with healthy well-being and improved patient outcomes.

Dr. Suhaila Sanip is a Senior Lecturer and the Head of Medical Education Unit at the Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia. She obtained her Bachelor Degree in Medicine from Universiti Kebangsaan Malaysia (UKM), Master in Medical Education from University of Sydney, Australia and PhD in Medical Education from University of Leeds, United Kingdom. She is currently the Vice President of the Malaysian Association of Education in the Medical and Health Sciences (2019-2021) and a committee member of the Subcommittee on Undergraduate Medical Education of the Medical Education Committee, Malaysian Medical Council (2020-2022).

**Dr Rahman Omar**
Lecturer
Universiti Sains Islam Malaysia, Malaysia

# Symposium 6:
# ALTERNATIVE LEARNING STRATEGIES IN HEALTH SCIENCES

When the declaration of COVID-19 pandemic is declared by WHO in March 2020, various institutions face a dilemma in delivering their courses. As education is not considered as essential services, the most government had put to halt the education from primary till tertiary education. Although, in health educations, some institution had expedited the graduation of healthcare workers who are in needed in combating the pandemic. The challenge in health educations is when the students are forced to stay at home or hostel, and various teaching and learning activities are made remotely after the session restarted following movement control order. In higher institutions, all the course delivery must follow the body of the regulations like in Malaysia; it must follow the requirement by the Malaysian Medical Council and Malaysia Qualification Agency for the medical degree. The higher education providers should take these challenges to expedite their improvement of the TLAs in conjunction with the fourth industrial revolution. Many online platforms are already there to be utilised for remote learning. What must be done is to find the best platforms and TLAs to meet the demand and requirement. Educators also should improve themselves with knowledge and skills in digital literacy. Higher education providers should also provide support and access to all the platform to be utilised at its maximum capacities. Various TLA which usually conducted synchronously and face to face can be modified and improvised for online or remote learning.

Dr Mohd Rahman Omar is a lecturer from Medical-Based Department, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia. He also a member of the Medical Education Unit, Head of Workshop Committee of Faculty Research and Innovation Interest Group, member of USIM's Human Ethical Committee and member of the Faculty Research and Publication Committee. He is practising as Consultant Physician at USIM's Specialist Clinic and person in charge of Pusat Hemodialisis MAINS-PNB-USIM, Nilai, Pusat Perkhidmatan Hemodialisis USIM, Nilai and Pusat Hemodialisis Fasa, PJ.He graduated with MD from UKM followed by Doctor of Internal Medicine and Master of Medical Education from UKM. He has Specialty Certificate in Endocrinology from Royal College of Physician UK in 2017 and certified Diving Medical Officer from Institute Hyperbaric and Underwater Medicine and currently still undergoing training in Endocrinology subspeciality. His interest as an academician is in clinical teaching, particularly in teaching methods like cased based discussion and team-based learning.

SPEAKER

**Prof Dato' Dr Syed Mohamed Al-Junid,**
Lecturer
Kuwait University, Kuwait

## Symposium 7:
## CASEMIX SYSTEM: MANAGING RESOURCES AND INFORMATION DURING COVID-19 PANDEMIC

Covid-19 pandemic posed huge challenges to health systems of the world today. The pandemic, which was announced by WHO in March 2020 has affected more than 60 million people in more that 200 countries and territories. Countries, especially in developing world are facing acute shortage of financial resources in managing the pandemic. The situation is worsen with the lack of information to support evidence-based policy and interventions to manage the pandemic effectively. Casemix system, which was developed and implemented in early 80s is highly relevant to be used as a tool to support the management of Covid-19 pandemic. Conventionally, casemix is used to enhance efficiency and quality of care in health services. Costing information in casemix system can be used to track the financial resources used to manage Covid-19 cases. Significant cost-savings were proven in hospitals that managed cases of outliers identified through implementation of casemix system. The service weight is another important casemix parameter that can be used to enhance efficiency in health services. Service weights for intensive care units, nursing services and pharmaceutical services are among the casemix parameters that can be utilized to identify specific resource need for provision of efficient services in management of covid-19 pandemic. The outcome variable in casemix system can be used in quality assurance programme to ensure that variations of care can be minimised in clinical management of Covid-19. In conclusion, information derived from proper implementation of casemix system can help hospital managers to enhance quality and efficiency in management of Covid-19 cases.

Professor Dato' Dr Syed Mohamed Aljunid is the first Professor of Health Economics in Malaysia. He is the first Malaysian to obtain PhD in Health Economics from London School of Hygiene and Tropical Medicine in 1995. He obtained his MD from National University of Malaysia and Master of Science in Public Health from National University of Singapore. He is the Founding Head of International Centre for Casemix and Clinical Coding, a centre of excellence on casemix and health economics research in Faculty of Medicine UKM, which was established in 2011. Prior to this he served as a Senior Research Fellow of United Nations University International Institute for Global Health from 2006 to 2014. Currently, he is appointed as the Founding Professor and Chair of Health Policy and Management, Faculty of Public Health, Kuwait University from 1st January 2016. He is also the Director of Postgraduate Programmes of Faculty of Public Health Kuwait University. He is now appointed as a consultant and adviser to Ministry of Health of Kuwait on Control and Prevention of COVID-19 pandemic. His main interest is in the strengthening of health care system of developing countries through research and development in health policy, health economics and financing. He has conducted more than 50 research projects; most of the projects are to support policy decisions on health economics and financing. He has supervised 45 PhD scholars and more than 100 Master students. He is currently involves in supporting a number of developing countries to implement Social Health Insurance programmes. His work on Social Health Insurance covers many countries around the world including Malaysia, Indonesia, Philippines, Mongolia, Vietnam, Bhutan, China, Saudi Arabia, Kuwait, United Arab Emirates, Sudan, Nepal, Uruguay, Iran, Chile, Kenya and Ghana. He served as the Co-chair Morbidity Technical Advisory Group of ICD-11 Revision of World Health Organisation-Family of International Classification from 2007-2016. He is the Founding President of Malaysian Health Economics Association (MY-HEA) and Malaysian Society of Pharmacoeconomics and Outcome Research (MY-ISPOR) and the current Deputy-President of the Public Health Medicine Specialists' Association of Malaysia. He has published more than 180 journal articles, book chapters and scientific reports with 11,000 citations and h-index of 36. He is the developer and copyright owner of six casemix software: UNU-CBG®, INA-CBG®, MY-DRG®, CodeAssist®, DataTool Pro® and CCM®. He has presented more than 250 papers in local and international conferences, seminars and workshops. He has authored and co-authored seven books. His recent book is " Noise Induced Hearing Loss in Manufacturing Industries: How Much Does It Cost to the Workers, Families and Society?

**Prof Dr Maznah Dahlui**
Public Health Physician
University of Malaya, Malaysia

## Symposium 7:
## ECONOMIC IMPACT OF COVID-19 TO HEALTHCARE SYSTEM

The ongoing COVID-19 pandemic has been associated with considerable healthcare and humanistic burden and is expected to lead to significant economic and financial implications in addition to the clinical burden. The country needs to be prepared to cope with the additional pressure to the healthcare system. Currently, all COVID-19 cases in Malaysia are being treated in government healthcare facilities, with an additional budget of RM1 billion has been pledged to the Ministry of Health to handle this crisis. There are many uncertainties during this pandemic and the magnitude of the healthcare and economic consequences to Malaysia is unknown. The COVID-19 pandemic will impact healthcare systems and patients in many aspects, with the most immediate need being the increased healthcare burden and the increased demand for healthcare resources including healthcare personnel, healthcare facilities, increased load of clinical episodes. It is difficult to estimate whether the additional funding to the Ministry of Health acquires healthcare equipment and consumables necessary to fight this pandemic would be sufficient for the nation. This increased allocation for healthcare funding will be needed amid the anticipated global and national economic recession. To effectively contain the pandemic at a national level, Malaysia will need to continue to invest heavily into the healthcare system and there is a need for on-going work to estimate the cost to the healthcare system to contain this pandemic.

Dr. Maznah Dahlui is a Public Health Physician and a Professor at the Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya. She lectures on health economics, supervises and conducts economic evaluation research. She is currently the Deputy Dean (Development) of Faculty of Medicine and is a senate member of University of Malaya. Her experiences working in the Ministry of Health, Malaysia provides good linkages with the ministry resulting in consultancy works on evaluating and monitoring the National Strategic Planning of HIV/AIDs and as UNAIDs consultant for the National AIDs Spending Assessment in Malaysia. She is in the research team for the Study of Disease and Injury Burden, Malaysia. Her works with the Ministry of Health was acknowledged by World Health Organization who conferred her to do the study to evaluate the practice of female circumcision in Malaysia. Dr. Maznah has been appointed as the Chair of Malaysian Adolescent's Health Clearing House since 2013 and as a Tecnical Advisory Committee for Health Economic Technologies Evaluation since 2015, by the Ministry of Health. Dr. Maznah has great interest on breast cancer and has been involves in several studies on breast cancer including the economic evaluation of the screening and treatment of breast cancer, and the relationships between lifestyles and the quality of life in breast cancer patients. Internationally, Dr. Maznah is collaborating with Uni. of Leeds, United Kingdom, Uni. of Singapore and Uni. Al Aen, UAE looking into factors causing delay in diagnosis and treatment for Breast Cancer. As for infectious diseases, she conducted the cost-effectiveness analysis of Harm Reduction Program for HIV and on Hepatitis C management. Dr Maznah is currently also holds the position of Regional Director, Secretary and MPH accreditation reviewer of APACPH and an International Advisory Committee of the AUN- Health Promotion.

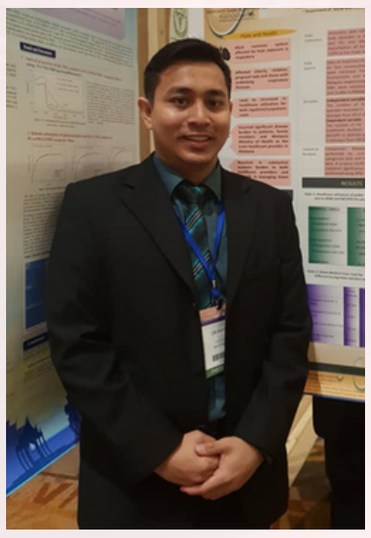
**Dr Amirah Azzeri**
Lecturer
Universiti Sains Islam Malaysia, Malaysia

## Symposium 7:
## ECONOMIC IMPACTS OF PANDEMICS: WHAT HISTORY TAUGHT US

COVID-19 infection has significantly restrained global economic activities in addition to the substantial burden on healthcare systems. The pandemic has caused negative economic impacts to the society due to loss of a job, loss of income and under-employment. It has also caused direct economic implications to patients due to high healthcare expenditure for disease management as well as an indirect financial burden due to premature deaths, workplace absenteeism and reduction in work productivity. COVID-19 patients incurred high out-of-pocket (OOP) expenditure for investigations, ward admission and other facility-based costs. At the same time, the patients experienced a loss of income due to hospitalization and quarantine. The OOP expenditure for tests and prescription drugs were approximately more than the average annual OOP healthcare expenditure during the non-COVID time. Uninsured people are highly exposed to high OOP expenditure for Covid-19 management. The OOP expenditure for hospitalisation was one-third of their average monthly income. Apart from the direct medical expenditures, patients have also incurred considerable OOP expenditure for transport and childcare during hospital admission and compulsory quarantine. Due to the significant healthcare expenditure required, many individuals delayed hospital care and turned to alternatives medicine such as self-medication, traditional medicines, and drugs from street vendors. COVID-19 crisis has also impacted social life across the globe. Economic shock took off soon after the initial outbreak of the pandemic. International trade slowed down and financial markets plunged as early as February 2020. Labour markets were further affected by lockdowns implemented, which resulted in a dramatic rise in unemployment and under-employment. These scenarios provide evidence on the importance of local action to help address the short-term and long-term negative financial consequences of the coronavirus (COVID-19) outbreak. Plan of action on mitigating the health and economic impacts of the Covid-19 pandemic is essential to ensure the survival and well-being of the people.

Dr Amirah Azzeri completed her PhD in health economics at University of Malaya in 2019. She obtained an MBBS from Universiti Sains Islam Malaysia and a Master of Public Health from the University of Sydney. Her research focuses on economic burden of Hepatitis C management in Malaysia. Apart from that, she also works on several disease prevention and health promotion programs such as community outreach program to find undiagnosed hepatitis patient in Malaysia with ‘Hepatitis Free Malaysia’ and Coalition PLUS. Research findings by Dr Amirah and her team members on disease and financial burden of Hepatitis C infection was used by the Ministry of Health to obtain compulsory licensing agreement for Direct-Acting Antiviral (DAA) drug for national hepatitis C program in Malaysia. She has experience in case-mix costing study for medical and dentistry services costing analysis. She is also currently working on a project that examines the health status of coastal community among people at Tun Mustapha Park.  Her other areas of interest include health policy, health education, disease prevention and disease modelling. She is one of the task force members for Covid-19 control at national level and she is also one of the researchers under the COVID-19 International Modelling Consortium (CoMo Consortium) that represents Malaysia for disease modelling on Covid-19.

SPEAKER



**Dr Mohd Hafiz Jaafar**
Lecturer
Universiti Sains Islam Malaysia, Malaysia

## Symposium 7:
## WILLINGNESS-TO-PAY AND ABILITY-TO-PAY FOR COVID-19 PREVENTIONS AND TREATMENTS: ARE WE READY?

The covid-19 pandemic will have a profound financial and economic impact on the general population. Out-of-pocket expenditure on preventive measures mainly face masks, hand sanitizers, gloves and others increase significantly during this pandemic. Inadequate production and mounting disruption of medical supplies caused by the rising demand during the outbreak resulted in extensive market manipulation and surge in prices of those preventive measures, which will lead to significant expenditure and catastrophic health payment. Apart from that, when the vaccine is available in future, the expenditure to purchase the vaccine through out-of-pocket payment will cause a significant financial burden to many people especially those in the B40 group. So, it is crucial to examine the willingness-to-pay and ability-to-pay of future Covid-19 vaccination. This could facilitate government to set appropriate market prices to ensure the affordability of covid-19 vaccination and to improve accessibility to covid-19 vaccination among Malaysians so that a big proportion of the people will be vaccinated and protected from this disease. An economic analysis to estimate the potential consequences of this pandemic to our country and forecast different national strategies would help to inform national decision-making concerning the development of national policies for Covid-19 pandemic. National estimates can help inform the development of national treatment and screening strategies for the Covid-19 pandemic. Sufficient resources and financial commitment at the national level will need to be available for our country to successfully navigate our way through this pandemic.

Dr. Mohd Hafiz Bin Jaafar is a Public Health Medicine Specialist and currently works as a Senior Medical Lecturer under the Community Health Unit, Department of Primary Care, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia (USIM).He was born in 8th of April 1986 in Kuala Lumpur, Malaysia. He graduated from Universiti Sains Islam Malaysia (USIM) and obtained his Bachelor of Medicine and Surgery (MBBS) degree in 2011. He worked with Ministry of Health Malaysia from 2011 to 2013 as a house officer and medical officer before decided to join his alma mater as a trainee lecturer in 2013. He then pursued his study and obtained his Master of Public Health (MPH) degree with distinction from the University of Sydney in 2015. He was also the first student in his cohort to complete his Doctor of Public Health (DrPH) study from the University of Malaya in 2019.His main research area is Health Economics with a special interest in Environmental Health. Previously, he involved in a few projects related to the evaluation of economic impact of haze-related illnesses in Malaysia. Due to his contribution, he was awarded with the “Young Investigator Travel Award (YITA)” during the Asia Pacific Academic Consortium of Public Health (APACPH) Conference in 2019. Currently, he is working on the research project related to the economic impact of COVID-19 in Malaysia and restoration of Sungai Kim Kim in Pasir Gudang.

**Assoc Prof Dr Supangat**
Lecturer
University of Jember, Indonesia

# Symposium 8:
# AGROMEDICINE: FARMERS HEALTH AND SAFETY DURING COVID-19 PANDEMIC.

The COVID-19 Pandemic present and predictable effect of Health, food security and work cyckles. Like a doctor, Farmer has very inportance rules as a food provider and also they must work from field instead of work from home that way agromedicine should protect farmer during pandemic. To resume the strategy for keep farmer and family health and save during COVID-19 Pandemic. Indonesia have 33.487.806 farmer with 25 436 478 and 8 051 328 male and female, respectivly. Number of Agricultural Households by Province and Age Group of Main Farmers was >45 years old 17.771.389 from 27 .682 .117. Number of Farmers by Province and Internet Use 4 501 415 and 28 986 391 not used internet. Indonesia farmer have risk to COVID exposure and disease and need specific strategy for manage and prevention program for Farmer family

Supangat MD MSc PhD is a Pediatric Surgeon, Dean of Medical Faculty Jember University, and Head of PANAH (Pesticide Exposure and Heath) Research Center, Jember University.He is an associate professor in the Pharmacology department with research interests in molecular pharmacology, Protein Crystallography, congenital Anomaly, and Pesticide Exposure and Health

**Dr Angga Mardro Raharjo**
Pulmonologist
University of Jember, Indonesia

## Symposium 8:
## CONVALESENCE PLASMA THERAPY FOR COVID-19: IS IT EFFECTIVE?

In the absence of specific therapy and vaccines against SARS CoV-2 infection, covalescent plasma therapy (CP) is an option for people with COVID-19. CP contains specific antibodies, albumin, clotting factors, and immunomodulators. CP has been tested on Spanish Flu, MERS, SARS, Avian Influenzae, and Ebola. Neutralizing antibodies are the main contributor to protection against SARS CoV-2 infection. Looking at the effectiveness of CP for severe and critically ill COVID-19 patients. Does CP really promising therapy for people with COVID-19? Methodology A cross sectional observational analytic study. Subject of the study was a confirmed COVID-19 patient with severe and critically ill at Jember Klinik Hospital for the period March-November 2020. The dose of CP was 4-5 ml / kgBW. A total of 10 people with severe and critical symptoms of COVID-19 received CP. The results of the study on 10 patients were found 7 successful and 3 were not. Successful patients show clinical improvement and negative conversions during treatment. Three unsuccesfull patients died caused by ARDS who had receiving mechanical ventilator support.  Convalescent plasma therapy has shown very promising results for COVID-19 patients. Convalescent plasma therapy become an option for people with moderate or severe critical illness of COVID-19.

I was born at Surabaya East Java in 1980. Completed my study as a doctor from Airalngga University at 2017. Then served as a PTT doctor in the western part of East Java for 3 years before becoming a lecturer at the Faculty of Medicine, University of Jember (FK Unej). Continuing his study to become a Pulmonologist at FK UNS, Surakarta in 2013. Currently, as a staff of the Public Health Departemnet of FK Unej and member of Internal Medicine laboratory of FK Unej / RSD Dr. Soebandi Jember. Now fighting against the COVID-19 pandemic in 3 hospitals in Jember of East Java province.

**Dr Nurfika Asmaningrum**
Lecturer
University of Jember, Indonesia

## Symposium 8:
## PROMOTING NURSE'S WELL-BEING THROUGH NURSING WORK ARRANGEMENT DURING PANDEMIC COVID-19

Nurses are the largest group of professionals, thus the overall quality of the health care system substantially depends on the performance of nurses. Nurses as part of health care providers are a group of health workers who are at risk of occupational exposure due to the transmission of the COVID-19 disease, compared to other types of work. During pandemic COVID-19, the nurses are at the forefront of handling COVID-19. Thus, the importance of protecting occupational health in the nursing sector during the COVID-19 pandemic is compulsory. Therefore, in a health care system, a good working adjustment model for nurses, especially during the COVID-19 pandemic, will affect their productivity and performance. The need for comprehensive support should be provided so that the wellbeing status of nursing personnel is maintained. There are five main categories that are important in relation to the adjustment of the nursing work system during the COVID-19 pandemic in hospital health service, including the management of nursing personnel, working regulations for nurses, setting the work patterns of nurses, setting up nurse work procedures, and the flexibility of the nurse's work system. Management of nursing personnel leads to arrangements in managing the workforce of nurses assigned to the COVID-19 specials rooms. The work regulations for nurses in hospitals during the COVID-19 pandemic influence their working principles in providing health services during the COVID-19 pandemic. The adjustment of the work pattern is concerned with the arrangement of a nurse's work model specifically adapted to the situation and conditions in the COVID-19 pandemic. The adjustment of nursing work procedures leads to regulating nurse's treatments at work to anticipate the spread of the COVID-19 disease. The flexibility of nurse's work system is related to the freedom in managing nurses assigned in treating COVID-19 patients. Adjusting the work system is a form of social support in providing a sense of security to nurses. In addition, the existence of adequate support for nurses through the adoption of a safe work environment is very important to support nurses in nursing practice and protect the physical and mental health of nurses. The adjustment of the work system for nurses during the COVID-19 pandemic can help reduce the negative impact of the crisis and reduce nurse anxiety. Because the level of anxiety about COVID-19 may have a negative effect on their well-being, thus managing emotional intelligence and positive emotions also aid in combating nurses' occupational stress and improve their well-being. Through the work system arrangement nurses strive to minimize the negative effects of work-life imbalances so that their productivity, work morale, service quality, commitment and dedication to work can be maintained properly. The nurse's work-life balance aims to achieve harmony in nurse's physical, emotional, and spiritual health.

Nurfika Asmaningrum, RN., MN., Ph.D., is an Assistant Professor in Faculty of Nursing, University of Jember. She was born on January, 12, 1980 in Jombang, East Java of Indonesia. She was graduated her nursing doctoral in 2019 from Chang Gung University, Taiwan. Her subject focused on Nursing Management and Fundamental of Nursing Science. Her research mainly focuses on nursing ethics, transcultural nursing, and nursing management with qualitative research design. In 2020, her publication entitled "Threats To Patient Dignity In Clinical Care Settings: A Qualitative Comparison of Indonesian Nurses and Patients" awarded as high impact article and productive author (artikel ilmiah berkualitas tinggi dan penulis produktif) from National Research and Innovation Agency (RISTEKBRIN).

**Assoc Prof Dr H. Iwan Setiawan Adji**
Ear, Nose and Throat Surgeon
Universitas Muhammadiyah Surakarta, Indonesia

# Symposium 8:
# EFFECTS OF SNAKEHEAD FISH EXTRACT CONSUMPTION ON COVID-19 PATIENTS

The Covid 19 disease caused by SARS-CoV-2 is currently the biggest health challenge for the community. There is still no approved drug or vaccine. Food supplements are thought to strengthen patient endurance and recovery. One of the potential sources to be developed as a nutritional supplement is snakehead fish extract. Apart from being rich in amino acid and fatty acid nutrients and high protein content, snakehead fish extract has pharmacological activity. This study was conducted to determine the effect of snakehead fish extract supplementation in COVID-19 patients. The method used was experimental design with a control group of 4 patients and treatment of 7 patients of covid 19. The parameters analyzed were clinical, blood saturation, blood laboratory at day 1 and 5. The results showed that the incidence of the neutoril lymphocyte ratio decreased and was significantly different between the snakehead fish extract recipient group and the control group. Snakehead fish extract can be considered as an adjuvant therapy in the case of Covid 19, a treatment option that is friendly to the body.

Dr Iwan Setiawan Adji was graduated in Doctor's of Medical, Faculty of Medicine, Universitas Gadjahmada Yogyakarta, Indonesia in the year of 1990. He was then graduated his PPDS I THT-KL in Ear, Nose and Throat Speciality at the same University in 2000. Due to his passion in research, he was pursued his doctorate at Universitas Airlangga and successfully graduated in the year of 2015. He is currently a 'Pembina Utama Muda, IV/C' and also Director of the RSUD Karanganyar District Hospital. He also as clinical instructur and lecturer for under graduate medical students, clerkship rotation medical students, post graduate magister management students of Universitas Muhammadiyah Surakarta (UMS) until today. He ever been as the head of Public Health Centre at Timor-Timur, director of Ambeno District Hospital Timor Timur, head of  education and training committe, hospital accreditation committee and pharmacy department previously. On 2016-2019, he was also chairman of the Surakarta branch of the PERHATI KL (Indonesian Association of Ear Nose and Neck Surgery Specialists.  Some of his research are : Anti-Inflammatory Activity of Snakehead Fish Extract (Channa) in Chronic Rhinosinusitis Patients at Karanganyar District Hospital, Expression of HSP70, HSF-1, Nf-kB and Bcl-2 in Recurrent Nose Polyp Tissue of Chronic Rhinosinusitis Patients.

**Assoc Prof Dr. Budi Suprapti**
**Lecturer**
Universitas Airlangga, Indonesia

# Symposium 9:
# CHALLENGES IN MANAGING PPE AND CLINICAL PHARMACY SERVICES AT A COVID-19 REFERRAL TEACHING HOSPITAL

The Covid-19 pandemic demands various adaptations and policy determinations to implement safe services either for patients or health care workers in hospitals. The referral hospitals are required to provide clinical treatment and management of Covid-19. As a member of the healthcare professionals, hospital pharmacists have responsibilities to join the medical collaborative team and provide pharmaceutical care services to Covid-19 patients. This presentation highlights the challenges faced by hospital pharmacists in managing personal protective equipment (PPE) and implementing clinical pharmacy services in the pandemic era based on real-life experience at the Universitas Airlangga Teaching Hospital as one of the Covid-19 referral hospitals in Indonesia. Hospital pharmacists have experienced a challenging situation and hard time in providing pharmaceutical care services to Covid-19 patients. All confirmed cases of Covid-19 have been managed by the referral hospital in a different building apart from the main building to contain further spread of the pandemic. Some problems or challenges faced by hospital pharmacists including (1) developed a new pharmacy unit at the Covid-19 central care with adapted standards, (2) contributed to provide medications for Covid-19 based on available evidence, medication safety monitoring, and managed shortage of medicine, (3) managed shortage supply of PPE although there were abundant PPE donations which required quality assessment, and (4) overcome limited human resources and capacity to provide clinical education. To overcome these challenges, well coordination and communication were required both upward-downward, horizontally in the internal hospital management, starting from planning, implementation, and continuing stages. Coordination and communication with the community and other stakeholders were also necessary. The challenges in managing PPE and providing clinical pharmacy services in the Covid-19 referral teaching hospital demanded good coordination and communication from all hospital parties.

Dr. Budi Suprapti—Associate Professor and Head of Department of Clinical Pharmacy in the Faculty of Pharmacy, Universitas Airlangga and Manager of Pharmacy at the Universitas Airlangga Teaching Hospital, Surabaya, Indonesia. She has been teaching for 34 years in subjects of clinical pharmacokinetics and (advanced) pharmacotherapy. Her research interest includes pharmacokinetic and clinical pharmacy particularly related to endocrine and kidney diseases. In addition to teaching activities, she has clinical pharmacy experiences more than twenty years. She has developed hospital pharmacy services and internship program for the entry-level pharmacy education at the Universitas Airlangga Teaching Hospital. She also serves as active members of The Indonesian Pharmacist Association and The Indonesian Hospital Pharmacist Association. She has been invited as speakers in seminars, conferences, or workshops.

SPEAKER

**Dr Elida Zairina**
Lecturer
Universitas Airlangga, Indonesia

# Symposium 9:
# SCREENING IN NON-COMMUNICABLE DISEASE AND HOW COMMUNITY PHARMACIST CAN PLAY A ROLE DURING PANDEMIC COVID-19

The rise in the total number of deaths from non-communicable diseases (NCDs) has increased the number of healthy years lost from these conditions. Advances in medicine have delayed the transition from chronic to disability; the incidence of extreme disability has declined, but there has been a rise in milder chronic diseases. Tobacco use, physical inactivity, alcohol intake and inadequate diet and nutrition are four main risk factors for the rise of chronic diseases. COVID-19 is a pandemic that must highlight the high burden that NCDs impose on healthcare services. During the COVID-19 pandemic, many countries saw the importance of tighter restrictions on tobacco and alcohol as a significant step towards reducing NCDs. However, some have failed to balance public health measures against predatory commerce and economic recovery. Strengthened health system aimed at resolving NCDs should seek to strengthen the prevention, early detection, treatment and sustained management of people at high risk of NCDs. Community pharmacies are ideal locations to initiate early detection and screening services for chronic diseases and also to assist patients for monitoring and managing their chronic condition. Evidence has shown that almost all pharmacy-based screening studies included the opportunistic screening of people attending the community pharmacy or responding to screening advertisements. Screening interventions in pharmacy mainly used medical equipment for physiological measurements and questionnaires or risk assessment forms to determine the risk of getting the diseases. Staff training or education about screening methods and the target disease was part of the intervention in most community pharmacy-based screening studies. Studies have shown that participant satisfaction with pharmacy-based screening was consistently high. Physicians and pharmacists were both pleased with the screening programs. Providing flexible screening interventions requiring less-invasive tests is likely to encourage the consumer to participate in the program.

Dr Zairina is a lecturer at the Department of Pharmacy Practice, Faculty of Pharmacy, Universitas Airlangga, Indonesia from 2002. She received her Bachelor of Science in Pharmacy and Apothecary from Universitas Airlangga in 2002 and received her Master of Public Health from Universiteit Maastricht, the Netherlands in 2006. She completed her Doctoral degree in Monash University, Melbourne, Australia in 2015. In 2017 she received an Endeavour Research fellowship to do a project related to asthma management in Monash University, Australia. She has a background in conducted a clinical trials to investigate the role of telehealth for optimising asthma management during pregnancy and the role of pharmacist in asthma management. Her particular research interest is chronic disease management during pregnancy particularly those with asthma and has publications in the area. She currently running projects about risk assessment in non-communicable diseases and barriers and medication adherence. She has various experiences in management and organisations; as a secretary of the research committee of Faculty of Pharmacy Airlangga University (2008-2011) and an active member of Airlangga Journal Development Committee (2008-2011). She has been pointed as a Chief Editor of Jurnal Farmasi dan Ilmu Kefarmasian Indonesia (JFIKI) from Universitas Airlangga since 2016. Currently, she is also the coordinator of material tests in the Student Admission Centre at Universitas Airlangga.

**Dr Nor Eyzawiah Hassan**
Ear, Nose and Throat Consultant
Universiti Sains Islam Malaysia, Malaysia

## Symposium 9:
## SWABBING FOR COVID-19: IS IT ALL IN THE NOSE?

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) was initially an outbreak in Wuhan, China, has been rapidly spread across the globe. The pandemic has forcing massive screening to identify the infected populations. Viral samples for diagnostic tests can either be taken from the upper (nasopharyngeal/ oropharyngeal swabs or saliva) or lower respiratory tract (sputum or tracheal aspirate or bronchoalveolar lavage- BAL). The lower respiratory tract specimen commonly sampled in symptomatic or severe cases. However, the healthcare practitioners continue fiercely debating the use of methods for screening. The present literatures on upper respiratory tract sampling in COVID-19 have provide recommendations to improve the screening. The viral load of SARS-CoV-2 RNA in the upper respiratory tract was significantly higher during the first week and peaked at 4-6 days after onset of symptoms, during which it can be potentially sampled. Proper nasopharyngeal swab has demonstrated significantly 10 times higher in viral load than oropharyngeal swab (95% CI 4.6–22.6, $P < 0.001$), with higher sensitivity (98.3%, $P<0.05$) and higher detection of positive rate (46.7%, $P < 0.001$). In addition, considering the anatomical structures in the nose and nasopharynx, it may reduce the discomfort and injury during the blind procedure, and increase the diagnostic yield. Nevertheless, patient self-collected throat washing has been shown to contain higher viral load than nasopharyngeal or oropharyngeal swab. The high viral load in oropharynx because nasopharyngeal and bronchopulmonary secretions that move by mucociliary activity towards the oropharyngeal area while the patients are in a supine position during sleep. Besides, potential complications to patients like discomfort and bleeding, as well as viral transmission to the health workers through various methods of sampling also need to be considered. As conclusion, routine nasopharyngeal swab of suspected COVID-19 infection should be the method of choice for screening and monitoring purpose. Routine oropharyngeal swab should be replaced by throat washing which has demonstrated better diagnostic accuracy, and lower risk of virus transmission.

Dr Nor Eyzawiah has obtained her Specialist Master in Otorhinolaryngology, Head & Neck Surgeon from Universiti Kebangsaan Malaysia (UKM) in 2014. She has been practicing as a Consultant ENT Specialist in Hospital Ampang and Klinik Pakar Universiti Sains Islam Malaysia (USIM), whilst being a Medical Lecturer in USIM. She has received multiple awards, active in research and journal publications, and has presented in multiple conferences such as Malaysian Society of Otorhinolaryngology and Head Neck Surgeons (MSO-HNS). She has a research interest in COVID-19, Otorhinolaryngology, Esport and Language delay in children.

**Mr Razrim Rahim**
General Surgeon
Universiti Sains Islam Malaysia, Malaysia

# Symposium 9:
# STAYING SAFE IN A PANDEMIC: PERIOPERATIVE CARE

The COVID-19 pandemic has affected our lives as never seen before. Many aspects of healthcare are experiencing changes and disruptions to it's normal routine. One aspect of healthcare most affected by these changes is the perioperative care of surgical patients.Peripeorative care is the care of patients before, during and after surgery. Due to the highly infectious nature of COVID-19, surgical patients and those looking after them are at risk of contracting the disease from each other. Contracting the infection is more critical of a problem in the perioperative setting as patients and healthcare workers are more exposed to each other compared to other healthcare situations.To ensure surgical services are not disrupted during the pandemic, hospitals and authoritative bodies such as the Ministry of Health and surgical societies have developed guidelines for perioperative care. Besides the continuation of important surgical services, the guidelines are in place to reduce the transmission of COVID-19 and to avoid over burdening of the healthcare facilities during this pandemic.Healthcare workers must be flexible and be prepared to follow these guidelines based on the situation of the pandemic. The guidelines are adjusted according to the severity of the pandemic. Effective communication between the authorities and healthcare workers is of vital importance. Patients understanding is also necessary as inevitably, some clinic appointments and surgeries will have to be postponed. During this pandemic, hospitals in Malaysia have been designated into COVID-19, hybrid, or non-COVID-19 hospitals. The experience of a surgical unit at a non-COVID-19 government hospital is brought to light during this presentation. The steps taken are part of the concerted efforts in Malaysia to contain COVID-19 and hopefully will help to 'flatten the curve' of this pandemic.

Mr Razrim is a general surgeon and a senior lecturer at Universiti Sains Islam Malaysia. He qualified from the University of Liverpool in the United Kingdom and underwent his surgical residency at Universiti Kebangsaan Malaysia in Kuala Lumpur.Besides his academic duties, Dr Razrim practices surgery in a government hospital in Negeri Sembilan. He also has visiting rights in two private hospitals.Dr Razrim is a member of the World Society of Emergency Surgeons (WSES) and the Trauma Surgical Society of Malaysia (TSSM). He sits on the editorial board of the Journal of Surgery and Trauma Care.During this COVID-19 pandemic, Dr Razrim continues to be involved with surgical patient care by adapting to the required changes and SOPs outlined by authoritative bodies and surgical societies. Dr Razrim volunteered as a healthcare frontliner with the Malaysian Ministry of Health and the Malaysian Army screening patients and taking swab samples during the early part of the Movement Control Order (MCO).

SPEAKER

**Dr Febi Dwirahmadi**
Lecturer
Griffith University, Queensland, Australia

## Symposium 9:
## CHALLENGES TO EFFECTIVE PANDEMIC RESPONSES AND DETERMINING PRIORITY MEASURES TO PREPARE FOR THE FUTURE.

Dr Febi Dwirahmadi is a Lecturer in Global Health at School of Medicine and the Indonesian Program Coordinator for the Centre for Environment and Population Health, Griffith University, Queensland, Australia. He gained his PhD and Master of Science in Public Health degree from Griffith University. He also holds a Bachelor of Public Health (Epidemiology) from the University of Indonesia. His expertise and research interest include: Global health and regional security; linking disaster risk reduction, climate change adaptation, and sustainable development; public health in emergency (Community risk communication and risk awareness); Community health program design and evaluation; and community resilience building.

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| 1610 - 1620 | Hamzah, Zahreni | OP3.11 | The Role Of Circadian Rhythm On Distress And Anxiety Regulation In Elderly People At Pandemic Covid-19 |
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| 1510 - 1520 | Samsudin, Ahmad Dzulfikar | OP4.5 | Assessment of USIM's Faculty of Dentistry Students Psychological Wellness during Movement Control Order COVID-19 |
| 1520 - 1530 | Mohamed, Nusima | OP4.6 | Implementation of E-Learning In Universiti Sains Islam Malaysia (USIM) Dental School During Covid-19 Pandemic Crisis. |
| 1530 - 1540 | Ab Rahman, Siti Soraya | OP4.7 | The Use of Simulated Patients in Objective Structured Clinical Examination During COVID-19 Pandemic: Report of an Initial Experience |
| 1540 - 1550 | Sulistyaningsih, Erma | OP4.8 | The S-protein Point Mutations of SARS-CoV-2 in Indonesian Covid19 Patients |
| 1550 - 1600 | Tolla, Nelly | OP4.9 | Neutrophil to Lymphocyte Ratio, Platelet to Lymphocyte Ratio and Absolute Lymphocyte Count in Coronavirus Disease Patients. |
| 1600 - 1610 | Hermansyah, Bagus | OP4.10 | Parasite Immunomodulation in Endemic Countries: Does it Affect The Prevalence of Covid-19? |
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| 1520 - 1530 | Ghani, Syamsul Abu Baharin | OP5.6 | Psychological Impact of the COVID-19 Pandemic among Undergraduate Students: A Systematic Review |
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| 1540 - 1550 | Izani, Izlyn | OP5.8 | Psychological Impact Of Covid-19 Among Medical Students In A Public Higher Institution In Malaysia |
| 1550 - 1600 | Nabila, Annisa Ayu | OP5.9 | Impacts of COVID-19 Pandemic on Anxiety among Undergraduate and Clerkship Medical Students |
| 1600 - 1610 | Mohamad Mustafa, Nuralia Akma | OP5.10 | Nasopharyngeal and Oropharyngeal Swab Sampling For Diagnosis in COVID-19 in large scale screening centers; Which method do we prefer? |
| 1610 - 1620 | Nur Quratul Ain, Rozaimee | OP5.11 | Postpartum Care During Covid-19: The New Norm |
| 1620 - 1630 | Shasha, Sheikh | OP5.12 | Online Learning Readiness Among Medical Students In The Wake Of COVID-19 Pandemic |
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| 1410 - 1420 | Ida Ayu Yunita Widya Antari | OP6.2 | Determination of total phenolic content and classification models of crystal guava leaves powder (Psidium guajava L.) from different altitudes using NIR spectoscopy method and chemometrics |
| 1420 - 1430 | Tantut Susanto | OP6.3 | The Relationship Between Parenting of Young Mother and Nutritional Status among Under-Five Children in Public Health Canter of Panti, Jember Regency, Indonesia |
| 1430 - 1440 | Istidamah, Rafika | OP6.4 | Animal Model Diabetes Sepsis on Wistar Rat Strain (Rattus norvegicus) Induced by Streptozotocin and Bacteria Staphylococcus aureus Based on Leukocytes and E-cadherin levels |
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| 1450 - 1500 | Derani, Qatrun Nada | OP6.6 | Inhibition of MCF-7 Proliferation by Stingless Bee Honey: The Role of MicroRNA |
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| 1510 - 1520 | Saldy Meirisandy | OP6.8 | The Correlation Between Serum Vitamin D Level And Anti-dsDNA Antibody Titers in Systemic Lupus Erythematosus Patients |
| 1520 - 1530 | Hapsari, Bramantyas Kusuma | OP6.9 | The Relationship Between Nutrition Knowledge And Fast Food Consumption Habits With Nutrition Status In Medical Faculty Of Muhammadiyah Makassar University Batch 2019 |
| 1530 - 1540 | Juni Ekowati | OP6.10 | Comparison of Conventional Heating and Microwave Irradiation Assisted on Synthesis of Methyl ortho-Methoxycinnamate as Antithrombotic Candidate |
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| 1420 - 1430 | Letchumanan, Geetha | OP7.3 | Clinical Parameters In Diabetic And Non-Diabetic Patients: A Case-Control Study At A Health Clinic In Klang Valley |
| 1430 - 1440 | Lee Lee Chin | OP7.4 | Otitis Media Effusion And Its Association With Early Childhood Caries |
| 1440 - 1450 | sharom, Syaziyah | OP7.5 | A Descriptive Study of the Reaction Time and Muscle Strength of the Male Youth Involved in Esports in Klang Valley |
| 1450 - 1500 | Haq, Arinal | OP7.6 | Knowledge and Practice of Mothers on Common Cold Self-Medication in Children Under Five Years |
| 1500 - 1510 | Khoiri, Abu | OP7.7 | Utilization Analysis of Referral Health Services in The Indonesian National Health Insurance Program: A Sample of Big Data Analysis |
| 1510 - 1520 | Perdani, Peni | OP7.8 | Nursing Implementation for Children with Febrile Seizure |
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| 1540 - 1550 | W.M. Tan | OP7.11 | Challenges in the Management of Refractory Atrial Tachycardia in a Gravid Patient with Dilated Cardiomyopathy- A Case Report |
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| 1440 - 1450 | Jaafar, Azlan | OP8.5 | Factors Associated with Dental Plaque Formation Among University Undergraduate Students. |
| 1450 - 1500 | Mat-Baharin, Nor Haliza | OP8.6 | Compliance of Clinical staff & Students to Dental Guideline Post COVID-19: Reality or Just Theory? |
| 1500 - 1510 | Yakop, Fahmi | OP8.7 | Characterizations and Cytotoxicity Of Agnps Beta-Sitosterols Against Various Cancer Cell Lines. |
| 1510 - 1520 | Wan Omar Abdullah | OP8.8 | Prophetic Herbal Medicine: Efficacy of of Nigella sativa (Black Seed) for the treatment of Malaria in Plasmodium berghei rodent model. |
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| 1420 - 1430 | Ratnawati, Leersia Yusi | OP9.3 | Effect Of Zinc Supplementation On Increasing Height And Body Weight Of Stunted Children With Cadmium Exposure |
| 1430 - 1440 | Witcahyo, Eri | OP9.4 | Ability to Pay of National Health Insurance Premium Model according to Agricultural and Coastal Communities Expenditures in Jember District |
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| 1530 - 1540 | Holidah, Diana | OP9.10 | Hepatoprotective and Lipid-Lowering Effects of Passiflora edulis var. flavicarpa Juice on Alloxan Induced Diabetes Mice |
| 1540 - 1550 | Indahyani, Didin Erma | OP9.11 | Effect of Red (Rhodophyceae), Brown (Rhodophyceae) and Green (Chlorophyceae) Seaweed Extracts, On Platelet Counts In Diabetic Mice |
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| 1420 - 1430 | Suut, Nurkhalida | OP10.3 | Perceived Financial Threat and Psychological Effects on Working Adults in Sarawak During Lockdown for Covid-19 Pandemic |
| 1430 - 1440 | Fitri Pranita | OP10.4 | The Perception of Female Medical Students Towards Breast-Self Examination Behavior With Health Belief Model: A Qualitative Study |
| 1440 - 1450 | Lee Zhi Han | OP10.5 | A Survey On Knowledge, Initiation And Usage Of Electronic Cigarette Among Students In A Private University, Kajang |
| 1450 - 1500 | Ng Sin Hooi | OP10.6 | A Survey On Suicidal Ideation And Attempt In One Private University, Malaysia |
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| 1530 - 1540 | Aminuddin, Amirah | OP10.10 | Comparison Of Efficacy And Adverse Effects Of Belimumab And Rituximab In Systemic Lupus Erythematosus |
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# THE EFFECT OF PATIENT SATISFACTION TOWARD PATIENT LOYALTY IN HASANUDDIN UNIVERSITY HOSPITAL

Dian Ayu Fitriani1*, Syahrir A. Pasinringi2, Hasnawati Amqam3

*1Departement of Public Health, Faculty of Medicine, Muhammadiyah Makassar University*
*2Department of Hospital Administration, Faculty of Public Health, Hasanuddin University*
*3Departement of Health Environment, Faculty of Public Health, Hasanuddin University*

**Introduction:** Loyalty is considered as the peak of consumer behaviour that can increase hospital income, while satisfaction is a basic step in shaping loyalty.

**Objective(s):** This study aims to analyze the effect of satisfaction on patient loyalty at Hasanuddin University Hospital.

**Methodology:** The research method used a cross-sectional design with a sample of 187 respondents. Sampling is done through purposive sampling technique with general patients at least twice visits as inclusion criteria. Analysis using logistic regression to see the influence between variable. Satisfaction variable is measured through seven dimensions (general satisfaction, interpersonal manners, communication, time spent with the doctor, technical quality, and accessibility convenience) that are adopted from the Short-Form Patient Satisfaction Questionnaire (PSQ-18) and have been tested for validity and reliability.

**Results:** The results showed a significant value of influence between satisfaction with patient loyalty (p = 4.84x10-8, Exp (B) of 16.50). The dimension of technical quality contributes the most, while the financial aspect dimension has the least contribution to the formation of variable patient satisfaction. In loyalty, the dimension that has the greatest contribution is publicity behaviour.

**Conclusion(s):** Significant influence between satisfaction with patient loyalty. Technical quality such us standardized service provider competencies and accuracy of diagnosis must be maintained and improved, while cost aspects will not be a significant problem for patients if the quality received are as expected. High publicity behaviour (word of mouth) can increase patient loyalty

# HOAX AND SOURCES OF INFORMATION FOR COVID-19 IN HEAD OF RT (RUKUN TETANGGA) KLATEN, CENTRAL JAVA, INDONESIA

**Prasetyowati, Irma1***; Majid, Nurholis2; Nurhidayati, Anis3; Prihatmono, Ignatius Gonggo4.

*1Department of Epidemiology, Faculty of Public Health, Universitas Jember, Jember, Indonesia*
*2Perkumpulan Sinergi Sehat Indonesia, Yogyakarta, Indonesia*
*3STIKes Kusuma Husada Surakarta, Surakarta, Indonesia*
*4STIKes Panti Rapih Yogyakarta, Yogyakarta, Indonesia*

**Introduction:** Hoaxes are fake news that usually comes from social media. Currently, almost everyone accesses social media as a source of information. including hoaxes about covid-19, also circulated quickly and were replicated on social media. Incorrect information about covid-19 can interfere with the response to the covid-19 pandemic. The response to Covid-19 requires the synergy of all parties including the Head of the RT as the leader of the smallest area in the Community.

**Objective(s):** This study aims to determine the source of information about covid-19 and hoax news circulating to the RT head.

**Methodology:** The research method was used as a descriptive approach. Data collection by filling out a questionnaire via a google form. the respondent was the head of the RT in the Kalikotes District located in Klaten Regency, Central Java, Indonesia.

**Results:** The results of the study stated that 76% of information sources about Covid-19 are from social media. The social media that are frequently accessed are 92% WhatsApp, 44% Facebook and 28% Instagram. and 60% of RT heads have received fake news or hoaxes originating from 52% of WhatsApp, 40% of Facebook, and 8% of Instagram.

**Conclusion(s):** The conclusion of this study are RT heads have received fake news or hoaxes and the biggest sources of information from social media. The recommendation in tackling hoaxes circulating in the community is to develop a WhatsApp group in the RT area to always check the truth of covid-19 information via hoax buster on the official covid-19 Indonesia website, namely https://covid19.go.id/p/hoax-buster.

# A PILOT STUDY OF KNOWLEDGE, ATTITUDES AND PRACTICES (KAP) AMONG HIGHER EDUCATION INSTITUTIONS STUDENTS ON HEALTHY ONLINE GAMING IN MALAYSIA, DURING MOVEMENT CONTROL ORDER (MCO)

**Abdul Muna'aim, Maimunah***; Abu Hasan, Zatul-´Iffah; Mohamad Nor, Nadeeya; Hassan, Nor Eyzawiah

*Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia (USIM), Nilai, Negeri Sembilan, Malaysia*

**Introduction:** The outbreak of Coronavirus disease 2019 (COVID-19) in Malaysia has started since January 2020. The Malaysian government has imposed movement control order (MCO) to flatten the curve. As a result, it has boosted user engagement with online gaming and esports, especially among the students in Higher Education Institutions.

**Objective(s):** This study aimed to determine the knowledge, attitude, and practices (KAP) on healthy online gaming and its effects towards eye, hearing and posture among students of higher education institutes in Malaysia.

**Methodology:** A pilot survey was conducted among the convenient samples of 210 Higher Education Institutions students in Malaysia during the period of movement restricted order (MCO). A self-administered questionnaire was disseminated using a google form which consisted of sociodemographic characteristics, 15 items on knowledge, 9 items on attitudes and 14 items on practice towards online gaming and its health effects. Data were analysed using IBM SPSS statistics version 24.0.

**Results:** A total of 210 students (female, 102; male, 108) participated with a median age of 18 (18-24 years). During the MCO period, 26.7% engaged in online gaming more than 5 hours a day and 17.1% were involved with esports tournament. Mean scores for knowledge, attitude and practices were 8.70 (SD = 2.445), 26.76 (SD = 5.017) and 42.58 (SD = 6.901), respectively. Most of the students were knowledgeable on the effects towards eye and posture. However, minimal knowledge was noticed on the effects of hearing. There was a positive correlation between age and attitude score ($r = 0.242$, $p < 0.001$) and a significant difference in mean attitude score between male and female students ($p<0.001$).

**Conclusion(s):** The findings highlighted the engagement of students towards online gaming during MCO with moderate knowledge, attitude and practices on healthy gaming and its effects. Health promotion activities should be directed toward improving this gap.

# PREDICTION OF DISEASE BURDEN AND HEALTHCARE RESOURCE UTILIZATION THROUGH SIMPLE PREDICTIVE ANALYTICS USING MATHEMATICAL APPROACHES DURING COVID-19, AN EXPERIENCE FROM UNIVERSITY MALAYA MEDICAL CENTRE

**Azzeri A**1*,2, Hakim NFA1, Jaafar H2, Dahlui M1,3,4,5, Othman S1,6, Zaman TK1,7

*1Department of Research, Development and Innovation, Universiti Malaya Medical Centre*
*2Department of Primary Care, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia*
*3Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya*
*4Centre for Population Health (CePH), Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia*
*5Faculty of Public Health, University of Airlangga, Surabaya, Indonesia*
*6Department of Primary Care Medicine, Faculty of Medicine, University of Malaya*
*7National Orthopaedic Centre of Excellence for Research and Learning (NOCERAL), Department of Orthopaedic Surgery, University of Malaya, Kuala Lumpur, Malaysia*

**Introduction:** Mounting disruption of medical supplies caused by the rising demand during COVID-19 outbreak may endanger patients as well as healthcare workers and forces hospitals to plan for future needs. A simple predictive analysis was conducted to forecast the disease burden and Personal Protective Equipment(PPE) utilization at University Malaya Medical Centre (UMMC) from February until May 2020.

**Methodology:** Time-series projections using mathematical algorithms were conducted to forecast the disease burden and resources utilization for Covid-19 pandemic. The initial national projection was conducted by using daily rate and trend of positive cases prior to the implementation of the Movement Control Order. After more specific national data became available, projections using a decision tree technique with several parameters such as the probability of infection among symptomatic and asymptomatic patients, R0, rate of daily positive cases, the proportion of patients in care and the number of deaths were conducted. Subsequently, the amount of PPE required from the volume of users estimated and the average daily consumption rate of PPE was assessed.

**Results:** The projections revealed a steady increase in the number of cumulative cases until 9th of April 2020 followed by an exponential increase in the number of cumulative positive cases in Malaysia. By the end of April, the estimated number of patients at UMMC is expected to be 4,000 with over 100 patients in the intensive care unit. It was projected that more than 80,000 sterile and non-sterile isolation gowns, 40,000 masks N95 and face shields are required, 30,000 gloves and nearly 17,000 bottles of hand sanitizer are needed until late May 2020.

**Conclusion(s):** Predictive analysis using mathematical calculations and algorithms are one of the useful tools for hospital management to predict resource consumptions. It could help the hospital management to decide and take timely actions to address PPE shortages, especially during a pandemic.

# CLINICAL AND EPIDEMIOLOGICAL FEATURES OF COVID-19 INFECTED PATIENTS IN PASIR PUTEH, KELANTAN, MALAYSIA: A RETROSPECTIVE EPIDEMIOLOGICAL ASSESSMENT

**Teh Muthmainnah Md Suhaimi**1*, Muhd Alwi Muhd Helmi2, Nik Anisuddin Atiqi Wan Abd Rahman3, Nurul Adhiyah W Ishak4, Zawiyyah Dollah4

*1Pejabat Kesihatan Daerah Kuantan, Pahang, Malaysia.*
*2Kulliyyah of Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*
*3School of Medical Sciences, Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia.*
*4Pejabat Kesihatan Daerah Pasir Puteh, Kelantan, Malaysia.*

**Objective(s):** Eight positive COVID-19 cases were reported in Pasir Puteh between March and August 2020. All these cases were related to a religious gathering in Kuala Lumpur. This report described the clinical characteristic of patients in Pasir Puteh district of Kelantan, Malaysia, infected with the 2019 Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)

**Methodology:** This is a retrospective epidemiological assessment of all COVID-19 positive cases in the district of Pasir Puteh, Kelantan from 12th March 2020 to 1st August 2020. These were laboratory-confirmed COVID-19 positive patients diagnosed and registered in Pasir Puteh District Health Office. Epidemiological and clinical data of the eight patients were analysed. This information includes a history of exposure, symptoms at presentation, numbers of closed contacts, incubation and infectivity period, and the disease outcome.

**Results:** The median age was 31 years (ranges 26 to 76 years old). One patient admitted to an intensive care unit and died during the study period. The patient was a 76-year-old gentleman with diabetes mellitus, hypertension, dyslipidemia, and history of pulmonary tuberculosis and prostate cancer. All eight patients were related to the international gathering held in Kuala Lumpur, Malaysia. Majority of the patients were asymptomatic and the reported most common symptoms at the onset of illness were a sore throat in four patients (50%), followed by cough in three patients (37.5%) and myalgia by only one patient (12.5%).

**Conclusion(s):** This epidemiological assessment signifies the role of a mass social event as a source of an outbreak of infection. Generally, COVID-19 infected individuals were either asymptomatic or developed mild symptoms with the worst outcome seen in people with advanced age and comorbidities.

# LARGE-SCALE SOCIAL RESTRICTIONS POLICY IMPACT ON COVID-19 DEVELOPMENTS IN INDONESIA

**Marchianti, Ancah Caesarina Novi**1*; Purbyanto, Eko2.

*1 Department of Public Health, Faculty of Medicine, University of Jember, Jember, Indonesia*
*2 Sekar Wangi Hospital, Magetan, Indonesia*

**Introduction:** COVID-19 pandemic reached Indonesia by the first case in March 2020 and in four months reached around sixty-two thousand cases. Although the government declared large-scale social restrictions policy (PSBB) in the effort to mitigate COVID-19 in several provinces, confirmed cases are still increasing and not yet reaching the peak. PSBB implementation e.g. school and workplace are off or from home, restrictions on religious activities, and or restrictions on activities on the general premises or facilities.

**Objective(s):** The objective of this study was to explore the impact of large-scale social restrictions policy on COVID-19 developments in Indonesia.

**Methodology:** This was a cross-sectional study with three samples of provinces in Indonesia with a total population of 99,077,313 peoples. This research analysed the PSBB policy implemented (total province or partial) as exposure and the development of Covid-19 as an outcome/impact. The impact was measured by doubling times needed for new cases. Data were taken secondary from the report of the COVID-19 task force that has been announced publicly. Statistical analysis of secondary data used the unpaired two-tailed t-test.

**Results:** The result showed a significant impact ($p<0.05$) when comparing the province with full PSBB policy (DKI Jakarta or West Java) versus the PSBB policy in selected cities (East Java). The PSBB policy of total province was quite effective in suppressing COVID-19 development that was shown by a more rapid and a more considerable increase in doubling time of new cases following the implementation of PSBB as early as possible than in the comparative provinces.

**Conclusion(s):** PSBB policy has had significant impacts on COVID-19 development in Indonesia shown by a significant difference in doubling time of COVID-19 new cases, where the PSSB policy of total province has given a better result than the partial one.

# LONELINESS AMONG OLDER ADULTS DURING THE COVID-19 PANDEMIC: A SCOPING REVIEW

**Tengku Mohd, Tengku Amatullah Madeehah**1*.

*1 Faculty of Medicine and Heath Sciences, Universiti Sains Islam Malaysia, Bandar Baru Nilai, Negeri Sembilan, Malaysia*

**Introduction:** The COVID-19 pandemic has been a challenge for the whole world. Many countries have implemented lockdown or have restricted movement in their population during the pandemic. These restrictions impact older adults especially those living alone.
Previous studies have shown that loneliness among older adults leads to decrease in life expectancy and quality of life.

**Objective(s):** This study aims to determine the prevalence of loneliness and whether older adults are lonelier during the COVID-19 pandemic.

**Methodology:** A scoping review was carried out by using keywords “older adult”, COVID, loneliness and similar words in PubMed, PsycINFO and Google Scholar. The inclusion criteria were primary studies conducted among older adults using the English language. Title and abstract screening was performed and full papers were retrieved for further screening. The search was carried out on the 16th November 2020.

**Results:** A total of 228 articles were from the three databases and 49 full papers were reviewed. Thirteen studies were included in the review which consisted of 6 cross-sectional studies, 3 cohort studies, 2 pre and post COVID-19 and 2 mixed method studies from 10 countries. The prevalence of loneliness among older adults during the pandemic ranged from 11.8% to 54% The results from 6 studies, nearly all cohort studies reported that loneliness increased among older adults during the pandemic compared to before the pandemic. The most common factor associated with loneliness was living alone while other significant factors were lower socioeconomic status, individuals with comorbidities and having more worries about their health.

**Conclusion(s):** The COVID-19 pandemic has shown that older adults are more vulnerable to loneliness during the pandemic. This review highlights the importance of health services to try to alleviate loneliness among older adults during this challenging time.

