

PRESCRIPTION

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CHEMOPREVENTIVE ROLE OF LACTIC ACID BACTERIA: INSIGHTS FROM A UNIQUE STRAIN ISOLATED FROM FERMENTED SOYBEAN

Colorectal cancer (CRC), which is characterised by abnormal growth of normal cells in the colon lining or rectum, is currently ranked second in terms of mortality rate, accounting for approximately 881,000 deaths of all cancer patients worldwide with over 1.8 million new cases in 2018 (Baidoun et al., 2021). The majority of CRC cases are sporadic (Yamagishi et al., 2016). Sporadic CRC, being intrinsically non-hereditary, is associated with multi-factors such as high intake of red meat, being overweight and the lack of fibres in diet (Baena & Salinas, 2015; Hamza et al., 2017; Vipperla & O'Keefe, 2016). The actual cause of CRC hitherto remains poorly understood. Nevertheless, imbalanced gut microbiota and intestinal metabolome are increasingly linked to CRC (Ciernikova et al., 2015; Drewes et al., 2016). In fact, there is now growing evidence indicating that restoration of gut microbiota could potentially prevent CRC (Arkan, 2017; Lin et al., 2018; Seidel et al., 2017). Also, the limitations of conventional chemotherapy and targeted therapy raise the need for preventive strategies against CRC through diet modifications (Arkan, 2017).

In this regard, probiotics are increasingly recognised for their roles in preventing CRC in a strain-dependent manner (Chong, 2014; de Andrade Calaca et al., 2017; Dos Reis et al., 2017). Probiotics were reported to halt proliferation of cancer cells, promote apoptosis as well as inhibit angiogenesis (Khoury et al., 2014; Nada et al., 2020). As part of the effort in identifying superior probiotic strains with health promoting effects, the Collaborative Drug Discovery Research (CDDR) Group, Faculty of Pharmacy, Universiti Teknologi MARA (UiTM) has assessed the chemopreventive potential of locally isolated lactic acid bacteria (LAB) with probiotic characteristics (Fareez et al., 2022; Mohd Bajuri et al., 2023; Ramasamy et al., 2012). To this end, we tested the LAB-derived cell free supernatant against CT26, a mouse colon carcinoma cell line. Our in vitro findings indicated cytotoxic and anti-angiogenic potentials of *Lactiplantibacillus plantarum* (formerly known as *Lactobacillus plantarum*) LAB12 (isolated from fermented soybean). Immunocytostaining indicated LAB12-induced downregulation of vascular endothelial growth factor (VEGF) and upregulation of thrombospondin (TSP-1). High performance liquid chromatography (HPLC) found LAB12 to produce beneficial short chain fatty acids (SCFA). We also validated the chemopreventive potentials of microencapsulated *L. plantarum* LAB12 against NU/NU nude mice bearing orthotopic transplanted CT-26 CRC (female mice; 4–6 weeks old; 20–22 g; n = 6/group). Orthotopic mice pre-supplemented with microencapsulated *L. plantarum* LAB12 (10 log CFU kg⁻¹ BW for 11 weeks) were presented with significantly reduced tumour volume and weight when compared to control. In line with the in vitro findings, the in vivo chemopreventive effect was found to be attributed to apoptosis and anti-angiogenesis. Subsequent protein expression studies further indicated that the beneficial effects could be mediated, at least in part, through upregulation of tumour suppressor p53 and pro-apoptotic caspase-3 as well as downregulation of pro-inflammatory COX-2, pro-angiogenic VEGF and PECAM-1. Our present findings strongly implied the chemopreventive potential of LAB12, thus warranting further investigations at clinical settings. The significant output from our study has also yielded important insights into future efforts of incorporating natural probiotics into food and nutraceutical products that can be potentially used for prevention against CRC.

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Collaborative Drug Discovery Research (CDDR) Group
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Questions

Let's dive deeper into the article and evaluate your comprehension. We have 3 questions for you [here](#).

PROMOTING THE SAFE USE OF MEDICINE AMONG UNIVERSITY STUDENTS:

Impact of Educational Intervention on Awareness and Knowledge



The Know Your Medicine programme is introduced to support the fourth component of the Malaysian National Medicines Policy which is the quality use of medicines. The main objective of this programme is to ensure that medicines are used wisely, appropriately, safely and cost-effectively for better health outcomes. Multiple strategies are used to achieve the objectives, among them are education, training and providing accurate medicine information to the consumers (Ministry of Health Malaysia, 2019). A previous study reported a lack of knowledge on medicines use among the general public in Malaysia (Dawood et.al, 2019). Currently, there is limited documentation on awareness and knowledge of the safe use of medicine especially among university students.

This program aims to raise awareness and knowledge on the importance of the safe use of medicine (including supplements) and the health implications of using dangerous drugs in university students. The objective of this program is to encourage the involvement of university students to actively engage in promoting the safe use of medicines. Through this program, the dissemination of information on medicines and health issues may contribute to behavioural changes in the community.

Studies on attitudes and awareness of the safe use of medicines and the implications of inappropriate use of medicines gave mixed results (Abdullah, 2022; Jami, 2023; Lee, 2021; Obi, 2023). Educational intervention on the responsible use of medicine has been shown to be useful to the public (Guanghui, 2023). With this educational intervention programme, it is hoped that participants will be mindful of safe drug use and at the same time be advocate for change in rational drug use among their families and peers. The aim of this study is to assess the impact of educational intervention on the awareness and knowledge levels of university students on the safe use of medicines. The findings will provide valuable insights for developing targeted educational interventions to promote safe medication