# THE EPIDEMIOLOGICAL CHARACTERISTIC OF COVID-19 CASES IN NORTH-EASTERN PENINSULAR MALAYSIA, JANUARY TO JULY 2020

**Mohd Hatta, Hazlienor**1*; Mohd Fuzi, Nik Mohd Hafiz1, Mohd Zin, Nur Dalilah1, A Rahim, Afiq Izzudin2, Zakria, Najihah Mahfuzah3, Sulaiman, Suhaiza1, Muhammad, Abdul Haris1, Hussin, Zaini1

*1 Kelantan State Health Department, Malaysia*
*2 Community Health Department, University Science of Malaysia (USM), Malaysia3 Pasir Mas District Health Office, Kelantan, Malaysia*

**Introduction:** Although Malaysia's effort of COVID-19 containment has been commendable, a resurgence of a new wave has been reported. This study aimed to describe the epidemiology of COVID-19 in Kelantan towards a better understanding of the disease for better preparedness and response.

**Methodology:** Data of laboratory-confirmed COVID-19 cases from January to July 2020 were collected from the nation-based e-COVID reporting system. Information from investigation reports were reviewed for validation. Analyses included were the calculation of incidence and case-fatality rate, summary of demographic and clinical characteristics, assessment of age distributions and sex ratios, epidemiological curve and choropleth map construction, and measurement of healthcare usage. Factors for Intensive Care Unit (ICU) admission were determined by multiple logistic regression.

**Results:** There were 166 cases diagnosed until July 2020. Cases were concentrated in the capital and peaked during March, before steadily declining. The age-adjusted incidence rate was 9.4/100,000 populations with a case-fatality rate of 2.4%. The median age was 37 years (range 3 months to 80 years) and 78% were male. Fever and cough were the predominant symptoms while 25% of cases were asymptomatic. About 97% of cases had exposure risk and 57% were identified by active case detection. Potentially infected cases were isolated within a median of 7 days after exposure, even before diagnosis. All cases were hospitalized with a median of 14 bed days; 12% admitted to ICU, and 3% required ventilators. Significant factors for ICU admission were older age (AOR: 1.05; 95% CI: 1.02, 1.09; p=0.001) and diabetes mellitus (AOR 4.55; 95% CI: 1.36, 15.25; p=0.014).

**Conclusion:** High proportion of cases were male and in the capital. All ages appeared susceptible but older age and diabetic patient were more vulnerable to COVID-19. Kelantan's early identification and isolation approach for potentially infected individuals have been effective in curbing the transmission; allowing sufficient healthcare capacity to respond to the pandemic.

# A SYSTEMATIC REVIEW ON MICRORNA PROFILE OF VARIOUS SAMPLES FROM PATIENT WITH AUTISM SPECTRUM DISORDER

**Mohd Manzor, Nur Fariha**1*; Muhammad Lasim, Masniza1; Hassan, Nureyzawiyah2; Abdul Rahman, Hayati3.

*1 Department of Medical Sciences I, Faculty of Medicine and Health Sciences, University Sains Islam Malaysia, Nilai, Malaysia*
*2 Department of Surgery, Faculty of Medicine and Health Sciences, University Sains Islam Malaysia, Nilai, Malaysia*
*3 Department of Medical Sciences I, Faculty of Medicine and Health Sciences, University Sains Islam Malaysia, Nilai, Malaysia*

**Introduction:** MicroRNAs were reported to be associated with the mechanism of autism spectrum disorder (ASD). ASD which detected in approximately 2% of the world population is commonly indicated by repetitive and stereotyped behaviours and characterised by disturbance of cognitive functioning, learning, attention, and sensory development. Discovery of genetic and genomic alterations in ASD have let to further exploration on the microRNA's role in the pathogenesis of ASD.

**Objective(s):** This systematic review aims to establish a microRNA profile of ASD based on published data retrieved from prominent databases.

**Methodology:** Electronic search was performed until 20th October 2019 through Pubmed, Scopus and Ovid-Medline where the following MeSH terms were used and they had been specified as the primary focus of the articles; microRNAs, autism spectrum disorder, autistic disorder and profiling. Two reviewers independently scrutinized the titles and abstracts before examining the eligibility of studies that met the inclusion criteria. For each study, data on sampling type, sample size, a method for microRNA profiling and microRNAs identified were extracted.

**Results:** A total of 452 titles were found relevant from the database search. The EndNote software (X7.0) was used to identify and remove duplicates. 199 articles had been retrieved for abstract review which further brings to selection of 26 potentially relevant citations for full-text review. 14 articles were removed based on our inclusion and exclusion criteria. Eventually, a total number of 12 preliminary studies were found eligible to be included in the present systematic review. Several microRNAs: miR-103a, miR-34b, miR-let-7a, miR-let-7d, miR-1228, miR-608a, miR-4728-5p, and miR-4788 are among microRNAs that were differentially expressed in ASD.

**Conclusion(s):** Our findings outlined the profile of microRNA that might play crucial roles in the mechanism of ASD and could be associated with various biological processes and neurodevelopment.

# ADVOCACY OF COVID-19 HEALTH PROMOTION MEDIA IN TOBACCO AGRICULTURAL COMMUNITIES

**Mury Ririanty**1*, Iken Nafikadini2, Afif Hamdalah3, Dewi Rokhmah4, Erwin Nur Rif'ah5

*1,2,3,4,5Publich Health Faculty of Jember University,Jember-east Java-Indonesia, Kalimantan 39 Street, Jember, 68121, Indonesia*

**Introduction:** Jember Regency Government showed until October 10, 2020, there are 919 COVID-19 patients in the Jember Regency area, 36 patients in Puger District and 2 of them in the Village Bagon. This figure is quite alarming for the community with the limited information they get in their village but moreover, people who work daily as farmers feel that the Covid virus will not attack people whose daily activities are only in plantations.

**Objective(s):** Aim of this activity is to carry out community service activities by means of advocating for health promotion media as a means of socialization in the Bagon Village community, Puger District, Jember Regency.

**Methodology:** The activities are from June to September 2020 based on Lasswell's theory and P Process strategic. Participatory, educative, training, mentoring and evaluating are some of the methods that have been used.

**Results:** The result showed this community service has included primary, secondary and tertiary targets in an advocacy effort for health promotion media. Activities carried out by building partnerships with existing resources in Bagon Village. Activities include Training for posyandu cadres by providing health education related to Emo Demo of Washing Hands, Put up Baliho (large banners) about COVID-19 at the entrance and exit of Bagon Village so that people can read and remember health protocol messages, socialization of COVID-19 in the Kifayah recitation of Muslim and Muslimah, Health education for Bagon Village children through the COVID-19 snake and ladder game, Training on making natural hand sanitizers from organic household waste.

**Conclusion(s):** It is hoped that community leaders can become role models so that people change their behaviour through examples and necessary to build a joint commitment with religious leaders in implementing health protocols in mosques, recitation places and tobacco warehouse.

# ANALYZING EPIDEMIC-RELATED VERSES IN THE QURAN BASED ON AL-RAZI' EXEGESIS IN HIS MAGNUM OPUS MAFATIH AL-GHAYB

**Mohd, Robiatul Adawiyah*** ; Azmi, Ahmad Sanusi ; Mohd Ghazali, Norzulaili ; Ahmad, Hishomudin

*1 Faculty of Quranic and Sunnah Studies, Universiti Sains Islam Malaysia, Bandar Baru Nilai, 71800 Nilai, Negeri Sembilan.*
*2 Faculty of Quranic and Sunnah Studies, Universiti Sains Islam Malaysia, Bandar Baru Nilai, 71800 Nilai, Negeri Sembilan.*
*3 Faculty of Quranic and Sunnah Studies, Universiti Sains Islam Malaysia, Bandar Baru Nilai, 71800 Nilai, Negeri Sembilan.*
*4 Faculty of Major Language Studies, Universiti Sains Islam Malaysia, Bandar Baru Nilai, 71800 Nilai, Negeri Sembilan.*

**Introduction:** COVID-19 has been officially announced as a pandemic threat in this century. Such a pandemic occurs not only today but also throughout human civilization on earth. Interestingly, the Quran, which was revealed fifteen centuries ago, also touches on the issue of pandemics or epidemic diseases that occurred to the previous generations and provides a reminder for future generations. The interpretation of epidemic-related verses in the Quran definitely carries a different dimension than that of the current scientific research approaches. Nonetheless, the combination of these two approaches certainly yields the results that create a new dimension in understanding and preventing epidemic diseases holistically.

**Objective(s):** The current study attempted to identify the verses in the Quran that are related to epidemics and to analyze them based on the views of an exegesis scholar, Imam al-Razi (who passed away in 606H), in his magnum opus Mafatih al-Ghayb.

**Methodology:** This study employed a qualitative method based on the approach of text analysis using the Quran and the exegesis of Mafatih al-Ghayb.

**Results:** As a result, there are several words that refer to epidemic-related verses in the Quran that lead to some epidemic features mentioned in the Quran and how to deal with it holistically.

**Conclusion(s):** The results of this study provide a new dimension in understanding and preventing epidemics in the holistic manner, such as the Covid-19 pandemic that is occurring today and other epidemics that might occur in the future.

# CIK KIAH SEWING PROJECT: PRODUCTION OF PERSONAL PROTECTIVE CLOTHING FOR FRONTLINE PERSONNEL FIGHTING COVID-19

**Abdullah, Kharmila***; Abdul Muna'aim, Maimunah; Hassan, Nor Eyzawiah; Masri, Maizatul Akma; Mokhtar, Azlina

*Faculty of Medicine and Health Science, Universiti Sains Islam Malaysia (USIM), Nilai, Negeri Sembilan, Malaysia*

**Introduction:** Corona Virus 2019 (COVID-19) outbreak spread fast worldwide and soon became a pandemic. The virus is transmitted through droplets from the mouth or nose that spread when a COVID-19 patient coughs or sneezes. To reduce the risk of spreading the virus, the use of personal protective equipment (PPE) by frontline personnel is essential. In a pandemic situation, demand for PPE increased dramatically around the world while production by the industry cannot meet that demand.

**Objective(s):** The initial objective of this project was to supply PPE in form of protective gown, boot cover and head cover to USIM Health Specialist Clinic and USIM's teaching hospitals. However, due to high demand, it was extended to supply various requesting hospitals and clinics.

**Methodology:** This community service's project was funded using personal funds from staffs, crowdfunding and fund from our joint venture with Pusat Keusahawanan Universiti, Pusat Libatsama Komuniti dan Jaringan Industri and Pusat Wakaf Zakat. Procurement of materials such as non-woven fabric, elastic band and thread was done through various suppliers, including online purchasing. The PPEs were sewn by volunteers within USIM and the public as well as paid professional tailors.

**Results:** Within 2 months, this project has produced a total of 19,052 pieces PPE consisting of 5,794 gowns, 6,665 head coverings and 6,593 pairs of boot covers. These PPEs were distributed to health and dental clinics, hospitals and departments involved in managing COVID-19 patients around the Klang Valley, Negeri Sembilan, Perak, Kedah, Kelantan and Johor.

**Conclusion(s):** Our project is one of many other similar projects carried out by various parties. While there was no uniqueness to it, the value it carries was priceless where new knowledge was attained, the skill was sharpened, friendship and networking were built and first and foremost, care, help and support were warmly delivered.

# PESTICIDE EXPOSURE TO BLOOD CHOLINESTERASE LEVELS IN TOBACCO FARMERS IN JEMBER REGENCY

**Prehatin Trirahayu Ningrum**, Isa Ma'rufi, Ellyke, Ragil Ismi H, Anita Dewi Moelyaningrum*, Rahayu Sri P, Reny Indrayani, Kurnia A

*Faculty of Public Health; University of Jember*

**Introduction:** Indonesia tobacco is produced in 15 provinces spread across several islands. According to data from the Director-General of Plantation of the Ministry of Agriculture (2016), in 2015 tobacco production in Java reached 150,343 tons, Nusa Tenggara 35,773 tons, Sumatra 5,081 tons, Sulawesi 1,570 tons, and Bali 1,024 tons. The area of tobacco plantations in Jember in 2013 was in the first place, namely 15,748 ha.

**Objective(s):** The purpose of this study was to assess the levels of cholinesterase in the blood with the behaviour of using pesticides on tobacco plantation workers in Jember Regency.

**Methodology:** This study was an observational study with a cross-sectional study design. The location of this study in 10 districts in Jember Regency with a total sample of 50 respondents selected based on proportional sampling. Analysis of the data used includes univariate analysis, namely by doing descriptive analysis related to the frequency distribution of each variable and bivariate analysis with the Spearmen test to test the relationship between variables.

**Results:** Statistical test results using the Spearman test showed that the significance value of the relationship between frequency of spraying, spraying technique, and personal hygiene and blood cholinesterase levels of tobacco farmers in Jember was 0,717, 0,284 and 0,918 > α (0.05)

**Conclusion(s):** No relationship between cholinesterase levels with the frequency of pesticide spraying, spraying techniques and personal hygiene

# WORKFLOW MODIFICATION DURING COVID-19 PANDEMIC: EXPERIENCE FROM A MALAYSIAN RADIOLOGY DEPARTMENT

**Nik Mazian, Assyifaa**1*; Ab Rahman, Siti Soraya1; Wan Mokhtar, Wan Zainab Hayati2.

*1Radiology Department, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Malaysia*
*2Radiology Department, Hospital Ampang, Selangor, Malaysia*

**Introduction:** The COVID-19 pandemic has increased the demand for chest imaging. Although not a COVID-designated hospital, suspected COVID-19 patients may present to our hospital's Emergency Department (ED). To reduce the risk of disease transmission to frontline radiology personnel, changes in the workflow have been implemented, particularly in regards to personal protective equipment (PPE) guidelines and operations protocol.

**Objective(s):** We share the modified workflow and control measures taken to prevent COVID-19 transmission at the Radiology Department of our hospital.

**Results:** Patients with respiratory symptoms at ED are categorized as Severe Acute Respiratory Infection (SARI) or non-SARI. Once a CT scan request for SARI patient is granted, the pathway from the main door to CT room is cleared and the Radicare cleaning team is alerted. "Purple code" announcement is made prior to mobilizing the patient to the Radiology Department. Two radiographers will don full PPE and 3 layers of gloves. The first radiographer will position the patient on the CT gantry. Gloves are removed in layers before touching the CT machine and injector. The second radiographer is stationed at the workstation in the control room. Once the scanning is completed, the patient is escorted back through the designated pathway. The first radiographer will change their gloves and sanitise the CT gantry and workstation. Both radiographers will doff the PPE in the changing room and shower. Lastly, terminal cleaning is carried out in the CT examination room, changing room and along the designated pathway. For mobile radiograph, the cassettes are covered with biohazard plastic bag prior to the examination. The radiographer must don full PPE. Before returning to the department, the cassette and mobile XRay machine including the wires and wheels are sanitized.

**Conclusion(s):** Complying with new workflow is crucial to prevent COVID-19 transmission among personnel in the Radiology Department.

# PUBLIC PERCEIVES AND RESPONSES TO HEALTH INFORMATION ON SOCIAL MEDIA DURING COVID-19 PANDEMIC: A POTENTIAL MEDIUM FOR HEALTH EDUCATION

**Sukorini, Anila Impian**1*, Alifiyah, Fatihatul1, Hermansyah, Andi1

*1Department of Pharmacy Practice, Faculty of Pharmacy, Universitas Airlangga, Indonesia*

**Introduction:** The use of social media as a channel of health information and communication is increasing during the pandemic. However, health information on social media is often reported to be of poor quality.

**Objective(s):** Therefore, this study aimed to identify the type of health information circulated on social media during the COVID-19 pandemic; perceives and responses of the public to this information.

**Methodology:** A cross-sectional study was conducted through an online survey in public (residents of Surabaya) from April to May 2020. Data were collected using a validated questionnaire consist of three main sections asking for the type of health information on social media, the public perceives and responses to the health information. The data were descriptively analyzed using SPSS Ver 22.

**Results:** A total of 262 people have participated in the survey. 77% of the participants were female with 59% were between 21-30 years old. Healthy living (94%), traditional/ herbal/ alternative medicine (78%) and medication side effects (63%) were health information that was often found on social media by respondents. Along with the COVID-19 pandemic, respondents also reported there was a lot of information on social media about the benefit of natural medicines and conventional medicines aimed to improve the immune system, preventing and treating COVID-19. Most the respondents agreed that health information on social media was more interesting, easy to understand, easy to apply; but less reliable. Respondents showed varied responses to health information obtained from social media, 89% of respondents applied this information in their daily life, but only 16% of respondents always clarified the correctness of the information.

**Conclusion(s):** Social media was an effective and efficient channel of information and communication so it can be used as a medium for health education. This might imply a potential role for pharmacist regarding pharmaceutical information.

# COVID 19 PANDEMIC: AN OPPORTUNITY FOR BETTER PARTICIPATION, EASIER DATA COLLECTION AND COST REDUCTION FOR AN ONLINE TRACER STUDY

**Sanip, Suhaila**1*; Zulkifli, Noor Fadzilah1; Mohamad, Mazlen; Mohd. Aris, Muhammad Shamsir1

*1Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Negeri Sembilan, Malaysia*

**Introduction:** A tracer study on USIM's medical graduates' performance in the workplace is currently conducted qualitatively, using face-to-face and focus group interviews, to evaluate the effectiveness of the current curriculum.

**Objective(s):** This paper will discuss the challenges for data collection and the need to modify data collection strategy in response to the movement control order (MCO). It will also describe the benefits and limitations of the modification in data collection strategy.

**Methodology:** In the beginning of the study, data collection was carried out via individual and focus groups face-to-face interviews. After the MCO was enforced, individual and focus groups interviews was carried out online.

**Results:** The shift to online data collection made it easier to schedule the interviews and for the graduates to participate in the group interview at the comfort of their own homes, which normally have better internet access than being in the hospital. The risk of exposure to COVID 19 through face-to-face interaction is therefore eliminated. Although Microsoft Teams is more convenient to record the interview, some graduates were not able to access the application during the interview. The Google Meet application is used instead, and the interview was recorded using a voice recorder. The reduction in travelling cost for data collection is significant and therefore, can be channelled to pay for publication charges of more manuscripts. In our case, Microsoft Teams licence is provided by the university and Google Meet is free for use. opportunity for better participation, easier data collection and cost reduction for an online tracer study.

**Conclusion(s):** The MCO of COVID 19 pandemic has presented an opportunity for online data collection that is not thought off at the beginning of the study. Online data collection should therefore be considered for both qualitative and quantitative studies in the future.

# STRESS LEVEL AMONG TEACHERS OF LANDANG ELEMENTARY SCHOOL AT BANTAENG REGENCY IN THE COVID-19 PANDEMIC ERA

**Sompa, A.W**1*, Padad, A. Tenri 1, Diarfah, A. Dian 2, Mutmainna, A1

*1 University of Muhammadiyah, Makassar, Faculty of Medicine, Indonesia*
*2 The Alauddin State Islamic University, Makassar, Indonesia*

**Introduction:** COVID-19 pandemic has a profound impact on people's lives, especially schoolteachers. The need to continue the learning process during a pandemic has encountered them with many problems, including limited internet access in remote areas. Landang Elementary School (SDN 19 Landang) in Bantaeng Regency is one of the elementary schools located in remote regions of South Sulawesi, which has limitations on the online learning process due to limited internet access. The teachers are forced to teach in person by visiting students' homes to continue their study. This situation then creates stress with the conditions in which they must keep their distance to avoid the spread of the COVID-19 virus.

**Objective(s):** This study aims to describe and analyse the factors that cause stress among teachers of Landang elementary school by using the validated Perceived Stress Scale (PSS).

**Methodology:** This study uses online cross-sectional survey methods involved 47 respondents. The respondents fulfil the questionnaire of PSS via Google form. The factors measured and analysed by the PSS scale were age, sex, education level and teaching hours. Data were analysed using the chi-square test.

**Results:** From respondents, 85% of teachers are female. There is 93.6% bachelor, and 6% are magister. More than half respondents (72%) showed higher levels of stress, moderate 24% and 4% showed mild stress. Factors that associated with stress level is age (p= 0.024) while others factors (sex and teaching hours) not showing significant association. The age is at range 40-50 years old showed higher levels of stress (49%).

**Conclusion(s):** Teaching face to face during the COVID-19 pandemic is a challenge for teachers, especially with their remote living conditions. Responsibility to teach cannot be postponed. The results show that higher stress levels are more in this population and mostly influenced by the maturity of age.

# THE COINCIDENCE OF DENGUE AND COVID-19 IN PANDEMIC: REPORT OF CASES, PUBLIC HEALTH AND HUMANISM

**Ardyanto TD**1*; Suyatmi2; Hanafi, Wardani LO2

*1 Medical Faculty, Sebelas Maret University*
*2 Sebelas University Hospital*

**Introduction:** Since March 2020, the covid-19 is started to report in Indonesia. The toll was relatively low in the beginning but gradually increased in the following months. In the same period, as it is annually reported, the dengue fever rate is also growing. The possible coincidence of covid-19 and dengue infection is, therefore, an exciting issue.

**Objective(s)** We review 14 cases of which the Dengue fever serology as well as Covid RT-PCR test was simultaneously performed based on the symptoms and sign found on the patient.

**Methodology:** The study was conducted through data analysis based on medical records.

**Results:** Of those cases, the coincidence was found in 3 instances. Even relatively low, the 3 cases were significant issues for public health management and humanism. The emerging covid infection interfered dengue infections in the neighbourhood. Also, the pandemic, tend to multiply the burden of humanism aspect for the patients among the society.

**Conclusion(s):** The issues of covid-19 and dengue coincidence should be taken into consideration seriously for health policies.

# INFECTION CONTROL OF COVID-19, HOW CONSISTENT IS THE MEDICAL PERSPECTIVE AND THE ISLAMIC PERSPECTIVE?

**Mohamed, Mossad**[1]*; Rosternberghe, Hans2; Ramli, Noraida [3]; Ibrahim, Roshidah[4]; Mossad, Manar[5]

*[1] Associate Prof of Paediatric, Neonatology. Paediatric department KOM IIUM, IIUMMC Kuantan. mossadshaban@iium.edu.my*
*2 Professor of Paediatric, Neonatology, Nephrology Paediatric Department KOM USM Kota Bharu. hansvro@usm.my*
*[3] Associate Professor of Paediatric, Neonatology Paediatric Department KOM USM Kota Bharu. aidaramli@usm.my*
*[4]Dr of Paediatric. Paediatric Department KOM USM Kota Bharu. nroshidah@usm.my*
*[5]4th y master of internal medicine KOM IIUM.*

**Introduction:** The World Health Organization (WHO) announced the COVID-19 viral infection as pandemic on March 11, 2020. Within eight months, it recorded 49 million infections and 1.23 million deaths. Despite the progress and evolution of medical care, we cannot underestimate the role of religion in crisis.

**Objective(s):** This report discusses the consistency between Islamic recommendations and medical regulations.

**Methods:** In the wake of the pandemic, governments made strong evidence-based recommendations and implemented new guidelines or laws to control the infection. These recommendations appear strikingly like what Islam recommended 1400 years ago. The medical advice will be acknowledged and judged in Islamic references including Quran, Sunnah, and its illustrations in either Arabic or translated copies, books, research articles. Both references will be presented by AMA format. For Islamic references will be guided by Wikipedia Manual of Style/Islam-related articles.

**Results:** studies reveal that infection control is inherent to Islamic practices. Islam regulations are similar and comprehensive to the advances in medicine that we encounter today. In the following areas the parallels are striking: movement control order, border control, travel bans, isolation, hand hygiene, general hygiene, face-covering, guidelines in limited resource situations, etiquettes of cough and sneezing, seeking early medical treatment and consulting specialists, financial and psychological support for the patient and his family, community setting and social distancing, supervision of crises by the authority of the infection control team and specialised agencies, and many others.

**Conclusion(s):** Teachings and practices from Islam that is echoed in medical science, centuries later, confirmed it helped to control infections. Moreover, Islam combines the individual frame and societal cohesion optimising the interest of both. Islam is unique in many ways as it propagates infection control regulations that call for practical, professional, and global measures to be taken to contain any crisis.

# SELF-MADE FACE SHIELD TRAINING IN THE WOMEN'S SOCIAL COMMUNITY REPRESENTED ONE OF THE EFFORTS TO FACE THE NEW ADAPTATION ERA OF COVID 19

Dyah Ayu Puspitaloka1; **Agustin Wulan Suci Dharmayanti**2*

*1Faculty of Economics and Business, University of Jember, Jember, Indonesia*
*2Biomedical Department, Faculty of Dentistry, University of Jember, Jember, Indonesia*

**Introduction:** The COVID-19 issue causes its colour to the human in the world, including Indonesia. The rapid spreading and high mortality rates make everyone aware of health maintenance for themselves and others. Moreover, this pandemic impacts the socio-economy aspect. The society has to think creatively to withstand in this situation.

**Objective(s):** This community service activity aimed to provide training about "self-made face shields," as prevention, personal health maintenance, and alternative income.

**Methodology:** This study presented a descriptive study by the community service activity to a small population. The participants of the social empowerment were housewives in Ngingas Village, Waru District, Sidoarjo, held on July-August 2020. This training was carried out for four weeks, including a pretest-posttest, health education about COVID-19 and health protocols, training of face shields production, production and marketing management.

**Results:** The results revealed the participants' knowledge about COVID-19 and health protocols increased after training. Although the participants were appreciated when they trained face-shields production with simple materials provided around their houses (plain bottles (without patterns) and elastic band), they did not respond about production and marketing management.

**Conclusion(s):** Implementing this community service activity program produced housewives who care about family and social health. Moreover, they could think creatively to make face shield as a projection screen for their selves and their family. Thus, the housewives could be a role model for their family to keep up the health protocols in the new adaptation era of COVID-19.

# FACE MASK ETIQUETTE AND CARE: A PRELIMINARY CASE STUDY IN UNIVERSITI SAINS ISLAM MALAYSIA DURING COVID-19 PANDEMIC

**Nuruliza Roslan**1,2*, Wan Shahida Wan Sulaiman1, Mohd Dzulkhairi Mohd Rani1, Nurul Azmawati Mohamad1, Hana Maizuliana Solehan1, Mohd Radzniwan A Rashid1.

*1 Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia*
*2 Islamic Science Institute, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia*

**Introduction:** The COVID-19 pandemic has impacted the lifestyles of the whole world population as to what is now known as; the new normal. These lifestyle changes are based on WHO COVID-19 prevention recommendations, which includes physical distancing, hand hygiene and face mask wear whenever going out in public. Proper use and disposal of face mask are essential to maximizing its effectiveness and protection in order to avoid any risk of transmission associated with incorrect use and disposal of face masks.

**Objective(s):** This study aims to assess the practice of face mask wear and care among the staffs of Universiti Sains Islam Malaysia (USIM).

**Methodology:** This cross-sectional study with online Google survey was conducted among USIM staffs. Data from the survey was taken from July to October 2020. Convenience sampling was used in recruiting the study samples. Descriptive statistics were performed using SPSS version 22.

**Results:** A total of 152 responses retrieved from the survey. With regards to face mask wear, 99.3% (151) felt it is important to wear a face mask when going out in public. From this, the majority of 94.1% (143) wore a surgical 3-ply mask. 53.9% (82) and 46.1% (70) chose to either wear their face masks the entire day or change when it's wet or torn respectively. Positively, 84.2% (128) chose not to recycle used their face mask and agreed that face masks should be disposed of in bins. Interestingly, 58.6% (89) of responses revealed about RM10 –RM50 is being spent on a monthly basis for purchasing face masks.

**Conclusion(s):** Majority of USIM's staffs are aware of the importance of wearing face masks when out in the public. Increasing efforts to advocate on proper care of face masks is vital to help prevent the spread of COVID-19.

# HARNESSING ONLINE PLATFORM FOR COVID-19 PROMOTION, PREVENTION, AND EARLY DETECTION IN UNIVERSITY OF JEMBER

**Rachmania, Sheilla**1,2; Handoko, Adelia1,2; Hakiim, Arsyzilma1,2; Pralampita, Pulong Wijang1,2; Abrori, Cholis1,2*

*1 Faculty of Medicine, University of Jember, Indonesia*
*2 COVID-19 Disaster Preparedness Response Team, University of Jember, Indonesia*

**Introduction:** In a pandemic crisis, the rapid and continuous progress of the Covid-19 problems may stir agitation and perception amidst communities. Hence in the workplace that involves various groups of people such as in the university setting, a comprehensive health promotion and prevention approach is compelling. Digital intervention that does not require face-to-face contact may hold an important role. Still, the abundance of continuously updated information available online can create confusion. University of Jember has proposed a comprehensive online platform run by health professionals contain an early assessment, telemedicine consultation, education through social media, and a cluster tracing system

**Objective(s):** This study aims to identify the University of Jember Covid-19 online platform's acceptance and benefit among students, staff, and resident around the university.

**Methodology:** Anonymous online questionnaires were sent to the university students, staff, and resident around the university to determinate the preference and degree of satisfaction toward the online platform.

**Results:** Eight hundred seventy respondents have been using the online platform for five months, with 641 people were categorized as healthy/no risk, 205 people as in risk, and 24 people as symptomatic and closely monitored. The tracing system has identified 5 clusters that have been solved and closed through online monitoring and further examination. A questionnaire sent showed that all users feel that the comprehensive service is beneficial enough (51%) and very beneficial (49%) even though 90% of users who mostly are students prefer to access the information and self-assessment through social media rather than online consultation with health professionals service provided.

**Conclusion(s):** Online platform for Covid-19 promotion and prevention in the University of Jember is generally accepted and beneficial, but tailored online platform addressed to different age groups within users is needed to optimize the usage.

# PREVENTION OF COVID-19 TRANSMISSION THROUGH THE FISHERMEN'S RESILIENT VILLAGE PROGRAM

**Sujoso, Anita Dewi Prahastuti1**; Hamdalah, Afifr2, Kinanti, Citra Anggun3, Silviana Safitri4

*1 Department of Occupational Safety and Health, Faculty of Public Health, University of Jember, Indonesia*
*2 Department of Health Promotion and Education, Faculty of Public Health, University of Jember, Indonesia*
*3 Department of Epidemiology, Faculty of Public Health, University of Jember, Indonesia*
*4 Student of Faculty of Public Health, University of Jember*

**Introduction:** Covid-19 has been declared a world pandemic by WHO and the government has declared a non-natural disaster in the form of disease outbreaks. Community empowerment in the health sector is a very important thing to do in order to create a society that has the will and ability to maintain and improve health status. Fishermen are one of the groups vulnerable to Covid-19 transmission.

**Objective(s):** The purpose of this study was to evaluate whether any program interventions provided were able to increase the knowledge and behaviour of fishermen groups towards the prevention of Covid-19.

**Methodology:** The design of this research is evaluative research, which is to evaluate programs or activities that have been running. The research used 2 stages. Stage 1, namely determining priority problems for the prevention of Covid-19 and Phase 2, which is to intervene in preventing Covid-19. The evaluation criteria for this activity refer to the WHO concept, namely Relevancy, Adequacy, Efficiency, Effectiveness, Impact and Constraints.

**Results:** The results of the Phase 1 study indicated that there were several households that had poor actions in implementing preventive measures at home (6.3%), public places (15.6%), and workplaces (21.9%). There are 8 families (25%) who have not implemented proper and proper handwashing at home, public places and workplaces. There were 10 families (31.3%) did not apply them at the workplace. Interventions conducted in phase 2 of the study showed an increase in knowledge about Covid-19 from 56% to 92%. The results of this activity increased knowledge about the importance of using masks from the pre-test results of 73.3% to 90%.

**Conclusion(s):**It is hoped that there will be further monitoring of community activities, especially those related to the implementation of health protocols.

# SERVICES AND POLICIES FOR A NEW LIFESTYLE DURING THE COVID 19 PANDEMIC IN THE SECTION FOR PREVENTION AND CONTROL OF INFECTIOUS DISEASES OF BONDOWOSO DISTRICT HEALTH OFFICE

**Rokhmah, Dewi**1*; Ahmadi, Haris2.

*1 Department of Health Promotion and Behaviour Sciences, Faculty of Public Health, University of Jember, Indonesia*
*2 The Leader of The Section for Prevention and Control of Infectious Disease of Bondowoso, Indonesia*

**Introduction:** The policy is needed to implement a clean and healthy lifestyle amid the COVID-19 Pandemic. The protocol for preventing the spread of COVID-19 is a new lifestyle that is able to encourage the creation of a healthy and productive community in the midst of a pandemic and service activities.

**Objective(s):** This study aims to analyze the services and policies of a new lifestyle during the COVID-19 pandemic in the P2PM Section of the Bondowoso District Health Office.

**Methodology:** The research method used descriptive explorative. The data collection technique is by observing and using secondary data at the Section for Prevention and Control of Infectious Diseases of Bondowoso District Health Office. This research was conducted from July-September 2020. The data analysis method used descriptive analysis which was presented in the form of narrative documentation and narrative.

**Results:** The results showed that there was a policy which was stated in the Bondowoso Regent Regulation Number 50 of 2020 concerning Guidelines for Implementing a New Lifestyle Order for Community Activities during the COVID-19 Pandemic in Bondowoso Regency. In implementing the program guided by health protocols in the form of officers using masks and carrying out physical distancing, health education is carried out outside the home and residents are empowered to identify vector nests in their own homes. Prioritizing services to sufferers and with coughs, fever or with other flu symptoms, Patients must take precautions as recommended by health workers to be protected from COVID-19 and continue treatment as directed.

**Conclusion(s):** The Communicable Diseases Prevention and Control Section has followed the guidelines by the Bondowoso Regency Government so that in implementing the program, the transmission and spread of COVID-19 can be avoided.

# COVID-19 INFECTION IN A LEUKEMIC CHILD

**Muhd Alwi Muhd Helmi**1*, Fahisham Taib2, Nik Khairulddin Nik Yusoff 3, Ariffin Nasir2, Norsarwany Mohamad2

*1Department of Paediatrics,Kulliyyah of Medicine, International Islamic University Malaysia, Kuantan, Pahang Malaysia*
*2Pusat Pengajian Sains Kesihatan, Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia*
*3Paediatric Department, Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan, Malaysia*

**Introduction:** immunosuppressed individuals and paediatric population are susceptible to infections. This case report depicts the presentation and severity of COVID-19 infection in a single case report of a Leukemic child on chemotherapy and compares the course of disease with previously reported case reports of immunocompromised children with COVID-19.

**Case presentation:** We reported a 27-month-old boy, known case of B-cell Acute Lymphoblastic Leukemia in remission, which was infected with COVID-19. Our reported case was asymptomatic and recovered well without developing any complication related to COVID-19 infection despite being immunocompromised. A comparison made with published case reports of immunocompromised children with COVID-19 revealed variability in the presentations whereby most of the children were mildly affected. Other factors such as concomitant infection, the severity of immunosuppression, presence of other co-morbidities and infection by different virus subtypes may explain the variability in the severity of COVID-19 infection.

**Conclusion(s):** Mild presentation of COVID-19 in immunocompromised children can be explained by the lack of overwhelming immune responses toward SARS-CoV-2 virus in an immunocompromised host. Clinicians, however, have to be vigilant as immunocompromised children can be severely affected by COVID-19. Further studies on the pathophysiology of COVID-19 infection in immunocompromised hosts and factors contributing to variability of presentations among patients with similar immune responses are required before a firm conclusion can be made.

# MOVEMENT CONTROLLED ORDER: THE IMPACT ON MANAGEMENT OF GLAUCOMA IN A SUB-URBAN TERTIARY CENTRE IN MALAYSIA

**Jasvinjeet Kau**r1*, Liza Sharmini2

*1 Department of Ophthalmology and Visual Sciences, School of Medical Sciences, Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia*

*2 Ophthalmology Clinic, Hospital Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia*

**Introduction:** Glaucoma is an irreversible chronic optic neuropathy that requires a life-long follow-up. Intraocular pressure (IOP) control is the mainstay of treatment. Movement controlled order (MCO) imposed due to the pandemic may affect the management of glaucoma.

**Objective(s):** To evaluate the impact of MCO on the management of glaucoma patients in a suburban tertiary hospital.

**Methodology:** A cross-sectional study was conducted between 10 June 2020 and 31 August 2020 in glaucoma clinic, Hospital Universiti Sains Malaysia. A total of 193 glaucoma patients, previously on regular follow up were included. Their compliance with treatment, visual acuity, IOP measurement and a potential sign of progression were evaluated. A comparison was made with the last clinic visit prior to MCO.

**Results:** A total of 93(48.2%) male and 100(51.8%) female patients with glaucoma were included with their mean age of 64.5SD 13.7years old. Mean duration between pre-MCO and post-MCO follow up was 26.4 SD 6.7 weeks. There was a significantly increased number of patients with deterioration of visual acuity; 4 patients lost their vision after MCO. There was also a significant elevation of mean IOP of the right eye (pre-MCO: 16.4 SD 7.6 mmHg, post-MCO: 17.3 SD 8.5 mmHg) (p=0.034). The cup to disc ratio (CDR) for the right eye increased significantly from pre-MCO (0.67 SD 0.19) to 0.70 SD 0.19 (p<0.001). However, there were no significant changes in IOP and CDR of the left eye. A total of 22 patients (11.4%) missed medications during the MCO period, and 35 patients (18.1%) required additional topical medications due to progression of the disease. Only one patient (0.5%) required admission due to uncontrolled IOP.

**Conclusion(s):** MCO as the preventive step of Covid-19 pandemic indirectly caused the progression of glaucoma and uncontrolled IOP. Malaysia needs to be better prepared in handling chronic diseases during the pandemic in the future.

# TRACHEOSTOMY PROCEDURE DURING PANDEMIC COVID-19: CONTROVERSIAL ISSUES AND CHALLENGES; DOES IT BENEFIT?

**Md Arepen Siti Asmat**; Salahuddin Nor Azirah*; Hassan Nor Eyzawiah

*Otorhinolaryngology, Head And Neck Surgery, Surgical-Based Department, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia (USIM), Nilai, Negeri Sembilan, Malaysia*

**Introduction:** Tracheostomy is one of the aerosol-generating procedure (AGP) and has a high rate of COVID-19 transmission. There are some controversial issues pertaining to tracheostomy procedure in COVID-19 patient's are still debatable.

**Objective(s):** To review the issues regarding tracheostomy procedure for COVID-19 patients such as when to do the procedure, patient's selection, the safer operative's technique and risk of healthcare workers. Besides, the challenges faced by the surgeons during the procedure were also included.

**Methodology:** Searching of articles done through PubMed, Medline and Google scholar using keywords tracheostomy, COVID-19, intensive care, issues and challenges. Original articles were obtained and analyzed. The related information was retrieved and concluded in this article.

**Results:** About 35%-36% of ventilated COVID-19 patient underwent tracheostomy reported in China and Spain. There were variables of the time frame given to perform a tracheostomy, in between 7 to 21 days. The decision for the appropriate time was made after considering the viral load and the course of the disease. There were no clear criteria on the type of patients' selection, however, there were some guidelines suggested to perform tracheostomy for patients who had shown clinical improvement and based on Sepsis Related Organ Failure (SOFA) scores. The operative's technique used depends on the facilities and surgeon preferences. The patient's outcomes varied between centres. Nevertheless, the surgeon had to face some difficulties during the procedure such as limitation of movements and vision, communication and heat stress. There was a reported Health Care Workers infected from the procedure.

**Conclusion(s):** The best time to perform tracheostomy in COVID-19's patient is after 10 days of intubation. There are guidelines created for patient selection while techniques depend on the surgeon preference and the procedure can be a benefit to a selected patient only.

# CHALLENGES OF INDONESIA'S PLASTIC SURGERY SERVICES IN THE ERA OF THE COVID-19 PANDEMIC: A NARRATIVE STUDY

**Ulfa Elfiah**1*

*1Department of Anatomy and Plastic Surgery, Faculty of Medicine, University of Jember, East Java, Indonesia*

**Introduction:** The COVID-19 pandemic has caused changes in Indonesian people's rules of life, including the regulation of health services. The high morbidity and mortality due to COVID-19 require more health facilities and infrastructure. It becomes a priority so that it affects health services in plastic surgery, including outpatient services, inpatient services, emergency cases, urgent cases, and elective cases.

**Objective(s):** The purpose of this narrative study was to explore the challenges faced, problem-solving, and hopes of Indonesian plastic surgeons in providing services to patients during the COVID-19 pandemic.

**Methodology:** Participants in this study were five plastic surgeons who work in hospitals in the cities and two plastic surgeons who work in hospitals in townships. The city and township selection shows the differences in the challenges of health services in plastic surgery. The narrative data collection was carried out through semi-structured interviews using Whatsapp media.

**Results:** Based on thematic analysis, qualitative data showed that participants who worked in hospitals in the cities and townships during this pandemic had the same challenges. The challenges faced included: problems with personal protective equipment, patient status, patient screening, types of cases, difficulties in patient education, and concerns about their health conditions.

**Conclusion(s):** The author concludes that the right strategy in managing and facing the various challenges of plastic surgery health services during the COVID-19 pandemic is to create a standardized, safe and regulated health service system by the Indonesian plastic surgery college to apply equally to all Indonesian hospitals.

# COVID-19 AND SPEECH-LANGUAGE THERAPY IN MALAYSIA – CHALLENGES FACED AND ADAPTATIONS DURING THE EARLY PHASE OF THE PANDEMIC

**Razali, Nurshahira**1; Maniam, Puspa1*; Mohd Abdul Wahab, Wahida1.

*1 Department of Otorhinolaryngology, Hospital Kuala Lumpur, Malaysia*

**Introduction:** The Speech-Language Therapist (SLT) service in Malaysia involves assessment and management in the domain of speech, language, communication and swallowing. The current COVID-19 pandemic continues to pose several challenges in providing services and thus affecting the quality of treatment by SLTs.

**Objective(s):** The study aims to explore how the pandemic affected the SLTs individually as well as changes or adaptations to our general service delivery.

**Methodology:** An online survey was conducted among Malaysian SLTs from different backgrounds, including the government service, academic and private sectors to provide insight into their experiences during the early phase of the COVID-19 outbreak in Malaysia.

**Results:** A total of 50 SLTs responded. 96% agreed that the pandemic significantly affected their professional roles, responsibilities and duties, in which there was a reduction in routine clinical caseloads and referrals, with an increase in preparatory time for clinical services in the form of additional personal protective equipment (PPE) required during therapy. As a result, 54% of SLTs found it challenging to conduct sessions with PPE, with 64% of them finding difficulty maintaining physical distancing during therapy. Moreover, 95% of them were involved in non-clinical tasks during the pandemic. Additionally, patients are seen less frequently compared to pre-COVID-19 era, with more than 50% of the patients requested not to attend scheduled sessions resulting in suspended therapy. Virtual therapy remains an excellent alternative to this; however, only a quarter of SLTs managed to conduct their sessions virtually.

**Conclusion(s):** The early phase of the COVID-19 pandemic struck the SLT service in Malaysia drastically with the uncertainty of our roles, as well as disruption in the delivery of our core service. A “disaster” action plan is required to pave the way for the direction of service to comply with the new norm.

# GRAM-NEGATIVE BACTERIA AS THE PRIMARY CAUSE OF SECONDARY BACTERIAL INFECTION IN COVID-19: A SYSTEMATIC REVIEW

Agustina, Dini1*; **Supranoto, Yehuda T.N**2

*1 Department of Microbiology, Faculty of Medicine, University of Jember, East Java, Indonesia*
*2 Medical student, Faculty of Medicine, University of Jember, East Java, Indonesia*

**Introduction:** The Coronavirus disease 2019 (COVID-19) is a viral respiratory infection caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). This disease is often followed or associated with a bacterial infection. Secondary bacterial infections in patients with COVID-19 often have a more severe clinical course. To overcome this problem, it is required the administration of an antibiotic. The use of antibiotics will be more appropriate if the infectious agent is known precisely. Therefore, we need a study to describe the most common aetiology of a secondary bacterial infection or bacterial coinfection in patients with COVID-19.

**Objective(s):** This systematic review aimed to investigate the most frequent etiologic agent of secondary bacterial infection in COVID-19 so that it can provide an overview of the next steps of research and therapy.

**Methodology:** This systematic review was reported based on criteria from Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). A literature search was conducted with multiple electronic databases, such as PubMed, ScienceDirect, Cochrane Library, and Google Scholar. The keywords used in electronic databases were described using the Boolean operator. All literature was selected by considering the eligibility criteria and reference standards.

**Results:** Eleven studies were included in the qualitative synthesis. The current study shows that Gram-negative bacteria are a major cause of secondary infection in patients with COVID-19 (71%). While, Escherichia coli, Klebsiella pneumonia, Pseudomonas aeruginosa, Staphylococcus aureus, and Streptococcus pneumoniae, are the top five bacteria causing secondary bacterial infections or bacterial infections.

**Conclusion(s):** This systematic review provides valuable evidence of the most frequent etiologic agents of secondary bacterial infection in COVID-19 patients.

# CORRELATION STUDY BETWEEN BMI AND HYPERLAXITY OF JOINTS IN A GROUP OF YOUNG FEMALE ADULTS

**Sharifudin, Mohd Ariff**1*, Taib, Mai Nurul Ashikin1,2, Zaki, Hafizatul Solehah3, Che Ujang, Rahati Najwa3, Ishak, Nur Aisyah3.

*1Faculty of Medicine, Universiti Sultan Zainal Abidin, Medical Campus, 20400 Kuala Terengganu, Terengganu, Malaysia*
*2Ara Damansara Medical Centre, 40150 Shah Alam, Selangor, Malaysia*
*3Kulliyyah of Medicine, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia*

**Introduction:** Joint hyperlaxity is rarely a health issue (ROM) but posses a higher risk of developing troublesome sequelae. The symptomatic form of generalised hyperlaxity (GH) is called hyperlaxity syndrome (HS). Body mass index (BMI) and GH risk factors for developing joint disorders.

**Objective(s):** This study was conducted to determine the correlation between GH and BMI in young female adults.

**Methodology:** Sixty female Malay adults aged between 20 and 30 with a medical history of joint hyperlaxity were recruited and reviewed. Beighton score was used to identify the presence of GH (scores of >4) BMI was calculated using height and weight and categorised according to the World Health Organization (WHO) classification.

**Results:** The mean age was 22.49 years old. 30% of participants were diagnosed as having GH. Most of them have hyperlaxity of the upper limb, especially the wrist joint (88.89%) and the fifth metacarpophalangeal (MCP) joints (77.78%). Majority of participants with hyperlaxity of the fifth MCP joint had unilateral involvement. Four participants did not have an ideal BMI. A negative correlation (-0.2182) between BMI and hyperlaxity of joints was recorded.

**Conclusion(s):** Although both are risk factors for joint disorders, no positive correlation was found between the two. The results were similar to previous studies in other age group and population.

# CEREBRAL VENOUS THROMBOSIS IN THE COVID-19 PATIENT: A SYSTEMATIC REVIEW

**Sulistyani**1*, Iwan Setiawan2, Titian Rakhma3, Burhannudin Ichsan4

*1,2,3Department of Neurology, Faculty of Medicine, Universitas Muhammadiyah Surakarta*
*4Department of Public Health, Faculty of Medicine, Universitas Muhammadiyah Surakarta*

**Introduction:** Severe Acute Respiratory Syndrome coronavirus-2 (SARS-CoV-2) caused the pandemic of Coronavirus disease 2019 (COVID-19) began in December 2019, in Wuhan, China (Goldberg et al. 2020). Neurologic manifestations range from mild to severe, including impaired consciousness, acute cerebrovascular disease, and seizures. Arterial and venous thromboembolic complications in Covid-19 patients range from 5-10%, including cases of cerebral venous thrombosis. This is due to low-grade disseminated intravascular coagulation (DIC) and a localized pulmonary thrombotic microangiopathy. DIC is characterized by an increase in D-dimers, although in SARSCOV2 caused the increase in D-dimers was higher than in sepsis-induced coagulopathy.

**Objective(s):** This study aims to present characteristic CVT in Covid-19 Patients.

**Methodology:** The preparation of a Systematic review refers to the PRISMA (Preferred Reporting Items for Systematic Review and Meta-analysis) guidelines. Relevant articles were obtained from online databases and selected according to the eligibility criteria by looking at the title, abstract, full text, and critical appraisal results, then the article analysis narratively.

**Results:** Electronic searches conducted on August 5th, 2020 yielded a total of 404 after deduplication. Twenty-two of these were deemed potentially relevant after the title and abstract reading. Six studies met the inclusion criteria for this review after full-text reading and critical appraisal. Two case series and four case reports were reviewed and got 8 cases of CVT. The characteristics of CVT cases with Covid-19 are 42,4 years (23-65 years), five men (62.5%), cryptogenic 5 (62.5%), with neurological symptoms that vary from mild to severe head to coma, patients with increased D-Dimer 5 (62.5%), all CVT imaging, patients who received anticoagulants 7 (87.5%), patients who died 4 (50%)

**Conclusion(s):** CVT patients in Covid-19 tend to be young, male, and cryptogenic. This case has varied symptoms, requiring D-Dimer examination and neuroimaging for correct diagnosis.

# THE CONTENTIOUS MANAGEMENT OF ANAPLASTIC THYROID CARCINOMA VERSUS COVID-19

**Mohd Safian, Ahmad Izani**1; Mohd Isa, Seoparjoo Azmel2; Mat Lazim, Norhafiza1; Mohamad, Irfan1*

*1Department of Otorhinolaryngology-Head and Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia, Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia*
*2Department of Pathology, School of Medical Sciences, Universiti Sains Malaysia, Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia*

**Introduction:** Anaplastic thyroid carcinoma (ATC) is the most aggressive form of solid tumours in humans, with an average survival of 3-5 months. As the disease is rapidly progressing, most of the cases were diagnosed at the advanced stage. Rapid progression of the anterior enlarged neck mass often requires prompt airway management. Nevertheless, the coronavirus disease (COVID-19) outbreak in Malaysia warrants all healthcare providers to adapt and adopt the recommended Infection and Prevention Control guiding principles.

**Case presentation:** A 66-year-old lady, presented with rapidly progressive neck swelling for one month, associated with shortness of breath and stridor during this COVID-19 pandemic. She was intubated under a controlled setting in the operating room with full personal protective equipment. After the COVID-19 test result was confirmed negative, urgent CECT neck and thorax were performed and revealed a huge anterior neck mass, with retrosternal extension causing deviation and compression of the trachea. Fine needle aspiration for cytology concluded the diagnosis as ATC. She succumbed after day 4 of admission, with the final diagnosis of Stage IVC ATC.

**Discussion:** Airway management in ATC always impose a dilemma, and is made more challenging during this pandemic. The issue of providing artificial ventilation either via intubation or tracheostomy is made more complicated when the patient presents with acute upper airway obstruction with unknown COVID-19 status. While endotracheal intubation approach is not easy, the trachea is also difficult to be identified externally due to the huge 'cemented' mass plastering over the compressed trachea. Due to the advanced disease, surgical intervention is not an option.

# ETHNOPHARMACY STUDY AT OSING TRIBE IN BENELAN LOR VILLAGE, BANYUWANGI REGENCY: EXPLORING THE MEDICINAL PLANTS HAVING PROSPECTUS FOR COVID-19 THERAPY

Puspitasari, Endah; Damayanti, Alfina Eka; **Zikrina, Intan Nabila Sufi***; Dianasari, Dewi.

*Bioactive Natural Product Development Research Group, Faculty of Pharmacy, University of Jember, Jember, Indonesia*

**Introduction:** Ethnopharmacy is a study of the use of drugs and methods of treatment carried out by certain ethnic or ethnic groups.

**Objective(s):** The ethno-pharmaceutical study was conducted at Benelan Lor Village; Badean Village; Pengatigan Village; Aliyan Village; and Kepundungan Village, Banyuwangi, Indonesia to identify plants that have the potential to be tested for certain bioactivity.

**Methodology:** The ethnopharmacy study was done with a snowball and purposive sampling methods using qualitative and quantitative research with semi-structured interviews and questionnaires, the parameter used were the Use Value (UV), Informant Consensus Factor (ICF), and Fidelity Level (FL). The results were then followed by the literature study on the potential of the plants for COVID-19 therapy.

**Results:** Based on the results of the ICF value, it was found that circulatory system diseases had the largest percentage. On the FL values, kencur is used to treat categories of circulatory system diseases. On the UV calculations, plants that are considered important and often used were kencur (Kaempferia galanga), temulawak (Curcuma zanthorrhiza), gigen-gigen (Centella asiatica), suruh (Piper betle L), kunir (Curcuma domestica Val), manting (Syzygium polyanthum), pace (Morinda citrifolia L), and anggrek merpati (Dendrobium crumenatum). Of the eight plants, there were only three plants having immunomodulatory properties, they were kunir, temulawak, and gigen-gigen.

**Conclusion(s):** Kunir, temulawak, and gigen-gigen have the potential to be developed to prevent COVID-19, due to its immunomodulatory properties.

# THE ROLE OF CIRCADIAN RHYTHM ON DISTRESS AND ANXIETY REGULATION IN OLDER PEOPLE DURING PANDEMIC COVID-19

**Hamzah, Zahreni**1*; Meilawaty, Zahara1; Handayani, Ari Tri2

*1Departement Biomedical, Fac. of Dentistry, University of Jember-Indonesia*
*2 Departement Dental Public Health, Fac. of Dentistry, University of Jember-Indonesia*

**Introduction:** Older people (≥ 60 years old) are susceptible to COVID-19 attacks, particularly those with underlying health conditions or comorbidities. Since march (6 months) ago, older people in Indonesia started to be affected by this new novel coronavirus, such as distressed feeling, anxiety, confusion, quickly exhausted and muscle pain. This behaviour alteration might be caused by circadian rhythm transformation, physiological function, and central nervous system modulation, which is repeated for 24 hours.

**Objective(s):** This study aimed to describe sign and symptoms emerge during COVID-19 pandemic in older people who are living in Jember, East Java-Indonesia.

**Methodology:** Qualitative-descriptive analysis is used by performing some observations, surveys based on online Questioner-Answer and secondary data from the Indonesian Health Ministry and public health Office, East Java, Indonesia.

**Results:** Based on the survey results, a lot of older people in Jember experience mental disturbances (distress and Anxiety) due to COVID-19 pandemic. They felt disturbed because they cannot go outside the house and communicate with relative or neighbours, as they used to be.

**Conclusion(s):** Older people could have a healthy life in COVID-19 pandemic era if they lived a life as they used to be in a limited manner without any pressure. The elderly should be given an understanding slowly so as not to cause sudden changes so that circadian rhythm changes do not occur that result in mental disorders or other related disorders.

# AEROSOL BOX – ADAPTING TO THE NEW NORM

SFA Wahab1,2* , **R Othman**3, AR Ismail4,5

*1 School of Medical Science, Universiti Sains Malaysia, Malaysia*
*2 Hospital Universiti Sains Malaysia, Kelantan, Malaysia*
*3Mechanical Design Department, Kolej Kemahiran Tinggi MARA Pasir Mas, 17000, Lubok Jong Kelantan*
*4Faculty of Creative Technology and Heritage, Universiti Malaysia Kelantan, Campus Bachok, Bachok, Kelantan, Malaysia*
*5Centre of Management Environment, Occupational Safety and Health (CMeOSH), Universiti Malaysia Kelantan, 16300 Bachok, Kelantan, Malaysia*

**Introduction:** Workers in the Accident and Emergency Department face a high risk of infections when triaging patients and performing procedures such as intubation. Thus, an aerosol box is introduced. This study took place at a red zone of a university hospital in Malaysia

**Objective(s):** Objectives of this study are to determine whether the aerosol box can achieve its objective in providing adequate guarding and protection to its users and the body posture of the user.

**Methodology:** Aerosol box was made of prospect with open bottom. It was used to do procedures on highly infectious patients with the aim of protecting the operator. During the assessment, the effectiveness of aerosol box usage was observed. The body posture of a healthcare worker is evaluated using Rapid Entire Body Assessment (REBA). REBA used a score sheet to calculate the worst body posture of the assessor. The score is negligible, 2-3 is low risk, 4-7 is medium risk, 8-10 is high risk and 11 and above is very high risk. The study used a mannequin as a substitution for the real patient.

**Results:** Findings indicate the aerosol box alone is not adequate in protecting the healthcare workers from the risk of infection. The risk of leakage due to the current design of the box is identified because, during the procedure, the box lifted. The REBA scores range from medium risk to high risk.

**Conclusion(s):** The shape of the box must be redesigned according to the shape of bed so that it can be placed at the near end of the bed. The height of the box is also needed to change.

# STUDENT PERFORMANCE DURING ONLINE TUTORIAL SESSION IN PROBLEM-BASED LEARNING METHODS

**Ami Febriza Achmad**1*, Nur Faidah, Asdar

*1 Departement of Physiology, Faculty of Medicine, University of Muhammadiyah Makassar, Indonesia*
*2 Departement of Biochemistry, Faculty of Medicine, University of Muhammadiyah Makassar, Indonesia*
*3 Departement of Surgery, Faculty of Medicine, University of Muhammadiyah Makassar, Indonesia*

**Introduction:** The rise of COVID-19 in Indonesia caused the majority of educational institutions to organize learning processes online. This is done to reduce the spread of the virus. Adaptation in learning during the pandemic in medical education, carried out in various ways, including problem-based learning (PBL).

**Objective(s):** The objective of this study was to analyze the student's performance during an online tutoring session.

**Methodology:** The student's performance was measured by direct observation with a rubric that was filled out by the tutor during the session and their level of understanding about the module, cognitive abilities, by pre and post-test, before and after the tutorial session. This study used a comparative design with a cross-sectional study approach. The study was conducted in the 2019/2020 academic year and 92 respondents who met the research criteria were recruited.

**Results:** Results showed high overall performance for the students during the online tutorial and a statistically significant increase score between pre and post-test (with p-value < 0.000, A Wilcoxon signed-rank test). Students were showing good participation and communication skills, even though the discussions were done online via teleconferencing. They still have shown ability in applying and linking concepts to the problem and draw valid conclusions.

**Conclusion(s):** There is a relationship between student performance with their level of understanding about the module that showed by the increasing score in the test. As a conclusion, an online tutorial is effective in problem-based learning.

# VIGILANCE ASSESSMENT OF HIGHER EDUCATION INSTITUTE POPULATION DURING ALERT PHASE COVID-19 PANDEMIC: AN EXPERIENCE SHARING.

**Salvaraji, Loganathan1**, Syed Abdul Rahim, Syed Sharizman1*, Omar, Azizan1, Tze Ping Pang, Nichloas1, Ahmedy, Fatimah1, Hayati, Firdaus1, Boon Tat, Yeap1, Giloi, Nelbon1, Saupin Sahipudin1, Muhamad, Assikin1, Zainudin, Syaza Putri1, Jeffree, Mohammad Saffree1.

*1 Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, 88400, Malaysia.*

**Introduction:** The higher education institution confronts extensive challenge in overseeing the impact of the COVID-19 pandemic. The liability of exposure from the community struts a threat to the campus personnel and students. If left unmanaged, the spread of COVID-19 worsens and leads to serious detrimental effects to the institute population.

**Objective(s):** This study illustrates epidemiological attributes of suspected COVID-19 cases among the institute's personnel and students.

**Methodology:** Review on the secondary data compiled from the COVID-19 Preparedness and Response Center in the institute situated at Kota Kinabalu for a 4-month period (January until April 2020). A targeted incidence rate was established according to institute location, students, and staff. Details about gender, age, job position, type of contact, source of exposure and presence of symptoms recruited through interviews and documents.

**Results:** Suspected COVID-19 cases are identified among staff (57.1%) and male gender have a higher incidence rate compared to female (IR=40.2/1,000 population) and those assigned as frontline (IR=39.6/1,000 population). Overall suspected COVID-19 cases have types of contacts in regard to occupations (37.3%) and social contacts (27.3%). Common types of contacts among students were related to the household (38.1%) and during travel (33.3%). One positive COVID-19 case was identified out of the 161 suspected cases (0.6%) in the institution.

**Conclusion(s):** A task force team must be formed to implement vigorous contact tracing and situational analysis integrated with other departments to help the institute continuity plan. Suspected COVID-19 cases must be quarantined and assessed daily for prompt identification of symptoms. A high index of suspicion and effective containment of suspected cases will hinder the transmission of the virus among the institute population.

# COVID-19 TEACHERS' DILEMMA: THE PAST, THE PRESENT AND THE FUTURE

**M Yusof, Hazira**1; Wan Ali, Wan Nor Syariza1; Mohamed, Nusima1.

*1 Clinical Lecturer, Department of Conservative Dentistry and Prosthodontics, Faculty of Dentistry, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia*

**Introduction:** Dental education has been relying on the foolproof method of student-centered face to face (f2f) classes, demonstrations and hands-on practical simulation. When Covid-19 outbreak changes this blueprint with distant online learning, the main question arises if this change is for the better?

**Objective(s):** The objective of this study was to assess the effect of online learning methods on the final examination performance for undergraduate students.

**Methodology:** One-way analysis of variances was conducted to assess the impact of learning methods on academic performance through assessment of final examination scores from the year 2018 (f2f), 2019 (f2f) and 2020 (online learning) for students in Year 3, Year 4 and Year 5.

**Results:** A one-way between subject ANOVA was conducted to compare the effect of f2f and online learning methods on the mean examination result performance. There was a statistically significant difference in learning methods on final exam performance at the $p<0.05$ level for Year 3 [$F(2, 102) = 11.68$] and Year 5[ $F(2, 95) = 22.32$]. There was, however, no statistically significant difference in different types of learning methods on examination performance for Year 4 students. Post hoc Tukey HSD test indicated that the mean exam results for exam performance for 2019 was significantly different from 2020 and 2018 even though the same learning method was employed for the latter. Overall, the result shows that face to face learning in the year 2019 is the most effective method for Year 3 ($M=64.59$, $SD=6.65$) and Year 5 ($M=66.5$, $SD=3.42$).

**Conclusion(s):** The result shows that the f2f learning method is more effective than online learning. However, e-learning is a newly employed method in dental education, and it should be further analyzed and refined to be used to enhance the effectiveness of conventional classroom lecture.

# IMPACT OF COVID-19 PANDEMIC TO DENTAL EDUCATION: A NARRATIVE REVIEW

**Abdul Fatah, Faizah**1*; Ahmad Tarmidzi, Nor Azura1; Mat Baharin, Nor Haliza1; Md Zahid, Diana1; Mohamad Hanafiah, Rohazila1; Mohamed, Nusima1; Wan Ali, Wan Nor Syariza1; Ibrahim, Zurairah1.

*1 Faculty of Dentistry, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia*

**Introduction:** The COVID-19 pandemic that hit the world has left an impact in many aspects of life including education. Dental health education faces significant impact due to this pandemic, in terms of teaching and learning activities and assessments, especially the psychomotor component (clinical and practical). Student's clinic was tremendously affected and students were required to follow strict infection control procedures as the new norms.

**Objective(s):** This sharing of experience article aims to discuss the challenges faced by dental educators and the course of actions taken by the Faculty of Dentistry, Universiti Sains Islam Malaysia (USIM) to ensure the learning process is not disrupted during the pandemic crisis.

**Results:** The challenges in dental education can be divided into the coordination of planning and implementation of dental education, adherence to guidelines directed by the authorities, teaching and learning activities through online sessions and implementation of practical and clinical sessions. The faculty overcome these challenges by setting up committees such as online learning and clinical COVID-19 committee. The Online Learning Committee is dedicated to monitoring the participation of faculty members in training sessions, as well as assisting the lecturers in conducting the online learning and assessments sessions. Clinical COVID-19 Committee is responsible to ensure strict adherence to the standard operating procedures in preventing the spread of COVID-19, by producing clinical guidelines and conducting training. Good record keeping is implemented for future reference and periodic monitoring processes were carried out to ensure compliance with established guidelines.

**Conclusion(s):** In dealing with pandemic situations, it is important to have good teamwork, immediate planning and implementation and interaction from time to time with those involved i.e. academic and support staff, students and patients. This step is important in ensuring the learning activities and clinical services in dental schools run smoothly.

# ASSESSMENT OF PSYCHOLOGICAL WELLNESS DURING COVID-19 PANDEMIC AMONG USIM'S DENTAL STUDENTS.

**Samsudin, Ahmad Dzulfikar**1*; Jaafar, Azlan2; Idaham, Nurul Izza2..

*1 Department of Oral Maxillofacial Surgery, Pathology and Medicine, Faculty of Dentistry Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia*
*2 Department of Periodontology and Community Oral Health, Faculty of Dentistry, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia*

**Introduction:** COVID-19 pandemic has given a profound effect on the lives of people around the world. Fear and anxiety about a new disease, what are the consequences to the future may cause stress to people and society including university students.

**Objective(s):** To assess depression, anxiety, and stress level experienced by the dental students of Faculty of Dentistry USIM during the pandemic COVID-19 outbreak.

**Methodology:** A Depression, Anxiety and Stress Scales (DASS-21) were distributed online among USIM's dental students to assess their psychological impact and mental health status. The questionnaire included demographic characteristics of respondents.

**Results:** A total of 175 students involved in this study. Majority of the respondents are female (79.4%), first-year dental students (25.7%) and stay at home with family (94.9%) in the midst of the outbreak. Overall, the depression, anxiety and stress (DASS21) scores are normal. However, the proportion of the student's anxiety level was apparently higher than depression and stress. A significant finding showed that students who stayed at home were more anxious than those who stayed at the hostel (p=0.035).

**Conclusion(s):** Pandemic COVID-19 lockdown revealed psychological impact to the USIM's dental students mainly on anxiety level. Mental health among the students should be carefully monitored by the university particularly at the faculty level to prevent unnecessary events.

# IMPLEMENTATION OF E-LEARNING IN UNIVERSITI SAINS ISLAM MALAYSIA (USIM) DENTAL SCHOOL DURING COVID-19 PANDEMIC CRISIS.

**Mohamed, Nusima**1*; Badlishah Sham, Nurul Iman1; Osman Basah, Rina Haryani1; Rokhani, Faezah1; M Yusof, Hazira1; Abdul Fatah, Faizah1; Mohamed Jali @ Yunos, Mohamed Hisham1; Idaham, Nurul Izza1

*1 Faculty of Dentistry, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia*

**Introduction:** Covid-19 crisis has become a pandemic disease outbreak declared by the World Health Organization (WHO) in the year 2020. This sudden outbreak has led to the change in terms of methods in teaching and learning for USIM's dental students. The traditional face to face lectures and examinations previously has shifted to e-learning. Therefore, e-learning has become a tool for USIM's dental school teaching and learning process during a covid-19 crisis.

**Objective(s):** To assess the lecturers and students' perceptions, preparation and obstacles that might be encountered during the implementation of e-learning methods and to determine the suitable methods for USIM's dental students.

**Methodology:** Online survey and feedback on e-learning was distributed to lecturers and students before the semester started. For an online assessment survey, the form was given after the trial and real assessment. Google or Microsoft Form was used. Data presented descriptively.

**Results:** 87.2% of lecturers were prepared to do teaching and learning online. However, they required training sessions to strengthen the e-learning process. 41% of lecturers used Zoom Application meeting (ZAM) to deliver online synchronized lectures while for a seminar, tutorial, single group discussion and problem-based learning various methods were used including Kahoot, Padlet and Quizziz. A combination of a few e-learning applications was applied for objective structured clinical examination(OSCE) and pre-clinical examination. 44% of students were having problems continuing e-learning sessions in the future. Enough internet data as well as finding suitable areas and time to join online learning due to low internet access at their home was their concern. It was worse during the online examination and this might affect their results. Lecturers also found it difficult to control confidentiality during the examination.

**Conclusion(s):** E-learning among lecturers and students during a pandemic is well managed. However, there are a few obstacles that have to be overcome before the implementation.

# THE USE OF SIMULATED PATIENTS IN OBJECTIVE STRUCTURED CLINICAL EXAMINATION DURING COVID-19 PANDEMIC: REPORT OF AN INITIAL EXPERIENCE

**Ab Rahman, Siti Soraya***; Sanip, Suhaila1.

*1 Medical Education Unit, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Malaysia*

**Introduction:** The COVID-19 pandemic has brought about unprecedented public health measures. Final year medical students in our university were particularly affected because a new method of clinical assessment was introduced in their final professional examination. In compliance with new standard operative procedures, the Objective Structured Clinical Examination (OSCE) replaced the traditional long and short cases format.

**Objective(s):** We share our initial experience in recruiting and training simulated patients for OSCE.

**Results:** The faculty did not have an existing pool of simulated patients (SPs). We sought participation from the public via advertisements placed in multiple social media and web sources. Response to the advertisement was encouraging, and we successfully recruited two-thirds of the total number of required volunteers. The remaining SPs were recruited through word of mouth, mainly friends and family members of the faculty staff.  Training of SPs was divided into two sessions. The first session was conducted one month prior to the examination. The volunteers were given a general briefing on the role of SPs and the conduct of OSCE. They were briefed on rules and regulations, with emphasis placed on confidentiality of the exam script. Volunteers with a conflict of interest were disallowed from participating. Subject coordinators then selected SPs most suitable for their OSCE station from the common pool. The second session was conducted three days prior to the examination. SPs were grouped according to their respective stations, given the exam script, and coached by the lecturers who set the question. A detailed explanation was given regarding the flow of events of the exam day. SPs were reminded to memorize the exam script as they were not allowed to bring it with them on the exam day. Lastly, they signed a consent and confidentiality form.

**Conclusion(s):** Comprehensive SPs training is critical to the sucess of OSCE

# THE S-PROTEIN POINT MUTATIONS OF SARS-COV-2 IN INDONESIAN COVID-19 PATIENTS

**Sulistyaningsih, Erma**1*; Dewi, Rosita2.

*1 Department of Parasitology, Faculty of Medicine, University of Jember, Jember, Indonesia*
*2 Department of Histology, Faculty of Medicine, University of Jember, Jember, Indonesia*

**Introduction:** SARS-CoV-2 is the novel human-infecting Coronavirus causing covid19 and resulting in more than 38 million cases worldwide. The virus uses its spike glycoprotein (S) to bind its receptor and mediate membrane fusion. Virus entry makes this protein responsible for the disease pathogenesis and as a main target for neutralising antibody.

**Objective(s):** The study aimed to identify the point mutations in the S-protein of SARS-CoV-2 in Indonesian covid19 patients.

**Methodology:** The SARS-CoV-2 genome from Indonesia and several countries' representations of each continent (Taiwan, India, Zhejiang, Italy, France, Germany, and the USA) were collected from the GISAID EpiCoV database, and the reference sequence Wuhan-Hu-1 (NC_045512) was retrieved from GenBank, NCBI. We used DNASTAR software to analyse the mutation.

**Results:** As many as 23 complete SARS-CoV-2 genomes were collected. The S-protein was extracted from nucleotide 21563 – 25384. There were 15 point-mutations in the position of nucleotide 21789, 21795, 21909, 21976, 22115, 22616, 23277, 23403, 23426, 23575, 23577, 23593, 23731, 24026, and 25323, those mutations causing 12 changes of amino acid T572I, D614G, V622F, A672V, Q677H, L822F, and C1254F.

**Conclusion(s):** The D614G point mutation of S-protein in Indonesian covid19 patients is the most common variant as worldwide. The mutation is located in the B-cell epitope with a highly immunodominant region that may affect its infectivity and vaccine effectiveness. The further molecular study, in conjunction with clinical findings, is needed to develop an immunological intervention.

# NEUTROPHIL TO LYMPHOCYTE RATIO, PLATELET TO LYMPHOCYTE RATIO AND ABSOLUTE LYMPHOCYTE COUNT IN CORONAVIRUS DISEASE PATIENTS

T**olla, Nelly** 1,2,3*; Pratiwi, Andi P. H.1; Anggeraini, Andi Salsa1; Faidah, Nur1; Djauhar, Yuni Anggriani3.

*1 Departement of Biomedical Science, Faculty of Medicine, Muhammadiyah Makassar University, Makassar, Indonesia*
*2 Department of Clinical Pathology, Faculty of Medicine, Muhammadiyah Makassar University, Makassar, Indonesia*
*3 Morowali Hospital, Morowali, Central Sulawesi, Indonesia*

**Introduction:** Inflammatory response is believed to play a major role in the pathophysiology of Covid-19. To date, many studies have been developed to determine laboratory markers of inflammation with better precision, time and cost. Laboratory markers such as neutrophil-lymphocyte ratio (NLR) and platelet lymphocyte ratio (PLR), obtained from the routine blood tests, indirectly reflect patient's inflammatory state and has been validated as one of the prognostic markers in many diseases.

**Objective(s):** To analyze neutrophil-lymphocyte ratio, platelet lymphocyte ratio, and absolute lymphocyte count in Covid-19 patients.

**Methodology:** 68 patients in Morowali Hospital suspected of Covid-19 based on their radiological imaging and rapid test results. The patients were divided into positive and negative groups. Each group was grouped again based on their symptoms as moderate and severe symptoms group. The patients were checked for a routine blood test, nasopharynx and oropharynx swabs. The NLR, PLR and absolute lymphocyte count (ALC) were calculated based on the blood test. The data distribution was tested with Kolmogorov-Smirnov and analyzed with the appropriate data test.

**Results:** The NLR and ALC values in Covid-19 patients were significantly different in the positive and negative groups ($p<0.05$), while the PLR values were not significantly different in the two groups. The ALC value was not statistically significant in the group with moderate and severe symptoms in the positive and negative group. In contrast, the NLR values were significantly different in 4 groups with ($p=0.000$). Spearman rho correlation test showed a significant correlation between the NLR value, the swab results, and the patient's symptoms ($p=0.000$) with a correlation strength of 79.6%.

**Conclusion(s):** There are differences in NLR and ALC values in patients with Covid-19. There is a significant correlation between the NLR value and the symptoms experienced by Covid-19 patients.

# PARASITE IMMUNOMODULATION IN ENDEMIC COUNTRIES: DOES IT AFFECT THE PREVALENCE OF COVID-19?

**Hermansyah, Bagus**1*; Agustina, Dini2; Risqiyani, Siti Z3; Habibi, Ali3

*1 Department of Parasitology, Faculty of Medicine, University of Jember, East Java, Indonesia*
*2 Department of Microbiology, Faculty of Medicine, University of Jember, East Java, Indonesia*
*3 Medical student, Faculty of Medicine, University of Jember, East Java, Indonesia*

**Introduction:** Now, about 35 million cases and one million deaths in the ninth months of COVID 19 in the world. Africa and some endemic countries of parasitic infestations had a low incidence of COVID-19. By contrast, the United States and several countries in Europe as a non-endemicity of parasitic infections, recorded a high incidence of Covid-19. It could be that the two things are related. As we know, some parasites have an immunomodulatory mechanism that can induce an immunotolerogenic state in infected persons by balancing pro-inflammatory and anti-inflammatory responses. it is feasible to hypothesize that an increase in the number of regulatory immune cells due to the immunomodulatory effects of a pre-existing parasitic infection could result in a reduction in the risk of COVID-19. Objective: To find out more about the role of parasitic infections in modulating the immune response so that it can reduce the risk of covid in endemic countries.

**Results:** The mechanism of immunomodulation by parasites is increased numbers of Treg cells, M2 macrophages, eosinophils, Th 2 cytokines IL-4 and IL-5, and downregulate of proinflammatory such as IFNλ, TNFα, IL-6, which play an important role in the occurrence of cytokine storms in COVID-19. That condition will probably occur in a person with a parasitic infection that is in a limited community facility and infrastructure for treatment of parasites regularly such as in developing countries, which must also be supported by a competent immune system and do not have a chronic illness.

**Conclusion(s):** In endemic countries, the immunomodulation effect of parasites infection to reduce the risk of COVID-19 cases/death is possible if the host is immunocompetence.

# THE PROVISION OF SELF-MEDICATION ASSISTANCE AND INTEGRATIVE MEDICINE SERVICES IN COMMUNITY PHARMACY: AN INSIGHT TO NEW NORMAL PHARMACY PRACTICE

**Andi Hermansyah**1*, Anila Impian Sukorini1, Abdul Rahem1

*1 Faculty of Pharmacy, Universitas Airlangga, Indonesia*

**Introduction:** Community pharmacy has the potential to contribute to public health care by assisting patients with self-medication requests. Besides, there is an increasing trend nowadays that patients self-medicate with Integrative Medicine (IM). It is unknown whether such a practice might be a sustainable post-COVID-19 pandemic.

**Objective(s):** This study aimed to assess the provision of self-medication assistance services and to identify IM services provided by the community pharmacy in Indonesia.

**Methodology:** A cross-sectional study was conducted through a nationwide survey in 7,000 pharmacists across the country from September 2018 to May 2019. The survey consisted of two main sections asking for the types of self-medication services and provision of IM services, respectively. The data were descriptively analysed using SPSS Ver 22.

**Results:** A total of 1,952 pharmacists participated in the survey. 78% of the participants were female, with almost half of the ages being between 21-30 years (49%). The large portion of pharmacists offered self-medication assistance (86%) to the patients. Some of these pharmacists claimed to provide client assessment before self-medication (75%) and drug information and counselling (77%) to the clients. Still, they did not monitor the effectiveness of the services they have provided (53%). A significant proportion of pharmacies did not support and did not provide IM services such as acupuncture, aromatherapy, meditation and spiritual therapy. However, some pharmacies were providing herbal medicines.

**Conclusion(s):** Self-medication was commonly practised in the Indonesian community pharmacy. Pharmacists currently not supportive of IM. This can be an insight that pharmacy practice might need to evolve during the new normal as there was a significant rise in patient inquiries for self-treatment during the COVID-19 pandemic particularly given the limited access to healthcare facilities due to lock-down and activity restriction. This might imply a potential role for pharmacy self-medication assistance and IM services focusing on herbal medication. However, future uptake might be determined by pharmacist competence and willingness to provide such services.

# URRENT UPDATE ON NOVEL THERAPEUTIC STRATEGY FOR SEVERE AND CRITICAL COVID-19 PATIENTS: A SYSTEMATIC REVIEW OF MESENCHYMAL STEM CELLS (MSCS) THERAPEUTIC OUTCOME IN COVID-19 ASSOCIATED ACUTE RESPIRATORY DISTRESS SYNDROME

**Yulianti, Natasya F**1*

*1 Universitas Jember, Jember, Indonesia*

**Introduction:** Severe cases of COVID-19 infection have been associated with acute respiratory distress syndrome (ARDS). ARDS is the worst prognosis of the manifestations with low survival and high mortality rate. Considering many patients died of severe inflammation response, it is urgent to develop effective therapeutic strategies for severe and critically ill COVID-19 patients. Mesenchymal stem cells (MSCs) have been shown to possess a comprehensive, powerful immunomodulatory and anti-fibrotic function.

**Objective(s):** he author performed a systematic review to determine whether the administration of MSCs is safe and potentially useful in these patients.

**Methodology:** The author performed studies search on the PubMed, Science Direct, and Cochrane Library databases using specific keywords. After the studies were selected through inclusion and exclusion criteria, extraction was carried out. Publications from 2019 to September 2020 were reviewed, yielding in 1137 studies, of which five were included.

**Results:** MSCs were intravenously administered in 85 participants, who were followed for 12 to 22 days. MSCs were from bone marrow, umbilical cord, adipose tissue, or unreported sources. No related serious adverse events were reported. A trend was found of improved radiographic findings, pulmonary function, and inflammatory biomarker levels. No comparisons were made between the MSCs of different sources.

**Conclusion(s):** Due to its safety profile, capacity to restore oxygenation, downregulate cytokine storm, and reconstitute immunity as well as the presumptive therapy mechanisms of action, MSC is a promising therapeutic candidate for severe and critically ill COVID-19 patients. Future RCTs are still needed to determine the therapeutic potential.

# PREPARATION FOR HIGH STAKE UNDERGRADUATE MEDICAL SCHOOL EXAMINATION DURING COVID-19: STUDENTS' PERSPECTIVES

**Nour Hanan Daniah MB**1*, Ahmad Anwaar MS1, Ruhi Fadzlyana J1

*1 University Sains Islam Malaysia, Kuala Lumpur, Malaysia*

**Introduction:** The COVID-19 pandemic has had a more dramatic impact on medical students in the clinical years with hospitals suspending medical and observership students from attending clinical attachments. During the pandemic, medical students have evacuated inpatient and outpatient arenas to reduce viral transmission, so they were unable to practice their clinical skills on real patients. Regardless of the pandemic, high stakes examinations have to take place, and preparation must be done.

**Methodology:** Universiti Sains Islam Malaysia (USIM) has made a drastic change in the delivery of medical education and conduct of its final undergraduate examination for the students. The usual way of teaching and learning session has been changed to video conferencing session and small group discussion about maintaining social distancing. The traditional one long and three short cases clinical examinations were converted to objective structured clinical examination (OSCE) comprising of sixteen manned and twenty unmanned stations.

**Results:** The pandemic has become the biggest challenges for USIM final year medical students to adapt physically and mentally with the new style of learning and format of examination in less than three months. Mock OSCE conducted by the lecturers, sources from the internet and books were beneficial to help the students in preparing for the new method of examination. Students' family members and colleagues were taking the role of the simulated patient for students to practice their physical examinations and history taking techniques. Students adapt quickly by attending and conducting intensive revision classes tailored to the new examination method.

**Conclusion(s):** The overall feedback from USIM medical students found that OSCE is a more favourable assessment method in comparison with the traditional clinical examination. OSCE can assess the student's capabilities in all aspects of knowledge and skills, as they are tested in all rotations that they have gone through during the OSCE.

# THE EFFECTIVENESS OF MOBILE APPS IN HEALTHCARE MANAGEMENT AND IN COVID -19 PANDEMIC.

**Nursyamila Zamri** 1, Fathima Begum Syed Mohideen2*

*1 Faculty of Medicine and Health Science, Universiti Sains Islam Malaysia, Nilai, Malaysia*
*2 Family Medicine Unit, Faculty of Medicine and Health Science, Universiti Sains Islam Malaysia, Nilai, Malaysia*

**Introduction:** Mobile health applications (mHealth apps) assist in healthcare management to track health problems and to improve personal wellness goals. Various mHealth apps are available, but their effectiveness is unknown. The 'MySejahtera' app is an example, currently used to manage COVID-19 pandemic in Malaysia. This review will deliver information on the efficacy of mHealth apps and the role of 'MySejahtera' app in managing COVID-19 pandemic.

**Objective(s):** To identify the types of mobile apps, use and effectiveness. To inform the role of 'MySejahtera' apps in controlling COVID-19 pandemic in Malaysia.

**Methodology:** The literature reviews were based on electronic databases: PUBMED and Google Scholar. From the search, several journals and articles from the year 2011 until 2020 were read and retrieved, based on its relevance. Keywords used to search were "mHealth apps" and "effectiveness" or "quality" or "uses" or "My Sejahtera" and "COVID-19".

**Results:** There are four types of mHealth apps. These are the information apps, diagnostic apps, control apps and adapter apps. Mobile App Rating Scale (MARS) is used to assess the reliability of mHealth apps. Review shows, the mHealth apps was proven effective. For instance, in reducing HbA1c level in diabetic patients and decreasing weight in patients who were not chronically obese. As for 'MySejahtera' app, it enables the users to perform a self-health assessment, to locate the nearest health-screening centre, and to provide the latest update on COVID-19 cases in Malaysia. However, the key role of this application is to contact tracing, to assist the Ministry of Health Malaysia to prevent the transmission of COVID-19 virus.

**Conclusion(s):** The mHealth apps are not only useful in the management of non-communicable diseases like Diabetes Mellitus and Obesity but also to control infectious diseases like COVID-19. More reliable apps like 'MySejahtera' are necessary for the prevention of infectious diseases like COVID-19.

# A SYSTEMATIC REVIEW ON KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS COVID-19 AMONG MEDICAL STUDENTS.

**Sufyan, Syahidatul**1; Long, Long Muhammad1; Shamsuddin, Syamim1; Jamil, Fathimah1, Mohd, Balkhis1; Abdul, Muhammad1; T Mohd, Tengku Amatullah Madeehah1; Azzeri, Amirah1 Mohamad Nor, Nadeeya1; Abu Baharin, Mohamed Fakhri1; Baharom, Nizam1; Mohd Razi, Nurain Amirah1; A. Rahman, Zairina A1; Mohd Rani, Mohd Dzulkhairi1; Mohamad Yusuff, Aza Sherin1; Jaafar, Hafiz1*.

*1 Public Health Unit, Department of Primary Care, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia.*

**Introduction:** The COVID-19 pandemic has been the theme for the year 2020. Medical students being future doctors should have an adequate understanding of this pandemic.

**Objective(s):** The aim of this systematic review was to assess COVID-19 related knowledge, attitude towards COVID-19 and practices in preventing COVID-19 infection among medical students worldwide and to determine their associated factors.

**Methodology:** A systematic literature search was performed using a combination of selected keywords in six electronic databases to identify literature that assessed either the knowledge, attitude and practice regarding COVID-19 among medical students. The six electronic databases were PubMed, EBSCOhost, SocINDEX, ScienceDirect, and Medline. The Newcastle–Ottawa Scale was used to evaluate the quality of these studies. The systematic review included studies from December 2019 to 19th June 2020. Inclusion criteria were a) studies with primary data collection; b) written in English; and c) study population consists of medical students. Studies with medical, dental and other allied health students were also included.

**Results:** A total of 735 studies were obtained of which nine articles were found suitable for inclusion in the final review. The total population of all studies combined was 7272 people worldwide. Not all studies present findings for knowledge, attitude and practice regarding COVID-19. Overall, there were high levels of knowledge, ranging between 71.2-91%. Only one study reported a 74% in a good attitude, while for practices regarding COVID-19 two studies reported 94.5% and 57% of students practising good practices. Being female and at a higher year of study were factors found to be associated with high levels of knowledge, attitude and practice. In studies with other health sciences students, studying medicine was associated with higher scores in knowledge, attitude and practices.

**Conclusion(s):** Overall, medical students have a high level of knowledge, good attitude and variable practices regarding COVID-19. This study highlights the importance of reinforcing knowledge, correct attitude and good practices regarding COVID-19 among medical students.

# CHALLENGES IN MEDICAL EDUCATION DURING THE COVID-19 PANDEMIC: STUDENTS' PERSPECTIVES FROM A MALAYSIAN INSTITUTION

**Ahmad Anwaar Muhammad Saifullah**1*, Nour Hanan Daniah Mohd Bakhit1, Mohd Rahman Omar1 , Maimunah Abdul Muna'aim1, Suhaila Sanip1

*1 Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai*

**Introduction:** The COVID-19 pandemic imposes unprecedented challenges for medical education around the globe. Both academics and students had to quickly adapt to several changes in medical education delivery. This paper describes how students adapted to the changes in order to comply with the guidelines implemented by the Malaysian Medical Council, Ministry of Higher Education and the Ministry of Health to curb the spread of COVID-19 while fulfilling the course requirements. We will discuss the influence of the pandemic on our medical education landscape from the students' perspectives, outline existing and proposed adaptations to social distancing, as well as describe potential challenges that lie ahead.

**Approach:** The use of various online applications enabled the students to participate in various teaching and learning activities (TLA) whenever and wherever they are, which allows for more flexible scheduling of the classes. The students also participated in a series of online classes including case-based discussions, clinical practice guideline (CPG) discussions, case presentations and objective structured clinical examination (OSCE) simulations. Access to online applications also allowed the students to participate in TLAs conducted by other institutions both locally and abroad, as well as collaborated among themselves and students from other institutions to conduct online peer-teaching activities.

**Evaluation:** The problems faced by the students were mainly technical issues including unstable internet connection which interrupted and reduced the quality of the speakers' voice. Since the students were unable to practise with real patients in the ward, they had to improvise by doing physical examinations on their friends and family members while looking up expected abnormal findings in textbooks and the internet. Learning medicine from a distance also gave us the experience of telemedicine which may be the way forward in medical practice after the pandemic. The reduction of personal contact with real patients and 'human touch' in online classes may also retard the acquisition of soft skills required of medical practitioners.

**Conclusion:** Students and academics need to be adaptive, resourceful and patient in facing these changes together. The institution needs to look at all stakeholders' perspective in order to respond to the changes in the medical education landscape and rise to the occasion..

# PSYCHOLOGICAL IMPACT OF THE COVID-19 PANDEMIC AMONG UNDERGRADUATE STUDENTS: A SYSTEMATIC REVIEW

**Ghani, Syamsul**1*; Marjeran, Atikah1; Zakaria, Afiq1; Mahadi, Humaira1; Ghazali, Munirah1; Mohamad Nor, Nadeeya1; T Mohd, Tengku Amatullah Madeehah1; Azzeri, Amirah1 Abu Baharin, Mohamed Fakhri1; Baharom, Nizam1; Mohd Razi, Nurain Amirah1; A. Rahman, Zairina A1; Mohd Rani, Mohd Dzulkhairi1; Mohamad Yusuff, Aza Sherin1; Jaafar, Hafiz1.

*1Public Health Unit, Department of Primary Care, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia.*

**Introduction:** The coronavirus (COVID-19) pandemic has caused enormous psychological impact worldwide, particularly towards undergraduate students who were imposed with lockdowns and quarantines, affecting their studies.

**Objective(s):** The aim of this study was to analyse the existing research works and findings in relation to the psychological impact of the COVID-19 pandemic towards undergraduate students and its associated factors.

**Methodology:** We systematically searched PubMed, Google Scholar, SocIndex, Psychology and Behavioral Science and PsycInfo for articles that focused on the prevalence of depression, anxiety, stress and post-traumatic stress disorder (PTSD) among undergraduate students during the COVID-19 pandemic. Results: Seven studies were included in the review. Each of the studies used a different measuring tool to assess the psychological impact of the participants. Three of the articles studied one psychological impact while the other studies measured multiple psychological impacts. The prevalence of depression, anxiety and stress ranged between 9.0%-48.1%, 0.9%-45.5% and 26.6%-69.5% respectively. Only one study reported on the prevalence of PTSD, which was 2.7%. A variety of factors were associated with a higher risk of low psychological well-being, including female gender and higher year of study.

**Conclusion(s):** COVID-19 has caused negative psychological impact among undergraduate students. Thus, it is imperative to develop psychological interventions and policies to improve the psychological wellbeing of this group.

# KNOWLEDGE, ATTITUDES AND PRACTICES ON COVID-19 PANDEMIC, THE ONLINE LEARNING READINESS, AND PSYCHOLOGICAL WELLBEING AMONG MEDICAL STUDENTS IN A PUBLIC UNIVERSITY: A STUDY PROTOCOL

**Zaidi, Nurin**1*; Affandi, Arni1; Sheikh, Shasha1; Izani, Izlyn1; Muhammad, Amalin1; Sufyan, Syahidatul1; Saharudin, Sarah1; Anuar, Adlina1; Azlan, S. Aisyah1; Norhakimi, Nurin1; Mahadi, Humaira1; Ghazali, Munirah1; Mohd Razi, Nurain Amirah1; Azzeri, Amirah1; T Mohd, Tengku Amatullah Madeehah1; Mohamad Nor, Nadeeya; Abu Baharin, Mohamed Fakhri1; Baharom, Nizam1; A. Rahman, Zairina A1; Mohd Rani, Mohd Dzulkhairi1; Mohamad Yusuff, Aza Sherin1; Jaafar, Hafiz1.

*1Public Health Unit, Department of Primary Care, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia.*

**Introduction:** COVID-19 outbreak that emerged from Wuhan, China and has affected more than 200 countries worldwide This has caused a serious implication towards many institutions and raises concerns for medical schools where their curriculum has to be shifted from normal pre-clerkship/ clerkship environment to fully digitized version of learning format. T

**Objective(s):** This study was initiated to investigate the level of knowledge, attitudes and practices (KAP) on COVID-19 pandemic, the online learning readiness, and psychological wellbeing among medical students in Universiti Sains Islam Malaysia (USIM) during Movement Control Order.

**Methodology:** The investigators designed a cross-sectional study. A universal sampling method will be used that involve 475 medical students from Year 1 to Year 6 in USIM. The data will be collected through an online survey. The survey consists of three components: the study of KAP of COVID-19, the online learning readiness and psychological impact of COVID-19 pandemic. The KAP questionnaires were adopted, adapted and validated from previous researches, while the online learning readiness scale was based on a local study. As for the depression, anxiety and stress, the Depression, Anxiety and Stress Scale (DASS) questionnaire was used. Duration of data collection is expected to be one month, and findings are expected to be ready by three months from the last data collection. The exposure includes sociodemographic factors and years of study, while the outcomes are KAP scores, online learning readiness level, and DASS scores. Relationship between the outcomes and associated factors will be analyzed once data collection is completed.

# PSYCHOLOGICAL IMPACT OF COVID-19 AMONG MEDICAL STUDENTS IN A PUBLIC HIGHER INSTITUTION IN MALAYSIA

Izani, Izlyn1*; Mustapa, Shazniza1; Rusdi, Raafik1; Zuhairi, Fawwaz1; Zaidi, Nurin1; Shaid, Lina1; Abu Baharin, Mohamed Fakhri1; Azzeri, Amirah1; T Mohd, Tengku Amatullah Madeehah1; Mohamad Nor, Nadeeya1; Baharom, Nizam1; Mohd Razi, Nurain Amirah1; A. Rahman, Zairina A1; Mohd Rani, Mohd Dzulkhairi1; Mohamad Yusuff, Aza Sherin1; Jaafar, Hafiz1.

*1 Public Health Unit, Department of Primary Care, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia.*

**Introduction:** Coronavirus disease (COVID-19) is an emerging global pandemic that is caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS COV-2). Like the previous pandemic, COVID-19 has prompt fear, anxiety, helplessness and stigma where a timely understanding of mental health status is needed to help the community.

**Objective(s):** The aim of this study is to determine the psychological impact of COVID-19 among undergraduate medical students in University Sains Islam Malaysia (USIM) and its associated factors.

**Methodology:** A cross-sectional study in a form of the online survey was conducted among USIM's medical students from the1st of June 2020 to 24th August 2020. Universal sampling method was used, in which a total of 471 students participated. The Depression, Anxiety, and Stress Scale (DASS-12) were used to measure the psychological impact of COVID-19. Among the factors studied were gender, year of study, household size, COVID-19 contact history, test history and reported symptoms.

**Results:** Almost 42% of the respondents reported to have a high score for depression, 37.8% for anxiety and 24.4% for stress. There were significant relationships between the respondent's year of study and all three psychological domains (depression, anxiety, stress) ($p<0.001$). As for anxiety, there were significant relationships between respondent's year of study (($p<0.001$), household size ($p=0.029$), COVID-19 contact history ($p=0.009$) and reported COVID-19 symptoms ($p=.019$). Lastly, there were significant relationships between respondent's gender ($p=0.039$) and year of study ($p<0.001$).

**Conclusion(s):** Majority of the respondents reported normal DASS scores with the preclinical students reporting higher psychological impact compared to clinical students. Several factors (gender, year of study, household size, COVID-19 contact history and reported symptoms) are associated with depression, anxiety and/or stress. Thus, periodic psychological screening is highly recommended among medical students in public higher institution.

# IMPACTS OF COVID-19 PANDEMIC ON ANXIETY AMONG UNDERGRADUATE AND CLERKSHIP MEDICAL STUDENTS

**Nabila, Annisa Ayu**1*; Mahmuda, Iin Novita Nurhidayati2; Sulistyani3; Herdaetha, Adriesti4

*1Medical Student, Faculty of Medicine, Universitas Muhammadiyah Surakarta, Surakarta, Indonesia*
*2Department of Internal Medicine, Faculty of Medicine, Universitas Muhammadiyah Surakarta, Surakarta, Indonesia*
*3Department of Neurology, Faculty of Medicine, Universitas Muhammadiyah Surakarta, Surakarta, Indonesia*
*4Department of Psychiatry, Faculty of Medicine, Universitas Muhammadiyah Surakarta, Surakarta, Indonesia*

**Introduction:** The COVID-19 (Coronavirus Disease 2019) pandemic is likely to increase anxiety level within the community and in particular medical students who are already considered psychologically vulnerable groups. Since the COVID-19 outbreak, no study has yet been conducted to examine the effect of this pandemic on our medical students within undergraduate and clerkship years.

**Objective(s):** The aim of this study is to identify the level of anxiety in order to create proper and effective strategies to build healthy mental status among medical students.

**Methodology:** This is a cross-sectional study. The survey was conducted using an online questionnaire to assess respondents' identity, demographic data, family history, perceptions about online/offline study, and we used Taylor Minnesota Anxiety Scale (TMAS) test to measure the anxiety level. Our subjects are 164 medical students of Universitas Muhammadiyah Surakarta, divided into two groups, 94 final-year of undergraduate students and 70 final-year of clerkship students who are still doing their clinical rotation at the hospital.

**Results:** We found that the average anxiety level is 18,3 for undergraduate students and 19,6 for clerkship students. It seemed that the anxiety level within clerkship students is higher than undergraduate students. However, the statistical analysis showed that there was no significant difference in the anxiety level between undergraduate and clerkship medical students (p=0,306). We also found that the average anxiety level for female students is 19,0 and for the male students is 17,5. It showed that female students have relatively higher anxiety level than male students but the statistical analysis showed that there was no significant difference in the anxiety level between female and male medical students (p=0,277).

**Conclusion(s):** There is no significant difference in the anxiety level among undergraduate and clerkship medical students in the period of COVID-19 pandemic.

# NASOPHARYNGEAL AND OROPHARYNGEAL SWAB SAMPLING FOR DIAGNOSIS IN COVID-19 IN LARGE SCALE SCREENING CENTRES; WHICH METHOD DO WE PREFER?

**Mohamad Mustafa, Nuralia Akma***; Md Arepen, Siti Asmat; Salahuddin, Nor Azirah; Mohd Ghazali, Mohd Ifwat; Baharom, Nizam; Mohamed, Nurul Azmawati; Hassan, Nor Eyzawiah

*Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia(USIM), Persiaran Ilmu, Putra Nilai, Nilai, N. Sembilan Malaysia*

**Introduction:** The screening of COVID-19 infection is essential and crucial to control the spread of the pandemic. As the researchers continue to study and understand COVID-19 disease, nasopharyngeal and oropharyngeal swabs typically have been used as the method of choice in collecting the virus particles in most of the screening centres across the world.

**Objective(s):** This paper aims to review the diagnostic accuracy of the nasopharyngeal and oropharyngeal swab sampling in comparison of its viral load by both methods, detection of positive rate among cases and sensitivity in real-time polymerase chain reaction (RT-PCR) assay in diagnosing COVID-19.

**Methodology:** 16 articles related to the topic were selected out of 5111 articles with keywords of COVID-19, SARS-CoV2, nasopharyngeal swab, oropharyngeal swab, nasal swab, throat swab and screening from Google scholar, PubMed and Medline. These articles were reviewed and analyzed

**Results:** We found that SARS-CoV2 load was reported to be significantly 10 times higher in nasopharyngeal swab than oropharyngeal swab (95% CI 4.6–22.6, $P < 0.001$). Besides, nasopharyngeal swab had a higher detection of positive rate (46.7%, $P < 0.001$) among cases and higher sensitivity (98.3%, $P<0.05$) in RT-PCR assay compared to oropharyngeal swab. However, both nasopharyngeal and oropharyngeal swab had a possibility in yielding false-negative result (30%) thus clinically suspicious patient with negative result should be concerned.

**Conclusion(s):** We suggest that nasopharyngeal swab should be practised in screening centres as it yields significantly higher viral load, higher detection of positive rate among cases and higher sensitivity in RT-PCR assay compared to oropharyngeal swab in detecting SARS-CoV2 in large scale screening for COVID-19. Nonetheless, larger studies are needed to effectively establish a more accurate diagnostic method to optimize detection of COVID-19.

# POSTPARTUM CARE DURING COVID-19: THE NEW NORM

**Nur Quratul Ain, Rozaimee**1*; Dinah Farhanah, Jamal1; Siti Munirah, Hasenan1; Nurzaireena, Zainal2.

*1 Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia*
*2 Obstetrics and Gynaecology Unit, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia*

**Introduction:** The world pandemic coronavirus disease 2019 (COVID-19) has been massively impacting every sector worldwide including maternity care. The Malaysian's cultural diversity and practices provide great support for lying-in mothers and newborns. Yet, the postpartum care and practices are unable to be entirely practised, abiding by the infectious control measures. Thus, exploring the execution of the postpartum care and support to the mothers and newborn would be challenging in the new norm.

**Objective(s):** To describe the recommended guidelines for nursing mother and baby during postpartum in COVID-19 pandemic without contravening the infectious control measures. To study the impact of COVID-19 on postpartum care on maternal mental health and quality of life.

**Methodology:** This literature review was done using the following electronic database; Google Scholar and Up to Date. Keywords used; Covid-19, maternity, mental health and postpartum. Several journals and articles were read and retrieved based on the topics in association with its relevance.

**Results:** The postpartum women and her newborn are considered a vulnerable group and have a higher risk of comorbidities if exposed to the Covid -19 viral infection. Thus, strict guidelines and measures are recommended and should be implemented by the government as well as individual at home to ensure good maternal health and mental health to achieve safe motherhood.

**Conclusion(s):** The postpartum care during the COVID-19 is crucial in order to provide safe motherhood yet may predispose to higher mental stress to the patient as well as the family members. Creativity in providing good quality of follow-up and care after childbirth despite the challenges faced in this pandemic era should be explored to improve our health care.

# ONLINE LEARNING READINESS AMONG MEDICAL STUDENTS IN THE WAKE OF COVID-19 PANDEMIC

**Shasha, Sheikh**1; S. Aisya, Azlan1; Nurin, Zaidi1; Ulfah, Nizam1; Natasha, Sahril1; Hanis, Farid1; Nadia, Ali1; Nurin, Norhakim1; I. Izham, Zul Akhman1; Anuar, Adlina1; Faiz, Fadlah1; Ikhwan, Zaini1; Baharom, Nizam1; Azzeri, Amirah1; T Mohd, Tengku Amatullah Madeehah1; Mohamad Nor, Nadeeya1; Abu Baharin, Mohamed Fakhri1; Mohd Razi, Nurain Amirah1; A. Rahman, Zairina A1; Mohd Rani, Mohd Dzulkhairi1; Mohamad Yusuff, Aza Sherin1; Jaafar, Hafiz1*.

*1 Public Health Unit, Department of Primary Care, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia.*

**Introduction:** COVID-19 pandemic has prompted a shift towards online learning. Students had to switch from face to face learning and adapted with the relatively new online education.

**Objective(s):** This study aimed to assess the level of online learning readiness and its associated factors among medical students at the Universiti Sains Islam Malaysia (USIM).

**Methodology:** An online cross-sectional study was conducted among the medical undergraduates from the 1st of July 2020 until 24th of August 2020. A pre-tested questionnaire was used to study the association between the sociodemographic factors and perceived internet connection speed with the Online Learning Readiness Scale (OLRS), which is a validated questionnaire with five dimensions: computer/internet self-efficacy, self-directed learning, learner control, motivation for learning and online communication self-efficacy.

**Results:** 471 students participated in the survey. The students' level of readiness was high in computer/internet self-efficacy, motivation for learning and self-directed learning dimensions but scored lower in learner control and online communication self-efficacy dimensions. Male students scored significantly higher in learner control ($p = 0.003$) while female students had higher motivation for learning ($p = 0.002$). Clinical students had significantly better computer/internet self-efficacy ($p = 0.011$), motivation for learning ($p = 0.001$) and online communication self-efficacy ($p = 0.001$) than the pre-clinical students. Students from higher household income scored better across all OLRS dimensions. This was also reflected in their perceived internet connection speed where those with perceived faster internet speed significantly scored better in all dimensions.

**Conclusion(s):** In conclusion, the medical students demonstrated an acceptable level of online learning readiness in response to the shift towards e-learning due to COVID-19 pandemic. Several factors such as gender, year of study, household income and perceived internets speed were associated with various dimensions of online learning readiness.

# AWARENESS OF BASIC LIFE SUPPORT AND ITS ASSOCIATED FACTORS AMONG NON-MEDICAL UNDERGRADUATES, IN A PRIVATE UNIVERSITY, KAJANG, MALAYSIA: A CROSS-SECTIONAL STUDY.

**Achi Blessing Zidyeb**1,*; Jagjit Kaur Najar Singh1,*; Woo Li Fong1; Mohammed Abdul Razzaq Jabbar2.

*1 Department of Nursing, Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Kajang, Malaysia*
*2 Department of Population Medicine, Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Kajang, Malaysia*

**Introduction:** Basic life support (BLS) is a simple and effective procedure to maximize the survival rate in most emergency situations if done well and in a timely manner. Certain health emergencies like heart attack, drowning, choking, and suffocation require immediate intervention to prevent death. Thus, being knowledgeable in this aspect is key to achieving this.

**Objective(s):** This study aims to analyze the awareness of BLS among non-medical students.

**Methodology:** A cross-sectional correlational study was conducted among 250 non-medical undergraduates in a private university in Malaysia from February 25th to May 22nd. Purposive sampling was used to select the participants. Consent was obtained and data were collected via a self-administered questionnaire. The collected data were analyzed using IBM SPSS version 21. As the data for awareness was not normally distributed, Spearman correlation was used for analysis.

**Results:** Out of the 250 participants, only 94 (37.6%) has heard about BLS. There was a positive correlation between BLS awareness and attendance ($r=0.404$, $p= \leq 0.000$). Correlation between BLS awareness and different faculty is not significant ($r=0.082$, $p= \leq 0.197$). Correlations between BLS awareness and socio-demographic variables shows age, gender and race is significant, ($r= -0.155$, $p= \leq 0.014$), ($r= -0.128$, $p= \leq 0.043$) and ($r= -0.130$, $p= \leq 0.040$) respectively.

**Conclusion(s):** The study revealed inadequate awareness of BLS among the undergraduates. However, it also shows that those who attended BLS lessons have a positive correlation to awareness. Therefore, health teachings should be implemented, as this is expected to increase the awareness of the non-medical population, thus improving life, and increasing longevity. Hence, the researcher recommends preliminary courses based on BLS and all that it entails, for all the university students, irrespective of their stream of study or specialization.

# KEPUH (*STERCULIA FOETIDA* L.) LEAVES ETHANOLIC EXTRACT DECREASES AST AND ALT LEVEL ON HIGH FAT DIET-INDUCED RAT

Sutejo, Ika Rahmawati 2' Sa'adah, Intan Nur 1; Permatasari, Terryda Ayu1; Kurnia, Riza Fahmi Qoyum 1; **Puspitasari, Endah**1*

*1 Bioactive Natural Product Development Research Group, Faculty of Pharmacy, University of Jember, Jember, Indonesia*
*2 Faculty of Medicine, University of Jember, Jember, Indonesia*

**Introduction:**
A high-fat diet is the most common cause of fatty liver. The fatty liver is characterized by increased aspartate aminotransferase (AST) and alanine aminotransferase (ALT) levels. The extracts of natural products, especially Kepuh (*Sterculia foetida* L.), are expected to act as antioxidants that repair liver damage caused by fatty liver.

**Objective(s):** The aim of this study was to determine the effectiveness of Kepuh (*Sterculia foetida* L.*)* leaves ethanolic extract (KLEE) on AST and ALT levels of high fat diet-induced rats. The antioxidant activity and the phytochemical screening were determined as the supporting data.

**Methodology:** Twenty-five rats were divided into three groups: normal control group, negative control group, and treated group given KLEE dose of 200, 400, and 800 mg/kg BW. A high-fat diet was given using duck egg yolks 5 g/kg BW for 21 days. On the 22nd day, a blood sample was collected for AST and ALT tests using the enzymatic kinetic method. The antioxidant activity was observed using superoxide radical scavenging activity, while the phytochemical screening was done using tube test and TLC method.

**Results:** The result showed that KLEE at three doses decreased AST and ALT levels significantly on high-fat diet-induced rats. The IC50 value of superoxide radical scavenging activity was 8.61+0.19 µg/mL. The extract contained alkaloid, flavonoid, terpenoid, polyphenol, saponin, and tannin.

**Conclusion(s):** KLEE decreases AST and ALT level on high fat diet-induced rat

# DETERMINATION OF TOTAL PHENOLIC CONTENT AND CLASSIFICATION MODELS OF CRYSTAL GUAVA LEAVES POWDER *(PSIDIUM GUAJAVA* L.*)* FROM DIFFERENT ALTITUDES USING NIR SPECTROSCOPY METHOD AND CHEMOMETRICS

K**ristiningrum, Nia**1; Antari, Widya Ida Ayu Yunita1; Nugraha, Ari Satia2 ; Wulandari, Lestyo 1*

*1Pharmaceutical Analysis and Chemometrics Research Group, Faculty of Pharmacy, University of Jember, Jember, East Java, Indonesia*
*2 Drug Utilisation and Discovery Research Group, Faculty of Pharmacy, University of Jember, Jember, East Java, Indonesia*

**Introduction:** Crystal guava is not only consumed as food, but other plant parts are used as traditional medicine, especially the leaves. Standardization of raw material in traditional medicinal needs to be established to fulfil the quality of the product.

**Objective(s):** This study aimed to determine classification models using NIR spectroscopy coupled with chemometric and total phenolic content (TPC) of powdered crystal guajava leaves from different altitudes.

**Methodology:** NIR spectra data of powdered crystal guajava leaves were correlated with the category of the altitudes (high, moderate, low). The total phenolic content was evaluated using uv vis spectroscopy.

**Results:** The highest phenolic levels were found in samples originating from the high altitude with an average value of 3.49 mg GAE / g powder, followed by moderate altitude with 1.9 mg GAE / g powder, and low altitude with 1.505 mg GAE / g powder. The sample spectra data were analyzed using NIR and chemometric qualitatively using the LDA, SVM, and SIMCA models. The accuracy value of LDA and SVM model was 100% of all.

**Conclusion(s):** The NIR spectroscopy combined with chemometric can be used to identify the originating of crystal guajava leaves powdered. This method was rapid, precise, accurate and eco-friendly

# THE RELATIONSHIP BETWEEN PARENTING OF YOUNG MOTHER AND NUTRITIONAL STATUS AMONG UNDER-FIVE CHILDREN IN PUBLIC HEALTH CANTER OF PANTI, JEMBER REGENCY, INDONESIA

Imrotul Koiriyah1, **Tantut Susanto**2*, Hanny Rasni2

*1 Undergraduate Nursing Program, Faculty of Nursing, University of Jember, Jember, Indonesia*
*2 Department of Community, Family & Geriatric Nursing, Faculty of Nursing, University of Jember, Jember, Indonesia*

**Introduction:** The mother plays an important role in child care, in particular to full fill a nutrition intake. However, some women are too young to have to marry and become mothers that impact on their role to take care of their children.

**Objective(s):** The aimed of this study want to analyze the relationship of parenting young mother and nutritional status among under-five children in the public health centre of Panti, Jember Regency of Indonesia

**Methodology:** A cross-sectional study was conducted among 170 mothers using consecutive sampling. A self-administered questionnaire was used to measure the sociodemographic of mothers, while parenting questionnaire that consisted of feeding practices, parenting practices, and health service practices was used measured parenting of mothers. Chi-Square test was used to answer the objective of the study.

**Results:** The score for the mother's parenting questionnaire was above 85% of good parenting. Meanwhile, the nutritional status of 70,6% of good nutrition. There were a significant relationship between parenting of young mother in feeding practices (p-value= <0,001; OR= 26,12), parenting practices (p-value= 0,007; OR= 0,281), and health service practice and the nutritional status of under-five children (p-value= <0,001; OR= 6,00). There is a relationship between parenting young mothers in feeding practices, care practices and health service practices with the nutritional status of children under five in Panti District, Jember Regency. The existence of this research is expected later on local health workers can provide information and education about the importance of maternal parenting in monitoring the nutritional status of under-five children and especially mothers should be able to implement parenting optimally.

**Conclusion(s):** Mother's parenting is one of the indirect factors that can influence the nutritional status of under-five children. Therefore, parenting young mothers should be optimized to improve the nutritional status of under-five children.

# ANIMAL MODEL DIABETES SEPSIS ON WISTAR RAT STRAIN (*RATTUS NORVEGICUS*) INDUCED BY STREPTOZOTOCIN AND BACTERIA *STAPHYLOCOCCUS AUREUS* BASED ON LEUKOCYTES AND E-CADHERIN LEVELS

Aryani, Dhita Evi1; **Istidamah, Rafika**1; Qosimah, Dahliatul2

*1 Department of Clinical and Community Pharmacy, Faculty of Pharmacy, University of Jember, Indonesia, Indonesia*

*2 Laboratory of Microbiology and Immunology, Faculty of Veterinary Medicine, Brawijaya University, Indonesia, Indonesia*

**Introduction:** Sepsis is characterized by a loss of control of the inflammatory response, which can be triggered by various microorganisms and toxic secretions. Sepsis can damage organ by inducing systemic activation of the inflammatory pathway and systemic coagulation in response to microbial infections and toxin secretion, and diabetes mellitus may exacerbate this condition.

**Objective(s):** The study aimed to determine the method of using animal models of sepsis diabetes through a combination of Streptozotocin (STZ) and *Staphylococcus aureus* infection based on biological marker parameters like E-cadherin and leukocytes.

**Methodology:** We used 30 male Wistar rats that divided into six treatment groups. Treatment A as a negative control (healthy). Treatment B as a positive control (diabetes): mice were given STZ at a dose at 45 mg/kg BW on day 8th intraperitoneally, measured blood glucose on day 10th. Treatment C as a positive control (bacteria): rats inoculated with *S. aureus* with a concentration of 108 CFU/mL on day 8th intraperitoneally, sepsis was observed on day 10th. Treatments D, E, and F: rats were given STZ dose at 45 mg/kg BW on day 8th intraperitoneally, measured blood glucose on day 10th, then inoculated with *S. aureus* with concentrations of 105 CFU/mL, 106 CFU/mL, and 107 CFU/mL. We observed the condition of sepsis on day 12th. Quantitative data came from leukocytes and E-cadherin level. They were analyzed using the One-Way Analysis of Variance Test with a confidence level of 95%.

**Results:** The results showed that leukocytes levels were significantly different in all treatments, and the lowest level seen in group B. And E-caderin levels were significantly different in all treatments, and the highest level was seen in group E and the lowest level was seen in group B.

**Conclusion(s):** Animal models of sepsis diabetes showed leukocytes abnormalities and increasing expression of splenic e-cadherin.

# ROLE OF DATA AND SAFETY MONITORING BOARDS (DSMBS) IN PROTECTING PARTICIPANTS: PRELIMINARY REVIEW OF SUSPENDED AND TERMINATED COVID-19 TRIALS

**Nor Aripin, Khairun Nain** 1*; Azmi, Liyana2; Sani, Anuar2.

*1 Pharmacology Unit, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia (USIM), N.Sembilan, Malaysia*
*2 Microbiology Unit, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia (USIM), N.Sembilan, Malaysia*

**Introduction:** Numerous clinical trials have commenced to investigate potential treatments and vaccines for Covid-19. The newly emerging, rapidly evolving nature of the pandemic exposes trial subjects to heightened risks. A DSMB is composed of a committee of experts that is independent from the investigators and appointed to oversee the safety of participants. A DSMB has the authority to suspend or terminate a clinical trial.

**Objective(s):** We aim to review the role of DSMBs in relation to planned or ongoing Covid-19 clinical trials.

**Methodology:** Medline/Pubmed was searched for publications on the Covid-19 stage 3 trials that were suspended. We then conducted a further search on Google for statements from the trial investigators regarding the suspensions. Subsequently, listed Covid-19 trials on ClinicalTrials.gov were searched to obtain information on suspended clinical trials and examine the involvement of DSMBs. Any published material relating to the suspended trials were sourced.

**Results:** The crucial role of DSMBs have been demonstrated in leading Covid-19 clinical trials such as in the AZD1222/ChAdOx1 nCoV-19 and the Ad26.COV2.S (Ensemble) vaccine trials. Trial investigators were forthcoming with the safety review process in both cases and referred to their robust safeguards involving DSMBs in their public statements. As of end October, ClinicalTrials.gov listed 3706 clinical trials on Covid-19. Of these, 20 were suspended and 24 were terminated. Commonest (26/44) were hydroxychloroquine related trials, the majority stated enrolment difficulties (10/20 and 11/24 respectively) as the main reason for their status while a further 4/20 and 6/24 stated emerging evidence leading to their decision. In both categories, 2 studies each stated a DSMB suspended or terminated the study; additionally 1/20 and 3/24 trials mentioned a safety/interim analysis.

**Conclusion(s):** DSMBs are required to safeguard participants in Covid-19 clinical trials. Further work is needed to determine compliance, in the form of a systematic review.

# INHIBITION OF MCF-7 PROLIFERATION BY STINGLESS BEE HONEY: THE ROLE OF MICRORNA

**Derani, Qatrun Nada**1, Abdul Rahman, Hayati2; Nordin, Noraziah1, Muhamad, Marlini1; Addnan, Faizul Helmi1; Pathmanathan, Gowri2; Mansor, Fadlul Azim Fauzi2; Hassan, Noreyzawiyah3; Mohd Manzor, Nur Fariha1*.

*1 Department of Medical Sciences I, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Negeri Sembilan, Malaysia*
*2 Department of Medical Sciences II, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Negeri Sembilan, Malaysia*
*3 Department of Surgery, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Negeri Sembilan, Malaysia*

**Introduction:** Emerging reports on the anti-cancer effects of honey were noted recently. The mechanisms behind this effect were linked to microRNA inhibition of mRNA from different signalling pathways.

**Objective(s):** This study aimed to investigate the anti-proliferative effect of stingless bee honey on MCF-7 and predict the proliferation of genes-microRNA interactions.

**Methodology:** Cell proliferation assay was performed on MCF-7 treated with different concentrations of honey (3.125%, 0.78% and 0.195%). Media with 10% serum serve as the control for the proliferative effect. Qualitative polymerase chain reaction (qPCR) was also performed to measure the expressions of proliferative genes; beta-catenin, hepatocyte growth factor (HGF) and vascular endothelial growth factor (VEGF). Kruskal Wallis test was used to compare differences among the groups. $P < 0.05$ was regarded as significant. Genes with significant inhibition were further analysed for its gene-microRNA interaction using miRWalk 3.0.

**Results:** Significant reductions of beta-catenin and HGF were detected in MFC-7 treated with 3.125% honey as compared to control. Further analysis of gene-microRNA interaction revealed two potential microRNAs which might have interactions with HGF which are hsa-miR-26a-5p and hsa-miR-199a-3p. Whereas, 46 microRNAs were predicted to target the mRNA of beta-catenin.

**Conclusion(s):** Anti-cancer effect of stingless bee honey could be contributed by its properties to inhibit the proliferation of MCF-7 cells. The mechanism of this inhibition could be due to the induction of microRNAs which target proliferation-associated genes. These data support that honey may be evaluated as a potential natural agent for new anticancer therapy in the future.

# MICRORNA AS A POTENTIAL CHRONIC MYELOID LEUKAEMIA TREATMENT: AN *IN-SILICO* ANALYSIS.

**Syarifah Faezah Syed Mohamad**1; Marjanu Hikmah Elias1*.

*1Faculty of Medicine & Health Sciences, Universiti Sains Islam Malaysia, Persiaran Ilmu, 71800 Nilai, Negeri Sembilan.*

**Introduction:** MicroRNA is a small non-coding RNA that acts as a post-transcriptional gene regulator that plays a key role in gene expression. It is around the length of 22 nucleotides and binds to the 3'untranslated region (UTR) of mRNA. Chronic myeloid leukaemia (CML) is a clonal myeloproliferative disorder characterized by the expression of *BCR-ABL1* fusion gene located in the Philadelphia chromosome. CML current care employs Imatinib as frontline treatment. However, Imatinib resistance has occurred among 30-40% of CML patients.

**Objective(s):** Hence, to overcome the resistance issue, this study aims to identify human miRNAs that target the 3'UTR of ABL1 gene using silico analysis.

**Methodology:** From ENSEMBL, the 3'UTR sequence was obtained whilst miRNAs that bind to the 3'UTR of ABL1 was identified using DIANATOOLS; MicroT-CDS. The folding energy of the conformations was obtained from RNA22. Subsequently, protein interaction networks of all the targeted genes were constructed using STRING and Cytoscape software. The pathway analysis was done using the KEGG pathway.

**Results:** The analysis predicted five human miRNAs namely hsa-miR-891a-3p, hsa-miR-3131, hsa-miR-6847-5p, hsa-miR-1185-1-3p and hsa-miR-1185-2-3p that target ABL1. Hsa-miR-891a-3p was chosen for further analysis as it showed the highest miTG score of 0.99, p-value of 0.037 and folding energy of -12 Kcal/mol. Apart from ABL1, hsa-miR-891a-3p also targets other 645 genes. Twelve proteins were identified as immediate neighbouring proteins for ABL1. The interaction network for these proteins are concentrated on RAS (4 nodes) and MAPK (4 nodes) signalling pathways.

**Conclusion(s):** Thus, hsa-miR-891a-3p could be a potential therapeutic prospect in CML treatment. By down-regulating the pathways using miRNA, CML cells proliferation could be suppressed. However, further in vitro, in vivo and clinical studies need to be carried out in order to determine its effectiveness as a targeted therapy for CML.

# THE CORRELATION BETWEEN SERUM VITAMIN D LEVEL AND ANTI-DSDNA ANTIBODY TITERS IN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS

**Saldy Meirisandy**1*, Irma Permata Sari2, Faridin HP3

*1 University of Muhammadiyah Makassar, Makassar, Indonesia*
*2 RSUD Tadjuddin Chalid Makassar, Indonesia*
*3 Department of Internal Medicine, Faculty of Medicine, Hasanuddin Univrsity, Makassar, Indonesia*

**Introduction:** Systemic lupus erythematosus (SLE) is an autoimmune disease with unknown aetiology and multiorgan involvement. It is characterized by the production of some autoantibodies such as Anti-dsDNA. Anti-dsDNA antibody has high sensitivity and specificity to SLE. Patients with SLE have some risk factors to suffer vitamin D deficiency, one of them is impaired renal function. Vitamin D plays a role in the immune system to suppress the autoimmune process.

**Objective(s):** To determine the correlation between serum vitamin D level and anti-dsDNA antibody titers in SLE patients.

**Methodology:** Using Descriptive-analytic method with Cross-sectional approach among 24 SLE subjects in Dr Wahidin Sudirohusodo Hospital, Makassar from December 2014 to July 2015. Measuring the vitamin D level and anti-dsDNA antibody titers for each subject. Then, for controlling the effect of renal dysfunction, we divided subjects into two groups based on the eGFR value.

**Results:** This study included 24 SLE patients. We found vitamin D levels between 4.0 ng/mL and 33.3 ng/mL (mean 13,8±8,5 ng/mL), while anti-dsDNA antibody titers between 10 IU/mL and 3200 IU/mL (mean 701.6±917.2 IU/mL). There was no significant correlation between vitamin D levels and anti-dsDNA antibody titers. However, there is a tendency that the lower vitamin D levels the lower the anti-dsDNA antibody titers ($r= 0.263$, $p>0.05$). Based on eGFR value, there was a tendency of negative correlation between vitamin D levels and anti-dsDNA antibody titer in subjects with LFG < 60 ml/min/1.73 m2, although statistically insignificant ($r= -0.257$, $p>0.05$). While in subjects with LFG ≥ 60 ml/min/1.73 m2, we found no correlation ($r= 0.015$, $p>0.05$).

**Conclusion(s):** From this study, overall there wasn't a significant relationship between serum vitamin D level and anti-dsDNA antibody titers, but there was a tendency of negative correlations between them in subject with impaired renal function

# THE RELATIONSHIP BETWEEN NUTRITION KNOWLEDGE AND FAST FOOD CONSUMPTION HABITS WITH NUTRITION STATUS IN MEDICAL FACULTY OF MUHAMMADIYAH MAKASSAR UNIVERSITY BATCH OF 2019

**Hapsari, Bramantyas Kusuma**1*; Rahman, Sri Gustia2.

*1 Department of Microbiology, Faculty of Medicine, Muhammadiyah Makassar University, Makassar, Indonesia*
*2 Faculty of Medicine, Muhammadiyah Makassar University, Makassar, Indonesia*

**Introduction:** A practical urban lifestyle makes people prefer fast food. Excessive consumption of these lead to an increase in body mass index (BMI) or over nutrition and also decrease cognitive function. Mostly, people consume fast food on their excellent taste, regardless of their nutrient content, as this can affect their nutritional status.

**Objective(s):** To determine the relationship between nutrition knowledge and fast food consumption habits with nutrition status among medical students of Faculty of Medicine, Muhammadiyah Makassar University batch of 2019.

**Methodology:** In this cross-sectional study, there were 101 students. We used a validated questionnaire to collect information for nutrition knowledge and fast food consumption habits. BMI is used as an indicator of nutrition status.

**Results:** From 101 participants, we found that good nutrition knowledge was 92.1%, and sufficient nutrition knowledge was 7.9%. 72.9% of students have the habit of consuming fast food infrequently, and 20.8% of students have the habit of consuming fast food frequently. The nutrition status was underweight in 10.9%, normal in 52.9%, overweight in 6.9% and obesity in 28.4% of the study subjects. There was no relationship between nutrition knowledge level with nutrition status ($p=0.129$); however, we showed there was a strong relationship between fast food consumption habits with nutritional status ($p<0.001$).

**Conclusion(s):** This study showed that fast food consumption habit can be considered as one of the risk factors for increasing body weight among medical students of Faculty of Medicine, Muhammadiyah Makassar University batch 2019.

# COMPARISON OF CONVENTIONAL HEATING AND MICROWAVE IRRADIATION ASSISTED ON SYNTHESIS OF METHYL *ORTHO*-METHOXYCINNAMATE AS ANTITHROMBOTIC CANDIDATE

**Juni Ekowati***1, Lis Suryani1, Itsna Nur Ainul Yaqin1, Iwan Sahrial Hamid2, Kholis Amalia Nofianti1, Tutuk Budiati3

*1 Department of Pharmaceutical Chemistry, Faculty of Pharmacy, University of Airlangga, Surabaya, Indonesia*
*2 Department of Basic Veterinary, Faculty of Veterinary Medicine, Campus C Airlangga University, Surabaya, Indonesia*
*3Faculty of Pharmacy, Widya Mandala University, Surabaya, Indonesia*

**Introduction:** Cardiovascular Disease is one of the leading disease affecting not only developed countries but developing ones as well. This disease has the highest rates of mortality and morbidity. The current medications have some side effects that even lead to resistance. According to *in silico* approach in our preliminary study, MOMS has an advantage as an antithrombotic agent because of its interaction with COX-1 enzyme as same as aspirin.

**Objective(s):** to compare the synthesis method of MOMS, using conventional heating and microwave irradiation method. 2. to determine the antithrombotic activity of MOMS.

**Methodology:** The synthesis of MOMS was conducted through alkylation reaction on carboxylic acid and phenolic moieties of *o*-coumaric acid. We compare the conventional and microwave irradiation method as a source of heating. The reaction was conducted using dimethyl sulfate as a methylating agent, in base condition. The power of the microwave was 120-400W, while the heating by reflux for 3-7 hours. The product was analyzed through TLC, UV, IR spectrophotometry, 1HNMR and 13CNMR. Anti-thrombotic assay of MOMS was carried out i*n vivo* using mice model and CMC-Na 0.6% solution was managed as a negative control.

**Results:** The complete reactions through microwave irradiation on 120-400Watt was achieved at the 25th-10th sampling times. The yield of product using reflux for 3-7 hours was 43-79%, in that order. It has antithrombotic activity comparing negative control in mice.

**Conclusion(s):** Synthesis MOMS using microwave irradiation more effective than conventional heating. This compound has a prospect to be developed further as an antithrombotic agent.

# HEALTH LITERACY AND ITS CORRELATION WITH SELF MONITORING BLOOD GLUCOSE IN DIABETES MELLITUS TYPE 2 AT OUTPATIENT DR. SOEBANDI JEMBER HOSPITAL

**Sutawardana, Jon Hafan** 1*, Kushariyadi 2, Alfania, Zulfa 3

*1Department of Medical Surgery and Critical, Faculty of Nursing, University of Jember, Indonesia*
*2Department of Medical Surgery and Critical, Faculty of Nursing, University of Jember, Indonesia*
*3Keris Department of Medical Surgery and Critical, Faculty of Nursing, University of Jember, Indonesia*

**Introduction:** Diabetes mellitus is a chronic metabolic disorder that requires self-monitoring of blood glucose to regulate the stability of blood sugar levels in order to prevent long-term complications. Many DM patients in Indonesia do not monitor their blood sugar levels; medical check-up is not well scheduled, and a lack of understanding of blood sugar values and drug administration negligence. The problem may also be caused by a lack of understanding and application of health literacy (HL) of diabetic patients.

**Objective(s):** This study aims to determine the relationship between HL and SMBG in type 2 DM patients in RSD dr. Soebandi Jember.

**Methodology:** The independent variable in this research was health literacy, and the dependent variable was the self-monitoring of blood glucose. This study used 109 respondents, the respondent recruited by consecutive sampling. The data of HL was measured by Health Literacy Survey Europe 16 Questionnaire (HLS-EU 16Q), and the level of SMBG was measured by Self Monitoring Blood Glucose Questionnaire (SMBG-Q). The correlation between HL dan SMBG was analyzed by Spearman correlation ($\alpha < 0.05$).

**Result:** The results showed that 38.5% of respondents had a middle level of health literacy, and 84.4% had good SMBG. There is a significant and positive correlation between HL and SMBG in type 2 DM patients (p-value = <0.001 and r = 0.444).

**Conclusion(s):** Adequate HL will improve the ability of patients to receive information. Useful information about diabetes management is related to patients' right knowledge and will improve self-care, especially SMBG. This study is the base of nurses to assess the HL state of the patient before decide nursing intervention.

# COMPARISON BETWEEN A COMMERCIAL NUTRITIVE LIQUID MEDIUM AND STERILE DISTILLED WATER AS THE LIQUID PART OF BIPHASIC CULTURE MEDIUM FOR LEISHMANIASIS

**Pratiwi, Andi P.H.**1*; Santos, Calila2; Peacock, Christopher2.

*1 Department of Biomedical Science, Faculty of Medicine, Muhammadiyah Makassar University, Makassar, Indonesia*
*2 School of Biomedical Science, Faculty of Health and Medical Sciences, The University of Western Australia, Perth, Australia*

**Introduction:** Leishmaniasis is an ancient neglected disease caused by obligate intracellular parasites from the genus *Leishmania. Leishmania* parasite detection, either by microscopic identification or cultivation in a culture medium, remains the gold standard for diagnosing leishmaniasis. There is a wide range of medium can be used to grow the parasite promastigotes, one of which is the biphasic medium consisting of solid rabbit blood agar and a liquid portion of either water or specific media.

**Objective(s):** To compare the effectivity between a commercial nutritive liquid medium and sterile distilled water for the liquid part of the biphasic culture medium for leishmaniasis.

**Methodology:** Using an experimental design, we cultivated the sample of *Leishmania (L.) major, L. mexicana* and *L. tropicana* where a series of concentrations of these species promastigotes were grown onto two types of biphasic medium, one was supplemented with nutritive liquid medium (M199, 20% foetal bovine serum, biopterin) on top of the solid agar and the other agar was only combined with the same volume of sterile distilled water to resemble the water condensation condition.

**Results:** By day 5 of inoculation, we found a significant difference between these two media ($p<0.0001$) of the three species culture. The commercial media M199 with biopterin not only improved the overall growth of the parasites compared to distilled water, but it also allowed for the detection of parasites that were inoculated at a lower concentration. This is especially important as many clinical specimens have low numbers of parasites and this would improve the success rate of culture as a diagnostic method.

**Conclusion(s):** Therefore, it can be concluded biphasic medium with supplemental nutrition on the liquid part is more effective to diagnose Leishmaniasis especially when the parasite numbers are low.

# THE EFFECTS OF RELAXATION THERAPY AMONG HEAD AND NECK CANCER PATIENTS ON QUALITY OF LIFE

**Siti Nor Ashiah Johari** 1, Norhafiza Mat Lazim 1*, Irfan Mohamad 1, Baharudin Abdullah 1, Nor Asyiqin Fadzil 2, Wan Mohd Nazri Wan Zainon3

*1 Department of Otorhinolaryngology-Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia.*
*2 Department of Psychiatry, School of Medical Sciences, Universiti Sains Malaysia Health Campus, 16150 Kubang Kerian, Kelantan, Malaysia.*
*3 Department of Nuclear Medicine, Radiotherapy and Oncology, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia.*

**Introduction:** Head and neck cancer is a debilitating condition either due to the disease itself or related to the treatment, hence adversely impacting on patient's quality of life.

**Objective(s):** The aim of our study was to evaluate the effect of relaxation therapy among head and neck cancer patients on the quality of life (QOL). Specifically, the aims were to assess the quality of life among head and neck cancer patients whose had received the relaxation therapy with those who did not receive as well as to evaluate the effect of relaxation therapy on anxiety and depression.

**Methodology:** A randomized clinical trial was conducted. Head and neck cancer patients were recruited from Otorhinolaryngology (ORL) clinic and Oncology clinic. They were randomly grouped into case and control group. The case group would receive periodically-time-specific relaxation therapy at week 1,2,4 and 6 at our rehabilitation centre, whereas the control group would be provided with psychoeducation at week 1 and 6. The evaluation was done at week 1 (before the commencement of therapy) and week 6 (after completion of the intervention) using Functional Assessment Cancer Therapy-Head & Neck (FACT-H&N version 4) questionnaires for assessment of QOL, and Hospital Anxiety and Depression (HAD) Scale for a screening of anxiety and depression.

**Results:** A total of 26 participants were recruited for this study. There was no significant mean difference of all related variables measured between case and control group for each pre and post-test ($p>0.050$). However, it was found that case result has higher QoL (higher FACT-H&N result, lower HAD result) in post-test even though it was not significant.

**Conclusion(s):** Relaxation therapy is an adjunct treatment strategy in order to improve the quality of life in head and neck cancer patients.

# IMPACT OF MOLECULAR RESPONSE ON SURVIVAL OF PATIENTS WITH B-LYMPHOBLASTIC LEUKAEMIA WITH *BCR-ABL1*

**Chong, Siew Lian**1*; Ahmad Asnawi, Asral Wirda1,3; Leong, Tze Shin1; Hon, Siong Leng1; Mohd Ramli, Nurliyana1; Hamzah, Roszymah1; Mohd Sopani, Intan Nurliza1; Syed Abd Kadir, Sharifah Shahnaz1; Selvaratnam, Veena1; Tan, Jerome1; Tan, Sen Mui1; Ong Tee Chuan1; Lau, Ngee Siang1; Law, Kian Boon2; Yegappan, Subramaniam1; Sathar,Jameela1.

*1Department of Hematology, Hospital Ampang, Selangor, Malaysia*
*2Clinical Research Ward, Hospital Ampang, Selangor, Malaysia*
*3Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia*

**Introduction:** In patients with B-Lymphoblastic Leukaemia with *BCR-ABL1*, measurable residual disease (MRD) assessment can identify patients more likely to benefit from stem cell transplantation (SCT) in first complete remission (CR1). However, the impact of achieving complete molecular response (CMR) in B-Lymphoblastic Leukaemia with *BCR-ABL1* remains undefined.

**Objective(s):** The aim of this study was to investigate the prognostic impact of achieving a CMR in these patients.

**Methodology:** Patients diagnosed at Hospital Ampang between 2007-2017 were included in this study. Overall survival (OS) was analysed using Kaplan-Meier survival function and different groups were compared using the log-rank test. *BCR-ABL1* levels at three time-points were recorded. Major molecular response (MMR) was defined as *BCR-ABL1:ABL1* ratio of ≤0.1% on the International Scale for p210 *BCR-ABL1* or a 3-log reduction in transcripts for p190 *BCR-ABL1.*

**Results:** Ninety-six adult patients were identified with a median age of 37.5 years old (14-69 years old) at diagnosis. At the time of analysis, 33 (34.4%) patients were alive. The median OS was 16.8 months (95%CI: 12.0; 20.9). Median OS was significantly different between patients who achieved MMR at TP3 as compared to those who did not (77.0 vs 20.4 months, p = 0.006). The risk of dying is 3 times higher for those who did not achieve MMR at TP3 (hazard ratio = 3.0, 95%CI: 1.97; 6.70, p=0.009) compared to those achieving MMR.

**Conclusion(s):** Achievement of MMR at TP3 receiving first-line chemotherapy plus targeted therapy is associated with superior survival. Prospective trials using MRD-based risk stratification may elucidate the optimal post-remission management of these patients.

# CLINICAL PARAMETERS IN DIABETIC AND NON-DIABETIC PATIENTS: A CASE-CONTROL STUDY AT A HEALTH CLINIC IN KLANG VALLEY

**Letchumanan, Geetha**1; Baharom, Nizam1; Addnan, Faizul Helmi1; Syed Mohideen, Fathima Begum1; Muhamad, Marlini1; Omar; Mohd Rahman1; Mohd Manzor, Nur Fariha1; Retnakumar, Kamini2; Raja Perdaus, Raja Rabiyatun Adawiyah1; Jogulu, Sathya Rao2; Ismail, Zarini1; Pathmanathan, Siva Gowri1*.

*1Faculty of Medicine & Health Sciences, Universiti Sains Islam Malaysia (USIM), Nilai, Negeri Sembilan, Malaysia*
*2Klinik Kesihatan Ampang, Selangor, Malaysia*

**Introduction:** Type-2 diabetes mellitus (T2DM) is prevalent in Malaysia and often associated with a deranged biochemical profile.

**Objective(s):** This study aimed to compare the sociodemographic and biochemical profile between T2DM and non-diabetic patients at a health clinic in Klang Valley. This is part of ongoing research studying the gut microbiota involvement in T2DM.

**Methodology:** This is an unmatched case-control study conducted between November 2019 and August 2020. Cases were randomly selected diabetic patients while controls were from the outpatient department with normal blood glucose levels. Patients were subjected to anthropometry and biochemical investigations including fasting blood glucose (FBG), serum lipids, liver function tests (LFT) and renal profile.

**Results:** A total of 49 T2DM cases and 49 non-diabetic controls participated in the study. The gender and ethnicity distributions were not significant, but BMI was slightly higher in T2DM [OR (95%CI) = 1.09 (1.01-1.19)]. As expected, the FBG was significantly higher among T2DM patients (9.35 ± 3.34 mmol/L) vs non-diabetic patients (5.18 ± 0.43 mmol/L) [OR (95%CI) = 9.15 (3.18-26.39)]. Triglyceride (TG) was markedly higher in T2DM patients [OR (95%CI) = 2.86 (1.41-5.80)], with no significant difference on other lipid profile. T2DM patients had significantly altered LFT with higher alkaline phosphatase (ALP) [OR (95%CI) = 1.02 (1.02-1.05)] and alanine aminotransferase (ALT) [OR (95%CI) = 1.04 (1.01-1.07)]. Creatinine was similar in both groups however urea was higher in T2DM [OR (95%CI) = 1.34 (1.04-1.72)] with lower chloride [OR (95%CI) = 0.83 (0.71-0.97)].

**Conclusion(s):** T2DM patients demonstrated an altered biochemical profile in particular higher TG, ALP, ALT, urea and lower chloride levels, depicting pathophysiological changes in the disease. Whether or not these alterations are mediated by gut microbiota is subjected to further studies.

# OTITIS MEDIA EFFUSION AND ITS ASSOCIATION WITH EARLY CHILDHOOD CARIES

**Lee Lee Chin**1*, Noor Dina Hashim1, Farinawati Yazid2

*1Department of Otorhinolaryngology, Head and Neck Surgery, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia*
*2Pediatric Dentistry, Faculty of Dentistry, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia*

**Introduction:** Otitis media with effusion and early childhood caries are frequent paediatric disorders. These disorders are often asymptomatic and easily missed.

**Objective(s):** This study aims to determine the association of Otitis Media Effusion (OME) and Early Childhood Caries (ECC) in preschool children.

**Methodology:** This is a prospective, cross-sectional study in which two hundred and six children aged 1 to 6 years old who presented with hearing impairment or speech delay were recruited and grouped as with OME and without OME. Demographic and socioeconomic data were obtained followed by otoscopy and tympanometry assessment. Dental examination was conducted for caries detection and documented using Caries Risk Assessment and Dental Charting. Tympanometric width (TW) was also measured.

**Results:** 62.6% (n=129) children were diagnosed with OME and 37.4% (n=77) without OME. 51.5% of children with OME were diagnosed to have ECC. 20.8% OME with ECC children were diagnosed to have severe ECC according to Dental Charting followed by 30.2% (moderate ECC) and 47.1% (mild ECC). The Caries Risk Assessment showed that the majority of these children (51%) carry a moderate caries risk. Tympanometry width (TW) of more than 200 shown to be significantly associated ($p<0.001$) with abnormal tympanic membrane compliance which was suggestive of OME.

**Conclusion(s):** Early detection of OME with ECC is important and if left untreated it will affect speech and hearing development, disruption of growth and development as well as life-threatening infections. ECC should be routinely screened in preschool-aged children with OME or vice versa in children with diagnosed ECC

# A DESCRIPTIVE STUDY OF THE REACTION TIME AND MUSCLE STRENGTH OF THE MALE YOUTH INVOLVED IN ESPORTS IN KLANG VALLEY

**Sharom, Syaziyah**; Nordin, Norsham Juliana; Abu Hasan, Zatul-'Iffah; Md Arepen, Siti Asmat; Mohamad Nor, Nadeeya'ayn Maisara; Abang Abdullah, Khadijah Hasanah; Abdul Muna'aim, Maimunah; Hassan, Nor Eyzawiah*

*Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia (USIM), Nilai, Negeri Sembilan, Malaysia*

**Introduction:** Youth involvement in esports or electronic sports is on the rise. Although their physical fitness does not measure players' competency, it is an essential factor for their performance. The dexterity of the esports players needs improvement in terms of strength, flexibility and reaction time for better performance.

**Objective(s):** This study aimed to describe the reaction time and muscle strength among the male youth involved in esports around Klang Valley.

**Methodology:** : A cross-sectional study was conducted at an esports exhibition in September 2019. Healthy male participants with esports experience aged 18 to 30 years old were eligible for the study. Wall toss test (WTT) and ruler drop test (RDT) were utilized for the reaction time test. The handgrip and pinch grip strengths' force were recorded in kilogram (kg) by using a dynamometer. The data were analyzed descriptively by using IBM SPSS Statistics 25.

**Results:** A total of 134 participants were recruited in this study (age 23±3.21 years, BMI 25.76±6.53). The result from the WTT shows 27 maximum successful catches per 30 seconds, with a mean of 15 catches. For RDT, there is no significant difference between dominant (0.186±0.024 seconds) and non-dominant hand reaction time (0.185±0.026 seconds). As for the muscle strength test, both dominant hand grip and pinch grip (35.42±7.44 kg; 9.94±2.08 kg) shows the significantly higher mean ($p<0.05$) as compared to non-dominant hand grip and pinch grip (32.36±7.73 kg; 9.06±1.83 kg).

**Conclusion(s):** The mean score for reaction time for WTT and RDT were rated as fair and average, respectively. The handgrip and pinch grip strength were below average. Grip strength has long been regarded as a marker for healthy ageing, hence below average grip strength in a young adult is an alarming issue that warrants serious attention. Despite factors such as a difference in physical activity, this study highlighted the potential health issues among our youth.

# KNOWLEDGE AND PRACTICE OF MOTHERS ON COMMON COLD SELF-MEDICATION IN CHILDREN UNDER FIVE YEARS

**Haq, Arinal**1; Rachmawati, Sinta1*; Pratesya, Weka Agustin1; Rachmawati, Ema1.

*1 Department of Clinical and Community Pharmacy, Faculty of Pharmacy, University of Jember, Jember, Indonesia*

**Introduction:** The common cold is a self-limiting disease. Self-medication could be done to relieve it. Children often experience this disease. Knowledge about the common cold must be well understood by the mother to avoid the wrong practice.

**Objective(s):** The purpose of this study was to determine knowledge and practice also the relationship between the level of knowledge and training of mothers towards self-medication for common colds in children under five years in Sumbersari District, Jember.

**Methodology:** : This research was conducted with a cross-sectional design of 385 respondents who have a child aged ≤ five years in 2 public health centres. It used convenience sampling. The validity test and the reliability test of the questionnaire were carried out before the questionnaire used. And the result was analysed using chi-square. Results: The results showed that 49.6% of respondents had good knowledge, 30.9% had sufficient knowledge, and 19.5% had insufficient knowledge. In the practice parameters, 54.3% of respondents behaved well, and 45.7% behaved poorly. The relationship between the level of knowledge and practice was analysed using chi-square and showing p <0.001.

**Results:** The results showed that 49.6% of respondents had good knowledge, 30.9% had sufficient knowledge, and 19.5% had insufficient knowledge. In the practice parameters, 54.3% of respondents behaved well, and 45.7% behaved poorly. The relationship between the level of knowledge and practice was analysed using chi-square and showing p <0.001.

**Conclusion(s):** The level of knowledge and practice have a significant relationship (p <0.001). This research recommends providing interventions to improve knowledge and practice.

# UTILIZATION ANALYSIS OF REFERRAL HEALTH SERVICES IN THE INDONESIAN NATIONAL HEALTH INSURANCE PROGRAM: A SAMPLE OF BIG DATA ANALYSIS

**Khoiri, Abu**1*; Sandra, Christyana1.

*1Department of Administration and Health Policy, Faculty of Public Health, University of Jember, Jember, Indonesia*

**Introduction:** The utilisation of advanced referral health services has increased significantly in the era of national health insurance. The fees paid by the Social Security Agency of Health (BPJS Kesehatan) to referral health facilities for three years (2014-2017) amounted to 132 trillion or 79.5% of the total costs.

**Objective(s):** This study aims to analyse the characteristics of the utilisation of advanced referral health services which have an impact on the high-cost burden based on a sample from the big data of BPJS Kesehatan.

**Methodology:** This study utilised the big data provided by BPJS Kesehatan in the form of sample data which represented the membership database and health services of all national health insurance participants in 2015-2016. The sample size was 911,101 participants in national health insurance. Data analysed using frequency distribution and data central tendency.

**Results:** The highest service utilisation in terms of membership was the participant from the Group of Salaried Workers. Meanwhile, according to the class of care, the highest number of care is class III hospital services. Most diagnoses during the era of national health insurance were Factors influencing health status and contact with health services (ICD Code 10: Z00-Z99). The top ten INA-CBG codes indicated that other minor chronic diseases (Q5-44-0) had the largest proportion at 42.0% and dialysis procedures (N-3-15-0) had a proportion of 6.9%. The most severity level was L0 (outpatient services) and level 1 or mild for inpatient care, which was for inpatients with mild severity (without complications or comorbidities).

**Conclusion(s):** The INA-CBG code that contributes to the cost of advanced referral health services includes other minor chronic diseases and dialysis procedures.

# NURSING IMPLEMENTATION FOR CHILDREN WITH FEBRILE SEIZURE

**Perdani, Peni**1* ; Sulistyorini, Lantin1; Rahmwati, Ira1; Afdi, Eka1

*1Department of Maternity and Pediatric Nursing, Faculty of Nursing, University of Jember, Jember Indonesia.*

**Introduction:** : Ending under-five mortality by 2030 is one of the Sustainable Development Goals (SDGs). A Febrile seizure is one of the highest causes of children hospitalized in the Besuki Region. The nursing role on febrile seizure is to perform nursing implementation, which aims to fulfil client needs.

**Objective(s):** This study aims to identify the nursing implementations for children with febrile seizures in the Besuki Region, Indonesia.

**Methodology:** This study is a cross-sectional retrospective study using medical records between January 2017 to January 2018 from hospitals in the Besuki Region of Indonesia. Nursing implementations based on the Nursing Intervention Classification (NIC)was used. Purposive sampling with the inclusion criteria of children aged 6 months until 5 years old with febrile seizure as the primary medical diagnosis was used. A total of 113 samples were collected and analyzed using univariate analysis.

**Results:** The characteristics of the respondents were infant (9,7%), toddler (80,5%), and preschool children (9,7%). The most common nursing diagnoses were hyperthermia (93,8%), ineffective breathing pattern (3,5%), and risk of injury (2,7%). Hyperthermia management and temperature regulation is the most performed nursing procedure in children with febrile seizures and performed by nurses in 100% of all cases. The implementation of hyperthermia management and temperature regulation are observation (31,7%), therapeutic (21,3%), education (15,3%), and collaboration (31,7%).

**Conclusion(s):** The most common nursing problem in children with febrile seizures is hyperthermia, with observation and collaboration implementation usually performed by the nurses.

# BILASTINE FOR THE TREATMENT OF ALLERGIC RHINITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

**Aranjit Singh Randhawa**1*, Norhayati Mohd Noor2, Mohd Khairi Md Daud1, Baharudin Abdullah1

*1Department of Otorhinolaryngology-Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia.*
*2Department of Family Medicine, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia.*

**Objective(s):** To determine the efficacy and safety of bilastine drug for the treatment of allergic rhinitis.

**Methodology:** We searched the Cochrane Central Register of Controlled Trials CENTRAL (2020, issue 2) and MEDLINE (1966 to March 2019 and Web of Science (1985 to March 2019) and reference lists of articles. Meta-analysis was done using Review Manager 5.3 software based on the random-effects model.

**Results:** A total of 135 records identified through database searching. We included five trials involving 3,329 patients aged two to seventy-four years. There was a reduction in symptoms of allergic rhinitis in the bilastine treated group for the total nasal symptom (four trials, 1856 participants; SMD -0.28, 95% CI -0.43 to 0.12; $I^2$ statistic = 67%; moderate quality of evidence). For comparison between bilastine and placebo, there were two trials that reported the outcome of nasal symptom score. Bilastine showed a reduction in nasal symptoms than placebo (two trials, 929 participants; MD -12.00, 95% CI -17.78 to -6.22; $I^2$ statistic = 50%; moderate quality of evidence). For comparison between bilastine and placebo, there were two trials that reported non-nasal-symptom score. Bilastine was more effective than placebo in improving non-nasal symptom score (two trials, 929 participants; MD -9.80, 95% CI -13.27 to -6.33; $I^2$ statistic = 0%; high quality of evidence). Bilastine was more favourable than cetirizine with the incidence of somnolence was lower in bilastine group (two trials, 886 participants: RR 0.38, 95% CI 0.17 to 0.86; $I^2$ = 30%; the high quality of evidence).

**Conclusion(s):** Bilastine is effective in treating allergic rhinitis patients compared to placebo and similar to other antihistamines with a better safety profile compared to cetirizine.

# TRAUMATIC BILATERAL FACIAL NERVE PALSY: A 10 YEARS RETROSPECTIVE STUDY

**Vshakri Ehdam**1*, Mohd Khairi Md Daud1

*1Department of Otorhinolaryngology, Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia Health Campus, 16150 Kota Bharu, Kelantan, Malaysia.*

**Introduction:** Bilateral simultaneous facial nerve palsy (FP) is very rare and it is defined as facial paralysis involving both sides of the face occurring within four weeks of each other. Temporal bone fracture (TBF) is a well-known cause.

**Objective(s):** The objective of our study is to determine the prevalence and outcome of traumatic bilateral FP over a 10 years period and to discuss the management.

**Methodology:** This is 10 years retrospective study, from 2010 to 2019 involving one university hospital. Numbers, as well as the detail of patients, were traced using a hospital coding system.

**Result:** There were a total of 5 cases of bilateral FP secondary to TBF over a 10 years period. It accounts for about 25% of bilateral TBF and 1.5% of all TBF. Four of our cases had delayed onset FP on both sides while the other one patient had immediate onset on one side and delayed onset on another side. All cases developed incomplete FP and House Brackmann (HB) grade IV was the most severe. Although transverse TBF is more common to associate with FP, it only occurred in one patient and only on one side. All patients were treated conservatively by oral steroid and physiotherapy. Four patients had complete recovery within 6 months to 18 months, while another one patient is still in our follow up and showed improvement.

**Conclusion(s):** Bilateral FP is undoubtedly more challenging in diagnosis due to lack of facial asymmetry and may result in a delay in management. Although it is rare, it should be suspected in all cases of TBF especially when involved bilateral sides.

# CHALLENGES IN THE EARLY RECOGNITION AND MANAGEMENT OF REFRACTORY ATRIAL TACHYCARDIA IN A GRAVID PATIENT WITH DILATED CARDIOMYOPATHY- A CASE REPORT

**W.M. Tan**1*, J.L. Aiu2, A.R. Abd Ghani3, M. Balasingam2, K.K. Sia4

*1Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Malaysia*
*2Department of Internal Medicine, Kajang Hospital, Malaysia*
*3Department of Cardiology, Serdang Hospital, Malaysia*
*4Department of Internal Medicine, Ampang Hospital, Malaysia*

**Introduction:** Supraventricular tachycardia can usually be acutely managed with either vagal manoeuvres or pharmacological approaches in a hemodynamically stable patient, less frequently however in atrial tachycardia. More frequent and refractory tachycardia episodes are observed in pregnancy especially in patients with the pre-existing arrhythmic substrate.

**Case presentation:** We herein report a case of atrial tachycardia in a 19-year-old pregnant lady at approximately 26 weeks of gestation to highlight the hurdles in managing the incessant arrhythmia. She presented to the Emergency Department after complaining of palpitation and shortness of breath for 3 hours. A diagnosis of supraventricular tachycardia was made initially based on 12-lead ECG. Vagal manoeuvres failed to terminate the arrhythmia. Intravenous adenosine was given to no avail, albeit gradual slowing and reacceleration of heart rate occurred with the third dose of the adenosine. Intravenous verapamil was subsequently given, resulting in transient hypotension and mild reduction of heart rate, revealing a rhythm of atrial tachycardia. The arrhythmia was not terminated by trials of synchronized cardioversion and intravenous infusions of magnesium sulphate or amiodarone. She was intubated in the Intensive Care Unit due to impending respiratory collapse. Cardiopulmonary resuscitation following pulseless electrical activity failed to achieve a return of spontaneous circulation, leading to her demise.

**Conclusion:** The case emphasized the challenges of early recognition of atrial tachycardia, differentiating it from the other supraventricular tachycardias in acute settings. The importance of achieving a balance between rhythm control and heart failure management in such patients was highlighted. Early interventions of securing the airway and sedating the patients to reduce sympathetic tone might be beneficial in patients with dilated cardiomyopathy and refractory arrhythmia. In conclusion, while antiarrhythmic drug therapy is imperative, there are numerous facets in the care of these patients such as heart failure management and anaesthetic intervention, which might be able to alter the outcome of these complex patients.

# MICRODEBRIDER ASSISTED TURBINOPLASTY FOR NASAL OBSTRUCTION WITH INFERIOR TURBINATE HYPERTROPHY: A SYSTEMIC REVIEW AND META-ANALYSIS

**Nithya Kanesan**1*, Norhayati Mohd Noor2, Baharudin Abdullah1, Suzina Sheik Abdul Hamid1

*1 Department of Otorhinolaryngology-Head & Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*
*2 Department of Family Medicine, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

**Introduction:** Common cause of nasal obstruction is inferior turbinate hypertrophy and microdebrider is a new method for inferior turbinoplasty that preserves mucosa.

**Objective(s):** The objective of this study is to examine the efficacy of microdebrider assisted inferior turbinoplasty compared to other standard techniques. Our primary outcome in this study is to subjectively and objectively assess the relieve in nasal obstruction. Our secondary objective is to assess the relieve of other nasal symptoms and complications related to the techniques.

**Methodology:** We retrieved trials from the Cochrane Register of Controlled Trials CENTRAL, MEDLINE, EMBASE, and Web of Science. We used Review Manager 5.3.5 software to perform the meta-analysis.

**Results:** We retrieved 123 records from the search of the electronic database and one record from the other sources. We screened a total of 43 records and 11 trials were included systematic review and 10 studies in meta-analysis. There is a significant reduction in nasal obstruction in the microdebrider group when compared to radiofrequency (SMD -0.58, 95% CI -1.01 to -0.15; P=0.008, I2=76%; 4 studies, 400 patients). However, there is no significant difference when compared between the microdebrider and submucosal resection (MD -0.10, 95% CI -0.36 to 0.15; P=0.13, I2=57%; 2 studies, 280 patients). There is no significant difference between microdebrider and radiofrequency or submucosal resection in reduction of other nasal symptoms. Hemorrhage is increased in the microdebrider group (RR 4.20, 95% CI 1.09 to 16.18; P=0.90, I2=0%; 2 studies, 240 patients) when compared to radiofrequency but no significance when compared with submucosal resection. However, crusting was noted to be less in the microdebrider group when compared with submucosal resection group.

**Conclusion(s):** Microdebrider is proven to be effective in treating nasal obstruction secondary to inferior turbinate hypertrophy with minimal complication.

# SEX ESTIMATION IN MANDIBLE: A CT SCAN STUDY BY GEOMETRIC MORPHOMETRIC.

**Aspalilah Alias**1,2, AbdelNasser Ibrahim2,3, Siti Noorain Abu Bakar2, Nurliza Abdullah4, Helmee Mohammad Noor5, Iman Yi Liao6 , Helmi Mohd Hadi Pritam7, Mohamed Swarhib Shafie2, Fazalina Mohd Fadzilah8, Faridah Mohd Nor2*

*1Department of Basic Sciences and Oral Biology, Faculty of Dentistry, Universiti Sains Islam Malaysia, Tingkat 15, Menara B, Persiaran MPAJ, Jalan Pandan Utama, Pandan Indah, 55100 Kuala Lumpur, Malaysia.*
*2Forensic Unit, Department of Pathology, Faculty of Medicine, Universiti Kebangsaan Malaysia, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Kuala Lumpur, Malaysia.*
*3Department of Forensic Medicine and Clinical Toxicology, Faculty of Medicine, Al Azhar University, Cairo, Egypt.*
*4Institut Perubatan Forensik Negara, Hospital Kuala Lumpur, 50586 Jalan Pahang, Kuala Lumpur, Malaysia.*
*5Department of Radiology, Hospital Kuala Lumpur, 50586 Jalan Pahang, Kuala Lumpur, Malaysia.*
*6School of Computer Science, University of Nottingham, Jalan Broga, 43500 Semenyih, Malaysia.*
*7Pusat Pengajian Sains Kesihatan, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan.*
*8Department of Radiology, Faculty of Medicine, Universiti Kebangsaan Malaysia, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Kuala Lumpur, Malaysia.*

**Introduction:** Establishing sex, ancestry and age are the three main parameters used when determining the biological identity of an individual in forensic. In recent years, shape analysis in the skeletal research study by geometric morphometric has gained popularity in the field of forensic anthropology.

**Objective(s):** The aim of this research is to evaluate the morphological variation in the mandible for sex determination in the Malaysian population, and propose its use in forensic analysis.

**Methodology:** In this study, geometric morphometric analysis of mandible was conducted in 447 specimens from CT scan images. A total of 24 landmarks were recorded by three-dimensional coordinates using the Checkpoint Stratovan software. Generalized Procrustes Analysis (GPA), Procrustes ANOVA, Principal Component Analysis (PCA), Discriminant Function Analysis (DFA), MANOVA and T-test were performed using MorphoJ, PAST and SPSS software. The variation of mandibular shapes was visualized by IDAV landmark editor software.

**Results:** Results exhibited that the first six principal components displayed 61% variation in mandibular shapes. Procrustes ANOVA showed a significant variation in the size and shape of mandibles in different sexes. There were significant differences between males and females in DFA and permutation tests ($p < 0.01$). The classification rate from cross-validation analysis showed that mandible was accurately classified in 81.7% of cases.

**Conclusion(s):** In brief, this study compiled an extensive population database derived from multiple landmarks from the CT scan of the mandible, which will aid in future victim identification. This was the first study thus far, performed on the mandible by geometric morphometric method for sexual estimation in the Malaysians.

# STUDENTS' SELF-CONFIDENCE LEVELS AND PERCEPTIONS TOWARDS ENDODONTIC LEARNING: A NATIONAL SURVEY AMONG MALAYSIAN DENTAL SCHOOLS

**Omar, Siti Hajar**1, Alias, Aspalilah1, Baharin, Safura Anita2*.

*1Faculty of Dentistry, Universiti Sains Islam Malaysia (USIM), Kuala Lumpur, Malaysia*
*2Faculty of Dentistry, Universiti Kebangsaan Malaysia (UKM), Kuala Lumpur, Malaysia*

**Introduction:** The scope for undergraduate endodontic teaching has broadened vastly in recent years and demanded the students be equipped with adequate endodontic training upon graduation. However, most of them appeared to be unprepared and lacking in confidence particularly with molar root canal treatment. Apart from the complexity of the root canal treatment itself, other factors could be related to this issue is the quality of endodontic teaching provided by the faculty. Thus, the students' perceptions and feedback of their learning experiences were considered as one of the imperative factors in monitoring and improving the quality of the academic programme.

**Objective(s):** To evaluate the students' self-confidence levels and perceptions towards endodontic learning.

**Methodology:** An online questionnaire consisted of 26 questions was created using a web-based survey tool and was emailed to 270 dental students from 13 Malaysian dental schools including both government-funded universities and private universities.

**Results:** The response rate was 74.4%. For students' self-confidence levels, most of the students rated to have low confidence in performing working length determination, to locate the canal in multirooted tooth and to carry out obturation satisfactorily. Regarding their perceptions towards the endodontic curriculum, most of them appeared to be satisfied with the endodontic teaching provided by their faculty.

**Conclusion(s):** Majority of Malaysian undergraduate dental students were reported to have low confidence levels in performing the procedures related to the complexity of the root canal system. On the other hand, they were gratified with their endodontic teaching implemented in their dental schools. However, based on students' suggestions, every dental school might have to reevaluate their clinical credit hours devoted to endodontic clinical training.

# THE EFFECTIVENESS OF ARTHROSCOPIC LYSIS AND LAVAGE (ALL) IN THE MANAGEMENT OF TEMPOROMANDIBULAR JOINT INTERNAL DERANGEMENT: A SYSTEMATIC REVIEW AND META-ANALYSIS

**Waheeb Abugharsa**1, John Chong Keat Hon2*, Natasya Abdullah3, Faezah Rokhani4

*1,2,4 Department of Oral & Maxillofacial Surgery, Medicine and Pathology, Faculty of Dentistry, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia.*

*3 Department of Basic Medical Sciences II, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia.*

**Introduction:** Internal derangement (ID) of the temporomandibular joint (TMJ) is a pathological condition caused by disc displacement. Diagnosis of ID is carried out either by magnetic resonance imaging (MRI) or by direct visualisation by TMJ arthroscopy where therapeutic arthroscopic lysis and lavage (ALL) could be conducted simultaneously.

**Objectives:** [1] to determine the effectiveness of ALL as a diagnostic tool of ID of TMJ compared to MRI (2) to determine the magnitude of ALL for pain reduction (PR) and mouth opening Improvement (MOI), and [3] to identify the possible determinants of success of ALL in the treatment of ID.

**Methodology:** A systematic review and meta-analysis were conducted on clinical studies involving the use of TMJ arthroscopy. Online databases were searched for possible studies based on the inclusion criteria. The quality of trials was assessed and later analysed qualitatively for effectiveness as a diagnostic tool. The effect size (ES) of the treatment was estimated as a standardized mean difference from baseline for the treatment group. Data were pooled using the Hedges method in a random-effects model. A narrative synthesis was conducted accordingly. Subgroup analysis was undertaken to investigate the determinants of treatment success.

**Results:** 72 clinical studies representing 5,869 participants were included. Arthroscopy was found to be comparable with MRI to assess the disc status. In addition, arthroscopy was more reliable to detect adhesions and perforations. The ES for PR was 2.94 [95% CI 1.24 to 4.64] ($p<0.01$), while for MOI was -2.70 [95% CI -3.23 to -2.18] ($p< 0.01$). Proper cases selection, intraoperative adequate joint mobility, and efficient physiotherapy were the most important success determinants.

**Conclusion:** ALL is effective in both diagnosing and treating ID of TMJ. Therapeutic effectiveness varies with cases, joint mobility and efficient physiotherapy accompanying it. This review supports the broader use of TMJ arthroscopy.

# THE EFFECTIVENESS OF INHALATION SEDATION TO REDUCE DENTAL ANXIETY IN YOUNG CHILDREN RECEIVING DENTAL TREATMENT

**Nor Azlina Ismail**1*

*1Department of Paediatric Dentistry, Faculty of Dentistry, Universiti Sains Islam Malaysia (USIM).*

**Introduction:** Anxiety in child patients is common encounters in the clinical situation. Nitrous oxide is recognized as the most effective sedation to reduce anxiety.

**Objectives:** The aim of this study was to determine the effectiveness of nitrous oxide inhalation sedation (IS) in young children attending for dental procedures. The objectives of the study were to assess patients/parents perceptions of the way they were treated on the day of the treatment and to assess patient cooperation in future dental treatment.

**Methodology:** This study involved a sample of 3 to 11 years old healthy patients came for dental treatment using IS at Paediatric Dental Clinic, USIM. A questionnaire was designed to collect the data of the patients and IS experience. This 36-item questionnaire was divided into two parts; pre-operative on the same day before the treatment and post-operative which been filled in three different time points; on the day after the treatment, one day after the treatment (via phone) and 10 days after the treatment (via phone).

**Results:** Data was available for 40 patients (F: 21, M: 19). The treatments comprised of 92.5% dental extractions and 7.5% restorations. Pre-operatively, 85% of patients were anxious and 78% of patients believed they would feel worse if having the treatment without IS. Overall, 90% of patients successfully completed treatment using IS and 99% of patients were satisfied with the treatment. This study revealed 70% of patients were not anxious to have the treatment again and 75% believed IS helps relieve the anxiety on the day of the treatment.

**Conclusion:** IS helps reduce anxiety in child patients and allow them to receive the dental treatment needed successfully.

# FACTORS ASSOCIATED WITH DENTAL PLAQUE FORMATION AMONG UNIVERSITY UNDERGRADUATE STUDENTS.

**Jaafar, Azlan**1; Al-Kadhim, Aws Hashim Ali2; Ab Malik, Normaliza2.

*1 Department of Periodontology and Community Oral Health, Faculty of Dentistry, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia*
*2 Department of Conservative Dentistry and Prosthodontics Faculty of Dentistry, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia*

**Introduction:** Dental plaque plays an important role in the formation of oral diseases, including dental caries and periodontal disease. Frequent removal of dental plaque can prevent oral disease occurrence.

**Objective(s)**: This study aims to determine the factors associated with dental plaque formation among undergraduate Universiti Sains Islam Malaysia (USIM) students.

**Methodology:** A cross-sectional study was conducted among 280 USIM's undergraduate students. Data collection was performed by self-administered questionnaire through Google form and clinical examination using Löe-Silness plaque index. Data analysis was done using SPSS software version 21.0 with p-value was set less than 0.05.

**Results:** The mean age of participants was 22.3 (SD=1.17) years. Majority of them were female (82.1%) studying social science courses (63.2%). Multiple linear regression indicates a significant association of plaque score with gender ($p<0.001$), frequency of toothbrushing a day ($p=0.039$), perceived oral health status ($p=0.003$) and last dental visit ($p=0.023$).

**Conclusion:** Gender, frequency of toothbrushing a day, perceived oral health status and last dental visit are associated with dental plaque formation. Proper oral hygiene care should be emphasised to prevent dental plaque formation and improve the oral health status of the students.

# COMPLIANCE OF CLINICAL STAFF & STUDENTS TO DENTAL GUIDELINE POST COVID-19: REALITY OR JUST THEORY?

Ahmad Tarmidzi, Nor Azura1*; **Mat-Baharin, Nor Haliza**1; Md Zahid, Diana1; Alauddin, Muhammad Syafiq1.

*1Faculty of Dentistry, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia.*

**Introduction:** During the outbreak of COVID-19 pandemic, a dental clinic is among the area that needs strict adherence to the clinical standard operating procedure (SOP). This is because dental practitioners, supporting clinical staff and clinical year dental students are directly exposed to the aerosols produced during dental treatment. It has been proven that COVID-19 can be transferred via this mechanism. Faculty of Dentistry USIM has come out with a dental guideline that includes SOP for the clinical setting.

**Objective(s):** To assess the adherence of clinical staff and students to clinical SOP. It is also to investigate any difficulty faced in complying to the guidelines.

**Methodology:** The guideline was presented and distributed to all staff and students. An audit form was developed and a series of clinical audits by observation was done on a weekly basis. It was followed by a survey using a questionnaire to investigate any difficulties faced by the clinical staff and students in complying to the clinical SOP.

**Results:** The non-compliance of wearing goggles and face shields during the dental procedure was 7.1% and 2.1% respectively. It was also found that 2.9% of them did not wear double gloves. There were 128 clinical staff and students responded to the questionnaire. Difficulties in sight due to fogging on the goggles were reported by 80.5% of them. While 40.6% of respondents claimed an unclear view when both goggles and face shields were worn together. Although all staff and students wear the KN95 mask during treatment, 12.5% of them claimed that the KN95 mask could cause fogging on google.

**Conclusion(s):** Most of the clinical staff and students complied to the clinical SOP. The non-compliance was mainly caused by fogging issues in goggle-wearing. This will impair treatment quality if the problem is not addressed.

# CHARACTERIZATIONS AND CYTOTOXICITY OF AGNPS BETA-SITOSTEROLS AGAINST VARIOUS CANCER CELL LINES.

**Yakop, Fahmi**1; Abd Ghafar, Siti Aisyah1*; Yong, Yoke Keong2; Mohamad Hanafiah, Rohazila1; Lim, Vuanghao3.

*1 Department of Basic Sciences and Oral Biology, Faculty of Dentistry, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia.*
*2 Department of Anatomy, Faculty of Medicine and Health Science, Universiti Putra Malaysia, Serdang, Malaysia.*
*3 Integrative Medicine Cluster, Advanced Medical and Dental Institute, Universiti Sains Malaysia, Kepala Batas, Penang, Malaysia.*

**Introduction:** AgNPs were found cytotoxic towards cancer cell lines by generating reactive oxygen species which give oxidative stress to cancer cells.

**Objective(s):** This study was done to characterize AgNPs synthesized with β-sitosterol (AgNPs-βs) and to determine its cytotoxicity against various cancer cell lines.

**Methodology:** Methods used to determine the characterizations of AgNPs-βs were UV-Vis spectroscopy, fourier transform infrared spectrophotometer (FT-IR), particle size distribution, zeta potential, polydispersity index (pdi), transmission electron microscopy (TEM), scanning electron microscopy (SEM) and energy dispersive x-ray spectrophotometer (EDX). MTT assay was done to determine the cytotoxicity of AgNPs-βs against various cancer cell lines.

**Results:** Formation of AgNPs-βs was confirmed by UV-Vis spectroscopy and the average size of AgNPs is 76.62 ± 41.19 nm with pdi of 0.275. Zeta potential of AgNPs-βs produced is -40.2 mV. TEM showed AgNPs-βs are mostly in spherical shape in aggregated form. AgNPs-βs showed rough surface by SEM and intense peak at 3.0 keV in EDX suggested Ag is the main elements in AgNPs-βs. FT-IR showed the presence of C-O bonds which proved β-sitosterols binds with AgNPs as capping agent. Cytotoxic activity of AgNPs-βs was tested against various cancer cell lines such as breast cancer (MCF-7), skin melanoma (A375) and lung cancer (A549). It was found that the IC50 was range from 25 µg/mL to 80 µg/mL with the lowest IC50 is against A375 (28.0 ± 0.1 µg/mL) and the highest IC50 is against MCF-7 (78.0 ± 1.02 µg/mL). No toxicity was found when AgNPs-βs tested on pre adipose tissue (3T3-L1) and normal fibroblast lung (MCR-5) cell lines at the highest concentration (100 µg/mL).

**Conclusion(s):** β-sitosterols showed great potential as capping agents for the development of AgNPs as its phenol groups bind to AgNPs. Besides that, AgNPs-βs were smaller in size which added to its potential as an anticancer agent. Further study needed to determine the mechanism of anticancer properties of AgNPs-βs.

# KNOWLEDGE, ATTITUDE AND PRACTICE (KAP) TOWARDS GOAT MILK AMONG MULTICULTURAL MALAYSIAN

**Lim, Lee Chang**1*; Hayati A. Rahman1; Zairina A. Rahman1; Muhammad Shamsir Mohd Aris1; Han, Kok Siew1; and Mohd Dzulkhairi Mohd Rani1

1Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia

**Introduction:** In times of overcoming challenges associated with new norms due to Covid-19 outbreak, it is essential to make a conscious decision for nutritious foods. Goat milk is playing an ever more vital role in enhancing overall health. This study offers the level of KAP among Malaysians towards goat milk prior to Covid-19 pandemic.

**Objective(s):** This study was conducted to assess the KAP towards goat milk among multicultural Malaysians.

**Methodology:** A cross-sectional study was conducted in several main cities in Malaysia. Respondents were selected using probabilistic cluster sampling followed by purposive sampling. Questionnaires were distributed at hypermarkets, education centres and among the neighbourhood. Data were analyzed using SPSS version 25.0.

**Results**: A total of 398 respondents participated in this study. Based on the total mean score, 53% (n=211) respondents were considered to have good knowledge of goat milk. The mean score was significantly higher for Malay at 24.03 compared to Chinese (22.80) and “Others” races (22.28) but insignificant with Indian. Goat milk is sunnah food in Muslim which may lead to a better level of knowledge in Malay whereas other ethnics may need to proactively look up for information about goat milk when needed. For attitude, the total means score of 45.2% (n=180) respondents has a positive attitude into consuming goat milk. The mean score was significantly higher for Malay at 11.78 compared to the rest. Muslims are encouraged to consume goat milk in their religion which may have instilled positive attitude among Malay. For practice, the total mean score was 53.8% (n=214) respondents were considered to have the practice to consume goat milk. 46.2% (n=184) has never tried goat milk. Education level does not significantly affect the KAP of goat milk.

**Conclusion(s):** This study suggests health education is important for promoting higher consumption of goat milk and contributing to the overall health of the public.

# PREFORMULATION STUDIES: THE PHYSICOCHEMICAL PROPERTIES OF SALICYLAMIDE SUBSTANCES

**Dewi Isadiartuti***, Noorma Rosita, Esti Hendradi, Firdausiah Fania DP, Frida Magdalena

*Department of Pharmaceutics, Faculty of Pharmacy, Universitas Airlangga, Surabaya, Indonesia*

**Introduction:** Salicylamide is a weak acid substances (pKa 8.2) which has activity as an analgesic and antipyretic. Its activity is weaker than salicylic acid but does not cause side effects of inflammation and bleeding in the stomach. Salicylamide is used as an active ingredient in pharmaceutical preparations for oral and topical use. Solubility and partition coefficient are important physicochemical data in preformulation studies of pharmaceutical preparations, because they can be used to predict the absorption of drug substances in the gastrointestinal tract or drug penetration through the stratum corneum. As a weak acid, the solubility and partition coefficient of salicylamide are influenced by environmental pH.

**Objective(s):** This study aims to determine the effect of pH (2.0 - 11.0) of the solution on the solubility and partition coefficient of salicylamide.

**Methodology:** Determination of the solubility and partition coefficient of salicylamide was carried out in a buffer solution of 0.02 M with ionic strength of 0.2, in a waterbath shaker at a temperature of 37 ± 0.5 ∘ C with a shaking frequency of 150 rpm until equilibrium was formed. The concentration of salicylamide in the solution was determined using a UV spectrophotometer at λmax of each pH of the salicylamide solution.

**Results:** The results showed that increasing the pH from 2.0 to 10.0 increased the solubility of salicylamide, but at a pH of 11.00 the solubility of salicylamide decreased. The partition coefficient of salicylamide decreases with increasing pH value from 2.0 to 10.0.

**Conclusion:** From the research, it is known that the salicylamide is a weak acid substances which has a large solubility at alkaline pH, but above pH 10.0 there is a decomposition of salicylamide so that its solubility decreases.

# PASSION FRUITS (*PASSIFLORA EDULIS*) PULP ARE POTENTIAL SOURCES OF ANTIMICROBIAL ACTIVE INGREDIENTS

**Isnaeni**1*, Ni Made Mertaniasih1, Achmad Toto Poernomo1, Iif Hanifah Nurrosyidah1, Aprelita Nurelli Dwiana 1, Safarini Marwa1

*1Universitas Airlangga, Surabaya, Indonesia*

**Introduction:** Passion fruits are famous for their beautiful fruit shape, with the taste of the fresh sensation mixed with fragrant fruit, it turns out that it contains various nutritious ingredients.

**Objective(s):** Resent study was performed to evaluate antibacterial activities of red and yellow passion fruits (Passiflora edulis) pulp fermented filtrate (PFPFF) in Man Rogose and Sharp (MRS) media.

**Methodology:** in vitro evaluating antimicrobial activity was performed by agar diffusion method using Escherichia coli, Staphylococcus aureus, Bacillus subtilis, Extended Strain Beta-Lactamase (ESBL) Escherichia coli, Methicillin-Resistant Staphylococcus aureus (MRSA) and Mycobacterium tuberculosis (MTb) as test bacteria. Nutrient agar was used as media. Kanamycin, streptomycin, rifampicin, and vancomycin were used as antibiotics standards. The potency was expressed as the diameter of the zone of inhibition (mm) and evaluated based on the Clinical Laboratory Standard International.

**Results:** The evaluation results showed that PFPFF exhibited inhibitory ability against Gram-positive and negative bacteria even against pathogens of MRSA, ESBL, and MTb. Inhibitory activities of methanol and ethyl acetate extract of PFPFF against MTb were also evaluated and showing positive results.

**Conclusion:** The content of organic acids, alkaloids, flavonoids, and phenolic compounds even probiotic bacteria with their various metabolites is a necessity for passion fruits as a candidate source of biologically active ingredients. The fruits with high commercial potential and bioactive compounds have an auspicious phytochemical value. In recent years, there has been a growing interest in researching and developing new antimicrobial agents from various natural sources to overcome microbial resistance. Red and yellow passion fruits pulp fermented in MRS media obtained substances; by which a potential source of active antimicrobial compounds might be developed. Possible ratio towards compatible antibiotic standards still needs to be quantified followed by isolation and identification of the active compounds.

# EFFECT OF LOCAL ALENDRONATE BOVINE HYDROXYAPATITE SCAFFOLD ON BONE REPAIR IN OVARIECTOMIZED RATS

**Samirah**1; Gani, Maria Apriliani1; Budiatin, Aniek Setiya1; Khotib, Junaidi1*

*1Department of Clinical Pharmacy, Faculty of Pharmacy, Universitas Airlangga, Surabaya, Indonesia*

**Introduction:** Bone repair and bone reconstruction are problems for clinical rehabilitation in recent years. Alendronate is one of the most effective bisphosphonates that is known to accelerate bone regeneration in defective bone tissue.

**Objective(s):** This study aimed to investigate the effect of local alendronate bovine hydroxyapatite as a scaffold for a bone defect in ovariectomized rats.

**Methodology:** The scaffold composed of bovine hydroxyapatite with alendronate (ALE) and without ALE (non-ALE) was fabricated with direct compression. Twenty-four Wistar rats were used as experimental animals. The rats were ovariectomized and implanted with each scaffold in the femur area. After eight weeks, the femur was taken. The histology examination was carried out using hematoxylin-eosin (HE) staining. The histology data were quantified by a blind investigator by counting osteoclast, osteoblast and osteoclast cells on each group.

**Results:** The HE staining showed that the number of osteoblasts and osteocytes in the ALE group was higher than the non-ALE group ($p<0.05$). However, the number of osteoclasts was not statistically different.

**Conclusion:** Local alendronate bovine hydroxyapatite scaffold improved bone repair in ovariectomized rats by increasing osteoblast and osteocyte homing. Thus, the local alendronate bovine hydroxyapatite scaffold is potentially investigated in the future study.

# IN-VITRO ANTI-HEPATITIS C VIRUS ACTIVITY OF PIPER CROCATUM

**Tutik Sri Wahyuni**1,2*, Nida Septioning Sukma1, Adita Ayu permanasari2, Aty widyawaruyanti1,2, Chie Aoki3, Achmad Fuad Hafid1,2.

*1Department of Pharmacognocy and Phytochemistry, Faculty of Pharmacy, Universitas Airlangga, Surabaya, Indonesia*
*2Department of Natural Product Medicine and Research Development, Institute of Tropical Disease, Universitas Airangga, Surabaya, Indonesia*
*3Department of Public Health, Kobe University Graduate School of Health Sciences, Kobe, Japan.*

**Introduction:** Hepatitis C virus (HCV) infection is one of the major health problems in the world. Its estimated approximately 70 million people infected and 30% develop to be a serious liver disease such as hepatocellular carcinoma dan liver cirrhosis. Although the current therapy with a combination of a direct-acting antiviral agent (DAAs) has been improved the sustain virology response (SVR), however, serious side effect and resistant issue cause the needed to find new agents for HCV. Medicinal plants possess various metabolite that reported to have potential inhibition against RNA virus including HCV. This study aimed to evaluate anti-HCV activities of Piper croc

**Methodology:** The leaves of P. crocatum was extracted in 90% of ethanol and successively extracted with n-hexane, dichloromethane and methanol. Anti-HCV activities were performed by in vitro culture cell of Huh 7-it HCV infected.

**Result:** The results showed that ethanol 96%, dichloromethane and methanol extract of Piper crocatum leaves demonstrated anti-HCV activity with IC50 values of 4.5 ± 0.6 µg/mL, 7.2 ± 0.1 µg/mL, and 2.2 ± 0.1 µg/mL, respectively, while n-hexane extracts do not show inhibition effect in the concentration of 100 µg/mL. The mode of action inhibition to examine the action of extract in the HCV life cycle revealed that ethanol extract dominantly inhibits in the post-entry step of HCV life cycle without any toxic effect in hepatocyte cells with CC50 value of 186.7 ± 7.5 µg/mL.

**Conclusion(s):** *Piper crocatum* revealed a strong anti-HCV activity. The result suggested that *Piper crocatum* leaves extract may a good candidate to develop as an alternative medicine for the anti-HCV agent.

# THE MODIFICATION OF RICE CAKE FOR DIABETES MELLITUS IN ELDERLY

**Aryatika,Karera**1, Rohmawati,Ninna1

*1 Department of Nutrition, Faculty of Public Health, University of Jember, Jember, Indonesia*

**Introduction:** The phenomenon of over demographic is estimated to occur in 2020-2030 and stakeholder's attention will be focused on productive age. Meanwhile, the total of the elderly is predicted to be around 48.20 million during 2020-2035, and unhealthy elderly makes it worse. Diabetes Mellitus type II is a non-communicable disease which commonly affects the elderly and causes complication. Based on that explanation, our team proposed a healthy street food diet that contains various nutrients in one serving. This called as a modified rice cake. It's made from local foods, such as MOCAF analogue rice, shrimps, Moringa oleivera leaves and local spices according to the nutritional needs of diabetics. The expected outcome is, it fulfils the nutritional needs of diabetics even they don't consume the food completely. It's because modified rice cake has a nutrient density concept, makes the presentation of the food menu more practical. Additionally, it can control blood sugar levels in elderly with diabetes due to the determination of hypoglycemic rice.

**Objective(s):** The aim of this study is to analyze the feasibility of modified rice cake as a healthy diet food for a diabetic in the elderly.

**Methodology:** Literature study from credible books and journals which are related to the dietary principles of type 2 diabetes mellitus was used as a method.

**Results:** The result showed that modified rice cake has high values of organoleptic character compared to the usual rice cake. Furthermore, modified rice cake contains high protein, fat and fibre, also has a positive biological impact to the bodies of elderly with diabetes Modified rice cake is recommended to be consumed along with various types of foods which is equally frequent with a carbohydrate source.

**Conclusion(s):** As a conclusion, modified rice cake can be used as an alternative food which is feasible to be consumed by the elderly with diabetes.

# THE RELATIONSHIP BETWEEN PHBS AND NUTRITIONAL STATUS OF TODDLERS IN COASTAL COMMUNITY IN PUGER WETAN, JEMBER REGENCY

**Ningtyias, Farida Wahyu**1*; Pudjiati, Sri Rahayu2; Fajar, Mohammad3; Anggraeni, Novita4

*1,2,3,4 Faculty of Public Health, University of Jember, Jember, Indonesia*

**Introduction:** Clean and healthy life behaviour (PHBS) is a factor that can affect the nutritional status of children. According to the Health Profile of the District of Jember in 2016, the number of children under five with severe malnutrition in Puger District is 11 people.

**Objective(s):** The purpose of this study is to relate clean and healthy life behaviour with the nutritional status of children under five in Puger Wetan, Jember Regency.

**Methodology:** This study used quantitative observational analytic methods. Data collection is done by interview and observation. The design of this study was cross sectional. 75 responden was collected by simple random sampling. The variables were knowledge and attitudes level, an indicator of clean and healthy life behaviour and nutritional status.

**Results:** The results showed the relationship between knowledge and attitudes towards nutritional status (p = 0,000). someone's knowledge can be used as motivation in behaving and acting on something for that person. But the action has no relationship with nutritional status, where p = 0,726> 0,005, caused by bad PHBS actions on 57 respondents. Good nutritional status of 50 respondents (66.7%) is influenced by food intake, health or infection status, food security, parenting patterns and health services and the environment.

**Conclusion(s):** It is necessary to do counselling and supervision regarding PHBS to improve public health, especially for toddlers, such as exclusive breastfeeding, weighing babies and toddlers regularly, providing a balanced intake of fruits and vegetables and getting used to maintain personal hygiene from an early age by always washing hands with soap and water, BAB in the latrine.

# EFFECT OF ZINC SUPPLEMENTATION ON INCREASING HEIGHT AND BODY WEIGHT OF STUNTED CHILDREN WITH CADMIUM EXPOSURE

**Ratnawati, Leersia Yusi**1; Sulistiyani2; Rohmawati, Ninna3

*1 Public Health Program Study, Public Health Faculty, Universitas Jember, Jember, East Java, Indonesia*
*2 Public Health Program Study, Public Health Faculty, Universitas Jember, Jember, East Java, Indonesia*
*3 Nutrition Science Program Study, Public Health Faculty, Universitas Jember, Bondowoso, East Java, Indonesia*

**Introduction:** Zinc adequacy is very important to support children linear growth. In addition, zinc also has an important role in maintaining body immunity. Adequate zinc intake can reduce the risk of infectious disease and support optimal body growth. An adequate zinc intake is increasingly needed by stunting toddlers with a high risk of cadmium exposure from cigarette smoke residues.

**Objective(s):** This research was to analyze the effect of zinc supplementation on increasing height and bodyweight of stunted children with cadmium exposure.

**Methodology:** This study was an experimental study with pre-post-test design. The research was conducted on 45 stunted children 25 – 59 months that divided into 3 groups zinc treatment; group 1 (5 mg zinc supplementation), group 2 (10 mg zinc supplementation), group 3 (20 mg zinc supplementation). The treatment was conducted for 3 months. Assessment of cadmium exposure was using a urine sample and analyzed by spectrophotometry at Public Health Nutrition Laboratory, Universitas Airlangga. Data analysis was using paired t-test and ANOVA one way with significance 0.05.

**Results:** Cadmium urine of stunted children was 6,53 µ/L on average, it showed high exposure. Paired t-test showed that there was a significant difference in body weight and height before and after treatment (p=0,026; p=0,000) and one-way ANOVA showed there were no differences increasing of body weight and height between groups.

**Conclusion(s):** Zinc supplementation significantly increasing body weight and height of stunted children with cadmium exposure. Even there were no differences in increasing body weight and height between groups.

# ABILITY TO PAY OF NATIONAL HEALTH INSURANCE PREMIUM MODEL ACCORDING TO AGRICULTURAL AND COASTAL COMMUNITIES EXPENDITURES IN JEMBER DISTRICT

**Witcahyo, Eri**1; Ricko Pratama Ridzkyanto2

*1 Department of Health Policy and Administration, Faculty of Public Health, University of Jember, Indonesia*
*2 Department of Health Policy and Administration, Faculty of Public Health, University of Jember, Indonesia*

**Introduction:** In order to achieve Universal Health Coverage (UHC), in 2014 Indonesia has starting implemented the National Health Insurance (NHI), According to BPJS Kesehatan (Healthcare BPJS) data on April 1, 2018, still around 165 million people (75%) of the total population have registered as NHI participants, even though the government was targeting 95% participation in January 2019. The problem that on December 27, 2019 were shown still 224.1 million (83%) who were registered. According on that, it's still necessary to discuss the issue of collection of contributions/ premium because the source of main funding of NHI is the premium paid by participants each month.

**Objective(s):** The study objective was to describe and model how the Ability to Pay (ATP) were based on the expenditures of agricultural and coastal communities in Jember District, considering this community is an informal groups which need attention.

**Methodology:** The type of study was descriptive, conducted in September-November 2019 by cross-sectional approach. The sample were the agricultural and coastal communities in Jember District as 788 respondents by random sampling technique and analyzed based on type of expenditures.

**Results:** The results showed that the average expenditure on essential food (IDR 756,225), the average for non-essential food (IDR 208,267), and non-food (IDR 824,012). The model obtained was Expenditure - [2.706 - 0.788 (Essential Food) - 0.745 (Non-Essential Food) - 1.020 (Non-Food)].

**Conclusion(s):** The conclusions of this study include the need to reconsider the determination of NHI premium by considering the ability to pay of community so that UHC and the increase in the collectability of contributions in order to minimize the deficit.

# ANALYSIS OF COMMUNITY NEEDS FOR THE DENGUE VACCINE DURING THE COVID PANDEMIC

**Rif'ah, Erwin Nur**; Ersanti, Arina Mufida; Permatasari, Elok; Molasy, Honest Dody.

*1Department of Health Promotion and Behavioural Science, Faculty of Public Health, Universitas Jem- ber, East Java, Indonesia*
*2 Department of Epidemiology, Faculty of Public Health, Universitas Jember, East Java, Indonesia*
*3 Department of Biostatistics and Demographics Study, Faculty of Public Health, Universitas Jember, East Java, Indonesia*
*4 Faculty of Social and Political Sciences, Universitas Jember, East Java, Indonesia*

**Introduction:** Covid 19 has become a health threat to all countries in the world. At the same time, countries with tropical and sub-tropical climates also face the threat of Dengue Hemorrhagic Fever (DHF). Indonesia is a country with the highest DHF cases in Southeast Asia, with a death rate that continues to increase every year. Vaccination is one of the efforts to reduce dengue fever rates, but until now it has not been included in the government's vaccine program.

**Objective(s):** This study aims to analyse the community's need for a dengue fever vaccine as an effort to prevent dengue fever.

**Methodology:** This research is a quantitative study with 180 respondents as parents who have children aged 9-18 years and who live in Bondowoso Regency.

**Results:** The findings of this study were 94.7% of respondents agreed that the dengue vaccine could prevent DHF; 93.4% agree that the government should provide dengue fever vaccine; 74.8% of respondents are willing to vaccinate and pay if there is no vaccination program from the government.

**Conclusion(s):** The parents think that the vaccine is able to prevent the occurrence of dengue hemorrhagic fever (DHF) and is very much needed so that the government must provide a dengue vaccine program.

# THE IMPLEMENTATION OF THE MATERNAL MORTALITY REDUCTION PROGRAM IN JEMBER DISTRICT, EAST JAVA

**Ni'mal Baroya**1*; Elok Permatasari1; Dimas Bagus Cahyaningrat Wicaksono1; Devi Arine Kusumawardani1; Nurul Ulya Luthfiana1; Andrei Ramani1; Dwi Martiana Wati1

*1Biostatistics and Demographic Dynamic Research Group, Faculty of Public Health, University of Jember, Indonesia.*

**Introduction:** Maternal mortality is a key indicator of public health status. The maternal mortality ratio (MMR) in Jember Regency has increased since 2014-2018. Several programs that have been implemented have not significantly reduced MMR in Jember.

**Objective(s):** This study aims to describe the implementation of maternal mortality reduction programs and the challenges and obstacles faced in formulating appropriate recommendations.

**Methodology:** This study uses an instrument designed to provide data for the Consolidated Framework for Implementation Research (CFIR) domain. CFIR explores 5 main domains: the characteristics of the intervention, external settings, inner setting (organizational context of health care settings), individual characteristics, and implementation process. Data were collected using an in-depth interview with the head of a community health centre, focus group discussions with village midwives and documentation from maternal and child health report. We analyzed qualitative data with thematic content and quantitative data using descriptive statistics.

**Results:** Several primary health services (PHC) have succeeded in reducing maternal mortality, but there are still many who must struggle to reduce it. The cost of the maternal mortality reduction program is sufficient from the Regional Revenue and Expenditure Budget, Health Operational Costs and National Health Insurance. Efforts to reduce maternal mortality require cross-sector support. Regulations regarding mortality reduction still require a communication strategy that makes it easier for the public to understand and be willing to be involved.

**Conclusion(s):** In order to reduce maternal mortality, it is necessary to involve personal references (religious and community leaders) in educational activities to the community the importance of social support in the care of pregnancy, childbirth and postpartum.

# PROMOTIVE AND PREVENTIVE BUDGET IN INDONESIA

**Ridzkyanto,Ricko Pratama**1; Dewa Ngakan Gde Wahyu Mahatma Putra 2; Nuryadi3.

*1 Department of Health  Policy and Administration, Faculty of Public Health, University of Jember, Jember, Indonesia*
*2 Department of Health  Policy and Administration, Faculty of Public Health, University of Jember, Jember, Indonesia*
*3 Department of Health  Policy and Administration, Faculty of Public Health, University of Jember, Jember, Indonesia*

**Introduction:** The realization of promotive and preventive spending in 2016-2018 had an average value of 11%. The realization of curative and rehabilitation spending was 89%. It was indicating that promotive and preventive costs were lower than curative and rehabilitative costs.

**Objective(s):** The research objective was to determine the budget management for promotive and preventive efforts in Indonesia.

**Methodology:** Database from google scholar, science direct, and JSTOR, which is limited to the publication of articles in English and Indonesian in the last ten years from 2009– 2019. Keywords used in the search for articles is promotive health cost, health preventive cost, promotive health fund, preventive health fund, promotive health allocation, health preventive allocation. The initial search by identifying 200 articles, then screening 85 articles, the eligibility of 30 articles, and 10 articles were selected.

**Results:** Based on the source, the results showed that the largest source was obtained from foreign direct grants of 96.43 per cent, based on the largest allocation for preventive services at 4.93 per cent, based on the actual expenditure, which was the largest in Bali Province at 94.30 per cent.

**Conclusion(s):** The conclusion is to focus on the Direct External Grant strategy on the preventive service program in Bali Province.

# THE RELATIONSHIP OF SELF-EFFICACY WITH PATIENTS FAMILY ANXIETY IN THE INTENSIVE CARE UNIT OF JEMBER KLINIK HOSPITAL

**Yunanto, Rismawan Adi**1*; Rosi, Fahrur2; Wantiyah3.

*1,2,3 Faculty of Nursing, University of Jember*

**Introduction:** The presence of a family member treated in the Intensive Care Unit (ICU) is related to the increasing of family's anxiety. The patient's family anxiety can be relieved through self-efficacy.

**Objective(s):** The study aimed to analyze the relationship between self-efficacy and patient's family anxiety in the intensive care unit at the Jember Clinic Hospital.

**Methodology:** A cross-sectional study was carried out among 96 family members recruited by total sampling. The data collected using the General Self-Efficacy Scale (GSE) and the Hamilton Anxiety Rating Scale (HARS). Data were analyzed by the Spearman rank test. The ethical clearance was approved by the committee of ethics of health study.

**Result:** The result of this study indicates that there is a significant relationship between self-efficacy and patient's family anxiety in the intensive care unit at the Jember Clinic Hospital ($p = 0,001$; $r = -0,420$; $\alpha = 0,05$). The negative direction indicates an increase in self-efficacy is strongly associated with a decrease in anxiety in the family. Individuals who have high self-efficacy would not feel easily burdened, so they would not experience anxiety.

**Conclusion(s):** Nurses need to deliver information well and make a comfortable environment around ICU to make patient's family feels comfortable. It is crucial to maintain good self-efficacy for reducing the patient's family anxiety.

# THE RELATIONSHIP BETWEEN PSYCHOSOCIAL WELL-BEING AND EATING BEHAVIOURS AMONG MALAY PRESCHOOL CHILDREN IN AN URBAN LOCALITY IN NEGERI SEMBILAN

**Mohamad Nor, Nadeeya**1*; Mohd Razi, Nuurain Amirah1; Ibrahim, Aimi Syahirah2; Hamzah, Nur Sakinah2; Mohd Effendy, Nadia1; Abang Abdullah, Khadijah Hasanah1; Mohd Rani, Mohd Dzulkhairi1; Nordin, Norsham Juliana1; Baharom, Nizam1

*1Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Persiaran Ilmu, Putra Nilai, 71800, Nilai, Negeri Sembilan.*
*2 Hospital Sultanah Bahiyah, Km 6, Jalan Langgar, Bandar Alor Setar, 05460 Alor Setar, Kedah*

**Introduction:** Eating behaviours and psychosocial well-being have been a major concern as a determinant of health status. In child development, both factors showed equally important

**Objective(s):** This cross-sectional study aimed to assess the relationship between psychosocial well-being and eating behaviour among Malay preschool children.

**Methodology:** Parents were invited to answer the Strength and Difficulty Questionnaire (SDQ) to assess the child's psychosocial well-being, the Child Eating Behaviour Questionnaire (CEBQ) and consented an anthropometric examination for their children.

**Results:** Of 116 preschool children, 44.8% were 6 years old, followed by 5 years old (38.8%) and 4 years old (16.4%). The majority were boys (60.3%). The majority were in the normal (46.5%) and overweight/obese (44.0%) categories followed by underweight (9.5%) respectively. About 16.4% had abnormal/borderline psychosocial well-being and peer problem was the commonest domain (44.0%). ANOVA with post hoc test showed a significant relationship among children who have abnormal conduct problem with the desire to drink (p=0.012), borderline hyperactivity problem with food responsiveness (p=0.020) and emotional overeating (p=0.016) while borderline peer problem with satiety responsiveness (p=0.012), slowness in eating (p=0.021), emotional undereating (p=0.049) and food fussiness (p=0.017).

**Conclusion(s):** Externalising well-being associated with food approaching behaviours while internalising well-being associated with food avoidant behaviours. Early identification of the child's psychosocial well-being and continuous nutritional education should be highlighted among parents to improve the children's overall well-being.

# HEPATOPROTECTIVE AND LIPID-LOWERING EFFECTS OF PASSIFLORA EDULIS VAR. FLAVICARPA JUICE ON ALLOXAN INDUCED DIABETES MICE

Holidah; Diana1, **Dewi; Ika P.**1,2, Nurrizki, Azharia1, Rochayati; Diva1, Pusparini; Dyah1

*1 Preclinical Pharmacology Research Group, Faculty of Pharmacy, Universitas Jember, Jember, Indonesia*
*2 Drug Utilization and Discovery Research Group, Faculty of Pharmacy, Universitas Jember, Jember, Indonesia*

**Introduction:** Diabetes mellitus is a group of metabolic disorders characterized by hyperglycemia and abnormalities in carbohydrate, fat, and protein metabolism. Passion fruit (Passiflora edulis) had a wide range of biological activities such as antioxidant, hepatoprotective, anti-cholesterol, antihypertensive, antitumor, and antidiabetic. P. edulis had seven varieties, and one of them was Passiflora edulis var. flavicarpa. In the previous study, the leaves and stems of this variety had antihyperglycemic and antioxidant effect.

**Objective(s):** The purpose of this study was to examine the hepatoprotective and lipid-lowering effects of Passiflora edulis var. flavicarpa juice on alloxan-induced diabetes mice.

**Methodology:** The experimental used 24 Balb-C strain male mice which were divided into six treatment groups (normal, control negative, control positive with metformin, and yellow passion fruit juice with 40, 50, and 60 mL/kgBW doses that was given two times a day for 14 days). The diabetic effect was induced by alloxan on all groups except normal. Glucose, AST, ALT, total cholesterol, and triglyceride levels were measured on the 1st and 15th days of assay meanwhile, the MDA levels were assayed only on the 15th day.

**Results:** This study showed that the average decrease in glucose, AST, ALT, total cholesterol, and triglyceride levels in the treatment with Passiflora edulis var. flavicarpa juice groups were significantly different with negative controls. The 60 mL/kgBW dose had the biggest percentages to decrease AST, ALT, total cholesterol, and triglyceride levels. The plasma MDA level of this dose was not significantly different from the positive control group.

**Conclusion(s):** The yellow passion fruit juice had a hepatoprotective effect and could reduce lipid parameters in alloxan-induced diabetes mice.

# EFFECT OF RED (RHODOPHYCEAE), BROWN (PHAEOPHYCEAE) AND GREEN (CHLOROPHYCEAE) SEAWEED EXTRACTS, ON PLATELET COUNTS IN DIABETIC MICE

**Indahyani, Didin Erma**1*; Praharani, Depi2; Handayani, Ari Tri Wanodyo3; Barid,  Izzata4, Probosari, Niken5 ; Kartikasari, Dahna Maudita6

*1Oral Biology Departement, Dental Faculty, University of Jember, Jl. Kalimantan 32, Sumbersari, Jember, East Java 6812, Indonesia*
*2Periodontic Departement, Dental Faculty, University of Jember, Jl. Kalimantan 32, Sumbersari, Jember, East Java 6812, Indonesia*
*3Public Dental Health  Department, Dental Faculty, University of Jember.  Jl Kalimantan no 37. Jember 68121 Indonesia*
*2Periodontology  Departement, Dental Faculty, University of Jember, Jl. Kalimantan 32, Sumbersari, Jember, East Java 6812, Indonesia*
*3Undergradute Student, Dental Faculty, University of Jember, Jl. Kalimantan 32, Sumbersari, Jember, East Java 6812, Indonesia*

**Introduction:** Hyperglycemia and insulin resistance in uncontrolled diabetics induce the formation of reactive oxygen species (ROS), which is responsible for increased platelet activation. This has the potential for complications of atherosclerosis and cardiovascular disease. Seaweed extract has bioactive content that functions as an antioxidant and can lower blood glucose levels. The bioactive content is influenced by the type of seaweed, location and also the environment.

**Objective(s):** The purpose of this study was to determine the effect of giving red, brown and green seaweed extracts on the platelet numbers of diabetic mice.

**Methodology:** The study was conducted on 6 groups of mice, namely the normal group (without treatment) the negative control group (diabetes), the positive control group (diabetes and metformin), the diabetes group and given red seaweed extract, the diabetes group and given brown seaweed extract and the diabetes group. And given green seaweed extract. The dose of seaweed extract is 10 mg / 20 gr/BB / day and metformin at a dose of 1.3 mg / 20 gr/BB. The platelet count was calculated directly using the Brecher Cronkite method.

**Results:** The results showed that the platelet counts in diabetic mice were significantly higher than the normal group and the other groups that were given metformin and seaweed. Diabetic mice given red seaweed showed no significant difference in platelet counts from the positive and normal control groups, while brown and green seaweeds showed lower platelet counts.

**Conclusion(s):** It was concluded that the intake of seaweed extract decreased the platelet count in diabetic mice.

# KAP TOWARDS COVID-19: USIM UNDERGRADUATE STUDENTS CASE STUDY

**Shahrina Ismail**1*; Sharifah Fairuz Syed Mohamad1; Fatin Ahza Rosli2; Noor'adilah bt Ibrahim1; Sharifah Najwa Syed Mohamad3.

*1 Faculty Science of Science and Technology, Universiti Sains Islam, USIM, Malaysia, 71800 Bandar Baru Nilai, Negeri Sembilan, Malaysia*
*2 Department of Chemistry, Faculty of Science, Universiti Putra Malaysia, UPM, 43400 Serdang, Selangor, Malaysia*
*3 Faculty of Medicine & Health Sciences, Universiti Sains Islam Malaysia, USIM, Level 13, Menara B, Persiaran MPAJ, Jalan Pandan Utama, Pandan Indah, 55100, Kuala Lumpur, Malaysia*

**Introduction:** Higher educational centres with significant numbers of young people will become acute disease hubs during a pandemic. Owing to the sizeable young adult population, high levels of direct social interaction, and permeable boundaries, universities have the capacity to become volatile, centrifugal outbreak hubs.

**Objective(s):** This research examines the university student's knowledge, attitude, and practice towards the COVID-19 pandemic in Universiti Sains Islam Malaysia (USIM), Nilai. Our secondary outcome is to evaluate how USIM undergraduate students gained information and responded to the COVID-19 pandemic. These objectives were analysed through both descriptive and inferential statistics.

**Methodology:** A self-administered questionnaire consisting of 17 items on knowledge, 15 items under attitude, and 14 items related to practice was distributed to obtain the data and analysed using SPSS software with a sample size of 2061 USIM students. Descriptive statistics, Likert scale analysis, multiple linear regression, as well as Pearson correlation, were used to identify the relationship between KAP.

**Results:** It was discovered that most of the USIM's students have an excellent knowledge (85%) and attitude (73.8%) towards COVID-19. However, they moderately practice the right steps to prevent themselves from virus infection. This is very likely due to unpreparedness in responding to a critical situation such as this pandemic.

**Conclusion(s):** It can be said that although students have a pretty good level of knowledge on the matter, attitude, and practice still have much room for improvement. It was discovered that there is a significant relationship between practice and both knowledge and attitude. In the future, awareness campaigns and modules to encourage good health behaviour and practice among university students should be established when planning management strategies concerning outbreaks or pandemics in higher education institutions.

# COVID-19 PANDEMIC: KNOWLEDGE, ATTITUDE AND PRACTICE FROM MEDICAL STUDENTS' PERSPECTIVE

**Muhammad, Amalin**1; Kamaruddin, Ezieyan1; Zaidi, Nurin1; Nazri, Aina1; Ridza, Anis1; Anuar, Balkhis1; Affandi, Arni1; Zuhairi, Alia1; Rashid, Farhan1; Ayub, Haziq1; Rahman, Al Azam1; Najib, Nazdmi1; Shamsuddin, Syamim1; Azzeri, Amirah1; T Mohd, Tengku Amatullah Madeehah1; Mohamad Nor, Nadeeya1; Abu Baharin, Mohamed Fakhri1; Baharom, Nizam1; Mohd Razi, Nurain Amirah1; A. Rahman, Zairina A1; Mohd Rani, Mohd Dzulkhairi1; Mohamad Yusuff, Aza Sherin1; Jaafar, Hafiz1.

*1 Public Health Unit, Department of Primary Care, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia.*

**Introduction:** Lack of knowledge about COVID-19 transmission, inadequate understanding of the population at risk, and not being attentive to preventive measures are still widespread among regions and populations. As a result, COVID-19 infections keep on spreading and cause profound morbidity and mortality around the world.

**Objective(s):** To compare the knowledge, attitude and practice scores among medical students in USIM regarding COVID-19 and to determine factors that are associated with knowledge, attitude and practice among USIM medical students.

**Methodology:** A cross-sectional study with a descriptive and analytical design was conducted at the Faculty of Medicine and Health Sciences USIM through an online survey on 1st July 2020 until 24th August 2020.

**Result:** A total of 471 medical students completed the questionnaire A significant amount of respondents (334 students) were female (71%) and most of the students were from the M40 group (40%). The pre-tested questionnaire was designed based on previous study and information gained from validated sources to determine the level of knowledge, attitude and practice among USIM medical students. Cronbach's Alpha was used to assess the reliability of the questionnaire. The influence of sociodemographic characteristics (gender, year of study, household income and size, geographical area, history of contact with COVID-19 patient, the result for COVID-19 test and source of information) was analyzed using IBM Statistical Program for Social Sciences (SPSS) application.

**Conclusion(s):** Males had higher level of knowledge whereas females had significantly higher level of attitude and practice regarding COVID-19 pandemic. Level of knowledge differed between year of studies whereby the clinical year students had higher level of knowledge and practice compared to pre-clinical year students.

# SCHOOL CLOSURE DURING COVID-19 OUTBREAK: PARENTAL ATTITUDES AND THEIR EXPERIENCES

Chuong Hock Ting1, Jeffery Stephen1, **Ahmad Khairi Hassan**1*, Norashikin Abdul Moris1, Noor Nasuha Noor Hamal1, Nurul Ain Amidar1, Mohd Azlan Rusdi1

*1 Faculty of Medicine and Health Sciences, University Malaysia Sarawak, Kota Samarahan, Sarawak, Malaysia*

**Introduction:** COVID-19 brought closure to educational facilities. In this study, we want to explore how sociodemographic factors affect parental attitudes and their experiences during the pandemic related to school closure.

**Objective(s):** In this study, we are exploring the parental attitudes and their experiences during the school closure due to COVID-19 outbreak.

**Methodology:** A cross-sectional survey was conducted in Malaysian households of 273 parents with children aged <18 years between May and June 2020 by distributing a structured online questionnaire. Sociodemographic, attitudes, and experiences variables were explored and analyzed using the chi-square test and Fisher exact test. We determined the association between sociodemographic factors (parent working status and school affiliation of children) with four attitudes of a parent (extent of school closure seen as a problem, plan for childcare, permit out-of-home activities and who cared for the child) and parental experiences (impacts on parental employment - missed work, lost pay or income, the financial cost in excess during the pandemic comparing to typical days expenses and felt at risk of losing a job).

**Results:** 97.4% of the respondents agreed with the school closure due to the severity of COVID-19. Having both parents working (61.9%), having a plan for childcare (88.64%), parents permit outdoor activities (21.24%) and availability of caretaker for the child (82.42%) were factors associated with “school affiliation of children”. It was found that 56.0% of parents who were working, had missed their works during the school closure. School affiliation was significantly associated with parental employment.

**Conclusion(s):** This study had shown that the majority of the parents were significantly affected by the school closure together with their children due to COVID-19 pandemic in which they stayed at home for valid and essential reasons. The parents’ perspectives and attitudes toward the government’s policies on any pandemics should be studied in future.

# PERCEIVED FINANCIAL THREAT AND PSYCHOLOGICAL EFFECTS ON WORKING ADULTS IN SARAWAK DURING LOCKDOWN FOR COVID-19 PANDEMIC

**Suut, Nurkhalida**1; Azlan, Nasha1; Awal Din, Muazzin1; Jamaluddin, Jamilah1; Amin, Syaffa1; Aris, Rashyid1; Arabi, Zurraini2; Ting, Chuong Hock3*

*1 Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Sarawak, Malaysia*
*2 Department of Family Medicine, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Sarawak, Malaysia*
*3Department of Psychological Medicine, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Sarawak, Malaysia*

**Background:** The emergence of Coronavirus Disease 2019 (COVID-19) led to the implementation of special measures such as the Movement Control Order (MCO), which in return had caused economic disturbances and psychological effects across many countries over the globe.

**Objective(s):** Our study aims to determine the perceived financial threat and its predictors, the relationship with psychological outcomes on working adults' populations in Sarawak during lockdown for the COVID-19 pandemic.

**Methods:** We recruited 336 respondents from all divisions in Sarawak through an online survey with sociodemographic data, questionnaires were adapted from the Financial Threat Scale (FTS) to assess the perceived financial threat, and the Depression, Anxiety, Stress Scales 21 (DASS-21) to evaluate the psychological impact of lockdown implementation. IBM SPSS version 23.0 was used for data analysis. A p-value of ≤0.05 was considered statistically significant.

**Results:** The analysis revealed that the employment sector, number of children, and change in income during lockdown were important predictors associated with the perceived financial threat. 47.9% of the respondents perceived a moderate-to-severe financial threat. Of these, 72.6% were self-employed, 54.6% were without children and 60.0% had experienced decreased in income during the lockdown. Several factors were identified to be significantly associated with the negative psychological outcomes, namely employment sector, marital status, number of children, and number of liabilities. Generally, a severe perceived financial threat was significantly associated with severe levels of depression, anxiety, and stress.

**Conclusion(s):** There is an urgency to develop strategic plans and policies to provide economic and psychological support for the communities affected by the lockdown and COVID-19 disease.

# THE PERCEPTION OF FEMALE MEDICAL STUDENTS TOWARDS BREAST SELF-EXAMINATION BASED ON THE HEALTH BELIEF MODEL: A QUALITATIVE STUDY

**Pranita, Fitri**1*; Burhannudin, Ichsan2.

*1 Faculty of Medicine, Muhammadiyah University of Surakarta, Surakarta, Indonesia*

**Introduction:** Breast cancer is the most prevalent cancer in women. Early detection is very important in successful treatment, decreasing its mortality and care cost-burden. The major causes of mortality and other complications are due to late referral for treatment. Breast Self-Examination (BSE) is one of the most important methods for the early detection of breast cancer. It's a simple, low-risk, non-invasive, low-cost, self-performed screening and it has a high chance to detect breast lump as early as possible. The Health Belief Model has been widely used to explain for health-risk taking behaviours. There are six constructs, namely perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy.

**Objective(s):** The aim of this study was to identify the perceptions of female medical students towards breast self-examination based on the Health Belief Model.

**Methodology:** This study used a qualitative design through in-depth interviews and focus group discussions with 11 informants based on a topic-list related to the six constructs of the Health Belief Model.

**Results:** The theme of this research was high knowledge, negative attitude and poor practice regarding breast self-examination. It was a reflection from the following categories: breast cancer knowledge, family history of breast cancer and history of a lump in the breast affected perceived susceptibility. The main barriers of doing BSE were lazy, forget, fear and discomfort doing a BSE. Perceived severity of breast cancer was high for all female students. The perceived benefit of BSE included the effectiveness of breast self-examination as early detection. Women's self-efficacy was low, they were unable and unwilling to perform routine breast self-examination. Support from their family and fearful feeling of getting breast cancer were important cues for taking up breast self-examination.

**Conclusion(s):** Intervention programs should be focused on reducing perceived barriers, increasing women's self-efficacy to perform regular breast self-examination.

# A SURVEY ON KNOWLEDGE, INITIATION AND USAGE OF ELECTRONIC CIGARETTE AMONG STUDENTS IN A PRIVATE UNIVERSITY, KAJANG

**Lee Zhi Han**1*, Shamala Baskaran2, Thavamalar Paramasivam3, Mohammed Abdulrazzaq Jabbar4

*1Student Nurse, UTAR, Kajang, Malaysia*
*2, 3 Department of Nursing, UTAR, Kajang, Malaysia*
*4 Department of Population Medicine , UTAR, Kajang, Malaysia*

**Introduction:** Electronic cigarettes, a device that produces vaporized nicotine has gained popularity globally. The sudden increase in the usage of e-cigarette has raised concern about its safety and usefulness, particularly among young adults as there is no evidence to show differently.

**Objective(s):** The study aims to determine knowledge, reasons for the initiation, usage of e-cigarettes and the associations between the selected variables with e-smoking status among university students between the ages of 18-24 years.

**Methodology:** A survey was conducted among 312 participants in a private university in Kajang using convenient sampling techniques, from February to March 2020. Data entry were done by Statistical Package for Social Sciences (SPSS) 23 and analyzed using descriptive and inferential statistics.

**Results:** Data revealed 57.5% of participants had used an e-cigarette, 28.9% were current users, and 28.6% were former users. 50.7% had good knowledge of e-cigarettes. The main reasons for initiation of e-cigarette was accessibility (72%) followed by more acceptable to non-tobacco smokers (55.6%), affordable (42.6%) and effective in quitting smoking (42%). Association between sociodemographic variable (age, faculty and cigarette smoking status) with e-smoking status were significant [$\chi2$ (2, n=294) = 4.427, p = 0.109], [$\chi2$ (8, n=294) = 40.615, p < 0.001] and [$\chi2$ (4, n=294) = 148.045, p < 0.001]. Usage of e-cigarettes with e-smoking were equally significant [$\chi2$ (4, n=294) = 249.000, p < 0.001]. However, the association between knowledge with e-smoking status results was not significant.

**Conclusion(s):** E-cigarettes are predominant among university students and the figures are expected to increase. This emphasizes the need for more educational programs to impart knowledge among students on the risk and complication of using e-cigarettes. Understanding the reasons for initiation could help in predicting the likelihood of continued use of the e-cigarette.

# A SURVEY ON SUICIDAL IDEATION AND ATTEMPT IN ONE PRIVATE UNIVERSITY, MALAYSIA

**Ng Sin Hooi**1*, Thavamalar Paramasivam2, Shamala Baskaran2, Mohammad Abdulrazzaq Jabbar3

*1 Student Nurse, UTAR, Kajang, Malaysia*
*2 Department of Nursing, UTAR, Kajang, Malaysia*
*3 Department of Population Medicine, UTAR, Kajang, Malaysia*

**Introduction:** According to WHO, suicide is the second leading cause of death among individuals aged 15 to 29 years in the world and contributing to 8.5% of all deaths in this age range. Even though suicidal cases among youngsters are rising from 7.9% in 2012 to 10% in 2017, there is still a lack of research specifically on youngster's suicidal behavior, especially in Malaysia.

**Objective(s):** This research aims to determine the suicidal ideation (SI) and attempt (SA) among university students in a private university in Malaysia.

**Methodology:** A web-based survey was carried out in a private university. Two-hundred and ten participants were recruited using a convenient sampling method. Data collection was conducted from 19th to 28th February 2020 after obtaining ethical approval. Yatt Suicide Attitude Scale (YSAS) was used to assess SI and SA. SPSS Statistics 23 was used to analyze data.

**Results:** Results showed that prevalence for SI and SA were 49% (M=8.29, SD ±3.64) and 33.8% (M=6.21, SD ±2.49) respectively. Differences between sociodemographic characteristics (educational level) and SI was significant [t (46) = -3.10, p=0.003]. The result shows undergraduate students have higher SI than foundation students. There was a significant difference between sociodemographic (ethnicity) and SA [F (3, 206) = 12.71, p <0.001] with Indian having higher SA. As for correlation between SI and SA, there was a moderately strong positive correlation, [r (208) = 0.582, p < 0.001].

**Conclusion(s):** SI and SA among university students in this university were slightly alarming. This creates awareness on the needs of more research on this issue in Malaysia and also more strategies in the university levels to prevent future suicidal behavior.

# COMPARISON IN EFFECTIVENESS OF PLAQUE REMOVAL BETWEEN MANUAL TOOTHBRUSH AND POWERED TOOTHBRUSH IN PAEDIATRIC PATIENTS

**Noor Farahain Binti Matdiris**1, Mohamad Nazmi Bin Nisar Ahmad2, Nor Azlina Binti Ismail3*, Nusima Binti Mohamed4, Azlan Bin Jaafar5

*1Department of Paediatric Dentistry, University Sains Islam Malaysia, Malaysia*
*2Department of Prosthodontic University Sains Islam Malaysia, Malaysia*
*3Department of Public Health University Sains Islam Malaysia, Malaysia*

**Introduction:** Dental plaque plays a potential role in the pathogenesis of dental caries. In Malaysia, dental caries in children is prevalently high between 70-90%. Caries incidence can be reduced by effective plaque removal. However, children have shown that they lack the manual dexterity to properly brush their teeth with correct tooth brushing technique.

**Objective(s):** The aim of this study is to compare the effectiveness of manual and powered toothbrush in term of plaque removal in children.

**Methodology:** 9-years-old children from Sekolah Rendah Islam Al-Amin and Daqwah As-Sofa who met the enrolment criteria were selected randomly and were given a manual toothbrush and powered toothbrush, respectively. Each subject was given fluoridated toothpaste (1450ppm) to be used twice daily with a designated toothbrush during the study. Plaque score was recorded twice using Turesky Modified Quigley Hein Plaque Index with aid of disclosing tablet; baseline and after 1-week review. Data will be assessed using IBM SPSS statistics (paired sample t-test).

**Result:** 34 Al-Amin students show mean value reduction of 0.700 from baseline (mean value; 1.805) to 1-week review (mean value; 1.105). 30 As-Sofa students show mean value reduction of 0.995 from baseline (mean value; 2.048) to 1-week review (mean value; 1.053). There is a slight difference in the reduction of mean values, but it is not significant between manual and powered toothbrush.

**Conclusion(s):** In this study, the powered toothbrush is basically the same in reducing plaque compared to a manual toothbrush. This study needs to be continued for another week or longer to achieve a more valid and reliable result.

# AGE ESTIMATION IN MALAY POPULATION USING MANDIBLE FROM DENTAL PANORAMIC TOMOGRAPHY: A 2-DIMENSIONAL GEOMETRIC MORPHOMETRIC ANALYSIS

**Nur Ariessa Farhana Zulkifli**1, Nur Aliya Syuhada Binti Mohd Saaid1, Nurjehan Mohamed Ibrahim1, Choy Ker Woon2, Aspalilah Alias1*.

*1Faculty of Dentistry, Universiti Sains Islam Malaysia, Malaysia.*
*2Department of Anatomy, Faculty of Medicine, Universiti Teknologi MARA, Sungai Buloh Campus, Selangor, Malaysia.*

**Introduction:** Estimation of age is important in identification in criminal investigations, skeletal remains and illegal immigration movements when the valid identity document is unavailable. The geometric morphometric technique is a shape analysis method that can help in the forensic case in the identification of human.

**Objective(s):** The objective of this study is to determine and compare the size and shape of the mandible in the different age group within the Malay population.

**Methodology:** In this study, geometric morphometric analysis (GM) of the mandible was conducted in 400 specimens of Dental Panoramic Tomography (DPT) data that was taken from Planmeca Romaxis. The 27 landmarks were applied to the DPT using tpsDig2 software. Generalized Procrustes Analysis (GPA), Procrustes ANOVA, Principal Component Analysis (PCA), Discriminant Function Analysis (DFA) and Canonical Variate Analysis (CVA) were performed using MorphoJ software. The variations of mandible size and shape subsequently were classified into 4 age groups (Group 1 (15-24); Group 2 (25-34); Group 3 (35-44) and Group 4: 45-54).

**Result:** The first eight principal components exhibited 81% variation in mandible shapes. Procrustes ANOVA showed there were significant differences in shape ($p<0.001$) between different age groups, however, no significant difference in centroid size. Mahalanobis distances showed that there are significant differences in all group ages with the highest score between Group 1 and Group 4 with 2.114. The discriminant function test was ranged between 90-72% and 81-49% after cross-validation. The wireframe was visualized to show the shape differences between each age groups.

**Conclusion(s):** This study compiled an extensive population database from USIM dental clinic. The GM analysis using radiograph is easy-to-use, non-invasive, and non-destructive tools for age estimation using mandible. The result of this research is useful for forensic odontology investigation when individual identification is unknown.

# SEX DETERMINATION FROM ORTHOPANTOMOGRAM USING GEOMETRIC MORPHOMETRIC ANALYSIS IN MALAY POPULATION

**Nur Aliya Syuhada Mohd Saaid**1, ,Nur Ariessa Farhana Zulkifli1, Nurjehan Mohamed Ibrahim1, Choy Ker Woon2, Aspalilah Alias1*.

*1Faculty of Dentistry, Universiti Sains Islam Malaysia, Malaysia.*
*2Department of Anatomy, Faculty of Medicine, Universiti Teknologi MARA, Sungai Buloh Campus, Selangor, Malaysia.*

**Introduction:** The mandible is an excellent bone to be used in sex estimation of unknown individuals. It is presented with more information about sexual dimorphism compared to the other facial bones in both morphological and dimensional terms. Hence, in forensic anthropology, mandibles become useful to confirm the sex in the absence of pelvic or skull. However, the database of mandible available is not specific for the Malaysian population.

**Objective(s):** The aim of this study is to determine the differences in mandible size, shape and its variation in different sex within the Malay population in Malaysia.

**Methodology:** Geometric morphometric analysis of the mandible was conducted in 200 specimens in both sexes of subjects from 15 to 34 years old using orthopantomogram radiographs. Twenty-seven landmarks were recorded by two-dimensional coordinates using TPSdig2 software. Generalized Procrustes Analysis (GPA), Procrustes ANOVA, Principal Component Analysis (PCA), Discriminant Function Analysis (DFA) were performed using MorphoJ. The variation of mandible shapes was visualized by wireframe and lollipop graph.

**Result:** The first seven principal components exhibited a 79.5% variation in mandible shapes. Procrustes ANOVA showed significant variation of the mandible in centroid size and shape in different sex ($p<0.01$). There was a significant difference between sex in DFA and permutation tests. ($p< 0.01$) The classification rate from cross-validation analysis showed that mandible was accurately classified in 60% of cases for sex.

**Conclusion(s):** In conclusion, the population database which multiple landmarks was recorded in orthopantomogram radiographs of the mandible. This will be helpful in the forensic anthropology field in the future for identification of sex. The geometric morphometric approach can help in shape analysis in determining the sex.

# COMPARISON OF EFFICACY AND ADVERSE EFFECTS OF BELIMUMAB AND RITUXIMAB IN SYSTEMIC LUPUS ERYTHEMATOUS

Aminuddin, Amirah1*; Jaafar, Hafiz1

*Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Negeri Sembilan, Malaysia*

**Introduction:** Systemic Lupus Erythematosus (SLE) is a systemic autoimmune disease which increasing in trend with time. Previous studies proved that immunological factors including abnormalities among B cells interaction play an important role in this disease. Many studies had been done to develop a treatment that specifically targets these cells to relieve the disease's burden. The B cell-targeted therapies including biological agents such as Belimumab and Rituximab had been shown to give beneficial outcomes to SLE patients.

**Objective(s):** To conduct a review on the current treatment of SLE, the role of B cells in the pathogenesis of SLE and comparison of efficacy and safety between Belimumab and Rituximab.

**Methodology:** A literature review of published articles was conducted based on the objectives. Electronic databases such as PubMed, Science Direct, Update and Google scholar were used to obtain studies on Belimumab and Rituximab.

**Results:** Belimumab and Rituximab had been shown to give beneficial outcomes to SLE patients. Although observational and retrospective studies proved that improvement in SLE patients with the use of Rituximab, they were inconsistent with the results from randomized controlled trials. Despite satisfactory outcomes and clinical efficacy of Rituximab, the randomized controlled trials results did not achieve their primary and secondary endpoints. As for the safety of Belimumab and Rituximab, both were well tolerated and adverse effects were only detected in a small number of patients. They shared the same adverse effects which were infection due to decreased in B cells number and infusion reaction.

**Conclusion(s):** Despite the positive results showed by Rituximab, Belimumab is the only first FDA- approved targeted therapy due to inconsistent results in two randomized controlled trials Additional controlled studies with the improved and new design are required to evaluate the true effects of Rituximab and to gain the place for Rituximab as one of the therapeutic options in SLE.

# A SURVEY ON STUDENTS' KNOWLEDGE AND CONSUMPTION PATTERN OF BUBBLE MILK TEA IN A PRIVATE UNIVERSITY, KAJANG

**Lim Zhi Qian**1; Woo Li Fong2; Jagjit Kaur2; Mohammad Abdulrazzaq Jabbar3

*1 Student nurse, Universiti Tunku Abdul Rahman, Kajang, Malaysia*
*2 Department of Nursing, Universiti Tunku Abdul Rahman, Kajang, Malaysia*
*3 Department of Population Medicine, Universiti Tunku Abdul Rahman, Kajang, Malaysia*

**Introduction:** Bubble milk tea (BMT) is a recent craze and has rising popularity especially among the young adults. However, it is not a healthy choice as it contains high sugar and calories. This situation can lead to a risk of diseases such as obesity, diabetes, cardiovascular problems, and others.

**Objective(s):** This study aims to determine the prevalence, consumption pattern and knowledge level on BMT and its health effects among the university students.

**Methodology:** This descriptive survey was done among 404 university students aged 18 and above who study in a private university in Kajang. Participants were recruited through convenience sampling, with 383 of the remaining eligible after data cleaning. A self-administered questionnaire was used for data collection after obtaining consent. The data were analyzed using SPSS Statistics 23.

**Results:** The prevalence of BMT consumption was 93.0%. Majority of the consumers had consumed BMT for more than 3 years (38.2%), and peer influence (44.4%) was the main factor. The preferred pattern was drinking BMT in regular cup size and half sugar during snack time. Only 37.1% and 39.7% of the consumers were able to identify the sugar and calorie content in one standard cup of BMT. Diabetes, weight gain and obesity were the most well-known health effects of BMT consumption among the participants. The knowledge levels were significantly influenced by gender [$x2(1, 383)=9.926$, $p=0.002$] and choice of sugar level [$x2(4, 356)=16.780$, $p=0.002$]. Good knowledge was prevalent among females and those who usually choose 0% sugar level while purchasing BMT.

**Conclusion(s):** The prevalence of BMT consumption was high among university students with a lack of knowledge regarding the sugar and calorie content of BMT. Awareness of the importance of proper sugar intake needs to be raised through actions and interventions.

# REVIEW OF CHILDHOOD OBESITY: SOCIO-DEMOGRAPHIC, CAUSES, CONSEQUENCES AND INTERVENTIONS

**Roszaimi Syafiq**1, Hassan Nor Eyzawiah2, Salahuddin Nor Azirah2, Md Arepen Siti Asmat2

*1 Faculty of Medicine And Health Sciences, Universiti Sains Islam Malaysia (USIM), Nilai, Negeri Sembilan, Malaysia*
*2 Otorhinolaryngology Head And Neck Surgery, Surgical-Based Department, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia (USIM), Nilai, Negeri Sembilan, Malaysia*

**Introduction:** Incidence of childhood obesity has been growing at an alarming rate and already an epidemic in some countries. The World Health Organization (WHO) reported that approximately 41 million young children aged 0 to 5 years were overweight or obese.

**Objective(s):** Aim of this article is to review the socio-demographic background, causes of childhood obesity, as well as the medical and psychological consequences to them. Besides, the prevention interventions for childhood obesity are also included.

**Methodology:** The relevant articles were sourced from electronic databases such as Google Scholar and PubMed. The searched keywords were childhood obesity, epidemiology, risk factors, complications and intervention. The original articles were obtained, reviewed and important information's were retrieved by all authors.

**Results:** The prevalence of childhood obesity in a Western country such as United State (2013–2016, aged 2 to 19 years was 17.8%) is higher compared to Asia country such as Malaysia (2011-2015, 6.1% to 11.9% respectively). It occurred more in boys (13.6%) compared to girls (10.0%). There are several factors that contribute to the rising prevalence of childhood obesity including genetic, birth weight, maternal obesity, sedentary lifestyle, eating behaviour and parental status. Medical consequences have a range of morbidities such as childhood diabetes, hypertension, dyslipidaemia, obstructive sleep apnoea, orthopaedic disorder and psychosocial complications. Parents, school and governments play pivotal roles in preventing, reducing and treating childhood obesity by promoting a healthy diet and improve children enrolments in sports and co-curricular activities.

**Conclusion(s):** We conclude that childhood obesity is a higher prevalence in the Western country and occurred more in boys. Both genetic and environmental factors play a role and will affect both the medical and psychology of the children. More interventions focused on healthy foods, parenting strategies, and enjoyable physical activities are needed to overcome this problem.

# COVID-19: MENTAL HEALTH AMONG PREGNANT MOTHERS IN LABOUR

**Dinah Farhanah, Jamal**1*; Nur Quratul Ain, Rozaimee1; Nurzaireena, Zainal2; Maizatul Azma, Masri2.

*1 Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia*
*2Obstetrics and Gynaecology Unit, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia*

**Introduction:** The COVID-19 pandemic is affecting health care services in obstetrics and gynaecology department globally, requiring instant transformations and adjustments to face it. One of it is that policy has been implemented to limit the number of people in the labour room which a companion is not allowed to enter during delivery. This policy is to reduce the risk of infectious exposure to the patients, health care workers and to the community. We aimed to assess its impact on the mental health of the mother during delivery.

**Objective(s):** To explain the psychological impact of COVID-19 to mothers in labour and recommendations for promotion of maternal mental health during the intrapartum period. Methodology: A literature review was carried out using the electronic databases: Google Scholar, PubMed and Medline. Keywords that were used were COVID-19, companionship, labour and mental health. From the search, several journals and research articles were read and retrieved based on the relevance of the topic. Furthermore, the reference lists of all relevant articles retrieved were searched to identify other studies.

**Results:** The new policies in the COVID-19 pandemic cause the women in labour to develop higher anxiety and depressive symptom, especially with preexisting risk factors and background. Mental health individual screening assessment antenatally, and intrapartum period are recommended, early interventions and support may provide a better outcome for both mother and baby.

**Conclusion(s):** Infectious control measures during COVID-19 pandemic crucially affects maternal mental health antenatally and intrapartum. Therefore, strategies and recommendations are being outlined to encourage maternal health well-being during the intrapartum period.

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# PROPER HAND HYGIENE CAN REDUCE THE OCCURRENCE OF HAND DERMATITIS ON NON-MEDICAL VOLUNTEERS OF COVID-19

Musafirah Arif1, Sitti1, Amal A.Makmur, Andi1, Wahyuni, Sri2

*1Department of Dermatology and Venereology, Medical Faculty, Muhammadiyah University, Makassar, Indonesia*
*2 Health Department of South Sulawesi, Indonesia*

**Introduction:** The recent pandemic COVID-19 makes people aware of personal hygiene especially for hand hygiene to prevent virus transmission. Unfortunately, hand cleansing frequently with water and soap or with hand sanitizer can provoke hand-skin problems such as excessive skin dryness and contact dermatitis (particularly irritant or allergic subtype). These problems are also known as hand dermatitis. According to WHO recommendation in 2009, the proper hand hygiene procedures are (1) Hand-rub: Clean your hands by rubbing them with an alcohol-based formulation, or (2) Handwash: Wash your hands with soap and water. The duration of the entire procedure for Hand-rub is 20-30 seconds, and for Handwash is 40-60 seconds. To reduce the risk of the occurrence of hand dermatitis, the CDC and Prevention, American Contact Dermatitis Society and WHO have recommended Hand Hygiene properly and frequently without causing hand dermatitis. The proper and frequent hand hygiene can be managed by applying a moisturizer immediately after washing hands or using moisturizing hand sanitizer in preventing the hand dermatitis.

**Objective(s):** To observe the effect of proper hand hygiene on the occurrence of hand dermatitis to Covid19 non-medical volunteers.

**Methods:** Using a prospective method, samples were taken from 215 non-medical volunteers who served for 5 months (April-August 2020) in the Covid-19 task force in Makassar City, Indonesia.

**Results:** Descriptive analyses showed 98% of the samples performed washing hands properly more than or equal to 10 times per day. Almost all of the samples used moisturizer frequently after washing hands or using moisturizing hand sanitizer. From those samples, only 27% of volunteers tend to experience hand dermatitis occurrence and it resolved quickly.

**Conclusion(s):** Hand Hygiene properly can prevent hand dermatitis.

# COVID-19 NEGATIVE WITH SIMILAR CHEST RADIOGRAPH CHANGES IN AN IMMUNOCOMPROMISED PATIENT: A DIAGNOSIS NOT TO BE MISSED.

Ahmad Anwaar Muhammad Saifullah1; Mohd Rahman Omar1; Nour Hanan Daniah Mohd Bakhit1; Nor Safiqah Sharil1,2; Siow Kim Yoon2

*1 Medical-Based Department, Universiti Sains Islam Malaysia, Nilai*
*2 Medical Department, Port Dickson Hospital, Kementerian Kesihatan Malaysia*

**Introduction:** In the era of COVID-19 pandemic, any patient presenting with symptoms of respiratory infection, a diagnosis of COVID-19 infection must be excluded. We present a case of a patient who presented with respiratory infection symptoms and chest radiograph suggestive of COVID-19; however, the throat swab was negative for COVID-19. He was later found to have newly diagnosed advanced HIV infection with multiple opportunistic infections.

**Case presentation:** A 45-year-old man presented with a 3-months history of chronic cough associated with dysphagia, weight loss and anorexia with BMI of 19.83 kg/m2. He also had left lower limb weakness with bowel and urinary incontinence. On examination, there was extensive oral candidiasis, generalized crepitations on chest auscultation and left upper motor neuron lesion. Chest radiograph showed bilateral reticular opacities mainly in the upper and middle zone, with diffuse bilateral interstitial and alveolar infiltrates. The nasopharynx swab for RT PCR was negative, and the sputum was positive for pneumocystis jiroveci and negative for tuberculosis. Contrast-enhanced CT (CECT) brain revealed ill-defined hypodensities in the right centrum semiovale and occipital lobe, possibly of cerebral infarction. The cerebrospinal fluid (CSF) examination showed positive for India ink. He was initially treated in SARI ward to exclude COVID-19 based on the chest radiograph findings. HIV Rapid test and PCR was positive, with positive RPR and TPHA for syphilis. He was diagnosed with pneumocystis jiroveci pneumonia, cryptococcal meningitis, oral candidiasis and syphilis. He was treated with oral co-trimoxazole, intravenous Amphotericin B, oral flucytosine, fluconazole, intramuscular penicillin G and syrup Nystatin. He responded well to the treatment.

**Conclusion(s):** In the pandemic era, all patients with severe acute respiratory symptoms, the COVID-19 diagnosis must be excluded. However, in unknown HIV patient who presented in the advance state with prolonged respiratory infection symptoms and extrapulmonary symptoms, the opportunistic infections should be excluded together with COVID-19.

# HOME VISIT OF VILLAGE MIDWIVES AND PREGNANCY WOMEN IN CORONAVIRUS (COVID-19) PANDEMIC, IS THIS AN ACCURATE ACTION?: AN OBSERVATIONAL STUDY

Juliani Ibrahim1; Putri Ainun Mutia2

*1,2 Department of Public Health, Faculty of Medicine, Muhammadiyah Makassar University, Indonesia*

**Introduction:** There are many restrictions to routine healthcare services in South Sulawesi, including maternal and newborn healthcare services, in the COVID-19 pandemic condition. Consequently, many other community health services had already faced a policy change, such as a visiting policy for pregnant women, which is now being transferred and implemented by midwives of a differing village through a home visit.

**Objective(s):** This policy results in the irregular antenatal visit of pregnancy women by midwives. We, therefore, evaluated the accuracy of the home visits to pregnant women.

**Methodology:** Data were collected in Pinrang sub-District of South Sulawesi of targeted pregnancy women during COVID -19 from March to September 2020 with the observational study by using a questionnaire that was developed from maternity cohort book. Cluster random sampling on targeted pregnancy women in six villages to derive primary data. Chi-square test was used to identify the possible association between both variables. Results: A total of 63 pregnant women participated. Haemoglobin measure and type of blood examinations become issues, which tend to be performed incompletely during the period of pregnancy. However, while assessing the probability of the relationship between both variables, we found a significant relationship with p-value 0.04. Nevertheless, the odds ratio is not indicated as a risk to pregnant women.

**Conclusion(s):** Despite there is an association of both variables, but there is no potential risk to pregnant women since the village midwives have been well-prepared and performed health protocol to anticipated condition while found pregnancy women on high risk, coordination by online consultation clinic or mobile phone group and good collaboration with the cadre. However, in order to improve accurate services of a home visit by village midwives, their visits should be accomplished with good skills, medical equipment and safety kit on facing pregnancy women covered in that situation.

# DETECTION OF SARS-COV-2 VIRAL LOAD IN SALIVA COLLECTED FROM ASYMPTOMATIC PATIENTS: A SCOPING REVIEW

**Nam, Noor Akmar1**; Azhar Hilmy, Syathirah Hanim2; A.Rahman, Zulaiha1

*1 Department of Basic Sciences and Oral Biology, Faculty of Dentistry, University Sains Islam Malaysia, Kuala Lumpur, Malaysia.*
*2 Department of Periodontology and Community Dentistry, Faculty of Dentistry, University Sains Islam Malaysia, Kuala Lumpur.*

**Introduction:** From November 2019, rapid transmission of severe acute respiratory syndrome coronavirus (SARS-Cov-2 virus) that causes COVID-19 infection has resulted in a worldwide pandemic. A clear understanding of viral transmission is critical in controlling the spread of disease effectively. While efforts have been focussed on tracing symptomatic patients, asymptomatic patients who are not presented with common sign and symptoms might also contribute to the spread of the disease. Current evidences suggest the diagnostic potentials of saliva in detecting SARS-Cov-2 viral load among patients. However, not much is known regarding the reliability of saliva sampling for the detection of SARS-CoV-2 among asymptomatic individuals.

**Objective(s):** This review presents the findings of SARS-Cov-2 virus in saliva samples collected from asymptomatic COVID-19 patients and their possible contribution in the spread of COVID-19.

**Methodology:** A systematic search was performed in five public databases (Pubmed, Scopus, Web of Science, Science Direct, Google Scholar). This literature search was carried out without any restrictions on the date of publication to determine the detection of SARS-Cov-2 virus in saliva from asymptomatic patients.

**Conclusion(s):** Findings of this review suggest a potential application of saliva sampling for detection of viral load in samples collected from COVID-19 patients, including those under asymptomatic status.

# TAI CHI IN MAINTAINING GENERAL HEALTH AMONG THE ELDERLY DURING COVID-19 PANDEMIC

Zulkifli, Nursyazwani Aimi1; Syed Mohideen, Fathima Begum 2*; Syed Mohamad, Sharifah Najwa3; A Rashid, Mohd Radzniwan 4 .

*1Faculty of Medicine and Health Science, Universiti Sains Islam Malaysia, Nilai, Malaysia.*
*2Family Medicine Unit, Faculty of Medicine and Health Science, Universiti Sains Islam Malaysia, Nilai, Malaysia.*

**Introduction:** The number of COVID-19 deaths increases worldwide particularly among the elderly as they tend to develop a more severe course. This is due to the presence of multiple comorbidities and immunosenescence. Hence, prevention by home-isolation is the best method. Therefore, Tai Chi is suggested to maintain overall health as it is home-based and has a lower risk of injury.

**Objective(s):** To state the indications, benefits to health and adverse effects of Tai Chi among the elderly that can benefit during COVID-19 Pandemic.

**Methodology:** The literature reviews were based on electronic databases: PubMed, Google Scholar, EZproxy, UptoDate and web resources, using combinations of keywords like 'elderly', 'tai chi', 'exercise', 'health' and 'COVID-19'. Several books, journals, reports and articles analyzed. The key points and important facts extracted as references in order to provide information from reliable sources.

**Results:** Tai Chi is suggested for age 50 years and above. Hypertension, degenerative diseases and neurological conditions are among conditions suggested for Tai Chi. If practised accordingly, it benefits cardiovascular health, improves postural stability and balance, strengthens respiratory muscles and alleviates joint pain and stiffness. Furthermore, it improves global cognitive function, depression, anxiety, insomnia and reduces the risk of dementia. Tai chi also helps to reduce inflammation and improves immunoregulation by increasing several various immune cells including T- cells, B cells and immunoglobulins. Unfortunately, our review did not come across a study that proves Tai Chi's ability to specifically prevent COVID-19 in elderly. However, the benefits of Tai Chi in improving the comorbidities and the ability to induce immunomodulation might help in controlling the illness when the elderly are infected.

**Conclusion(s):** Tai Chi is recommended for the elderly during COVID-19 pandemic to improve general health. However, further studies to objectively prove the benefits of Tai Chi for the elderly in maintaining health during COVID-19 pandemic is suggested.

# EXPLORATORY STUDY: THE IMPACT OF COVID-19 PANDEMIC ON THE UNEMPLOYMENT RATE IN THE MALAYSIAN INDUSTRIES

Ibrahim, Ishaq1* ; Ali, Kalsom1 ; AL-Tahitah, Ali1 ; Ghaffar, Kadhim2

*1 Faculty of Leadership and Management, Universiti Sains Islam Malaysia, Bandar Baru Nilai 71800, Nilai, Negeri Sembilan, Malaysia*
*2 Faculty of Technology Management and Business, Universiti Tun Hussain Onn, 86400 Parit Raja, Batu Pahat Johor, Malaysia*

**Introduction:** The COVID-19 pandemic has caused a ripple effect in the Malaysian economy and the workforce.

**Objective(s):** This study explores the consequences of COVID-19 pandemic on the Malaysian economy and highlighting the unemployment issue has been experienced during the pandemic time until the present moment, as well as expecting the future of the industrial condition in Malaysia. The most effective industries in the country would be reviewed to figure out the fired employees and differences before and after the pandemic, which it could lead the researcher to important points and expectations to enrich the relevant literature and enhance the efforts to overcome the crisis.

**Methodology:** This is a quantitative study distributed the survey among 723 respondents including employees and employers, the collected data analyzed via SPSS and AMOS.

**Results:** There is a significant impact on skills and COVID-19 on the unemployment rate in Malaysia in all the industries. Which COVID-19 caused lower sales and economical activities in the country and the whole world, requesting the privet sectors to reduce their financial obligation by firing the employees or not paying their salaries. Furthermore, skills significantly influence employment because the current situation required different skills to work within the pandemic era about the time before the pandemic. The companies selected skilful employees to remain and fired the average skilled employees. While the government jobs didn't much been affected except the contract employees in a few positions. The self-employed sector reported as the best operated and active sector during the pandemic in the report of the special survey on the effect of COVID-19 on the country, economy, and individuals.

**Conclusion(s):** This study concluded that the unemployment rates rapidly increased, the pandemic is the main and only reason for all of the recent job loss in 2020.

# CHALLENGES FACED BY RESEARCHERS WHEN CONDUCTING RESEARCH DURING COVID-19 PANDEMIC

Abdullah, Amira Raudhah1, Azmi, Liyana1

*1Department of Medical Sciences 1, Universiti Sains Islam Malaysia. Nilai, Persiaran Ilmu, 71800, Bandar Baru Nilai, Negeri Sembilan.*

**Introduction:** Scientists and researchers delving in various fields have contributed significantly to COVID-19 mitigation. Workwise, researchers are forced to work from home and adapt to these changes. This has caused disruptions to on-going and imposes uncertainties on future research. The lack of attention to these challenges have complicated the process of research planning, especially in the life sciences, where most studies include lab-based experiments and require a constant presence in the lab.

**Objective(s):** We aim to identify challenges faced by researchers in Malaysia, particularly those involved in lab-based work during COVID-19 pandemic.

**Methodology:** An online-based questionnaire centred on the challenges faced by researchers particularly to those involved with laboratory work. The questionnaire was distributed among academicians, postgraduate and industrial researchers from government and private institutions. Questions were tailored to understand the problems faced by researchers under the 'new norm' and how they are currently dealing with these issues to continue performing research. Demographic data were analyzed using a descriptive statistic; independent t-test was used in this study to compare the significant correlation between each parameter.

**Results:** A total of 40 participants took part in this online study. All of the participants are actively involved with research of which, the majority involving laboratory usage. Our data showed that more than half faced issues with the unconducive working environment when working from home that includes factors such as families, internet connection and odd working hours. The significant challenges in researches identified were lack of grants funding, accessibility to research facilities and lack of technical support. Finally, the closing and re-opening of borders, unstable standard operating procedure (SOPs) have also impeded research planning.

**Conclusion(s):** Our work shows that these problems could significantly delay and affect the quality of research that is being conducted in Malaysia. Shedding light on these concerns will enable us to focus on solving these issues.

# SYSTEMATIC REVIEW ON ONLINE LEARNING READINESS AMONG UNDERGRADUATE STUDENTS

S. Aisya, Azlan1; I. Izham, Zul Akhman1; Nurin, Norhakim1; Anuar, Adlina1; Faiz, T Mohd, Tengku Amatullah Madeehah1; Azzeri, Amirah1; Mohamad Nor, Nadeeya1; Abu Baharin, Mohamed Fakhri1; Baharom, Nizam1; Mohd Razi, Nurain Amirah1; A. Rahman, Zairina A1; Mohd Rani, Mohd Dzulkhairi1; Mohamad Yusuff, Aza Sherin1; Jaafar, Hafiz1*.

*1 Public Health Unit, Department of Primary Care, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia.*

**Introduction:** Online learning has emerged as the saviour of the day as the most preferred method to conduct classes during this Coronavirus (COVID-19) pandemic. It is important to analyse students' readiness towards online learning in order to deliver the maximum benefits of online learning.

**Objective(s):** To identify tools that have been used to assess the readiness of students in online learning and also to determine the associated factors that affect the readiness for online classes.

**Methodology:** A systematic review of 3029 papers identified in a literature search on online learning readiness among undergraduates in 2010-2020 and among undergraduates during COVID-19 pandemic was conducted and 11 papers met the inclusion criteria.

**Results:** Result of systematic review shows that the most used tool to measure student's readiness for online learning is Online Learning Readiness (OLRS). The associated factors that affect the readiness for online classes are gender, year of study, household income and internet connection. There is no significant difference between male and female respondents, while there is a significant difference between different years of study, household income level and internet connection levels towards online learning readiness.

**Conclusion(s):** COVID-19 pandemic has changed the way how several people receive and impart education. Amidst this crisis, we need to adapt and accept the changes in the way of learning such as online learning.

# ACCUSTOMING HYBRID TEACHING AND LEARNING ACTIVITIES FOR INTERNAL MEDICINE DURING THE MOVEMENT CONTROL ORDER IN THE COVID-19 PANDEMIC

**Mohd Rahman Omar1**, Ummu Aiman Faisal1, Nor Safiqah Sharil1, Fatimah Zanirah Nordin1, Hana Maizuliana Solehan1, Abdul Aziz Marwan1,Tan Wei Ming1; Sarah Zulaikha Samad1; Nur Ezzaty Mohammad Kazmin1; Ummi Affah Mahamad1,2, Ahmad Najib Azmi1,3, Hilmi Lockman1,3

*1Internal Medicine Unit, Medical-Based Department, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia*
*2Pantai Hospital Kuala Lumpur, Kuala Lumpur*
*3Prince Court Medical Centre, Kuala Lumpur*

**Introduction:** Movement control order (MCO) during pandemic posed a new challenge to the academicians in delivering their teaching and learning activities (TLA). For clinical courses in medical school, the usual face to face sessions had been interrupted during the MCO whereby some students were asked to return to their hometown, and the teaching hospitals implemented restrictions towards the student-patient contact. In Internal Medicine course, when the MCO was implemented, the students were in their rotation, and their study was deferred for eight weeks. Adjustments had to be made to our TLA and assessment to comply with the guidelines from the Ministry of Health and the Malaysian Medical Council's (MMC).

**Objective(s):** This paper is to justify and share our actions and experiences in handling the delivery of our course.

**Process:** We formulated several online sessions accommodate students' needs in achieving the required student's learning. We created several online modules that include 1) Case-based discussion 2) Clinical Practice Guideline (CPG) discussion 3) online case presentations 4) online clerking and examination with simulated patients 5) online procedural skills tutorial and 6) dermatology seminars. Once students have returned to campus, we conducted clinical skills laboratories sessions that include 1) objectively structure clinical examination (OSCE)-training and simulation 2) medical emergencies simulation and 3) clinical procedural and communication skills sessions. The clinical end of posting assessment was switched to OSCE format with six stations to replace traditional long and short cases examination. Due to the new method of assessment, Modified-Angoff method was used for the standard-setting of the clinical assessment.

**Conclusion(s):** With the new challenges and demands, TLA can be modified, accustomed and improvised to meet the needs and requirements without jeopardizing the course requirement and the course learning outcomes. However, the evaluation of the achievement of the course outcome should be done.

# COVID-19 CLUSTER OUTBREAK AT MADRASAH AN-NABAWIYYAH IN KAMPUNG SUNGAI LUI, HULU LANGAT

**Muhamad, Norazlifah.** Sapari, Hadita. Mohamed, Norsafinaz. Abdul Shukor, Abdullah Husam. Suli, Zailiza.

*Hulu Langat District Health Office, Selangor, Malaysia*

**Introduction:** The COVID-19 cluster outbreak at Madrasah An-Nabawiyyah, Kampung Sg Lui, Hulu Langat was declared on 16th March 2020. The outbreak initially involved 3 residents, which had the first onset on the 26th February and ended on 10th May 2020.

**Objective(s):** To determine the outbreak by describing the time, place and people involved in the COVID-19 outbreak, to identify the causes of infection and risk factors that contribute to the outbreak, and to carry out effective control and prevention measures.

**Methodology:** Outbreak investigation was done via Passive Case Detection (PCD) and Active Case Detection (ACD). Passive case detection was determined by positive COVID-19 cases diagnosed by clinics or hospitals in Madrasah students or staff with symptoms. Active case detection involved screening and referral of Madrasah students or staff with symptoms to clinics or hospitals for further assessment and investigations.

**Results:** A total of 130 cases were confirmed through positive laboratory tests. Four cases were detected through PCD while 126 cases were detected through ACD. All cases were male, majority non-citizen (93.8%), mostly aged 21 to 30 years (67.7%). 44 positive cases attended an assembly at Masjid Sri Petaling on 27th February to 1st March 2020. 95.4% of the positive cases experienced symptoms such as cough (70.9%), fever (69.4%), sore throat (54.0%), cold (20.2%) and shortness of breath (2.4%). The attack rate was 45.8%.

**Conclusion(s):** In conclusion, the epidemic stems from close contact between cases due to an unconducive environment and failure to comply with Standard Operating Procedures (SOPs). Therefore, the relocation of madrasah residents to the Quarantine Centers was the best step to end the outbreak in the madrasah.

# THE CHALLENGES OF MASK WEARING AMONG USIM MEDICAL STUDENT DURING THE PANDEMIC OF COVID-19

Raja Hussin, Raja Hasrullah1; Roslan,Amirah1; Ahmad Sa'aduddin,Najat1; Abdul Manaf,Nurin1; Mokhtar,Nur1; Wan Abdullah,Nuur1, Noradilah Samseh Abdullah1, Wan Shahida Wan Sulaiman1*

*1 Faculty of Medicine and Health Sciences, Islamic Science University of Malaysia (USIM), Bandar Baru Nilai, Malaysia*

**Introduction:** Wearing a mask has become mandatory when going out to the public and is part of the preventive measures besides hand washing and physical distancing in curbing the COVID-19 infection. However, many people do not comply with the rules and have difficulties wearing masks.

**Objective(s):** The aim of this study is to determine the knowledge on the importance of face masks and factors contributing to discomfort in wearing a face mask.

**Methodology:** A study has been conducted using google form survey among 155 medical students of Universiti Sains Islam Malaysia (USIM) from 9th February 2020 to 18th February 2020.

**Results:** Data revealed 99.4% of the participants agree on the importance of wearing masks and 92.35% respondent's compliance in wearing masks. Out of 100%, only 63.9% are comfortable wearing the surgical mask. Among the factors which contribute to the discomfort of wearing face masks are hot (77.4%), excessive sweating (76.1%), hard to breathe (67.7%) and trapping the odour (67.1%). Most of the respondents (84.5%) agree for a change or alteration to be made to the current face mask to make it comfier.

**Conclusion(s):** The importance of mask-wearing had been well-realized by the society especially during this pandemic of COVID-19 instead of having several challenges on wearing them. The innovation of a more comfortable and easy-wearing mask should be highlighted among the inventors to enhance better compliance for the user.

# PREOPERATIVE COVID-19 SCREENING IN OTORHINOLARYNGOLOGY, HEAD AND NECK ELECTIVE SURGERY - THE MALAYSIAN GUIDELINES

Salahuddin, Nor Azirah1,2; Md Arepen, Siti Asmat1,2; Hitam, Shahrul2; Hassan, Nor Eyzawiah1,2

*1Otorhinolaryngology Head And Neck Surgery, Surgical-Based Department, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia (USIM), Nilai, Negeri Sembilan, Malaysia*
*2Department of Otorhinolaryngology, Head And Neck Surgery, Ampang Hospital, Selangor, Malaysia*

**Introduction:** Coronavirus disease 2019 (Covid-19) pandemic is among the disastrous global pandemic that affects most of the countries worldwide. It gives a major impact and risk on the healthcare system as well as socioeconomic. Preoperative Covid-19 screening will be one of the new norms before a patient goes for surgery.

**Objective(s):** To discuss preoperative Covid-19 screening and its necessity based on the present Malaysian guidelines for the management of surgery during Covid-19 pandemic and highlight the screening protocols implemented by the Ministry of Health.

**Methodology:** This retrospective review was conducted in Otorhinolaryngology (ORL) Department, Ampang Hospital from June till September 2020. We reviewed the surgical registry of patients going for elective surgery under General anaesthesia. Besides, preoperative screening protocols which have been practised in this centre was also highlighted.

**Results:** Our elective surgery was fully resumed back starting from June 2020. A total of 117 elective surgeries under general anaesthesia were performed from June to September 2020 in our centre. Out of the total cases, only 23 patients (19.7%) had Covid-19 screening done preoperatively based on the Malaysian guidelines patient selection. All patients were negative from Covid-19 infection.

**Conclusion(s):** Preoperative Covid-19 screening should not be the routine screening for all patients going for surgery but rather in selective cases to ensure the safety of the surgery for patient and healthcare personnel. Malaysian guidelines on pre-operative screening for Covid-19 is recommended for other institutions.

# THE ROAD TO A SAFE AND EFFECTIVE PEPTIDE-BASED COVID-19 VACCINE

Azmi, Liyana1; Nor Aripin, Khairun Nain1; Sani, Anuar1

*1Department of Medical Sciences 1, Universiti Sains Islam Malaysia. Nilai, Persiaran Ilmu, 71800, Bandar Baru Nilai, Negeri Sembilan.*

**Introduction:** The Coronavirus Disease 2019 (COVID-19) pandemic caused by the novel SARS-COV-2 virus which emerged in December 2019 has continued to plague the human race until today. Concerted efforts were made to develop vaccines to confer protection from COVID-19. However, with the myriad of vaccine candidates tested, some pose unknown health risks to the tested subjects.

**Objective(s):** We aim to review the considerations on a safe and effective COVID-19 vaccine design particularly for recombinant peptide-based vaccine candidates.

**Methodology:** We developed a comprehensive search strategy using the following keywords: “COVID-19 vaccines”, “peptide-based vaccines”, “COVID-19 vaccine design”. The inclusion criteria were applied, and the full text of relevant studies was obtained.

**Results:** Protein subunits make up 50-57% of the total vaccine candidates for COVID-19 vaccine development. But only one candidate (NVX-CoV2373, Novavax) has made it to Phase 3 for COVID-19 clinical trials. The production and development of peptide-based vaccines are laborious. However, these protocols are long-established and scalable. Peptide-based candidates are stable, however, lack immunogenicity. Therefore, conjugation to an immunogenic, safe and effective adjuvant is key to a successful peptide-vaccine design. Depending on the disease, the peptide, epitope design, adjuvants and route of administration can be tailored to elicit the type of immune response. The current NVX-CoV2373 recombinant protein is backed up with molecular proof-of-principle and documented phase 1/2 trials. It has also shown to elicit Th1 immune response, which is favourable for SARS-CoV-2 combat. While some vaccines (Ad5-nCoV, CanSino Biologics; Sputnik V, Gamaleya Research Institute; CoronaVac, Sinovac) are currently being released for early use, many experts are worried about the clinical side effects. Thus, a thorough study and clinical testing must be performed to ensure a safe application for COVID-19 vaccine.

**Conclusion(s):** Herein, we have discussed the cogitations in creating a safe and efficient peptide-based vaccine for COVID-19.

# UTILIZATION OF MORINGA LEAF FLOUR AND CATFISH TO FISH BALL FOR IMPROVING NUTRITIONAL STATUS DURING THE COVID-19 PANDEMIC

Rohmawati, Ninna1; Hidayati, Manik Nur2

*1 Department of Nutrition, Faculty of Public Health, University of Jember, Jember, Indonesia*
*2Nutrition Science Program Study, Public Health Faculty, Universitas Jember, East Java, Indonesia*

**Introduction:** The COVID-19 (Coronavirus) pandemic has caused many changes in our life. Protein source diet is essential to maintain immunity during the COVID-19 pandemic, especially for PEM (Protein Energy Malnutrition) children. Catfish and Moringa leaf flour are local food products that can be used to fulfil a children's nutrition with PEM. Catfish are rich in leucine and lysine, which are good for helping children's growth and development. Moringa leaf flour contains nine times the protein found in yoghurt and ten times beta-carotene found in carrots. Catfish and Moringa leaves are available in the market.

**Objective(s):** The purpose of this study was to analyze the effect of adding Moringa leaf flour to protein content, moisture content, beta-carotene content, and acceptability of catfish meatballs.

**Methodology:** This research is experimental research with a quasi-experimental type. Protein content, water content, and beta-carotene levels were analyzed using the Kruskal Wallis and Mann Whitney tests, and the acceptability test used the Friedman test and the Wilcoxon Sign Rank Test with a confidence level of 5% (α = 0.05).

**Results:** The addition of Moringa leaf flour had a significant effect on protein content, water content, beta-carotene content and acceptability (taste, colour, aroma, and texture) on catfish meatballs. The recommended treatment is X1 with the addition of 10% Moringa leaf flour which has high protein and beta-carotene content according to 1/3 RDA (Recommended Dietary Allowance) of children aged 5-12 years, protein and water content meet the quality requirements of SNI 01-3818-1995 (BSN) and can be accepted by panellists.

**Conclusion(s):** There is an effect of adding Moringa leaf flour to protein content, water content, beta-carotene content, and acceptance of catfish meatballs to maintain immunity during the COVID-19 pandemic.

# PSYCHOLOGICAL RESPONSES AND COPING STRATEGIES AMONG MEDICAL STUDENTS DURING LOCKDOWN FOR THE COVID-19 PANDEMIC IN MALAYSIA

Ting, Chuong Hock1, Lai, Mee Huong1; Tew, Aik Kai2; Chin, Joel Petrus2; Lim, Jia Yi2; Siva, Rubeni2; Salvem, Tamendaren2; Nichol, Denver2

*1Department of Psychological Medicine, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Sarawak, Malaysia*
*2Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak (UNIMAS), Sarawak, Malaysia*

**Introduction:** Coronavirus disease 2019 (COVID-19) was promulgated as a pandemic by the World Health Organization (WHO). In Malaysia, the Movement Control Order (MCO) has been implemented since March coherent with the Centers for Disease Control and Prevention (CDC) recommendation. This social distancing measure induced fears and caused significant disruptions to our everyday activities, including medical students.

**Objective(s):** We aim to examine the psychological responses of medical students of Universiti Malaysia Sarawak (UNIMAS) during the MCO and their coping strategies.

**Methodology:** We conducted a cross-sectional study involving 245 medical students in Universiti Malaysia Sarawak. A self-administered online-based questionnaire comprised of sociodemographics, mental status, and coping strategy was used. The mental status and coping skills were assessed using the Depression, Anxiety, and Stress Scale (DASS-21) and Brief COPE questionnaire respectively. IBM SPSS version 22 was used for the data analysis.

**Results:** The prevalence of depression, anxiety, and stress were 29.8%, 27.3%. and 34.7% respectively. The most commonly used coping strategy was religion (M= 5.62, SD = 2.10) while the least practiced strategy was substance abuse (M = 2.16, SD = .77). In general, the medical students favored approach coping strategies (M = 29.19, SD = 9.27). Pre-clinical students were inclined to use avoidant coping strategies. When comparing coping strategies among both genders, male students coped more significantly with humor, while females students coped more significantly with religion. Medical students who practised approach coping strategies were less likely to develop depression.

**Conclusion(s):** Understanding of coping strategy of the university students helps the authority to strategize psychological interventions during the present pandemic and future disaster.

# PRE-CLINICAL VALIDATION OF 3D-PRINTED SWABS FOR COVID-19 SPECIMEN COLLECTION: A MULTICENTRE COLLABORATION

Hassan, Nor Eyzawiah1*; Md Arepen, Siti Asmat1; Mohd Ghazali, Mohd Ifwat2; Baharom, Nizam1; Mohamed, Nurul Azmawati1; Zainol, Zetti3; Abdul Samad, Muttaqillah Najihan3; Othman, Siti Norlia3; Wong, Kon Ken3 ; Ali, Ummi Kalsom3

*1 Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia(USIM), Nilai, N. Sembilan Malaysia*
*2 Faculty of Science and Technology, Universiti Sains Islam Malaysia(USIM), Nilai, N. Sembilan Malaysia*
*3 Department of Microbiology & Immunology, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre (UKMMC), Cheras, Kuala Lumpur, Malaysia*

**Introduction:** The pandemic COVID-19 that is currently spreading globally and forcing multiple countries implementing movement control orders (MCO). This indirectly halted manufacturing imported items including medical devices. Therefore, the need for Malaysia to be self-sufficient with producing these vital consumables for testing has become more apparent than ever using 3D printer technology.

**Objective(s):** To validate the new 3D printed nasopharyngeal swabs (3D-p NP swab) for the detection of SARS-CoV-2.

**Methodology:** This is a pilot reliability study conducted in Universiti Sains Islam Malaysia and Microbiology laboratory of University Kebangsaan Malaysia Medical Centre. The specimens collected by 3D-p NP swab were compared against the widely used Copan Flocked swab as a control. Each swab was tested in 3 different virus concentration based on Ct value of low, intermediate and high and performed in triplicate. Both types of swabs were dipped and swirled into 6 tubes containing pooled sputum that was spiked with 10 µL of the known Ct values (2 low Ct, 2 intermediate Ct and 2 high Ct values). SARS-CoV-2 E gene from the tubes was detected by RT-PCR after 24 hours and CT value was recorded.

**Results:** The 3D-p NP swab demonstrated perfect concordance with the Copan Flocked swab in detecting E gene in all samples (100% categorical agreement, Cohen's kappa value 1.0), from all 3 different virus concentration mediums. The median (IQR) CT values for 3D-p NP swab were 34.81 (0.90), 31.96 (0.45) and 29.16 (0.96) for the low, intermediate and high virus concentration swab test, respectively.

**Conclusion(s):** This pilot pre-clinical validation study demonstrated that the 3D-p NP swab is comparable with the Copan Flocked swab in detecting the E gene for COVID-19 screening. Larger validation and clinical phase studies are required.

# A RELIABILITY AND VALIDITY OF AN INSTRUMENT TO EVALUATE KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS MEASURES FOR PREVENTING THE SPREAD OF COVID-19 IN MALAYSIA: A PILOT STUDY

Assoc. Prof. Dr. Zairina A Rahman*1, Dr. Natasya Abdullah1, Dr. Noor Dzuhaidah Osman2, Dr. Muhammad Nizam Awang@Ali2, Dr. Nur Syazana Umar3

*1Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai*
*2 Faculty of Syariah and Law, Universiti Sains Islam Malaysia, Nilai*
*3Faculty of Nursing and Allied Health Sciences, Lincoln University College, Kelana Jaya*

**Introduction:** Preventing the spread of COVID-19 is crucial in flattening the Covid-19 infection curve. General population control measures should emphasis on understanding the knowledge about the disease and importance of following regulations related to restriction on movement.

**Objective(s):** The aim of this pilot study is to develop a valid, reliable and practical instrument on Knowledge, Attitude and Practice towards Measures for Preventing the Spread of COVID-19 in Malaysia.

**Methodology:** The instrument is developed based on a Knowledge, Attitude and Practice (KAP) conceptual framework. The instrument in the form of a questionnaire (48 items) is distributed online to a sample of 40 adults. Questions on knowledge, attitude and practices consisted of 46, 10 and 11 questions related to health and two, seven and three questions related to law and regulations respectively.

**Results:** The content validity is assessed by the experts. The reliability of the instrument is measured using internal consistency reliability, which is measured by alpha coefficient reliability or Cronbach Alpha. The analysis shows that the total Cronbach Alpha's value for knowledge, attitude and practice were 0.94, 0.69 and 0.87.

**Conclusion(s):** The findings of this pilot study show that the instrument is valid and reliable to be used in a further larger study.

# THE IN VITRO ANTI-VIRAL STUDY OF DUAL COMBINATIONS OF LOPINAVIR/RITONAVIR AND AZITHROMYCIN AGAINST SARS-COV-2 VIRUS ISOLATED FROM HOSPITALIZED PATIENTS IN SURABAYA, INDONESIA

Purwati1,2,3; Miatmoko, Andang1,4; Nasronudin5; Hendrianto, Eryk1; Karsari, Deya1; Dinaryanti, Aristika1; Ertanti, Nora1; Ihsan, Igo S.1; Purnama, Disca S.1

*1 Stem Cell Research and Development Center, Campus C Unair, Mulyorejo, Surabaya, 60115, Indonesia*
*2 Faculty of Vocations, Universitas Airlangga, Campus B Unair, Gubeng, Surabaya, 60286, Indonesia*
*3 Department of Biotechnology, Asia University, Taichung, 41354, Taiwan*
*4 Faculty of Pharmacy, Universitas Airlangga, Campus C Unair, Mulyorejo, Surabaya, 60115, Indonesia*
*5 Universitas Airlangga Hospital, Campus C, Unair, Mulyorejo, Surabaya, 60115, Indonesia*

**Introduction:** The potent therapy for coronavirus disease (COVID-19) is urgently needed and until now, the research is still on progress.

**Objective(s):** This study aimed to evaluate the in vitro antiviral activities of drug combinations of some market-available drugs that are recently used for COVID-19 therapy.

**Methodology:** The drugs were prepared as dual combinatory drugs, which were Lopinavir-Ritonavir (LOPIRITO) and Azithromycin (AZI). These drugs were mixed were at determined ratios and evaluated for their safety use indicated by the cytotoxicity concentration (CC50) values on human umbilical cord mesenchymal stem cells. The antiviral efficacy of those combinations was then determined on Vero cells, which were infected with SARS-CoV-2 virus isolated from a patient hospitalized in Universitas Airlangga hospital, Surabaya, Indonesia, and evaluated for IC50 at 24, 48, and 72 hours after viral inoculation. The qRT-PCR was performed to observe the viral load.

**Results:** The results showed that there was no high cytotoxicity observed for all samples and dual combinatory drugs resulted in a lower degree of cytotoxicity than those of single drugs. In addition, these combinations had high efficacy in reducing the copy number of virus at 48- and 72-hours, even for 24-h, post-drug incubation resulted in low IC50 values. Most of combination drugs decreased pro-inflammatory markers i.e. IL-6 and TNF-α, and increased the anti-inflammatory response i.e IL-10.

**Conclusion(s):** In conclusion, It can be suggested that dual combinatory of LOPIRITO-AZI can be potentially used for COVID-19 therapy.

# MENTAL HEALTH AS AN URGENT PRIORITY: MANUAL STRATEGIES FOR THE PREVENTION AND MANAGEMENT OF MENTAL HEALTH DURING COVID-19 PANDEMIC

Abdul Razak, Nurul Syuhaida1; Samsudin, Muhammad Aslahuddin2; Shafie, Muhammad Hazmi1; Raj Kumar, Vidhya1

*1Psychiatry and Mental Health Unit, Hospital Sabak Bernam, Selangor, Malaysia*
*2Administration and Management Unit, Hospital Sabak Bernam, Selangor, Malaysia*

**Introduction:** The outbreak of coronavirus disease 2019 (Covid-19) brings uncertainties, new norms, unemployment, financial crisis and burnout. It is foreseen to precipitate an increase in mental health issues such as stress, depression and anxiety in society and frontliners. Protecting mental health is an urgent priority, while failure could threaten the last line of defence against the pandemic. Despite the shortcomings of Psychiatry and Mental Health Unit of Hospital Tengku Ampuan Jemaah (HTAJ) as a small unit in a small district hospital, this unit has implemented The Mental Health and Psychological Support Service (MHPSS) in support for this fight.

**Objective(s):** This article aims to share and suggest the strategies, experience and actions taken by HTAJ through MHPSS in supporting mental health amidst Covid-19 pandemic.

**Methodology:** This is the manual of the strategies taken and proposed by MHPSS. 1. Existing data, SOP and recommendation from authorities were reviewed and adjusted for local usage 2. The strategies creation involved stakeholders from hospital and inter-agencies through case-based discussion. 3. Further literature review based on existing cases handled were conducted. 4. Brainstorming ideas and feedback from department staff to ensure clarity and familiarization 5. Online mental health surveys were distributed and reviewed. 6. All data and information gathered were organized and transformed into structured manual procedures. 7. Implementation, programs conducted, feedback and evaluation.

**Results:** MHPSS has come out with an approach to support mental health which can be applied within 3 different areas; first, within the hospital itself; second, throughout the service of MHPSS; and third, the population at large. Among the strategies include Covid Buster Mental Health Kit, dedicated videos, mural painting for frontliners and #CovidCare (teleconsultation and outreach for the poor).

**Conclusion(s):** MHPSS strategies were able to help in developing good mental health and strengthen the resiliency in the community and frontliners for the fight against Covid-19.

# BRONCHIECTASIS SICCA: AN ELUSIVE CAUSE OF HEMOPTYSIS

Nour Hanan Daniah MB1, Hana Maizuliana Solehan1, Abdul Aziz Marwan1, Ahmad Anwaar MS1, Norazinizah Ahmad Miswan2

*1Universiti Sains Islam Malaysia, Nilai*
*2Hospital Ampang, Kementerian Kesihatan Malaysia, Kuala Lumpur*

**Introduction:** Bronchiectasis sicca is characterised by chronic cough with intermittent haemoptysis. Unlike bronchiectasis, there is an absence of copious sputum production, despite similarities in architectural defects found in computed tomography (CT) scan. Haemoptysis process in bronchiectasis sicca is thought to be similar to bronchiectasis; through bronchial artery erosion or injury. The most common cause of bronchiectasis is idiopathic, followed by post-pneumonia and past mycobacterium infection.

**Case presentation:** A 65-year-old male presented with a 3-month history of intermittent haemoptysis associated with shortness of breath. He had a chronic dry cough for 8 years, and before that, a history of completed-treatment pulmonary tuberculosis infection 15 years ago. There was no history of copious expectations. On examination, he was clubbed. There was reduced air entry over the right middle zone on chest auscultation. Thorax CT scan confirmed right upper lobe bronchiectasis. The patient underwent bronchial artery embolization. Together with tranexamic acid, the haemoptysis resolved after the procedure.

**Discussion:** Bronchiectasis sicca is a rarely reported variant of bronchiectasis. Its diagnosis is often delayed or misdiagnosed due to its 'dry' presentation. Chronic cough with haemoptysis warrants algorithmic work up and, upon diagnosis, the standard bronchiectasis care should be applied to bronchiectasis sicca patients. These cares include pulmonary rehabilitation, pseudomonas eradication, vaccination, long-term antibiotics and muco-clearance therapy. The first line of treatment for haemoptysis in bronchiectasis is CT-guided angioembolization of a bronchial artery, before any surgical means. Bronchiectasis sicca carries varied prognosis, depending on the extent of the disease.

# THE POTENCY OF GALACTOSYLATED NANOLIPOSOME CRISPR/CAS9 (GALNAC-NL-CRISPR/CAS9) MODIFIED BY POLYETHYLENE GLYCOL SPECIFIC ASIALOGLYCOPROTEINS RECEPTOR TO KNOCKDOWN ANGPTL3 GENE AS A THERAPEUTIC MODALITY FOR ATHEROSCLEROSIS

Wahyudi, Mauliya1; Nursafitri, Nidia1; Labibah, Hafsah1.

*1 Faculty of Medicine, University of Jember, Jember, Indonesia*

**Introduction:** Atherosclerosis is a disease that occurs as a result of a chronic inflammatory process in the walls of the arteries causing a narrowing and thickening of the arteries. Until now, medical therapy and stenting are still the main choices of atherosclerosis treatment. However, the side effects and prognosis that caused even lack so that it requires a more effective new therapeutic innovation.

**Objective(s):** The purpose of this paper is to describe the potential of CRISPR / Cas9 that is encapsulated by galactosylated nanoliposome (GalNAc-NL-CRISPR/Cas9) modified by polyethylene glycol (PEG) to knockdown ANGPTL3 gene in atherosclerosis patient.

**Methodology:** This paper is written using a literature review study and PRISMA based on synthesis and analysis from various and fact reference by entering keywords that have been determined. From 85 journals that had been reviewed, 64 journals fulfilled inclusion criteria.

**Results:** The success of CRISPR/Cas9 with single gRNA that is encapsulated by galactosylated nanoliposome (GalNac-NL-CRISPR/Cas9) modified by polyethylene glycol (PEG) to knockdown ANGPTL3 gene characterised by decreased levels of ApoB-100 secretion, LDL/VLDL uptake, ANGPTL3 level, triglycerides level, and cholesterol level.

**Conclusion(s):** Therefore, CRISPR / Cas9 that is encapsulated by galactosylated nanoliposome (GalNAc-NL-CRISPR/Cas9) modified by polyethylene glycol (PEG) to knockdown ANGPTL3 gene potentially to be a significant therapeutic innovation for atherosclerosis patients.

# FEMALE CIRCUMCISION IN MALAYSIA: A SCOPING REVIEW OF THE TRENDS AND PRACTICE WITHIN THE NATIONAL CONTEXT

Abdullah, Natasya1; Marjeran, Atikah2

*1Medical Lecturer, Department of Basic Medical Sciences II, Universiti Sains Islam Malaysia, Negeri Sembilan, Malaysia*
*2 Undergraduate, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Negeri Sembilan, Malaysia.*

**Introduction:** Despite the issues and controversies surrounding female circumcision (FC) worldwide, a portion of the Malaysian community is known to observe this procedure based on their cultural belief and religious justification. Nevertheless, many research and data are available from other countries, while data from the local community are limited.

**Objective(s):** This study aims to examine the trends of female circumcision within the local context based on the evidence available in addition to identifying gaps in knowledge.

**Methodology:** We adopted a scoping study design to review identified information. Electronic databases of PubMed, ScienceDirect and Google Scholar were used to identify FC studies in Malaysia. Cross-references were done, and the grey literature of newspapers and websites regarding female FC were also sought. All findings were summarised thematically.

**Results:** We obtained 11 published literature in which all were included. Three themes emerged, which include the definition, epidemiology, and the legal aspect of FC. The practice of FC in this country differs from the well-defined female genital mutilation by WHO. Limited epidemiological data showed that FC was accepted and practised by most of the rural and urban Malay respondents across various socioeconomic levels (prevalence: 87%-100%). Procedures were conducted by either traditional practitioners or certified medical personnel. There was a single case-study of labial fusion reported as the adverse effect of FC. Strong justifications of FC were given based on Islamic perspective. However, gaps remain on FC's legislation and national policy, which triggers many others to disapprove such practice.

**Conclusion(s):** Despite disapproval from certain parties, the practice of FC remains constant with time and place, particularly among the Malay community. Wide-scale future research to determine FC practice across the multicultural and multireligious community in this country is warranted.

# THE GREAT IMITATOR: DIABETIC PAPILLOPATHY

Chelvaraj,Radtthiga 1,2; Mohd Razali,Kursiah2; Chong, MF2; Yaakub, Azhany1

*(1) Department of Ophthalmology and Visual Sciences, School of Medical Sciences, Universiti Sains Malaysia,16150 Kubang Kerian, Kelantan, Malaysia*
*(2) Department of Ophthalmology, Hospital Raja Permaisuri Bainun. Perak, Malaysia*

**Introduction:** Diabetes mellitus deploys various ocular manifestations that can be vision-threatening. Diabetic papillopathy is another rare microvascular complication which is self-limiting with a good visual prognosis that is often misguided as non-arteritic anterior ischemic optic neuropathy (NAION).

**Case Presentation:** A 48-year-old lady with poorly controlled Type II diabetes mellitus and hypertension presented with sudden onset of the right eye (RE) painless blurring of vision for one week. Past ocular history was unremarkable with no other neurological deficits. RE vision was 6/24 and left eye (LE) was 6/36 with no pinhole improvement and absence of relative afferent pupillary defect (RAPD). Anterior segments of bilateral eyes were unremarkable with normal intraocular pressure (IOP). RE fundus showed grossly swollen optic disc (OD) with telangiectatic vessel nasally. LE fundus showed pale OD temporally. Both eyes (BE) demonstrated mild non-proliferative diabetic retinopathy (NPDR). Systemic examination was unremarkable. The patient was investigated extensively to establish the cause of OD swelling. Her blood parameters revealed poor glycemic control with HbA1c of 11.5%. Bjerrum showed right inferior altitudinal defect and left eye peripheral scotoma temporally with an enlarged blind spot in BE. The radio imaging scan was normal and fluorescein angiography revealed RE disc hyperfluorescence and leakage in the late phase. The patient was initiated on insulin treatment and advised on diet and lifestyle modification to optimise her glucose level. Following the improvement in blood sugar profile, the patient's vision recovered to normal bilaterally with improved visual field defect over RE.

**Conclusion(s):** Although diabetic papillopathy is uncommon, it should be suspected as it may imitate NAION. Mild and reversal of visual loss, negative RAPD and reversal of visual field defect differentiates it from NAION. Good diabetic control is the mainstay of treatment

# EXERCISE AS REHABILITATION FOR PARKINSON'S DISEASE, A SCOPING REVIEW

Nurhafizah Shaari 1, Hana Maizuliana Solehan 1

*1 Universiti Sains Islam Malaysia*

**Introduction:** Parkinson's disease (PD) is a neurodegenerative disease. The motor symptoms are rigidity, bradykinesia, resting tremor, and postural instability, which can have a significant negative impact on the patients' quality of life. Treatment of PD includes pharmacological therapy such as dopaminergic replacement therapy and non-pharmacological management such as physiotherapy and rehabilitation. Previous studies suggest that exercise can improve PD motor symptoms. Therefore, this scoping review was conducted to explore the existing evidence on this topic.

**Objective(s):**This study aims to gather evidence of exercise as an intervention in PD rehabilitation to improve life quality. Methodology: This scoping review was conducted using 'Arksey and O'Malley' framework. Relevant articles were identified using four electronic databases search engines using keywords of 'rehabilitation' OR 'physical activity' OR 'exercise' AND 'Parkinson Disease' OR 'parkinsonism AND 'motor symptoms' OR 'gait' OR 'muscle' Or 'trunk' OR 'fall'. The inclusion criteria include English language, Parkinson's disease of all stages and randomized control studies published between 2010 to 2020.

**Results:** Initial search identified 1262 articles. After applying the inclusion and exclusion criteria, only seven articles were included in this scoping review. We have identified various exercise interventions with different periods and dosage. The exercises include trunk exercise, tango, treadmill, tandem cycling, stretching, balancing program and simple boxing steps. These different exercise interventions showed various improvements in balance, gait, mobility and/or motor functioning.

**Conclusion:** This study demonstrates that specifically targeted exercise showed better improvement in PD patients' motor symptoms, thus better quality of life. However, further studies need to be done to obtain more evidence on targeted exercise's effect in improving motor symptoms. Future study recommendations include the involvement of a larger group of participants, with homogenous types of patients based on PD severity stages.

# A COMPARATIVE STUDY OF DENTAL AESTHETIC INDEX (DAI) AND INDEX OF ORTHODONTIC TREATMENT NEED (IOTN) USAGE AMONG USIM DENTAL STUDENTS.

Mohd Khairun Anuar, Siti Aisyah1,2; Wan Shuhaimi, Wan Hamidah Najwa1,2; Ibrahim, Zurairah1; Alias, Aspalilah1 ; Abdullah, Syiral Mastura1

*1 Faculty of Dentistry, Universiti Sains Islam Malaysia*
*2 Oral Health Department, Kelantan. Ministry of Health*

**Introduction:** Orthodontic indices help the dental profession to classify patients with malocclusion according to the level of treatment need. These indices are considered as an important tool for clinical assessment, epidemiology study and research purposes. The study reported a significant inappropriate number of referrals of orthodontic treatment were due to incorrect use of indices and have an impact on patient treatment and cost.

**Objective(s):** The aims of this study are to evaluate students' diagnostic ability in determining orthodontic treatment need using the Dental Aesthetic Index (DAI) and the Index of Orthodontic Treatment Need (IOTN).

**Methodology:** 49 clinical dental students attending a seminar on the indices IOTN and DAI by an orthodontist at the beginning of the research study including two practical sessions. On the assessment day, students were asked to score 20 models for both indices and the answers were compared to the gold standard. The data were analyzed using paired t-test and kappa statistic for inter-examiner reliability.

**Results:** The study found that USIM clinical dental students were able to determine the severity of malocclusion using IOTN better DAI. The mean IOTN is 8.55±2.28 and DAI is 1.59±1.27. There is a statistically significant difference using paired t-test between IOTN and DAI when comparing students score with a p-value of 0.001 ($P<0.05$). The inter-rater agreement between students and the gold standard for both indices were moderate agreement. The agreement with gold standard considered acceptable as the agreement recorded above 0.60.

**Conclusion(s):** In conclusion, clinical dental students showed a better understanding of IOTN than DAI in the clinical examination due to familiarity and technicality of the indices.

# STUDENTS' PERCEPTION ON USAGE OF ORTHODONTIC INDICES DURING CLINICAL EXAMINATION.

Wan Shuhaimi, Wan Hamidah Najwa1,2, Mohd Khairun Anuar, Siti Aisyah1,2, Ibrahim, Zurairah1 and Alias, Aspalilah1 , Abdullah, Syiral Mastura1

*1Faculty of Dentistry, Universiti Sains Islam Malaysia*
*2 Oral Health Department, Kelantan. Ministry of Health*

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**Conclusion(s):** This study demonstrates that specifically targeted exercise showed better improvement in PD patients' motor symptoms, thus better quality of life. However, further studies need to be done to obtain more evidence on targeted exercise's effect in improving motor symptoms. Future study recommendations include the involvement of a larger group of participants, with homogenous types of patients based on PD severity stages.

# WHAT ARE STRESS RELIEVING METHODS PRACTICED BY STUDENTS IN UNIVERSITI SAINS ISLAM MALAYSIA (USIM) AND UNIVERSITAS MUHAMMADIYAH SEMARANG (UNIMUS)?

Edi Osman, Nurul Aqilah 1; Jamaludin, Nurul Sofiah1; Jaafar, Azlan2; Ibrahim, Zurairah3

*1Dental Students, Faculty Faculty of Dentistry, University Sains Islam Malaysia, Kuala Lumpur*
*2Department of Dental Public Health, Faculty of Dentistry, University Sains Islam Malaysia, Kuala Lumpur, Malaysia*
*3Department of Orthodontics, Faculty of Dentistry, University Sains Islam Malaysia, Kuala Lumpur*

**Introduction:** Level of stress and anxiety was known to be high among undergraduate dental students compared to other fields of studies. One of the most common methods practiced by the students to cope with the stress is social supports from family, friends and lecturers.

**Objective(s):** The aim of this study is to investigate the level of stress and their methods of relieving stress in Universiti Sains Islam Malaysia (USIM) and Universitas Muhammadiyah Semarang (UNIMUS) undergraduate dental students.

**Methodology:** A total of 182 undergraduate dental students from Faculty of Dentistry, USIM and 275 students from Faculty of Dentistry UNIMUS in the academic year of 2019/2020, participated in this study. Self-administered questionnaires, and the Depression Anxiety and Stress Scale (DASS-21) added with close ended question regarding on methods of students relieve stress, were used to evaluate student's level of stress and methods of relieving stress.

**Results:** The results of the questionnaire revealed that the mean score of level of stress for USIM is significantly higher ($p < 0.001$) with score of 7.33 (SD=3.81) compared to UNIMUS with score of 5.94 (SD=4.35). This survey showed that most common methods of relieving stress among students in both universities are practicing religious activities, performing activities that includes eating, hobbies and watching videos or listening to music and seeking emotional support from others.

**Conclusion(s):** Contrary with the previous study, the most stress relieving methods practice among the students are by doing religious activities. This is strongly influenced maybe by their religious school background in both universities. Further study would be recommended to know why there is difference in the level of stress between both universities which may be due to different of curriculum and course outline as USIM has only five years while UNIMUS has six years of study.

# DENTIST'S APPEARANCE: DOES IT MATTER?

Ramainor, Ahmad Dhamiri ; Azizol, Intan ; Mohamed Ibrahim, Nurjehan1; Alias, Aspalilah2

*1 Department of Paediatric Dentistry, Faculty of Dentistry, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia.*
*2 Department of Basic Sciences and Oral Biology, Faculty of Dentistry, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia.*

**Introduction:** Dentistry is a client dependent field. Other than the dentist's skills, the dentist's appearance has been observed to affect the patient's perception of a clinician.

**Objective(s):** This research was conducted to assess the patient's perception towards the dentist's appearance, age and gender.

**Methodology:** A total number of 492 Malay respondents were involved in this study. A set of questionnaire was randomly distributed via google forms. This questionnaire consisted of three sections including sociodemographic details of the respondents/patients, patient's perception towards the dentist's appearance and patient's perception towards the dentist's age and gender.

**Results:** The result showed that respondents consist of 78% female and 22% male. The highest percentage of participants was in the age group of 18-30 (85.6%) while the lowest percentage of respondents came from the age group of 49-60 (5.3%). Majority of respondents (51%) preferred a dentist who wears a white coat followed by a dentist in scrub (38.2%) and dentist dressed in formal attires (9.3%). Only 1.4% of respondents selected a dentist who wears casual attire. The sex and age of respondents were significantly correlated with the age of the dentist with $p<0.05$. Patients in Malaysia have no preference in the dentist's sex and the majority wants dentist in the age of 41- 60 years old. A final open-ended question showed respondents also preferred to see dentists with acceptable dental appearance, good behaviour and established qualification.

**Conclusion(s):** In conclusion, the dentist's appearance is important to secure a promising interpretation of patient towards the dentist.

# THE EFFECTIVENESS OF COMPOSITE RESIN RESTORATION IN A GROWING CHILD – A CASE REPORT

Mohamed Ibrahim, Nurjehan

*Department of Paediatric Dentistry and Orthodontics, Faculty of Dentistry Universiti Sains Islam Malaysia, Kuala Lumpur Malaysia.*

**Introduction:** This case report to highlight the durability and longevity of composite resin restoration on a growing teenager.

**Case descriptions:** A 13-year-old girl was unhappy with the appearance of her anterior teeth that were small in size with generalized space in between them. She lost confidence and refused to socialise to avoid people asking about her teeth. She was diagnosed with hypodontia and microdontia of multiple permanent teeth. Composite resin build-up was done onto SI's upper anterior teeth. Tooth 13 was built-up to mimic the shape of tooth 12. Teeth 11, 21 and 12 had composite build-ups to improve their size and appearance. SI was reviewed every 6 months for two consecutive years and reviewed annually after that. After 5 years, all-composite build-ups on SI teeth were intact. There was no change in colour or texture of the restoration.

**Discussion and Conclusion:** There are new restorative materials developed these days including varieties of porcelain material. These updated materials are preferred by many practitioners and patients due to their promising outcomes in terms of aesthetic, strength and easy to handle. Despite this, many are costly and not proven to have superior longevity than composite resin. Composite resin is suitable to be placed on children's teeth as it is available to be repaired, added on and serve comparable strength as the newly developed materials. Furthermore, composite offers much less at price. Plus, the aesthetic part is acceptable by both clinicians and patients if it is handled properly. Composite resin remains as a superior restorative material for children. Despite various types of latest materials produced, composite is still worth the time, effort and cost value of it.

# STRESS RESPONSES OF *CANDIDA* SPP. ISOLATED FROM TRACHEOESOPHAGEAL SPEECH VALVES BIOFILM

Abdullah, Syatirah-Najmi1; Quinn, Janet2; EL-Badawey, Mohamed, Burgess3; Grant4 and Jakubovics, Nicholas5

*1Faculty of Dentistry, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia*
*2Biosciences Institute, Faculty of Medical Sciences, Newcastle University, Newcastle upon Tyne, United Kingdom*
*3Department of Otolaryngology and Head and Neck Surgery, Freeman Hospital, Newcastle upon Tyne, United Kingdom*
*4School of Natural and Environmental Sciences, Newcastle University, Newcastle upon Tyne, United Kingdom*
*5School of Dental Sciences, Newcastle University, Newcastle upon Tyne, United Kingdom*

**Introduction:** Biofilm formation in medical implanted devices is one of the primary reasons for implant failure. The surfaces of speech valves provide a particularly good environment for biofilm growth since they are constantly exposed to microorganisms in the oesophagus or trachea. The growth of *Candida* spp. invariably leads to failure of the valve within 3-4 months. There is now strong evidence that *Candida* spp. co-exist with bacteria in speech valve biofilms, but it is not clear how these bacteria affect the growth and gene expression of neighbouring Candida cells.

**Objective(s):** The aims of this study are (i) to characterize in detail the composition of different speech valve biofilm communities and (ii) to determine the stress responses of clinically isolated *Candida* spp.

**Methodology:** Biofilms were harvested from 10 explanted speech valves. Biofilm community members were identified using laboratory culture coupled with mass spectrometry biotyping and next-generation sequencing. Stress resistance phenotypes of *Candida* biofilm isolates were assessed by spot tests and were compared with appropriate reference strains.

**Results:** *Candida* albicans was shown to be present in all speech valves; either alone or in combination with either *Candida* tropicalis or Candida glabrata. In addition, reactive oxygen species (ROS)-producing bacteria were also identified such as *Lactobacillus* spp. and *Streptococcus* spp.

**Conclusion(s):** Although a degree of heterogeneity was observed with respect to stress resistance between the clinical isolates, most of the clinically isolated *Candida* spp. displayed increased resistance to several oxidative stress agents compared to the reference strain.

# IMPACT OF CORONAL RESTORATION ON THE OUTCOME OF ROOT CANAL TREATMENT: A RETROSPECTIVE STUDY.

Norazlina Mohammad1, Aws Hashim Ali Al-Kadhim1, Faizah Abd Fatah1, Aimi Amalina Ahmad1, Abdul Azim Asy Abdul Aziz1, Siti Hajar Omar1, Azlan Jaafar2

*1Conservative Dentistry & Prosthodontic, Faculty of Dentistry Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia*
*2Periodontology and Community Dentistry, Faculty of Dentistry Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia*

**Introduction:** The clinical performances of the final restorations of root treated teeth need to be regularly monitored to ensure the attainment of a sustainable and reliable coronal seal.

**Objective(s)**: The aim of this study was to evaluate the quality of coronal restorations in endodontically treated teeth performed by Universiti Sains Islam Malaysia undergraduate dental students.

**Methodology:** 136 patients previously undergone root canal treatment (RCT) from 2010 to 2016 with a minimum of one year of treatment completion were recalled for review. Three independent calibrated examiners examined and evaluated 52 anterior and 91 posterior root treated teeth.

**Results:** The most common final restoration done for root canal treated tooth was crown followed by composite restoration at 51% and 24% respectively. On the other hand, 25% of the root treated teeth were still in semi-permanent restorations. From the examination based on the Modified USPHS Ryge criteria, 93.4 % of the restorations were found intact with 89% of the restorations having good anatomical contour and no secondary caries (94.1%). All of the crowned teeth were present with good anatomical contour and marginal integrity. 2.9% of the crowns developed marginal discolouration and 1.5% secondary caries. On the other hand, 5% of the intracoronal restorations were completely dislodged and 9.8% partially dislodged/fractured. The marginal integrity for 9 restorations (14.8%) was compromised, 15.4% have marginal discolouration and 11.5% developed secondary caries.

**Conclusion(s):** In conclusion, crowned root teeth evaluated in this study are in good condition and therefore provided good coronal seal compared to the intracoronal restorations. Delay in providing permanent restoration in 25% of the root treated teeth in this study is a major concern as it may lead to fracture and failure of the root canal treatment. Further evaluation is required to determine the long-term success of root canal treatment with regards to coronal restoration.

# PERIODONTAL HEALTH AWARENESS AMONG PUBLIC UNIVERSITY STUDENTS

Mat-Baharin, Nor Haliza1; Jaafar, Azlan1; Osman, Muhamad Nur Akmal2, Salahuddin, Nur Zharifa2.

*1 Department of Periodontology and Dental Public Health, Faculty of Dentistry, University Sains Islam Malaysia, Kuala Lumpur, Malaysia*
*2 Faculty of Dentistry, University Sains Islam Malaysia, Kuala Lumpur, Malaysia*

**Introduction:** Periodontal disease is one of the oral health burdens in Malaysia. It holds the highest prevalence among adults. Although the disease is preventable, usually patients present at an advanced stage and require complicated treatment. In the prevention of the disease, good periodontal health knowledge and positive attitude towards periodontal among young adults is essential.

**Objective(s):** To assess the knowledge and attitudes towards periodontal health among non-dental undergraduate in Universiti Sains Islam Malaysia (USIM).

**Methodology:** A validated questionnaire from a published study was distributed to USIM students using convenient sampling. The questionnaire consisted of participants' personal data, questions on periodontal health knowledge and attitudes related to periodontal health. Medical and dental students were not included in this study.

**Results:** A total of 183 respondents participated in this study. Students from science streams were 29.5% while 70.5% of them were from social science streams. It was found that only 10.4% of participants can answer correctly on the outcome of gum disease. While only 41% of them are able to know the early signs of gum disease. Moreover, 66.1% thought that tooth brushing was not necessary if they do not eat. There were also 61.2% of the participants who believed that scaling is harmful.

**Conclusion(s):** Awareness of periodontal health among USIM students are still lacking. Therefore, periodontal health education should be emphasised in the community engagements among USIM students to increase their periodontal health awareness in order to prevent periodontal disease.

# MISWAK PULP POWDER AS DENTIFRICE

Halib, Nadia1; Nuairy, Nabilah1.

*1 Faculty of Dentistry, Universiti Sains Islam Malaysia, Level 15, Tower B, Persiaran MPAJ, Jalan Pandan Utama, Pandan Indah, 55100 Kuala Lumpur, Malaysia.*

**Introduction:** *Salvadora persica (S. persica)* also known as miswak has been used for centuries as oral hygiene tools and its cleansing efficacy is suggested to be attributed to the mechanical effects of its fibres. However, using miswak in its original form without proper guidance sometimes leads to inadequate cleaning effects.

**Objective(s):** Therefore, in this study, we improvised miswak into powder form and make it easy to be used with a commercial toothbrush.

**Methodology:** The bark of miswak stems were peeled off and the pulps were dried and ground to produce a powder. Scanning Electron Microscopy (SEM) and Energy-dispersive X-ray spectroscopy (EDX) were carried out to study the properties of miswak ground fibres.

**Results:** SEM revealed the presence of crystals with various shapes and sizes that may act as natural abrasive agents. While EDX identified that these minerals mainly constituted of O (43.44 wt%), C (31.2 wt%), S (11.7 wt%) and Ca (11.2 wt%). The miswak powder later formulated into paste of selected concentrations; 0.3%, 0.4%, 0.5% (w/w). Miswak fibre paste was then used to brush stained extracted permanent premolar teeth. The changes of teeth's staining shade (before and after brushing) were evaluated using VITAPAN® Classical Shade. After brushing under standardized condition using a brushing simulator machine, it was found that the stain at teeth buccal surface was reduced at least one tone of shade according to the VitaPan® shade.

**Conclusion(s):** The ability of miswak pulp fibre powder in reducing stain on teeth surface suggesting its efficacy as a potential dentifrice.

# MOTHER'S KNOWLEDGE OF DIARRHEA SELF-MEDICATION IN CHILDREN UNDER FIVE

Rachmawati, Sinta1; Hazrina, Inasa1; Rachmawati, Ema1 .

*1 Department of Clinical and Community Pharmacy, Faculty of Pharmacy, University of Jember, East Java, Indonesia*

**Introduction:** Diarrhea is the fifth-highest cause of death in children under five in the world. It is preventable. Mild diarrhoea can be treated by doing self-medication. Mothers have an essential role in handling diarrhoea in children.

**Objective(s):** This study aims to determine the mother's knowledge of diarrhoea self-medication in children under five and its relationship to socio-demography criteria.

**Methodology:** A total of 348 mothers became respondents. Questionnaires have been tested for validity and reliability before used. Data were analyzed statistically by the Chi-square test and Fisher Exact.

**Results:** It showed that only 76 respondents (21.8%) have good knowledge, while the remaining have sufficient and insufficient knowledge (272 respondents; 78.2%). There was a significant relationship between age, recent education, employment, family income, number of children, number of adult family members, sources of information, and educational experience to knowledge($p < 0.05$).

**Conclusion(s):** This study suggests the importance of providing intervention to improve knowledge of diarrhoea self-medication in children under five to mothers.

# TESTOSTERONE DOWN-REGULATES THE EXPRESSION OF CYSTIC FIBROSIS TRANSMEMBRANE REGULATOR (CFTR) IN ADULT FEMALE RATS UTERUS

Mohd Helmy Mokhtar1*; Nelli Giribabu2; Naguib Salleh2.

*1Department of Physiology, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000, Cheras, Kuala Lumpur.*
*2Department of Physiology, Faculty of Medicine, Universiti of Malaya, 50603, Kuala Lumpur.*

**Introduction:** Estrogen induces fluid and chloride secretion, while progesterone causes fluid and chloride reabsorption in the uterus of steroid-replaced ovariectomised rats via CFTR, a cAMP-dependent chloride channel that plays an essential role in mediating uterine fluid secretion. CFTR expression in the uterus is under the sex-steroid influence, down-regulated by progesterone and up-regulated by estrogen at proestrus and estrus stages of the oestrous cycle. However, the testosterone effect on the expression of this parameter is unknown.

**Objective(s):** Therefore, this study aimed to investigate the effect of testosterone on CFTR expression in rats' uterus

**Methodology:** Ovariectomised adult female rats were treated with peanut oil or 17-ß estradiol (E2) for five days or E2 for three days, followed by testosterone or testosterone plus flutamide or testosterone plus finasteride or peanut oil for another two days. Animals were then sacrificed, and uteri were removed for CFTR immunohistochemistry (IHC), mRNA, and protein expression analyses.

**Results:** It has been shown that the apical expression of CFTR in the luminal epithelia was highest under estrogen and lowest under testosterone influences. Similar changes were noted in the expression of CFTR protein and mRNA. Testosterone effects were antagonized by flutamide but not finasteride.

**Conclusion(s):** Testosterone was shown to down-regulate the expression and distribution of CFTR, which could inhibit the fluid and chloride secretions in rat's uterus. These might explain the adverse effects of testosterone on fertility.

# STUDENT'S PERCEPTION OF ANATOMY ONLINE LEARNING DURING COVID-19 PANDEMIC IN UNIVERSITI SAINS ISLAM MALAYSIA (USIM)

Omar, Azzizah1; Ku Mohd Nor, Ku Mastura1; Ngatiman, Mohd Hairulhisyam1; Khalid, Mohamed Hanief1; Abdullah, Amira Raudhah1

*1Dicipline of Anatomy, Department of Medical Sciences 1, Universiti Sains Islam Malaysia. Nilai, Persiaran Ilmu, 7180, Bandar Baru Nilai, Negeri Sembilan.*

**Introduction:** Corona-Virus Disease 2019 (COVID-19) pandemic has significantly impact anatomy education. This had led to a vast change from previously traditional hands-on practical sessions to full online lectures and practical demonstrations. Nonetheless, this pandemic provides a creative opportunity for anatomy educationists to explore the delivery of anatomy education via online and virtual platforms.

**Objective(s):** The aim of this study is to assess the students' perception of online teaching sessions in anatomy among first-year medical students in Universiti Sains Islam Malaysia (USIM).

**Methodology:** A total of 90 first-year medical students took part in an online survey after semester completion of anatomy online teaching and learning.

**Results:** Synchronous online lectures received positive feedback from students; 73.0 % of students perceived effective communication with lecturers through an online platform. Out of these, 71.6% prefer online lectures as it allows them the flexibility to record lectures and revisit them. Gross anatomy practical sessions were delivered asynchronously via pre-recorded video with an additional supplementary quiz on USIM's Global Open Access Learning system (GOALS) and histology practical were delivered synchronously via virtual slide demonstration. A total of 80.1% of students felt convenient with histology practical, however, only 48.3% of students reacted positively to gross practical. Overall, 76.4% of students prefer traditional practice compared to online sessions. Online examination has disputable responses between different exam formats; 71.9% students felt Multiple Choice Questions (MCQ) was conducted conveniently; contradictory to Modified Essay Questions (MEQ) in which only 34.9% students react positively. Meanwhile, 57.3% of students reported multiple setbacks during Objective Structures Practical Exam (OSPE) exam. Lastly, the majority (89.9%) of students reported no difficulties in accessing material and activity in GOALS.

**Conclusion(s):** The vast and impromptu change in the method of study has received multiple responses from the students. Overall, they preferred online platforms for didactic sessions but real live classroom for practical sessions.

# KNOWLEDGE AND ATTITUDE TOWARDS EPILEPSY AMONG UNDERGRADUATE STUDENTS OF A PRIVATE UNIVERSITY IN KAJANG, MALAYSIA

H'ng, Gilbert Yung Han1, Magesvary Maruthiah2, Thulasy Perumal2, Mohammed Abdulrazzaq Jabbar3

*1 Student Nurse, Faculty of Medicine and Health Sciences, University Tunku Abdul Rahman, Kajang, Malaysia*
*2 Department of Nursing, Faculty of Medicine and Health Sciences, University Tunku Abdul Rahman, Kajang, Malaysia*
*3 Department of Population Medicine, Faculty of Medicine and Health Sciences, University Tunku Abdul Rahman, Kajang, Malaysia*

**Introduction:** Epilepsy is one of the oldest conditions in the world, a total of 50 million or 0.5% of the world population suffers from epilepsy. The incidence rate of epilepsy is 49 per 100,000 population. Knowledge and attitude are important to reduce stigma and discriminations towards epilepsy.

**Objective(s):** The aim of this study is to determine the level of knowledge and attitude towards epilepsy and its association between selected variables among undergraduate students in a private university in Kajang, Malaysia.

**Methodology:** A cross-sectional, quantitative survey was conducted among 277 participants recruited through quota sampling. A self-administered online questionnaire consisting of 3 sections; socio-demographic data, knowledge towards epilepsy and attitude towards epilepsy was distributed. Data obtained was analysed with SPSS version 23 usingdescriptive and analytical statistics.

**Results:** The level of knowledge towards epilepsy was relatively high with 41.5% having good knowledge and only 4% with poor knowledge. Misconception such as epilepsy is contagious, caused by spiritual beings, can be cured through exorcism, and visiting religious places was identified. The level of attitude towards epilepsy was very positive at 92%. Association between the level of knowledge and the faculty of the respondents was significant [$\chi 2$ (6, n = 277) =15.867, p = 0.014]. Association between the level of attitude and the faculty of the respondents was significant [$\chi 2$ (3, n = 277) = 7.869, p = 0.049]. Respondents from the medical and health sciences field had a better level of knowledge and attitude towards epilepsy.

**Conclusion(s):** The level of knowledge towards epilepsy was relatively high but misconception exists. The level of attitude towards epilepsy was positive. Health promotion campaigns are recommended to increase the knowledge and awareness aiming to decrease stigma and discrimination towards people with epilepsy.

# SURVEY ON THE KNOWLEDGE TOWARDS CERVICAL CANCER AMONG STUDENTS OF A PRIVATE UNIVERSITY IN KAJANG

Chang, Michelle1; Thulasy Perumal 2; Magesvary Maruthiah 3; Mohammed Abdulrazzaq Jabbar4

*1 Student Nurse, Faculty of Medicine and Health Sciences, University Tunku Abdul Rahman, Kajang, Malaysia*
*2 Department of Nursing, Faculty of Medicine and Health Sciences, University Tunku Abdul Rahman, Kajang, Malaysia*
*3 Department of Population Medicine, Faculty of Medicine and Health Sciences, University Tunku Abdul Rahman, Kajang, Malaysia*

**Introduction:** Cervical cancer is currently the 3rd most prevalent cancer in women. Though it usually occurs in older female adults and rarely in younger people, it is still important for young adults to adopt preventive measures. Studies show lack awareness on safe sex practice among adolescents and high cases of early sexual intercourse in Malaysia. Knowledge is important to reduce the incidents of cervical cancer in later life.

**Objective(s):** To determine knowledge level towards cervical cancer among male and female students in a private university in Kajang, Malaysia.

**Methodology:** A cross-sectional, quantitative survey was conducted among 216 female and 226 male undergraduate students recruited through quota sampling. A self-administered questionnaire consisting of 20 close-ended questions divided into 2 sections was administered. Data were analyzed via IBM SPSS Statistics 23 version using descriptive and inferential statistics.

**Results:** The result shows females (57.9%) have better knowledge than male (51.8%). There is a significant difference in the knowledge level towards cervical cancer between male and female students [$\chi 2$ (2, n=442) = 11.768, p = 0.003]. Association between male students' knowledge level and the faculty they are from was insignificant [$\chi 2$ (6, n=226) = 10.685, p = 0.099]. Association between female students' knowledge level and the faculty there are from was significant [$\chi 2$ (6, n=216) = 23.719, p = 0.001].

**Conclusion(s):** Knowledge of cervical cancer among young adults is important and should be enhanced for both male and females by implementing a suitable approach to educate them. This will develop and promote the importance of cervical screening and safe sexual practices as young adults can contract HPV infection which could lead to cervical cancer later in their life.

# REPRODUCTIVE HEALTH ON DISABILITY YOUNG ADULTS: A QUALITATIVE STUDY ON VISUALLY IMPAIRED ADOLESCENTS ON YAYASAN PEMBINAAN TUNANETRA (YAPTI) MAKASSAR

Aras, Dara Ugi1; Ibrahim, Juliani1; Asbi, Nurul M.1

*1 Department of Public Health, Faculty of Medicine, Muhammadiyah Makassar University, Makassar, Indonesia*

**Introduction:** The lack of reproductive health will affect reproductive hygiene, which leads to the emergence of various infectious diseases, from early-stage such as infection to late-stage such as cancer. Therefore this issue has been featured on Sustainable Development Goals (SDGs) at the United Nation General Assembly in 2015. The main target is a teenage girls group. Furthermore, persons with disabilities, especially blind people, has a limitation in obtaining information foremost related to reproductive health.

**Objective(s):** In this study, we aimed to obtain rich comprehension of reproductive health on disability young adults and stakeholders.

**Methodology:** The research used a qualitative method with an ethnographic approach, as respondents attended individually intensive or in-depth interviews, and were asked with descriptive questions. Three respondents were selected from students, with an age range 9 – 20 years old, that were considered more cooperative to give adequate information about reproductive health. Other respondents were the teachers, and head of the dormitory. The study took place in Yayasan Pembinaan Tunanetra (YAPTI) Makassar. Other information was also collected from observations of the surrounding environment.

**Results:** Data collected by taking notes, recordings, and analyzing complement observation. The results show that the students have little knowledge of reproductive health and reproductive system in particular. This was due to the lack of information they have gained from teachers. Meanwhile, the teachers also had limitations on reproductive health so that the clarification became more complicated. The issue becomes significant as they hold full control of their own body.

**Conclusion(s):** These results conclude that blind teenage girls do not have a deep understanding of reproductive health due to lack of information they have from the teachers.

# A CASE OF METASTATIC BREAST CARCINOMA PRESENTING WITH THROMBOTIC THROMBOCYTOPENIC PURPURA

Chong, Siew Lian1; Ahmad Asnawi, Asral Wirda1,2 ; Liew, Pek Kuen1; Hamzah, Roszymah1; Wang, Phei Fern1; Mohd Ramli, Nurliyana1, Yegappan; Subramaniam1; Sathar,Jameela1

*1Department of Hematology, Hospital Ampang, Selangor, Malaysia*
*2Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia*

**Introduction:** Thrombotic Thrombocytopenic purpura (TTP), also known as thrombotic microangiopathy (TMA), is a multisystem disorder characterized by thrombocytopenia, microangiopathic hemolytic anaemia (MAHA), and ischaemia resulting in neurologic and renal impairment. In adults, TTP is typically idiopathic where the remainder is encountered in a variety of triggering clinical situations. These patients typically follow an aggressive disease course and do not respond to plasma exchange which is the mainstay of treatment for idiopathic TTP.

**Objective(s):** This case illustrates a patient with disseminated malignancy who presented with MAHA and the management that ensued.

**Results:** We report a case of a 48-year-old lady with a history of left breast carcinoma (stage T2N0M0) who had left mastectomy with axillary clearance followed by 4 cycles of chemotherapy in 2014. In January 2016 she presented with a one-week history of fever, anaemia and a tinge of jaundice. Full blood picture revealed MAHA. ADAMTS13 activity was 23%. Based on the clinical presentation and initial laboratory findings, plasma exchange and pulse corticosteroids were started, where she failed to respond. A bone marrow biopsy revealed metastatic carcinoma at which point, plasma exchange was stopped.

**Conclusion(s):** Occult disseminated malignancy may mimic acquired idiopathic TTP. There is little evidence for ADAMTS13 deficiency in the pathogenesis of malignancy associated-thrombotic microangiopathy (MA-TMA). Instead, mechanisms such as endothelial injury by tumour emboli or direct invasion are postulated. High clinical suspicion and thorough investigation for underlying malignancy are recommended for TTP patients with atypical clinical features or who fail to respond to plasma exchange.

# MUSIC AS COMPLEMENTARY AND ALTERNATIVE MEDICINE: AN ISLAMIC PERSPECTIVE

Radzniwan Rashid1, Nik Norsyafikah binti Nik Aris2, Sharifah Najwa Syed Mohamad1 , Fathima Begum Syed Mohideen1, Nuruliza Roslan3,4

*1 Family Medicine Unit, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, N.Sembilan, Malaysia*
*2 Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, N.Sembilan, Malaysia*
*3Biochemistry Unit, Department of Medical Sciences I, Universiti Sains Islam Malaysia, Nilai, N.Sembilan, Malaysia*
*4Institute Science Islam, Universiti Sains Islam Malaysia, Nilai, N.Sembilan, Malaysia*

**Introduction:** Music is a powerful medium in the millennium era. There are proven benefits of music as a form of complementary and alternative medicine (CAM). However, in Islam, music has become such an issue that is debated until now as some disagree using music as CAM.

**Objective(s):** To review if music practice and listening are allowable in Islam and its benefit as complementary and alternative medicine in medicine.

**Methodology:** Related articles to answer the objective were retrieved, reviewed and analyzed from the search engine using electronic databases: PubMed, Google Scholar, EZproxy, UptoDate from1980 until 2020. Keywords in single or combination's word used were 'music and Islam', "Islamic music in medicine", "alternative and complementary medicine" and "Quranic verses in medicine".

**Results:** The most searched keyword was "Islamic music in medicine" where 21 articles were obtained. None of the Quranic passages condemned the practice and listening to music. Prophet Muhammad allowed reciting Quran in a rhythmic way. Music was used to call for prayer through adzan and as a chant to praise God and prophet. In fact, Muslim were exposed to music starting from birth through adzan or iqamat. Few literatures had reported that religious Islamic music or the rhythmic Listening to Quranic recitation were reported beneficial as CAM in certain illnesses mostly related in physical, cognitive, and psychological to psychosocial morbidity. The familiar music improves the patient's memory and their orientation of time and place. A study reported twenty-eight verses were identified, with a focus on diet and nutrition, personal hygiene, alcohol abstention, and the importance of a healthy lifestyle.

**Conclusion(s):** Music practice and listening is allowable unless it causes astray from God. Religious Islamic music or the rhythmic Listening to Quranic recitation has proven benefits in some illness as CAM in modern medicine.

# PROPHETIC HERBAL MEDICINE: EFFICACY OF OF NIGELLA SATIVA (BLACK SEED) FOR THE TREATMENT OF MALARIA IN PLASMODIUM BERGHEI RODENT MODEL.

Wan Omar Abdullah1, Fadlul Azim Fauzi Mansur1, Anuar Sani1, Adlina Mohamad1, Asral Wirda Ahmad Asnawi1, Affirul Charil Ariffin2, Razrim Rahim2.

*1Department of Medical Sciences II, Faculty of Medicine and Health Sciences, USIM, 71800 Nilai, Negeri Sembilan*
*2Department of Surgical-based Discipline, Faculty of Medicine and Health Sciences, USIM, 71800 Nilai, Negeri Sembilan*

**Introduction:** Drug- resistance to chloroquine and more recently quinine was responsible in the spread of malaria to new areas and recurrence of malaria in areas where the disease has been eradicated.

**Objective(s):** To test whether the above claim has a sound medical basis, experiments were performed to show the effect of the N. sativa extract on the survival of malaria parasite, Plasmodium berghei in mice.

**Methodology:** Intraperitoneal and oral administrations of ethanol, chloroform and aqueous seed extracts (50, 100, 200 and 400 µL $kg^{-}1$) of N. sativa, were screened in the 4-day suppressive assays for their anti-malarial properties against Plasmodium berghei in mice.

**Results:** Both intraperitoneal and oral treatments of the seeds extracts showed suppression activities in all groups of mice with the highest values were noted by the 100 and 200 µL $kg^{-}1$ doses of the ethanol extract and by the 100 µL $kg^{-}1$ dose of the chloroform extract which significantly ($p < 0.05$) decreased the parasitemia and increased the survival times of the infected mice. On the other hand, the aqueous extract showed a dose-dependent suppression activity by which the 200 and 400 µL $kg^{-}1$ extracts doses showed significant degrees of suppression activities in the infected mice.

**Conclusion(s):** The results of this study confirm the usage of this plant as remedy for malaria and open a new opportunity to further investigate the potentials of this plant a novel antimalarial in the future. However, the active responsible principles are yet to be identified, which need further studies to elucidate the anti-malarial mechanism of its action.

# RETROVIRAL DISEASE IN AN ADOLESCENT: A BIOPSYCHOSOCIAL AND HEADSS PERSPECTIVE

Syed Mohamad Sharifah Najwa1; Syed Mohideen Fathima Begum1, Rashid Radzniwan1, Ahmad Saharuddin2

*1Family Medicine Unit, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia.*
*2Family Medicine Department, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia.*

**Introduction:** Human immunodeficiency virus (HIV) infection in adolescents is increasingly becoming a global burden. Recent local data show that 90% of the young population acquired HIV via sexual routes. Of concern, more than two-thirds of young males reported being engaged in homosexual or bisexual activity. This case report highlights the salient points in handling such a case using the biopsychosocial and HEADSS (home, environment, activities, drugs, sexuality, safety/suicidality) approach.

**Clinical History:** A 17-year-old adolescent with underlying HIV and Hepatitis C co-infection was followed up at a health clinic. He was sexually active since 15-years-old, with a homosexual orientation (men who have sex with men), through anal route. Source of sexual contacts were through online 'gay' applications that subsequently led to dating at parties, multiple sexual partners and associated with substance use. With maturity and time, the patient developed guilt and remorse over his actions and was willing to re-organize his future directions through multiple follow up sessions, mainly focusing on his education pathway.

**Discussion:** This case highlights the salient points in handling ruminations of guilt and remorse of acquiring a retroviral disease in an adolescent. Facilitating important points to redirect his future pathway to improve self-worth and self-confidence is vital. It is achievable via the biopsychosocial and HEADSS approach including treatment of depression which was identified as an undifferentiated symptom in this patient. With his consent, the involvement of family members helped to enhance problem-solving strategies.

**Conclusion(s):** Application of the biopsychosocial model and HEADSS assessment to a case of an adolescent with the retroviral disease is important to re-organize future directions and to identify self-values and potential. Healthcare providers must not miss the subtle psychological symptoms that can be masked in an adolescent.

# SPEECH AND LANGUAGE DELAY IN CHILDREN

Che Roslan, Nur Nabilah;  Salahuddin, Nor Azirah;  Md Arepen, Siti Asmat; Hassan, Nor Eyzawiah

*Faculty of Medicine And Health Sciences, Universiti Sains Islam Malaysia (USIM), Nilai, Negeri Sembilan, Malaysia*

**Introduction:**Language is defined as a process of communication that consists of understanding, processing and production of communication or a measure of comprehension. As for speech, is the usual output which consists of complex and systematic movements of respiratory, laryngeal, velopharyngeal, and oral structures. Generally, a child is said to have speech delay if the child does not attain normal developmental milestones at the expected age.

**Objective(s):** The aim of this review was to identify the prevalence, sociodemographic features, the risk factors and causes responsible for speech and language delay in children.

**Methodology:** The literature reviews were based on electronic databases: PubMed, Google Scholar, UpToDate and web resources by using combinations of keywords such as ‘speech delay’, ‘language delay’ and ‘causes of speech and language delay’.

**Results:** Studies revealed that the prevalence of speech delay is 5 to 12% in children aged 2 to 5 years old, with the highest prevalence being at the age of 13 to 24 month (21.21%). The male gender was predominant with 70.4%. The low paternal and maternal education was documented as significant risk factors with 71.4% and 81% respectively. There are multiple causes of speech delay which includes hearing impairment (34%), cerebral palsy and neurological disorder (26.2%), cleft palate (16.7%), autism (50%) and global developmental delay. Hearing impairment can cause speech delay as intact hearing in the first few years of life are very vital for the normal development of speech and language. In addition, family factors such as multilingual family environment (73.8%), family history of the speech-language disorder (33.5%), increased screen time exposure (66.6%) and inadequate stimulation (61.9%) were also related.

**Conclusion(s):** The high prevalence of speech and language delay in children was attributed to numerous causes and risk factors. Awareness of these factors may provide a chance for earlier diagnosis and intervention.

# SLEEP PARALYSIS: PHYSIOLOGY, CULTURAL BELIEFS AND ISLAMIC PERSPECTIVES

Ain Syafila Mohamad1; Muhamad, Marlini2

*1 Faculty of Medicine and Health Sciences, University Sains Islam Malaysia, Nilai, Malaysia*
*2 Physiology Discipline, Basic Medical Science I, Faculty of Medicine and Health Sciences, University Sains Islam Malaysia, Nilai, Malaysia*

**Introduction:** Sleep paralysis is a condition involving a transient immobility episode or generalized muscle atonia that occurs when an individual is falling asleep or upon awakening. Sleep paralysis is almost always associated with REM sleep.

**Objective(s):** This review aimed to discuss the physiological mechanism, risk factors, cultural beliefs and Islamic perspectives of sleep paralysis.

**Methodology:** Electronic databases such as Google Scholar and Pubmed were used for the literature search of this review.

**Results:** Physiologically, sleep paralysis occurs as a result of the suppression of the skeletal muscle tone by the pons and the ventromedial medulla during REM sleep. The motor neurons in the spinal cord are inhibited by neurotransmitters γ-Aminobutyric acid and glycine. Brainstem activation of the amygdala may occur, resulting in increased awareness for a sense of threat or danger during sleep paralysis. Variations in the PER-2 genes which is one of the genes that controls the sleep cycle, as well as smoking and alcohol, are found to have a link with sleep paralysis. Certain medical and neurological conditions such as hypertension, idiopathic hypersomnia, insufficient sleep syndrome and narcolepsy increase the risk of sleep paralysis. Different cultures have described sleep paralysis differently, although many believe that this condition is associated with the feeling of intense fear and the sensation of disturbance with demons and nightmares. Islam regards sleep as a sign of the greatness of Allah. The medieval Islamic scholars described sleep paralysis as a nightmare (Kabus in Arabic Islamic literature), as it is often associated with frightening hallucinations.

**Conclusion(s):** The physiological mechanism and cultural beliefs of sleep paralysis are well established. Although, the aetiology of sleep paralysis remains unknown. The medieval Islamic scholars' contribution to the scientific accomplishment of sleep paralysis is the significance and therefore may be considered for the advancement of treatment in sleep paralysis.

# A SYSTEMATIC REVIEW OF THE OUTCOME OF PREMARITAL B-THALASSAEMIA SCREENING IN MUSLIM MAJORITY POPULATED COUNTRIES

Adan, Nur Afiqah1; Mohamad, Muhammad Aliff1; Ahmad Asnawi, Asral Wirda1,2.

*1 Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia*
*2 Department of Hematology, Hospital Ampang, Selangor, Malaysia*

**Introduction:** Premarital screening is a platform for thalassaemia screening. There are three main issues relating to the incidence of thalassaemia carrier-couples, homozygous β-thalassaemic births, the provision of prenatal diagnosis and termination of pregnancy that needs to be addressed and discussed. Differing cultural and religious views on prenatal diagnosis and elective termination of pregnancy makes it highly improbable to have only one strategy.

**Objective(s):** The aim of this systematic review was to evaluate the different premarital thalassaemia screening programmes conducted in Muslim-majority populated countries or regions from published literature to determine the outcome.

**Methodology:** The PubMed, Scopus and MEDLINE databases were searched, using the terms “premarital screening”, “screening”, “thalassemia” and “thalassemia carrier”, in the title or abstract. Only articles with premarital couples who were screened for β-thalassaemia from Muslim-majority populated countries where included. The protocols and methods used for premarital screening and the outcomes in terms of the incidence of thalassaemia carrier couples and thalassaemic births were evaluated in this review.

**Results:** A total of four articles met the selection criteria. Most were retrospective studies. At-risk couples ranged from 0.15% - 2.1%. All studies recorded that a high percentage of thalassaemia carrier couples still opted to continue to marry. Termination of pregnancy was offered in half of the studies. Whether prenatal diagnosis and termination of pregnancy were offered, a significant decline in thalassaemic births could be observed.

**Conclusion(s):** There is strong evidence to show that premarital screening of thalassaemia is effective in identifying high-risk, thalassaemia carrier-couples and decreasing the incidence of thalassaemic births.

# ASSESSMENT OF COMMUNITY PHARMACISTS` KNOWLEDGE AND SKILLS ON THE PROPER USE OF METERED-DOSE INHALER (MDI) IN SELECTED AREAS OF CEBU CITY

Ballesteros, Irish Marie M., RPh; Estoreon, Cielou D., RPh; Orion, Peach Geisha I., RPh.

*Department of Pharmacy, School of Health Care Professions, University of San Carlos, Cebu City, Cebu, Philippinesa*

**Introduction:** Metered-dose inhalers (MDIs) are necessary forms of drug administration devices in asthma treatment. MDI delivers a measured amount of medication as a mist in which the patient inhales to relieve asthma; however, relief cannot be achieved when it not used correctly. It is the responsibility of the pharmacist to educate the patient on its proper use.

**Objective(s):** The aim of this study was to assess the knowledge and skills of the community pharmacists on the appropriate use of MDI.

**Methodology:** An interview-based cross-sectional survey was used to determine the participants' data. The researchers used an evaluation tool that was adapted from the National Asthma Education and Prevention Programmes of America (NAEPP) step criteria. The study was carried out selected areas of Cebu City.

**Results:** Only 12 (15%) out of 80 participants were competent enough to state and demonstrate the six essential steps, and 2 (2.5%) out of 80 participants were able to express and exemplify the 11-step use of MDI. Out of all crucial steps, step 2 'Remove the cap' was the most correctly stated and demonstrated essential step (94%). In contrary to that, step 5 'Breath out slowly' (47%) was the least correctly stated and demonstrated an essential step. The respective scores of the community pharmacists were not significantly influenced by either the length of community pharmacy experience ($p = 0.08$) or having received recent training and/or attended seminars on asthma and/or inhaler use ($p = 0.87$).

**Conclusion(s):** The results showed that the community pharmacists lack the complete knowledge and skills on the correct use of MDI and the length of experience working in community pharmacy and recent training and/or seminars attended by community pharmacists did not significantly affect their competency on MDI use.

# THE PRACTICE OF MEDICINE STORAGE AND DISPOSAL AMONG TERTIARY STUDENTS IN JEMBER, EAST JAVA, INDONESIA

Pratama, Antonius Nugraha Widhi 1,2; Maulani, Maghfirah Izzani 1,2; Lintarsari, Gustia Alinda1; Rachmawati, Sinta 1,2

*1 Faculty of Pharmacy, University of Jember, Jember, Indonesia*
*2 Drug Utilization Research Group, Faculty of Pharmacy, University of Jember, Jember, Indonesia*

**Introduction:** Medicines must be stored and disposed of appropriately to warrant their safety and effectiveness.

**Objective(s):** This study aimed to explore the practice of medicine storage and disposal among tertiary students who generally live apart from their families.

**Methodology:** This observational, cross-sectional study was conducted from May to June 2019 among undergraduate health science and non-health science students of the University of Jember, using a questionnaire. The questionnaire was prepared based on the results of a literature study followed by an assessment of face validity, content validity, and test-retest reliability. The final questionnaire consists of participant's socio-demographic characteristics, the practice of medicine storage and disposal, and medication return program to a health care facility.

**Results:** The results showed that the questionnaire was reliable (Cronbach's α = 0.93) and 380 participants from 15 faculties agreed to join the study. Of 276 (72.6%) participants who stored their medicines at their residence, only 192 (70%) kept them in closed containers, and only 172 (62.3%) regularly checked the expiration dates. Most participants (317, 84.4%) had disposed of their medicines. Generally, the disposal of solid, liquid and semi-solid preparations in their contained whole form was the most frequent practice, accounting for 232 (61,1%),162 (42.7%), and 219 (57.7%), respectively. More than three-fourths of participants (297, 78.1%) agreed with the medication return program.

**Conclusion(s):** In conclusion, storing medicine in residence is a common practice, but not all students routinely check the expiration dates. Another common way is inappropriate medicine disposal that may pose a risk to the environment. The idea of unwanted medicine return program could become an opportunity for Indonesian pharmacist to assist the community to safe-discard their medicines.

IHEC 2020 HEALTHCARE IN PANDEMIC ERA:"THE NEW NORMS"

# THE ACTIVITY OF GARLIC (*ALLIUM SATIVUM*) METHANOL EXTRACT AS AN INHIBITOR OF BIOFILM FORMATION ON METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA)

Suswati, Enny1; Irianto, Maulina2; Komariah, Cicih3.

*1 Department of Microbiology, Faculty of Medicine, University of Jember, Jemberr, Indonesia*
*2 Hospital Kaliwates, Jember, Jember, Indonesia*
*3 Department of Pharmacology, Faculty of Medicine, University of Jember, Jemberr, Indonesia*

**Introduction:** Staphylococcus aureus is a bacteria that easily resistant to antibiotics. One of the causes is that the bacteria can form a biofilm structure. Biofilm plays an important role in bacteria protection to environmental changes. Biofilm formation can be inhibited by some compounds, one of them is sulphur. Sulphur can resist biofilm formation by preventing bacteria adhesion to the surface and also preventing quorum sensing process. Organosulphur compound is contained in Allium species, mainly garlic (Allium sativum).

**Objective(s):** This study aims to determine the activity and MBIC of garlic methanol extract in inhibiting biofilm formation on MRSA.

**Methodology:** The sample of this research was MRSA that divided into seven groups on microplate,which were: negative control, positive control, and 5 treatment groups that given garlic's methanolic extract with 0,6 mg/ml, 0,8 mg/ml, 1 mg/ml, 1,2 mg/ml, 1,4 mg/ml concentration. After incubated for 24 hours, the microplates were dyed, and read on a microplate reader with 630 nm wavelength. Data in optical density and inhibition percentage were analyzed.

**Results:** The result indicates that garlic's methanolic extract has an inhibiting MRSA biofilm formation activity with MBIC at 0,460 mg/ml.

**Conclusion(s):** This finding strongly supports the garlic's methanolic extract has an inhibiting MRSA biofilm formation activity with MBIC at 0,460 mg/ml.

# BLASTOCYSTIS SUBTYPES AND THEIR ASSOCIATION WITH CLINICAL DISEASES: A SYSTEMATIC LITERATURE REVIEW

Mohd Shaari, Nurul Saadah,1; Wan Shahida, Wan Sulaiman,1; Mohd Rahman, Omar,1; Nadeeya'Ayn Umaisara,1; Samseh Abdullah, Noradilah1.

*1 Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, 71800 Nilai, Negeri Sembilan, Malaysia*

**Introduction:** Blastocystis is a common parasite that has been allied to cause of morbidity and mortality throughout the world. The role of this parasite as a pathogen is still controversial but it has been considered as opportunistic intestinal parasites among the general population particularly in immunocompromised patients.

**Objective(s):** A systematic review was performed to determine the prevalence of Blastocystis subtypes infection and the association with clinical diseases.

**Methodology:** A broad search in electronic databases, libraries such as Scopus, PubMed, Google Scholar and others were accessed. The search terms were Blastocystis, clinical characteristic and immunocompromised with restriction criteria include the date; from 2014 to 2020, the published articles are easily accessible for researcher, open access with full text and only English language were given preference.

**Results:** We identified (n=36) studies were on Blastocystis prevalence in clinical diseases. 8 articles reviewed showed the Blastocystis's infection was linked to irritable bowel syndrome (IBS) followed by four studies in HIV/AIDS, five studies in cancer, four studies in diabetes and rarely in other diseases. The studies found out the immunocompromised patients who were infected by Blastocystis had symptoms such as abdominal pain, bloating and diarrhoea. However, asymptomatic and healthy individuals also infected by the Blastocystis according to a higher prevalence among healthy individuals that were described in three studies. In fact, Blastocystis subtypes 3 (ST3) were highly discovered in IBS and cancer diseases followed by ST1 and ST2 while ST1 mostly observed in HIV and dengue.

**Conclusion(s):** In the reviewed studies, the overall prevalence of Blastocystis infection were observed in the immunocompromised patients with gastrointestinal symptoms which reflects there was a positive association between Blastocystis subtypes with clinical diseases. Extensive studies are needed to explain its pathogenicity towards human cases.

# THE SUSTAINABLE OF COMMUNITY-LED TOTAL SANITATION PROGRAM WITH ECOLOGICAL MODEL MODIFICATION APPROACH

Nurika, Globila1; Azizah, Roro2; Haksama, Setya2, Moelyaningrum, Anita Dewi1

*1 Faculty of Public Health, University of Jember, Jember, Indonesia*
*2 Faculty of Public Health, University of Airlangga, Surabaya, Indonesia*

**Introduction:** The C Total Sanitation (CLTS), which is one of the environmental sanitation programs and has been implemented in Situbondo Regency, East Java, Indonesia for almost 10 years but its achievement is still far from the Indonesia government target in 2019, which is 100% free of open defecation. Objective:

**Objective(s):** This study aims to analyze the sustainability first pillars of CLTS (Open Defecation Free) based on the perspective of program policymakers with a modified ecological model approach in Situbondo Regency.

**Methodology:** This is observational research with the evaluative method through a qualitative approach. The research conducted with case study design in Situbondo Regency. The informant of this research taken by purposive sampling. Data analysis in this study uses qualitative data analysis with the Spradley model, namely data analysis techniques that are adjusted to the stages in the study.

**Results:** Managing stakeholders at the program implementing level is very important, where program implementers must be able to consider the needs, needs and expectations of program makers to achieve their goals. The impact that occurs from the involvement of policymakers greatly influences the construction process in producing output, where the greater the power of the stakeholders, the greater the effect on the success of a project. In addition, the achievement and sustainability of the CLTS program cannot be successful only because of the readiness of policies made by policymakers. However, the interaction of health workers as program implementers with the community and social environment associated with the CLTS program is very important to accelerate the success of the program.

**Conclusion(s):** The sustainability of a program to achieve the target does not only require support from policymakers but also requires an increase in interpersonal support for program recipients.

# PESTICIDE USED AND COMPLAINTS ON HEALTH PROBLEMS ANALYSIS IN AGRO-INDUSTRY AREA

Kristianningrum Dian Sofiana1, Pulong wijang Pralampita2, Jauhar Firdaus1, Laksmi Indreswari3, Aries Prasetyo1, Hari Purnomo 4, Al Munawir 5, Supangat 6

*1Departement of Physiology, Faculty of Medicine, University Of Jember, Jember, Indonesia*
*2Departement of Clinical Pathology, Faculty of Medicine, University Of Jember, Jember, Indonesia*
*3Department of Anatomy, Faculty of Medicine, University Of Jember, Jember, Indonesia*
*4Faculty of Agriculture, University of Jember, Jember, Indonesia*
*5Departmen of Anatomy Pathology, Faculty of Medicine, University Of Jember Jember, Indonesia*
*6Department of Pharmacology, Faculty of Medicine, University Of Jember Jember, Indonesia*

**Introduction:** Several studies reporting pesticide can cause serious health problem to the human body. The use of pesticide in the agro-industrial area is unavoidable. Pesticide's exposure, either directly or undirectly of Jember society, is suspected to be one of the causes in health problems. Undirectly exposure of pesticide which should be avoided and anticipated is pesticides contamination on agroindustry product which consumed by Jember's society. The relationship between pesticide residual, the using of personal protection equipment, and health problem among agroindustrial farmer need to be examined both epidemiologically and biotechnological.

**Objective(s):** The research is investigating the relationship of residual pesticide, the using of personal protection equipment, and health problem among farmer in Jember district.

**Methodology:** descriptive observational method with a cross-sectional approach. The subject is farmers of 11 sub-districts in Jember. The sample is 84 people taken by Purposive sampling. The variables are types of pesticides, complaints of health problems, use of PPE. Analysis using univariate and bivariate analysis using Chi-square tests with $p < 0.05$.

**Results:** The most widely used types of pesticides was organophosphate 36.48%, the use of active ingredients used during spraying majority using one active ingredient was 51.19%. Complaints of health problems were 52.38% with the most complaints were dizziness by 29.76%. PPE using compliance was 36.90%. Results Analysis of the number of active ingredients when spraying with many health complaints by using Chi-Square test, $p = 0.009$ with a value of $p < 0.05$.

**Conclusion(s):** There is a relationship between the using of active ingredients of pesticide residues and complaints of health problems for farmers in Jember. It is necessary to research more comprehensive health problems for farmers in Jember using more accurate biomarkers.

# QUALITY CONTROL AND TOXICITY EVALUATION OF *RUSA UNICOLOR* ANTLER

Retno Widyowati1*, Suciati1, Dewi Melani Haryadi2, Hsin-I Chang3, IPG Ngurah Suryawan4, Nurliana Tarigan4

*1Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Airlangga, Surabaya, Indonesia*
*2Department of Pharmaceutics, Faculty of Pharmacy, Universitas Airlangga, Surabaya, Indonesia*
*3Department of Biochemical Science and Technology, National Chiayi University, Chiayi, Taiwan, Republic of China*
*4Dinas Peternakan dan Kesehatan Hewan Provinsi Kalimantan Timur, Indonesia*

**Introduction:** The deer antler from East Kalimantan is one of Indonesia's natural medicinal ingredients which is traditionally used for improve immune systems, physical strength and sexual function, however information related to raw materials quality and safety test is very limited.

**Objective(s):** This study aims to investigate the quality of crude drug and 70% ethanol extract of deer antler, as well as to obtain acute and sub-chronic toxicity data for product development.

**Methodology:** The powder of deer antler was extracted by 70% ethanol using maceration method. Then the quality of powder and 70% ethanol extract of deer antler were determined based on Indonesia Herbal Pharmacopoeia such as % of Loss on Drying (LOD), total ash, water content, water soluble extract, and ethanol soluble extractable matter. Therefore, the dose of 0.14, 7, 70, 700 & 2100 mg/kg BW of extract was evaluated acute toxicity by observing several symptoms (death, diarrhea, tremor, itchy, tumor) on mice (n=7) at 24 hour. The dose of 17.5, 35 & 70 mg/kg BW of extract was evaluated sub-chronic toxicity by observing biochemical and hematological parameters on rats (n=7) at 28 days based on Indonesia Food & Drug regulation.

**Results:** The water-soluble extractable matter of crude drug and 70% ethanol extract were 0.383±0.233 and 0.564±0.428 %, respectively. The ethanol soluble extractable matter of crude drug and 70% ethanol extract were 0.956±0.029 and 1.320±0.571%, respectively. The loss on drying of crude drug and 70% ethanol extract were 8.3±0.5 and 6.6±0.6 %, respectively. The water content of crude drug and 70% ethanol extract were 6.66±0.005 and 36.1±0.057 %, respectively. Then the total ash content of crude drug and 70% ethanol extract were 91.04±2.906 and 98.66±0.416 %, respectively. The acute toxicity results showed that none of mice experienced general behavior change, mortality, or change in gross appearance of internal organs. In addition, blood chemistry and hematology data did not deviate from normal mice.

**Conclusion(s):** It can be concluded that the deer antler extract from East Kalimantan has good quality and did not cause toxicity. Therefore it can be developed to become phyto-pharmaceutical product.

# CAN 2D:4D RATIO PREDICT THE DEVELOPMENT OF KNEE OSTEOARTHRITIS IN WOMEN?

Ab Rahman, Shafuzain1, Mustapha, Mawardi1, Sharifudin, Mohd Ariff2.

*1Department of Orthopaedics, School of Medical Sciences, Health Campus, Universiti Sains Malaysia,16150 Kubang Kerian, Kelantan, Malaysia*
*2Faculty of Medicine, Universiti Sultan Zainal Abidin, Medical Campus, 20400 Kuala Terengganu, Terengganu, Malaysia*

**Introduction:** There are gender differences in the prevalence, incidence and severity of knee osteoarthritis Women are affected with knee osteoarthritis more men. Digit ratio (2D:4D) is defined as the ratio of the length of the index finger to the length of the ring finger. Lower digit ratio (2D:4D), is a proxy indicator of in-utero testosterone exposure, which was associated with aggression and risk-taking behaviour.

**Objective(s):** To determine the association of index-to-ring finger length ratio (2D:4D) in a female with knee osteoarthritis and control.

**Methodology:** We conducted a comparative case-control study, in which female patients with knee osteoarthritis non-osteoarthritic females (control). Measurement of 2D:4D was taken from the tip of the respective fingers to the basal crease. The length of the index finger (2D) was divided by the length of the ring finger (4D) to obtain the 2D:4D ratio. The ratio was classified into 3 types. Type I (index longer than a ring) common female pattern, type II (index=ring) intermediate pattern and type III (index shorter than a ring) common male pattern.

**Results:** A total of 476 knee osteoarthritic patients and 474 non-osteoarthritic females were randomly selected for the study. In the osteoarthritic group, 48% (n = 231) were type III 2D:4D ratio followed by type I, 28% (n= 133) and type II, 24% (n=112). Whereas, among the non-osteoarthritic group, the most 2D:4D ratio type was type I which were 46% (n = 218). With Pearson Chi-Square Test, p-value obtained from the test was $p < 0.001$ which means there was a statistically significant difference between 2D:4D ratio in females with knee osteoarthritis and control.

**Conclusion(s):** 2D:4D ratio type III in women can predict the potential risk of developing knee osteoarthritis in women. We suggest women with 2D:4D type III should be a part of clinical assessment and risk stratification.

# PREDICTING THORACIC INSUFFICIENCY SYNDROME IN ADOLESCENT IDIOPATHIC SCOLIOSIS USING THE BODY MASS INDEX

Sharifudin, Mohd Ariff1, Johari, Joehaimey2, Ab Rahman, Azriani3, Taib, Mai Nurul Ashikin1,4.

*1Faculty of Medicine, Universiti Sultan Zainal Abidin, Medical Campus, 20400 Kuala Terengganu, Terengganu, Malaysia*
*2Department of Orthopaedics, School of Medical Sciences, Health Campus, Universiti Sains Malaysia,16150 Kubang Kerian, Kelantan, Malaysia*
*3Department of Community Medicine, School of Medical Sciences, Health Campus, Universiti Sains Malaysia,16150 Kubang Kerian, Kelantan, Malaysia*
*4Ara Damansara Medical Centre, 40150 Shah Alam, Selangor, Malaysia*

**Introduction:** Restrictive pulmonary disease is among the established complications of scoliosis. When the pulmonary function is impaired, the resting metabolic rate will increase leading to a reduction in body mass index. Reduction in patients' body mass index may predict the development of thoracic insufficiency syndrome in patients with scoliosis.

**Objective(s):** To determine the correlation between spinal deformity, pulmonary function, and body mass index.

**Methodology:** In this retrospective study, patients with adolescent idiopathic scoliosis aged between 13 to 24 years, confirmed cases of adolescent idiopathic scoliosis AIS, and underwent surgical interventions between the year 2000 to 2013 were selected. The spinal deformity was determined by measuring the Cobb spinal curve angle on anterior-posterior radiographs. Pre-operative pulmonary functions were evaluated using the forced vital capacity (FVC) and forced expiratory volume in 1 second (FEV1). Body mass index was calculated and determined using the standard measurements and calculations. Pearson correlation was performed to analyze the correlation between spinal deformity and pulmonary function with body mass index.

**Results:** Thirty-eight patients were recruited. The mean age of the patients was 16.7 years. Significant positive fair correlations between BMI and pre-operative FVC (p=0.018; r=0.38) and FEV1 (p=0.009; r=0.417) were observed. However, the correlation between spinal deformity and body mass index was not significant (p=0.363).

**Conclusion(s):** Body mass index of patients with adolescent idiopathic scoliosis was affected by poor lung functions, hence, can be used as a predictive factor of thoracic insufficiency syndrome.

# ANALYSIS OF COFFEE'S CONTENT IN THE COMMERCIAL COFFEE PRODUCT USING NEAR-INFRARED VIA A CHEMOMETRICS METHOD

Wulandari, Lestyo 1; Isman, Febrina Risdianti1; Lestari, Nadya Dini1; Sary, Indah Purnama1

*1 Department of Pharmaceutical Chemistry, Faculty of Pharmacy, University of Jember*

**Introduction:** Coffee is one of the plantation products that support the Indonesian economy. The commercial coffee product consists of pure coffee (containing 100% coffee) and mixed coffee (containing coffee and excipients).

**Objective(s):** This study aimed to determine classification and calibration models using NIR spectroscopy coupled with chemometric for coffee content analysis in the commercial coffee product.

**Methodology:** NIR spectra data of pure and mixed coffee were correlated with the coffee concentration using chemometric methods.

**Results:** The best chemometric method for qualitative analysis was the support vector machines classification (SVMC) and for quantitative analysis was the support vector machine regression (SVMR). SVMC model showed 100%accuracy value while SVMR model showed R2 and RMSEC value of 0.987 and 3.91 respectively. The R2 value of the leave one out cross-validation was around 0.980-0.990 and the R2 value of the 2-fold-cross-validation was 0.994. The coffee concentration from NIR-chemometric analysis compared with a coffee concentration based on the label claim showed no significant difference.

**Conclusion(s):** The NIR spectroscopy combined with chemometric can be used to determine coffee content (coffee purity and coffee concentration) in the commercial coffee product. This method was rapid, precise, accurate and eco-friendly

# ATYPICAL PRESENTATION OF A RARE CARDIAC ANOMALY IN AN INFANT OF DIABETIC MOTHER

Mohamed, Mossad1; Rosternberghe, Hans2; Ramli, Noraida 3; Ibrahim, Roshidah4; Mossad, Manar5

*1 Associate Prof of paediatric, Neonatology  Paediatric department KOM IIUM, IIUMMC Kuantan*
*2Professor of Paediatric, Neonatology, Nephrology Paediatric Department KOM USM Kota Bharu*
*3Associate Professor of Paediatric, Neonatology Paediatric Department KOM USM Kota Bharu*
*4Dr of Paediatric Paediatric Department KOM USM Kota Bharu*
*54th year master of internal medicine KOM IIUM*

**Introduction:** Screening for heart defects in babies is widely required. Here we present a case of neonatal asphyxia and pneumothorax. Early cardiac ECHO on the first day of life can reveal a rare congenital heart defect.

**Case presentation:** This reports an infant of a diabetic mother with oligohydramnios presented with, symmetrical IUGR at 37 weeks of gestation. She presented due to foetal distress, went for instrumental delivery, and the baby was born to find with one cord coil around the neck. Upon delivery, the baby was limp and required active resuscitation and intubation. The APGAR score was 6 and 7 at one and five minutes respectively, and the cord blood gas showed a pH of 7.27 and a BE of -7.2. Ventilator settings were on minimal sittings where the baby had stable vital signs and normalised ABG, warranting extubation to high nasal flow cannula, The baby covered by first-line antibiotics awaiting the results of septic workup. The baby tolerated HFNC for a short time before experiencing respiratory distress. CXR showed right-sided pneumothorax with normal cardiac shadow; the baby was reintubated. Clinical examination did not reveal any murmurs, but bedside ECHO screening was unable to pick the tributaries of the MPA. Urgent formal ECHO showed absent right pulmonary artery. CT thorax with contrast showed an oligemic right lung compared to the left lung. With ASD, RPA anomalies, Patent left PDA from aortic isthmus to the main pulmonary. Cardiac catheterisation confirmed closing PDA, a blind pouch of RPA from brachiocephalic, abnormal RPA connections, disconnected RPA and supply of PDA.

**Conclusion(s):** Even in the absence of signs of CHD on physical examination and CXR, the early cardiac screen in neonates is important, Either by cardiac screen via oxygen saturation and perfusion index or real-time ECHO can accomplish early detection, intervention, and improved prognosis.

# REVIEW OF HPV AND NON-HPV RELATED OROPHARYNGEAL SQUAMOUS CELL CARCINOMA: PREVALENCE, SOCIODEMOGRAPHIC, CLINICAL FEATURES AND OUTCOMES

Abdul Razak Siti Aisyah1, Hassan Nor Eyzawiah2, Salahuddin Nor Azirah2, Abdul Hamid Nazefah3, Roslan Nuruliza3,4, Md Arepen Siti Asmat2

*1 Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia*
*2 Unit of Otorhinolaryngology Head And Neck, Department of Surgical-Based, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia*
*3Unit of Biochemistry, Department of Basic Medical Sciences I, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia*
*4Islamic Science Institute, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia*

**Introduction:** Human Papilloma Virus (HPV) has been associated with many types of cancers and recent years demonstrated that there was an increasing incidence of HPV-related oropharyngeal squamous cell carcinoma (OPSCC) which account about 60% to 70% of oropharyngeal cancers.

**Objective(s):** This paper is to review the differences between HPV and non -HPV OPSCC related cases in terms of their prevalence, sociodemographic, clinical features and outcomes.

**Methodology:** A literature review was done using electronic databases such as Google Scholar, PubMed, and Science Direct. Articles were searched by using keywords HPV-positive, HPV-negative, oropharyngeal neoplasm, epidemiology, clinical features, outcomes and prognosis. Relevant articles and journals, which regard the topic was read and retrieved by using the electronic databases.

**Results:** The prevalence of HPV related OPSCC increasing in trend in developing countries such as Italy (87.6%), Amsterdam(48.1%), North America(65%), and Middle East (85.3%) while still low at Asia such as Malaysia(35%), Thailand (14.5%) and China(20.8%). Worldwide (30-70%) HPV-related OPSCC showed differences in sociodemographic where it occurred more in male (86%) with male to female ratio 6:1, younger age (mean 30-50), non-smoker/alcoholic (81%), had a history of oral sex (12.7%) and higher socioeconomic (62.2%). Presentation of HPV related OPSCC usually presented with low tumour size and the common sites are tonsils (50-80%) and base of tongue (9.0-40)%. However, they showed less second primary lesions. The non-keratinizing type was found to be more common in HPV related while the keratinizing type is common in non-HPV related. HPV related OPSCC also reported having better outcome and prognosis.

**Conclusion(s):** As a conclusion, HPV-related OPSCC has a high prevalence depending on the geographic area and lifestyle. There are differences in the sociodemographic, presentation and outcomes of both HPV related and non-HPV related OPSCC.

# THE FUNCTIONAL AND PHYSICO-CHEMICAL PROPERTIES OF CARBONATED BEVERAGE FROM BUTTERFLY PEA (*CLITORIA TERNATEA L.*) FLOWERS EXTRACT

Cormanes, Lianne 1 and Galvez, Lorina 2

*1School of Health Care Professions, Faculty of the Department of Nutrition and Dietetics, University of San Carlos Cebu City, Philippines,*

*2 College of Agriculture, Faculty of the Department of Food Science and Technology, Visayas State University, Baybay City, Philippines*

**Introduction:** Food consumers nowadays prefer consuming nutritious foodstuffs since they are significant contributors that impact health and well-being.

**Objective(s):** his study was conducted to evaluate the physico-chemical and functional properties of the carbonated beverage from Butterfly pea (Clitoria ternatea L.) flowers.

**Methodology:** Fifteen (15) treatments generated from CCD including the optimum were tested to determine the effects of the significant variables on the physico-chemical and functional properties of the Butterfly pea flower carbonated beverage. Physico-chemical properties (pH, total soluble solids (TSS) titratable acidity (%TA), color absorbance) and functional properties that include total phenolic content (TPC), reducing power, and total anthocyanin content (TAC) were gathered using standard protocols with slight modifications. Data obtained were subjected to statistical analyses through Response Surface Regression and Analysis of Variance.

**Results:** Results revealed that pH, TSS, %TA, color absorbance and Total Anthocyanin Content (TAC) were significantly affected by the levels of extract, syrup and acid in either linear, quadratic or interaction effects. TPC (Total and Reducing power on the other hand were also affected by the different variables studied. The optimum formulation has a pH of 3.0, TSS of 14.3, %TA of 0.17 (as citric acid), color absorbance of 0.57, TPC of 65.82 mg GAE/g, reducing power of 10.0mg/g and TAC of 6.03 mg/L.

**Conclusion(s):** The presence of these functional components in the beverage shows that Clitoria ternatea L. has the potential to be an alternative source of natural antioxidants. The effects of maturity of butterfly pea flowers on the quality of the product may be thoroughly studied.

# ATYPICAL PRESENTATION OF HERPES STROMAL KERATITIS IN A CONTACT LENS WEARER

Subramaniam, Ruknesvary1; Muhammed, Julieana1; Sonny-Teo, Khairy-Shamel1

*1Department of Ophthalmology and Visual Sciences, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

**Introduction:** Herpes Stromal Keratitis caused by Herpes Simplex Virus is one of the leading causes of corneal blindness in the developed nation. Involvement of cornea stroma typically manifests as stromal opacity/infiltrate, oedema, and neovascularisation. Ring infiltrate in the cornea stroma is a classical finding seen in Acanthamoeba keratitis (AK). Furthermore, contact lens wearer is a significant risk factor for AK. We report an atypical herpetic stromal keratitis with corneal stroma ring infiltration in a contact lens wearer.

**Case Presentation:** A 21-year-old female, a regular contact lens wearer presented with a chief complaint of left eye pain, redness and reduced vision. Her best-corrected visual acuity was 6/24. Ocular examination revealed a central corneal anterior stroma ring infiltrate with irregular border associated with the mild edematous cornea. A diagnosis of AK was made. A combination of topical polyhexamethylene biguanide (PHMB) and chlorhexidine was started. However, she did not show any improvements. Her vision deteriorated and the ring infiltrates extended into the posterior corneal stroma with worsening oedema. Initial microscopic examination and culture did not show any growth. Contact lens solution for Acanthamoeba sp. polymerase chain reaction (PCR) was also negative. Thus, we had a second thought about the diagnosis. Further examination showed a decrease in corneal sensation in otherwise intact before and serology test confirmed the presence of herpes simplex virus IgG. Oral Acyclovir 800mg five times/day was commenced. Further review showed improvements with stromal scarring and cornea oedema was reduced.

**Conclusion(s):** Atypical presentation of Herpes Stromal Keratitis possesses a diagnostic challenge and may mistakenly diagnosed as Acanthamoeba keratitis in a patient using a contact lens.

# RIGHT TROCHLEAR NERVE PALSY AS AN UNCOMMON SYMPTOM OF ARACHNOID CYST

Ruknesvary S1, Khairy Shamel Sonny Teo1, Wan-Hazabbah WH1, Chandran Nadarajan2

*1Department of Ophthalmology and Visual Sciences, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*
*2Department of Radiology, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, Malaysia*

**Introduction:** Most arachnoid cysts are congenital intracranial lesions, arising in the early embryonic stages from a minor anomaly of the flow of cerebrospinal fluid through the primitive mesenchyme. Usually, these cysts remain asymptomatic throughout life. Diplopia caused by an arachnoid cyst is very rare.

**Case Presentation:** A 56-year-old female with underlying hypertension presented to us with a complaint of vertical diplopia for one week. Her symptom started suddenly at rest and continuous. There was no history of trauma or illness. She denied any reduced vision. Neuro-ophthalmology examination revealed visual acuity of 6/6 in both eyes. Ocular motility showed very minimal limitation of abduction in the right eye. There was diplopia in all gaze except when she is looking upward. Visual fields were normal. The anterior segment was unremarkable. Examination of fundi were insignificant. Hess test confirmed the presence of right superior oblique paresis. We proceeded with neuroimaging and on Computed Tomography (CT) imaging, a well-defined non enhancing hypodense lesion noted at a retro-cerebellar region which highly represents arachnoid cyst. It causes a minimal mass effect to adjacent cerebellar folia. She was subsequently seen by our Neurosurgical team and given the absence of any additional neurological abnormalities, she was scheduled for Magnetic Resonance Imaging (MRI) as an outpatient for confirmation of diagnosis.

**Conclusion(s):** We present a rare case of arachnoid cyst presenting as acquired isolated fourth nerve palsy in adult. The importance of obtaining appropriate neuroimaging in such subtle condition should be kept in mind.

# DOES ROBUSTA COFFEE AFFECT METAL ION RELEASE FROM DENTAL ALLOY?

Rachmawati, Dessy1; Cahyasari, Devanti Ayu1; Febiantama, Ardin Tito1; Ermawati, Tantin 1; Masniari, Novita1; Hidayati, Lusi 2; Lestari, Sri 3.

*1Department of Biomedical Science, Faculty of Dentistry, University of Jember, Jember, Indonesia*
*2Department of Dental Materials, Faculty of Dentistry, University of Jember, Jember, Indonesia*
*3Department of Dental Conservation, Faculty of Dentistry, University of Jember, Jember, Indonesia*

**Introduction:** Nickel-Chromium (NiCr) alloy is often used in dentistry due to its low price, good physical and mechanical properties. NiCr alloy in oral cavity always exposed to the dynamic oral environment, such as pH variation, temperature, salivary conditions. Low salivary pH can be affected by coffee consumption. Coffee can increase the release of nickel ions that may lead to various health diseases.

**Objective(s):** This study aimed to investigate the effect of robusta coffee brews on the nickel release and morphological structure of NiCr alloy.

**Methodology:** Thirteen NiCr alloys with diameter 10 mm and 1 mm thickness were used. Alloys were immersed in various type of solutions: 1) aqua dest (negative control), artificial saliva and robusta coffee brew (positive control), and a mixture of artificial saliva and robusta coffee brew (as treatment group). NiCr alloys were immersed for 2 and 7 days. The release of nickel ions in solutions was examined using an Atomic Absorption Spectrometry (AAS). Next, the composition of alloys before and after immersion was examined by using an X-Ray Fluorescence (XRF), and the morphology of alloys was examined by using Scanning Electron Microscopy (SEM).

**Results:** AAS test showed that the highest release of nickel was found in the artificial saliva solution on the 2nd day of immersion and in the treatment group on the 7th day of immersion. In addition, the XRF test results show that there are differences in composition between alloys and confirmed that the main component is Ni.

**Conclusion(s):** Consumption of robusta coffee can increase nickel ions released from NiCr alloys. The release of ions is influenced by pH, the composition of immersion solutions, and alloy characteristics.

# PRELIMINARY STUDY OF 6-SHOGAOL EFFECT ON ADULT ZEBRAFISH BEHAVIOR USING NOVEL TANK DIVING-INDUCED STRESS TEST

Fajrin, Fifteen Aprila1; Mumpuni, Yuni2.

*1Department of Clinical and Community Pharmacy, Faculty of Pharmacy, University of Jember, Jember, East Java, Indonesia*
*2 Undergraduate Student, Faculty of Pharmacy, University of Jember, Jember, East Java, Indonesia*

**Introduction:** Previously, ginger extract was detected successfully to reduce anxiety in the anxiolytic-like mice model. One of the bioactive compound which responsible for this action is 6-shogaol. Until now, the report of how 6-shogaol activity in reducing stress is not evident yet.

**Objective(s):** This research was a preliminary study and aimed to observe the effect of 6-shogaol in adult zebrafish after stress induction using a novel tank diving test

**Methodology:** The behavioural changes of adult zebrafish were observed after stress stimulation using a novel tank diving test. Adult zebrafish were divided into five groups, i.e., naïve, without treatment, treatment 6-shogaol dose 0.3; 1; and 10 mg/L. Each zebrafish was individually exposed to an immersion solution of 0.3, 1, and 10 mg/L 6-shogaol or non-chlorinated water for 10 min. The behaviour of adult zebrafish was recorded and quantified using a tool developed in the biopsychology Laboratory, Graduate School of Integrated Sciences for Life, Hiroshima University by Masayuki Yoshida. Behaviour activities related to stress were determined as time spent in top and bottom area, number of the entry in top and bottom area, average entry duration in top and bottom area, number of crossing, freezing, and erratic movement.

**Results:** 6-shogaol showed to change the behaviour of adult zebrafish after incubated in novel tank diving-induced stress. Administration of 6-shogaol 1 mg/L significantly reduced erratic and freezing number and duration compared to naïve and without treatment group. On the other hand, 6-shogaol did not change the time spent and entry in top and bottom areas.

**Conclusion(s):** 6-shogaol diminished stress in adult zebrafish, which reduced the number of freezing and erratic movement.

# ANTIBACTERIAL ACTIVITY OF ETHANOLIC EXTRACT OF KEMAITAN LEAF *(LUNASIA AMARA BLANCO)* AGAINST *BACILLUS CEREUS*

Dianasari , Dewi 1; Kadarwenny, Carina Puspita 1 ; Pratoko, Dwi Koko1

*1Faculty of Pharmacy, University of Jember, Jalan Kalimantan I No.2, Jember, Jawa Timur, Indonesia*

**Introduction:** Infectious diseases become the most serious health issue in the world. Alternative treatment for infection is required by utilizing the antibacterial active ingredients of the medicinal plant. Based on a study of empirical use and prior research, Lunasia amara Blanco is thought to be potential as an antibacterial. Lunasia amara alkaloid extracts have inhibitory activity against protozoa, antimicrobial activity ( anti-staphylococcus), antituberculous and anti-fungal.

**Objective(s):** Therefore it is necessary to do an antibacterial activity test of ethanolic extract of Lunasia amara Blanco leaf against Bacillus cereus.

**Methodology:** Antibacterial activity performed using well diffusion and microdilution methods. In this study also conducted with the determination of total alkaloid content by spectroscopic method.

**Results:** The result of a good diffusion method showed that ethanolic extract of Lunasia amara Blanco leaf at concentration 2,3, 4, and 5% have an inhibition zone. In the microdilution method, it was found that IC50 of ethanolic extract of Kemaitan leaf in inhibiting the growth of Bacillus cereus is 47,9 ± 4,69 µg/mL. The total alkaloid content in the ethanolic extract of Kemaitan leaf is 0,230 ± 0.001 % b/b BE.

**Conclusion(s):** From this study, it can be concluded that the extract has good antibacterial activity with a total alkaloid level of 0,230 ± 0.001 % b/b BE.

# THE ACTIVITY OF KEPEL LEAVES EXTRACT AS AN A-AMYLASE, A-GLUCOSIDASE, AND LIPASE INHIBITOR

Holidah, Diana1; Fajrin, Fifteen1, Christianty, Fransiska1; Dewi, Ika1; Yakain, Finola; Wulandari,M.

*1Department of Pharmacy Clinic and Community, Faculty of Pharmacy, University of Jember, Jember, Indonesia*

**Introduction:** The number of cases and the prevalence of diabetes have continued to increase over the last few decades. Diabetes treatment that lasts for a long time can cause side effects and resistance, so it is necessary to develop new alternative antidiabetic drugs with a better mechanism. One of the plants that can be used as a medicinal plant is kepel (*Stelechocarpus burahol*).

**Objective(s):** The objective of this study was to determine the antidiabetic activity of Kepel leaves extract as an α-amylase, α-glucosidase, and Lipase Inhibitor.

**Methodology:** Kepel leaves powder was extracted by maceration method using 70% ethanol solvent to obtain an extract. The extract was analyzed for the total phenol content by the follin-ciocalteu method. Inhibitory activity of the lipase, α-amylase, and α-glucosidase enzymes were determined using the colourimetric method. Inhibitory activity of extract determined by IC50 and analyzed statistically with control positive using T-test method.

**Results:** Based on the results of the study, the total phenol content of kepel leaves extract was 145.31 mgGAE/g extract and flavonoid levels were 188.58 mgQE/g extracts. The kepel leaves extract had α-amylase inhibitory activity with IC50 439.98 µg/ml, α-glucosidase inhibitory activity with IC50 170.31 µg/ml, and lipase inhibitory activity with IC50 195.49 µg/ml.

**Conclusion(s):** The results showed that the kepel leaves extract had the activity as an α-amylase, α-glucosidase, and Lipase Inhibitor, although its activity is mild compared to acarbose and orlistat.

# ANTIBACTERIAL AND ANTIBIOFILM ACTIVITIES OF SELECTED PLANTS OF GENUS ZINGIBER ESSENTIAL OILS AGAINST *STAPHYLOCOCCUS EPIDERMIDIS*

Ulfa, Evi Umayah1; Puspitasari, Endah1; Ulyah, Hidayatul1; Imamah, Zulaikha Rachmi1; Qaromah, Endah Rizki1

*1 Department of Biology Pharmacy, Faculty of Pharmacy, University of Jember, Jember, Indonesia*

**Introduction:** *Staphylococcus epidermidis* has emerged as a major causative agent of nosocomial infections related to devices, implants and surgical procedures. Biofilm formation of *S. epidermidis* makes it highly resistant to antibiotics and host immune defences. On the other hand, the genus *Zingiber* has been used as a medicinal plant for numerous diseases, including antimicrobial activity.

**Objective(s):** This study proposed to evaluate the antibacterial and antibiofilm activity of three essential oil (EOs) obtained from *Zingiber officinarum var rubrum*, *Zingiber aromaticum,* and *Zingiber purpureum* against resistant *S. epidermidis* clinical isolate.

**Methodology:** The research was done using *S. epidermidis,* it is proven to be resistant to 53 antibiotics according to the Clinical and Laboratory Standards Institute (CLSI) guidelines (certificate of antimicrobial susceptibility test was obtained from Granostic Diagnostic Center, Indonesia). The antibacterial activity was determined using the agar diffusion method while biofilm inhibition formation and degradation activity were assessed using the microtiter plate assay. Crystal violet was used to stain the biofilm and optical density (OD) was measured at λ 595 nm.

**Results:** This study revealed that all EOs showed antibacterial activity against *S. epidermidis.* Besides, antibiofilm assay revealed that all EOs inhibited biofilm formation and degraded biofilm. *Z. purpureum* EO had the highest antibiofilm activity against *S. epidermidis* with (IC50) and EC50 were 37.89% (v/v) and 38.93% (v/v), respectively.

**Conclusion(s):** This finding revealed that the EOs of the genus *Zingiber* have an important effect in the control of human pathogenic microorganisms.

# NUTRITIONAL STATUS AND BLOOD PRESSURE IN STUDENTS WITH INTELLECTUAL DISABILITY

Kusumawardani, Banun1*; Robin, Dwi Merry Christmarini1; Rahayu, Yani Corvianindya2; Handayani, Ari Tri Wanodyo3; Dewanti, Parawita4; Nugraha, Ari Satia5.

*1Department of Biomedical Sciences, Faculty of Dentistry, University of Jember, Jawa Timur, Indonesia*
*2Department of Oral Biology, Faculty of Dentistry, University of Jember, Jawa Timur, Indonesia;*
*3Department of Public Dental Science, Faculty of Dentistry, University of Jember, Jawa Timur, Indonesia;*
*4Study Program of Agronomy, Faculty of Agriculture, University of Jember, Jawa Timur, Indonesia,*
*5Drug Utilization and Discovery Research Group, Faculty of Pharmacy, University of Jember, Jember, Jawa Timur, Indonesia*

**Introduction:** Children and adolescents with ID have poor living habits. In this stage, disabled children are at high risk for developing malnutrition, which may be associated with complications experienced in later life as adults.

**Objective(s):** To assess the nutritional status and the proportion of BP among students with ID in special schools for disability in Jember, East Java, Indonesia.

**Methodology:** We conducted a cross-sectional study among students with ID aged 7-22 years who were enrolled in public special education school. Anthropometric measurements were examined by trained-research assistants. Nutritional status was estimated from mid-arm circumference and body mass index. Blood pressure was measured twice for each subject and calculated the systolic and diastolic BP percentiles. Data were displayed by frequency and percentage, and the Spearman's Correlations were used to estimate the correlation between BMI and age on the risk of hypertension incidence.

**Results:** The nutritional status indicated that the students were obesity (16.7%), overweight (8.3%), normal nutrition (54.4%), moderate malnutrition (8.3%), and severe malnutrition (8.3%). The ID students had blood pressures in hypertension (35.0%) and pre-hypertension (13.3%). Hypertension was not only affected students with obesity (6 students, 10.0%), but also affected students with normal nutritional status (12 students, 20.0%). In addition, nutritional status has a positive correlation with age (P=0.016) but does not correlate with blood pressure (P=0.238).

**Conclusion(s):** The prevalence of malnutrition and obesity was high among mild ID students. Hypertension was most common among the mild ID students and higher as the increased age.

# COMMON LOSS OF HETEROZYGOSITY (LOH) FOUND IN MALAYSIAN ORAL CANCER PATIENTS: A STUDY OF LITERATURE

Nam, Noor Akmar1; Mohd Rasoul, Asfizahrasby2; Rokhani, Faezah2

*1 Department of Basic Sciences and Oral Biology, Faculty of Dentistry, University Sains Islam Malaysia, Kuala Lumpur, Malaysia.*
*2 Department of Oral and Maxillofacial Surgery, Pathology and Medicine, Faculty of Dentistry, University Sains Islam Malaysia, Kuala Lumpur.*

**Introduction:** In Malaysia, oral cancer is reported as eighth and fourth most common cancer among Indian male and female respectively. Numerous types of molecular changes contribute to cellular transformation and progression of oral premalignant lesions to oral squamous cell carcinoma (OSCC), the predominant type of oral cancer. Identification of these molecular signatures such as loss of heterozygosity (LOH) of tumour suppressor genes and microsatellite instability (MSI) may be useful to monitor disease progression.

**Objective(s):** This study aimed to gather all reported LOH and MSI changes found in Malaysian oral cancer patients, with functional significance in the pathways contributing to oral squamous cell carcinoma progression.

**Methodology:** A systematic literature search was performed in three public databases; Pubmed, Google Scholar and Science Direct. The search was carried out without any restrictions on date of publication however restricted to studies that comprise Malaysian oral cancer patients.

**Results:** Two independent studies that met the search criteria were found. Ashazila et al. (2011) reported LOH for chromosome 3p with an overall incidence of 37/50 (74%) cases. The two most frequent LOH was identified for marker D3S966 (chromosome location 3p21.3; 42.8%) that map to a putative tumour suppressor and marker D3S1228 (3p14.2, 36.7%) that map to FHIT gene. The highest frequency of MSI found for marker D3S966 (28.6% of informative cases). Another study by Salahshourifar et al. (2015) reported frequent MSI at D1S2346 (25.3 %) than LOH at D1S2345 (9.3 %) in 1q21.3 region, leading to downregulation of CRNN gene. LOH and MSI highlighted in both studies were also correlated to certain sociodemographic and clinicopathological parameters.

**Conclusion(s):** Studies on LOH and MSI in Malaysian oral cancer patients are still scarce, which only documented the changes in chromosomes 3p and 1q. Regardless, these changes are associated with the progression of OSCC in Malaysia.

# A REVIEW OF KETOGENIC DIET AS COMPLIMENTARY MANAGEMENT OF EPILEPSY

Ku Faridah Ku Zahari1 ; Mohd Rahman Omar1

*1Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia*

**Introduction:** The prevalence of epilepsy is increasing affected 50 million people worldwide. Some patients with epilepsy, their diseases are not controlled with the standard therapy either due to the development of drug-resistant epilepsy or other undesirable side effects. The alternative management that has been introduced as complimentary is ketogenic diet therapy.

**Objective(s):** The objectives of this study include i) to review the effectiveness of a ketogenic diet in epilepsy and ii) to discuss the Islamic perspective of fasting in line with ketogenic state.

**Methodology:** This concept paper is written through a thorough review using some of the online databases: Google Scholar, PubMed, UpToDate. The relevant and available updated works of literature regarding ketogenic therapy in epilepsy. In this concept paper, we will discuss theory on the mechanism of this diet and its action in epilepsy and the Islamic perspective of fasting as the ketotic state as the ketogenic diet is mimicking fasting condition as in producing ketone bodies.

**Results:** Ketogenic diet controlling the seizure through various mechanisms that include i. Fatty acid oxidation and ketone bodies production, ii. Gamma-aminobutyric acid (GABA) as an inhibitory neurotransmitter, iii. activation of KATP Channels that limit the neuronal activity, iv. stimulation of Peroxisome Proliferator-Activated Receptors and v. through alteration of the intestinal microbiome. Muslim have been ordered to perform fasting in the month of Ramadhan, and Prophet Muhammad PBUH recommends several intermittent fasting regimes like Monday and Thursday fasting. The ketogenic diet goal is to imitate a fasting or starvation state without oppressing the body of calories required for development and growth. Thus, through fasting, it imitates the ketogenic state thus help in controlling seizure attack.

**Conclusion(s):** Ketogenic diet may act as effective management to control seizure. The ketogenic diet is mimicking the mechanism of fasting, and in Islam, fasting is encouraged to all followers.

# GUT MICROBIOTA AND THE RISK OF DEVELOPING TYPE 2 DIABETES MELLITUS: A REVIEW

Anis Wahidah Sulaiman 1 ; Mohd Rahman Omar1

*1Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia*

**Introduction:** Diabetes Mellitus is a chronic disease where the prevalence is increasing every year and closely related to obesity. High-fat diets and sedentary lifestyle was thought to be the main factor for obesity. However, there are studies and evidence that propose there were other main factors that influence obesity that include alteration of gut microbiota.

**Objective(s):** i. To discuss the state of eubiosis and dysbiosis of gut microbiota and ii. to discuss how dysbiosis of gut microbiota associate with the onset of T2DM concerning inflammation, insulin resistance, and oxidation.

**Methodology:** Through the electronic repositories such as Science Direct, PUBMED, Google Scholar, and Medline, a search of all topics includes “gut” or “intestinal” microbiota or “microbiome” and “type-2-diabetes Mellitus” were carried. Furthermore, a search regarding the topics and its relevance from many other books, journals, and articles were read and retrieved.

**Results:** This paper reviews on gut microbiota and the risk of developing Type 2 Diabetes Mellitus (T2DM). Recently, the main focus that influences the onset of the disease was human gut microbiota. It has been proven that the onset of T2DM may be more closely associated with gut microbiota. Poor health of microbiome typically results from high-fat diets and which then result in a state of dysbiosis. The two critical factors in the development of T2DM, which are inflammation and increased in insulin resistance can be resulted from dysbiosis due to metabolic deregulation. By considering obesity, inflammation, insulin resistance and oxidative stress, this review discusses how gut microbiota associated with the onset of T2DM.

**Conclusion(s):** The evidence available at the moment illustrates that the T2DM onset had a special relationship with the type and state of the microbiome. Further study is crucial and potentially highly valuable to consider the microbiome as a target for treatment and prevention T2DM.

# DERMAL FILLERS: TYPES AND COMPLICATIONS

Zulkifli, Nursyazwani Aimi1; Ab Rahman, Siti Soraya1.

*1Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Malaysia*

**Introduction:** The number of aesthetic clinics has grown significantly in recent years, and it is most popular among middle-aged women. Dermal filler injection is minimally invasive and results in immediate improvement with minimal complications and lower cost, making it one of the increasingly popular treatments.

**Objective(s):** To review the current literature on the different types of dermal fillers which are available, their possible complications, and the Islamic views regarding this treatment.

**Methodology:** The literature search was performed via electronic databases using selected keywords.

**Results:** Dermal fillers can be classified according to their biodegradability or duration of effect (temporary, semi-permanent and permanent). Examples of fillers include hyaluronic acid, calcium hydroxylapatite, and polymethyl methacrylate. Depending on the type, the fillers are injected into the subcutaneous, subdermal, or mid to deep dermal layer. They add natural volume, improve contour and hydration, and are used in the correction of the nasolabial fold, atrophic cheeks, wrinkles and lips. The appropriate filler is chosen depending on the desired location, duration and expected degree of correction. Post-procedure appearance includes swelling, bruising and redness. Complications can be classified according to the duration of onset (early or late) or causes (injection technique-related or product-related) and include hypersensitivity, infection and vascular occlusion. In Islam, non-permanent filler injection with the intention to enhance beauty is permitted to married women if the changes are not excessive and requested by husband. It is not permissible for men and unmarried women, except to treat defects or abnormalities.

**Conclusion(s):** Despite being minimally invasive, complications of dermal fillers may be disfiguring albeit not life-threatening. It is vital to choose a certified and skilful doctor with good facial anatomical knowledge, good injection skill and appropriate fillers selection. Muslim patients and doctors must consider the intention of the treatment to be in accordance with Islamic guidelines.

# FOODBORNE DISEASE AND FOOD SAFETY AMONG STUDENTS

Anita Dewi Moelyaningrum

*Department of Environmental Health and Occupational Health and Safety, Public Health Faculty, Universitas Jember, East Java, Indonesia*

**Introduction:** There are more than 200 diseases that can be transmitted through food. The Public Health Emergency Operation Center (PHEOC) Indonesia record that there were 163 incidents, 7132 cases of food poisoning outbreak with Case Fatality Rate (CFR) 0,1% in 2017. Food safety is crucial to control foodborne disease or foodborne illness.

**Objective(s):** The Objectives of this study were to assess the characteristic, knowledge, attitude and practice about food safety among college students.

**Methodology:** This research is a cross-sectional study conducted in Universitas Jember, Indonesia Oktober 2019. The samples were (n)188, college students. There were 9 questions for knowledge, 10 for attitude and 11questions for practice, which categorized in low, medium and high. The data were analyzed with Spearman rank with (α=0,05).

**Results:** The result showed that 90,9% of respondents weren't living with parents, the knowledge was moderate attitude was neutral and the practice was low. There was a significant difference between knowledge, attitude and practice ($p < 0,05$).

**Conclusion(s):** Knowledge, attitude and practice about food safety should be increased from the college curriculum to prevent the foodborne disease.

# ANALYSIS OF PARENTAL RESPONSE SKILLS FOR PREVENTING CHILD SEXUAL ABUSE: WHAT SHOULD PARENTS DO?

Permatasari, Elok

*Faculty of Public Health, University of Jember, East Java, Indonesia*

**Introduction:** Effective parenting is a protective factor for early childhood sexual abuse. Parental response skills in parenting are able to help children to control negative emotions which are felt, including in preventing children from contacting the risk of sexual abuse. Moreover, this study aimed at analyzing parenting skills which were needed by parents for the efforts to prevent early childhood sexual abuse.

**Objective(s):** This study utilized cross-sectional method by involving 170 pairs of parents (170 fathers and 170 mothers) of early age children (3-6 years old) in Jember District, East Java Province, Indonesia in 2018. Analysis of indicators of response skills which were conducted in parenting consisted of appreciation, communication, support for independence and affection with Structure Equation Model by utilizing Smart-PLS.

**Methodology:** Most parents had good response skills category. Mothers (mean = 87.3) was known to have response skill score rather than the fathers. Ability to communicate effectively between parents and children had the lowest score among other indicators (mean = 19.70; max = 24). Whereas, for preventing sexual abuse in early childhood, communication and support for independence were dominant indicators which were quite needed.

**Results:** Parents often felt that they had limitations in conveying messages which were related to efforts in preventing child sexual abuse. Discussions about sexual education were often considered taboo and inappropriately discussed with their early childhood. Support for children to be able to make decisions about the discomfort that was felt by children regarding other people's behaviour towards them had not been optimally implemented by the parents.

**Conclusion(s):** All in all, parents needed to have support in order to have self-confidence in implementing response skills for their parenting. Particularly, it was in providing sexual education to their early age children through effective communication toward them.

# INCREASED NEUTROPHIL CELLS, LYMPHOCYTE CELLS AND IGM DUE TO GIVING SUPPLEMENTS OF CORK FISH (CHANNA STRIATA) IN PATIENTS WITH PULMONARY TB DISEASE

Isa Ma'rufi1; Farida Wahyu Ningtyias1; Kurnia Ardiansyah Akbar1

*1Faculty of Public Health, Jember University, Jember, East Java Indonesia*

**Introduction:** Tuberculosis is the third leading cause of death in Indonesia after cardiovascular disease and respiratory tract disease and the number one infection disease category.

**Objective(s):** This study aimed to analyze the cellular and molecular mechanisms of Channa Striata fish supplements in accelerating pulmonary tuberculosis treatment.

**Methodology:** This type of research is pure experimental (true experimental), where all variables that affect other than treatment can be controlled. Pulmonary tuberculosis patients will be given the treatment of Channa Striata fish. The research design was a randomized pre-test post-test only control group. The analysis in this study used the T Paired Test and Chi-square test.

**Results:** The results obtained were based on the T Paired Test, it was found that neutrophils (P = 0.98, α = 0.05; P> α; H0 was accepted / there was no difference) and lymphocytes (P = 0.002, α = 0.05; P <α; H0 is rejected / there is a difference). The result shows that there are differences between lymphocytes before and after treatment. Furthermore, based on the Chi-square test, the P-value before treatment between the control and intervention groups for IgM was 0.012 (α = 0.05; P <α; H0 was rejected / there was a difference) during the P-value after treatment between the two.

**Conclusion(s):** The conclusion shows differences in lymphocyte and IgM values before and after being given the treatment in this study.

# RESPIRATORY SYMPTOMS AND RISK OF TSP EXPOSURE AT PUBLIC TRANSPORT TERMINAL

Reny Indrayani1; Dwi Martiana Wati2

*1 Occupational Health and Safety Studies, Faculty of Public Health, Jember University, Jember, Indonesia*
*2 Biostatistics and Populations Studies, Faculty of Public Health, Jember University, Jember, Indonesia*

**Introduction:** Along with the progress of civilization, transportation plays an important role in advancing life. However, the growth of transportation has also brought an unfortunate impact on the community. One main part of the land transportation system is a public transport terminal which is common with total suspended particulate (TSP) as a risk agent for respiratory function. It may lead to an uncomfortable working environment, vision problems, poisoning, lung dysfunction and even cancer.

**Objective(s):** This study aimed to describe the possibility of risk cancer due to TSP exposure among public transport terminal workers in Jember using ARKL assessment (which is based on EPA) which is consisted of cancer and non-cancer risk.

**Methodology:** The study participants were 44 workers on terminal X. For assessing the respiratory symptom it used ARKL assessment based on EPA which is consisted of cancer and non-cancer risk.

**Results:** According to the assessment, most workers experienced respiratory symptoms and could be able to have cancer risk (shown by ECR >1). However, they were safe from non-cancer risk.

**Conclusion(s):** To conclude, TSP exposure seems to pose a potential risk of cancer. Therefore, it will be remarkably important to minimise the frequency of TSP exposure by evaluating working hours while ensuring the workers use a proper mask.

# SYSTEMATIC REVIEW ON THE PHARMACOLOGICAL EFFECTS OF ANNONA SQUAMOSA TO DIFFERENT SKIN CONDITIONS AND FACTORS CONTRIBUTING TO ITS ECONOMICAL RELEVANCE

Banta, Genevee 1; Ching, Johnny2

*1 College of Medicine-Microbiology and Parasitology Department, De La Salle Medical and Health Sciences Institute, Cavite, 2 University Research Office, De La Salle University- Dasmarinas, Cavite, Philippines*

**Introduction:** Skin infections are one of the common illnesses encountered worldwide but its treatment may be limited by the financial difficulties of affected individuals.

**Objective(s):** This systematic review aimed to discuss the phytochemical contents in *Annona squamosa* in treating skin conditions, and also the factors contributing to its economical relevance.

**Methodology:** The related journals were searched from the EBSCO and PubMed electronic databases.

**Results:** Several secondary metabolites were detected in *Annona squamosa* leaves than the other parts. Alkaloid, flavonoids and tannins are the phytochemical contents that are mostly detected in most of its parts. These secondary metabolites work against pathogens such as bacteria, fungi and ectoparasites. However, the application of synthetic drugs for Pediculosis have a rapid killing effect on the ectoparasites than *Annona squamosa* extract. Since its effectiveness is based on its natural content, there is a slower response to Annona squamosa extract. Aside from infectious skin conditions, Psoriasis may also respond to *Annona squamosa.* It inhibits the biomarker production of this non-infectious skin condition. Commercially-available medications are commonly given but traditional medicine is still being practised. *Annona squamosa* is widely available in the Philippines and can be easily prepared. It is also cheaper and has lesser side effects than synthetic drugs.

**Conclusion(s):** *Annona squamosa* may be used as an alternative treatment for skin conditions. Its availability, cost-effectiveness and safe use contribute in its economic use and relevance.

# COMMUNITY PHARMACIST PERCEPTION ON THE CONTEMPORARY PRACTICE AND CHANGES PRIOR TO COVID-19 PANDEMIC

Hermansyah, Andi1; Sukorini, Anila Impian1; Rahem, Abdul1

*1Department of Pharmacy Practice, Faculty of Pharmacy, Universitas Airlangga, Surabaya, Indonesia*

**Introduction:** The changing landscape of the healthcare sector, the increased societal demand and the rising healthcare and pharmaceuticals expenditure have been the key drivers for shifting community pharmacy practice in Indonesia prior to Covid-19 pandemic.

**Objective(s):** Therefore, this study aims to identify pharmacist perception towards contemporary practice and changes supporting innovation in community pharmacy.

**Methodology:** A nationwide survey using an online questionnaire was conducted between September 2018 and March 2019 to an accidental sample of 7,000 community pharmacists in Indonesia. Data collected included demographic information, pharmacist perception towards practice change, facilities and services supporting innovation in pharmacy. Data were entered into SPSS and descriptive statistics were reported.

**Results:** 1,952 pharmacists participated in all 34 provinces in Indonesia. Almost 70% of the respondents were optimistic that they are ready to face any changes in pharmacy practice. Majority of the respondents (more than 90%) believed that pharmacist has all the capacity, supports and potentials to practice within the changing healthcare landscape. However, respondents were not sure that some facilities (e.g. internet access and cashless payment) and services (e.g. public health pharmacy services) might support innovation and practice change in pharmacy.

**Conclusion(s):** This study was concluded nine months before the Covid-19 pandemic hardly hit Indonesia. In general, a community pharmacist in Indonesia had the confidence and strong belief for implementing practice change. Some ideas for improvement were planned despite the fact that investment for facilities and services has been lacking highlighting significant yet neglected challenges for change. The pandemic crisis might have a tremendous impact on community pharmacy leading to much different scenario for practice change.

# HEXANE EXTRACT OF *MELICOPE TRIPHYLLA* LEAVES AS A PROMISING SOURCE OF ANTIMALARIAL DRUG BASED ON INHIBITION OF PFMQO

A Widyawaruyanti1,2*, LA Mulya3, C Rahayu3, M Tanjung2,4, H Ilmi2, L Tumewu2, W Ekasari1,2, AF Hafid1,2

*1Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Airlangga, Surabaya, Indonesia*
*2Natural Product Medicine Research and Development, Institute of Tropical Disease, Universitas Airlangga, Surabaya, Indonesia*
*3Undergraduate student of Faculty of Pharmacy, Universitas Airlangga, Surabaya, Indonesia 4Faculty of Science and Technology, Universitas Airlangga, Surabaya, Indonesia*

*Introduction:*

**Introduction:** The alternative antimalarial drugs are an important requirement to overcome malarial problem worldwide. Melicope was one of the largest Genus which belong to Rutaceae family and several Melicope species were reported to have antimalarial activity. The chemotaxonomy approach was guided us to the potency of Melicope triphylla as an antimalarial source.

**Objective(s):** This study aims to obtain the antimalarial fraction from M. triphylla leaves based on inhibition of PfMQO: Plasmodium falciparum Malate Quinone Oxidoreductase, the mitochondrial P. falciparum enzyme.

**Methodology:** Melicope triphylla leaves was extracted gradually using hexane, dichloromethane and methanol as a solvent. The most potential extract was further fractionated by open column chromatography. Antimalarial activity of extracts and fractions were tested by cell-based assay against P.falciparum 3D7 strain and enzymatic assay on PfMQO.

**Results:** Antimalarial activity of hexane, dichloromethane and methanol extracts were showed to be active category against P.falciparum with Inhibitory Concentration 50% (IC50) value of 0.02 µg/ml, 0.08 µg/ml and 0.02 µg/ml respectively. Meanwhile, the highest inhibitory activity against PfMQO enzyme was hexane extract with an IC50 value of 7.49 µg/ml. The hexane extract was potential for further separation due to its antimalarial activity against both P.falciparum and PfMQO enzyme. Furthermore, it has dominant terpenoids content based on phytochemical screening. The fractionation of hexane extract was produced seven fractions, and fraction six (F-6) was performed inhibition against PfMQO enzyme with an IC50 value of 14.73 µg/ml.

**Conclusion(s):** Fraction six (F-6) of hexane extract from Melicope triphylla leaves was showed potential antimalarial activity. The dominant terpenoids content might take a role for its inhibition performance. The isolation and identification of active compounds were suggested to be conducted in the near future.

# EFFECT OF ALLOPURINOL ON URIC ACID LEVEL AND KIDNEY FUNCTION IN PEDIATRICS WITH TUMOR LYSIS SYNDROME (TLS) AND HIGH-RISK TLS

Yulistiani1*; Kharismawati M, Indira Dhany 1; Ugrasena, I Dewa Gede 2; Qibtiyah, Mariyatul 2

*1Faculty of Pharmacy, Airlangga University, Surabaya, Indonesia*
*2Dr. Soetomo Teaching Hospital, Surabaya, Indonesia*

**Introduction:** Tumor lysis syndrome (TLS) is a life-threatening oncologic emergency that occurs when cancer cells break down and release their intracellular contents into the bloodstream, such as uric acid which can cause hyperuricemia and risk towards acute kidney injury (AKI). The presence of TLS can increase mortality.

**Objective(s):** The study aimed to analyze the allopurinol effect on uric acid levels and kidney function in paediatrics with TLS and high-risk TLS.

**Methodology:** The study was conducted prospectively with a total sampling method from March to July 2020 (N=14). Inclusion criteria were all children patients with haematological malignancy who have TLS or high-risk TLS at the Pediatric Ward of Dr Soetomo Teaching Hospital. Allopurinol dose of 10 mg/kg/day was administered in 2-3 divided doses. The serum levels of uric acid, creatinine, and BUN were measured pre and post method after allopurinol administration. These parameters were observed for 15 days. Hyperhydration was given in sufficient quantity according to the guideline.

**Results:** The results showed that the serum levels of the uric acid, creatinine, and BUN in TLS patients fluctuated over the normal levels. There were significant differences in uric acid and BUN values before and after allopurinol administration ($p<0.05$), but the creatinine value was not a significant difference in TLS ($p>0.05$). Percentage of patients achieving normal levels of uric acid, creatinine, and BUN on the 6th day were 25%, 0%, and 50%, respectively. The massive release of uric acid had occurred as a result of disease progression and cytostatics use. It could lead to hyperuricemia and increase the risk of AKI. At high-risk TLS, allopurinol could prevent uric acid formation and maintain kidney function within the relatively normal range. There were significant differences in all parameters including uric acid, BUN and creatinine values before and after allopurinol administration ($p<0.05$). Percentage of patients achieving the normal serum levels of uric acid, creatinine, and BUN on the 6th day were 67%, 100%, and 67%, respectively.

**Conclusion(s):** Allopurinol dose of 10 mg/kg/day in 2-3 divided doses was inadequate in reducing uric acid levels at TLS patients. Rasburicase is preferred in this case.

# THE N-(P-TOLUYLCARBAMOYL) BENZAMIDE AS NOVEL CYTOTOXIC AGENT.

Bambang Tri Purwanto1, Siswandono1, Nuzul WD1, Suko Hardjono1,Tri Widiandany1

*1 Departement Pharmaceutical Chemistry Faculty of Pharmacy Airlangga University, Surabaya, East Java, Indonesia*

**Introduction:** The development of urea derivative compounds as anticancer agents continues because many significant results have been obtained. N- (p-toluylcarbamoyl) benzamide is a new urea derivative that is thought to have high cytotoxic activity when compared to hydroxyurea.

**Objective(s):** Obtaining a new compound N- (p-toluylcarbamoyl) benzamide from a synthesis reaction which has cytotoxic activity against HeLa cell.

**Methodology:** The compound N- (p-toluylcarbamoyl) benzamide was obtained from the synthesis of the Phenylurea compound with 4-methylbenzoylchloride compound using the Schotten Baumann method, which after being purified, then identified its structure using several instruments. The cytotoxic test was carried out by the MTT assays method using HeLa cells.

**Results:** The compound N- (p-toluylcarbamoyl) benzamide was obtained as much as 42%, in the form of white crystals, and its cytotoxic activity test IC 50: 6.66mM was higher than the hydroxyurea compound IC50: 99.1 mM. This is because in the compound N- (p-toluylcarbamoyl) benzamide, the values of ClogP and CMR are higher so that penetration into the biological membrane is easier and the bond harmony with the receptor is stronger.

**Conclusion(s):** The compound N- (p-toluylcarbamoyl) benzamide has activity as a cytotoxic agent.

# CHOLINESTERASE INHIBITOR AND ANTIOXIDANT ACTIVITIES OF *PTERNANDRA GALEATA* FOR ALZHEIMER'S DISEASE

Suciati1,2; Dwiki Inayah2; Aty Widyawaruyanti1,2.

*1 Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Universitas Airlangga, Surabaya 60115, East Java, Indonesia.*

*Center for Natural Product Medicine Research and Development, Institute of Tropical Diseases, Universitas Airlangga, Surabaya, 60115, East Java, Indonesia.*

**Introduction:** Alzheimer's disease (AD) is a neurodegenerative disorder, which is the most common cause of dementia. The ageing population means that the number of people suffering from AD is expected to increase each year if there is no effective treatment found. One of the strategies for the treatment of AD is the use of cholinesterase inhibitors and antioxidants.

**Objective(s):** The aims of this study were to investigate the acetylcholinesterase inhibitory activity as well as to evaluate the antioxidant activity of the ethanolic extract of the leaves of Pternandra galeata. The total phenolic and flavonoid contents in the sample were also determined.

**Methodology:** The acetylcholinesterase inhibitory assays were performed by using Ellmann's method. Two different methods were used to evaluate the antioxidant activity by 2,2-diphenyl-1-picryl hydrazyl (DPPH) and 2,2'-azinobis-(3-ethylbenzothiazoline-6-sulfonic acid) (ABTS) assays. The total flavonoid content of the extracts was determined by colourimetric method using quercetin as standard, while total phenolic contents were determined by the Folin-Ciocalteu method by employing gallic acid as a reference.

**Results:** The ethanolic extract of the leaves of P. galeata inhibited the AChE enzyme with IC50 value of 74.62 ± 0.89 µg/mL. The sample exhibited antioxidant activity in the DPPH assay with IC50 value of 40.44 ± 0.26 µg/mL and 15.37 ± 0.30µg/mL in the ABTS scavenging assay. The total flavonoid content in the extract was 195.07 mg QE/g extract, while the total phenolic content was 164.71 ± 3.33 mg GAE/g extract.

**Conclusion(s):** The ethanolic extract of the leaves of Pternandra galeata can be a promising cholinesterase inhibitor and antioxidant for the treatment of Alzheimer's disease.

# TINFLUENCE OF BINDER ADDITION METHOD ON THE DISSOLUTION OF TABLET CONTAINING DRIED HESPERETIN NANOSUSPENSIONITLE

Lestari, Maria L.A.D1; Prisvalina, Ridea1; Setyawan, Dwi1.

*1 Department of Pharmaceutics, Faculty of Pharmacy, University Airlangga, Surabaya, Indonesia*

**Introduction:** Nanosuspension has been widely known as one of the chosen methods to increase the dissolution rate of BCS II drugs. The drug compound is stabilized in stabilizing agent and nanosized to produce nanosuspension. Nevertheless, nanosuspension as a liquid form is less stable during storage hence conversion to dry form is preferable. Wet granulation using nanosuspension as a granulating liquid is considered as an alternative method to solidify nanosuspension. In the wet granulation, the use of binder is important. However, when the binder is also used as a stabilizing agent, it is often that the particle size cannot be reduced to a nanometer. Therefore, the addition of binder is separated from the nanosuspension process.

**Objective(s):** This research was aimed to investigate the influence of PVP addition as a binder in dry and wet method on the granulation and tabletting of hesperetin nanosuspension.

**Methodology:** Hesperetin (HPT) nanosuspension (95.4 % w/w HPT and 4.5% w/w SDS solution) nanosized using yttrium-stabilized zirconium beads 0.5 mm. 5% w/w PVP K-30 was dissolved in HPT nanosuspension then used to granulate powder mixture of 50% w/w lactose, 50% w/w MCC PH101, and 2% sodium starch glycolate. For the dry method, 5% w/w PVP K-30 was mixed with powder mixture. Wet granules were dried at 70°C, mixed with 2% w/w MgS then compacted to produce 1000 mg tablet. Release study was done in buffer phosphate pH 6.8 containing Tween®80 1% w/v.

**Results:** HPT nanosuspension released 100% of HPT within 15 min. HPT nanosuspension tablet released HPT in 90 min and 180 min for wet and dry method, consecutively. Both methods produced tablets that disintegrated within 2 min. Tablet hardness was 9.44 kg for tablet prepared with a wet method and 6.32 kg for dry method.

**Conclusion(s):** Wet addition of PVP released hesperetin faster than the dry method. Nevertheless, nanosuspension release HPT faster than its dried form.

IHEC 2020 HEALTHCARE IN PANDEMIC ERA:"THE NEW NORMS"

# THE CURSE OF THE KING: A CASE REPORT

Khairullah Anuar1,2

*1 Unit Otorhinolaryngology, Department of Surgery, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan Malaysia*
*2 Department of Otorhinolaryngology, Nilai Medical Centre, Nilai, Negeri Sembilan ,Malaysia*

**Introduction:** Durian is known as the king of fruits. Its seed is an uncommon foreign body impaction on the larynx.

**Case Presentation:** A 23-year-old male alleged that durian seed stuck in the throat while eating. He was having difficulty breathing with bouts of coughing. He had a failed Heimlich manoeuvre and rushed to the emergency department and subsequently the seed expelled after bouts of coughing. Flexible nasopharyngolaryngoscopy was done. The endoscopic findings showed the arytenoids were swollen, the erythematous laryngeal surface of the epiglottis, inflamed inner surface of right anterior and left true chords, ventricles and the false chords. Close observation with intravenous dexamethasone and an intravenous antibiotic is paramount in managing the patient.

**Conclusion(s):** Durian seed impaction on the larynx is rare. This case report showed the function of the larynx as the protective or the watchdog for any foreign body. The findings from the flexible endoscopy highly suggestive the lodgement of the foreign body on the laryngeal inlet and the appropriate treatment are important in managing such cases.

# EVALUATION OF REAL-TIME POLYMERASE CHAIN REACTION (RT-QPCR) FOR DETECTION OF RESPIRATORY VIRUSES

Ali, Umi Kalsom1*; Zainal, Marina1; Zainol, Zetti1; Tai Chian Wern2, Tang Swee Fong2, Lee Pei Chuen2 , Wong, Kon Ken1

*1 Department of Microbiology & Immunology, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre (UKMMC), Cheras, Kuala Lumpur, Malaysia*

*2 Department of Paediatric, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre (UKMMC), Cheras, Kuala Lumpur, Malaysia*

**Introduction:** Acute respiratory infection (ARI) contributes to significant mortality and morbidity worldwide and usually caused by a wide range of respiratory pathogens. To distinguish them is difficult without laboratory diagnosis. The conventional methods have several limitations, therefore, multiplex polymerase chain reaction (rt-qPCR) has become widely available to improve ARI diagnosis. This study aims to describe the performance of QIAstat-Dx® Respiratory Panel V2 (RP) and RespiFinder® 2SMART (PathoFinder) assays for respiratory pathogens detection.

**Objective(s):** To evaluate the performance of two PCR assays, QIAstat-Dx® Respiratory Panel (RP) (QIAstat RP, Qiagen, Hilden, Germany) and RespiFinder 2SMART (PathoFinder) in detecting respiratory pathogens in respiratory samples received in UKMMC.

**Methodology:** Nasopharyngeal swab (NPS) were collected from hospitalised children aged 1 month to 10 years old who presented with ARI at the University Kebangsaan Malaysia Medical Center (UKMMC) during a one-year period. The two rt-qPCR assays were conducted in parallel.

**Results:** From the 110 NPS, 97 (88.2%) were positive by QIAstat-Dx RP and 86 (78.2%) by RespiFinder assay. The overall agreement between QIAstat-Dx RP and RespiFinder assays was substantial (kappa value: 0.778) with an excellent concordance rate of 96.7%. Using both assays, hRV/EV, INF A/H1N1 and RSV were the most common pathogens detected. Influenza A/H1N1 infection was significantly seen higher in older children (age group > 60 months old) (53.3%, p-value < 0.05). Meanwhile, RSV and hRV/EV infection were seen among below one-year-old children. Co-infections by two to four pathogens were detected in 17 (17.5%) samples by QIAstat-Dx RP and 12 (14%) samples by RespiFinder, mainly involving hRV/EV. Bacterial detection was observed only in 5 (4.5%) and 6 (5.4%) samples by QIAstat-Dx RP and RespiFinder, respectively, with Mycoplasma pneumoniae the most common detection.

**Conclusion(s):** The overall performance of the two rt-qPCR assays was comparable and showed excellent agreement. Both assays detected various clinically important respiratory pathogens in a single test with simultaneous multiple infection detection. The use of rt-qPCR as a routine diagnostic test can improve ARI diagnosis and patient care.

POSTER PRESENTATION: PP2.66

# ESTIMATION OF ANCESTRY USING MANDIBULAR MORPHOLOGY BY CT SCAN: A GEOMETRIC MORPHOMETRIC STUDY

Aspalilah Alias1,2, AbdelNasser Ibrahim2,3, Siti Noorain Abu Bakar2, Nurliza Abdullah4, Helmee Mohammad Noor5, Iman Yi Liao6, Helmi Mohd Hadi Pritam7, Mohamed Swarhib Shafie2, Fazalina Mohd Fadzilah8, Faridah Mohd Nor2

*1Department of Basic Sciences and Oral Biology, Faculty of Dentistry, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia.*
*2Forensic Unit, Department of Pathology, Faculty of Medicine, Universiti Kebangsaan Malaysia, Malaysia.*
*3Department of Forensic Medicine and Clinical Toxicology, Faculty of Medicine, Al Azhar University, Cairo, Egypt.*
*4Institut Perubatan Forensik Negara, Hospital Kuala Lumpur, 50586 Jalan Pahang, Kuala Lumpur, Malaysia.*
*5Department of Radiology, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia.*
*6School of Computer Science, University of Nottingham, Malaysia.*
*7Pusat Pengajian Sains Kesihatan, Universiti Sains Malaysia, Kelantan.*
*8Department of Radiology, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia.*

**Introduction:** Forensic anthropologists have often encountered problems in ancestry estimation in unknown skeletonized remains. Hence, anthropologists have classified human population into three broad categories i.e. Caucasoid, Negroid and Mongoloid. Each category has its own special characteristics.

**Objective(s):** The aim of this research study was to investigate the morphological variation in the mandibles of three different ancestries i.e. Malay, Chinese and Indian of Malaysian adults.

**Methodology:** The retrospective study was performed on 447 specimens of Malaysian adults (150 Malays, 137 Chinese and 160 Indians) by CT scan. There were 24 landmarks applied to CT scan images by Stratovan software. Multiple statistical shape and size analyses were conducted by geometric morphometric technique, which included generalized procrustes analysis (GPA), procrustes ANOVA, principal component analysis (PCA), discriminant function analysis (DFA), MANOVA using MorphoJ, PAST and SPSS softwares. The IDAV landmark editor software was used for visualizing the mandibular shape variation in different ancestries.

**Results:** Results showed that the first six principal components exhibited 61% variation in mandibular shapes. By MANOVA, results displayed significant effects of ancestries on PC1 and PC2 ($p < 0.01$). The CVA graph showed that the Malays were located between the Chinese and Indians with prominent variations at several landmarks i.e. infradental, mandibular symphysis, pogonion, anterior ramus and condylar process. On cross-validation, the mandible was 61.1% correctly classified by ancestry.

**Conclusion(s):** This project has compiled a population database on CT scan images of mandible by geometric morphometric technique that will help in future victim identification in the Malaysian population.

# THE BATTLE AGAINST COVID-19: INCORPORATING LEGAL MEASURES

**Muda@Ismail, Farah Salwani**

*Faculty of Syariah & Law, Universiti Sains Islam Malaysia, 71700 Nilai, Malaysia*

**Introduction:** Covid-19 has dramatically caused global chaos. The pandemic has swiftly spread worldwide due to its vast transmission level. Emerging from China by the end of 2019, now Malaysia too is seriously affected with Covid-19, causing many lives lost while plenty more, still fighting to survive. By virtue of the Prevention and Control of Infectious Diseases Act 1988, the Malaysian government has taken a few initiatives including alerting multiple agencies like the police, customs, and immigration to collaborate, tightening the country's border, implementing surveillance and quarantine orders, and introducing the Movement Control Orders (MCO) as effective mechanisms adopted to control the pandemic. Nevertheless, the issue that arises is, are these measures valid to be carried out by our government?

**Objective(s):** This poster aims to illustrate the validity of such measures implemented in Malaysia.

**Methodology:** Through library and internet research of relevant sources.

**Results:** Findings show that all measures taken are clearly embedded in the Prevention and Control Of Infectious Diseases Act 1998. Section 5 of the Act states how multiple agencies must collaborate in controlling the spreading of any infectious diseases, including Covid-19. By virtue of Section 6 of the Act, Malaysia can close or tighten its borders to non-Malaysians. The surveillance order spelt out in Section 15 of the Act ensures any contact to be put under observation or surveillance until he brings no more harm to the public, while Section 14 provides that any person affected may be removed to a quarantine station for treatment.

**Conclusion(s):** To conclude, there is a need to implement legal measures for effective control of Covid-19, since any rejection towards it, is an offence punishable under the Act.

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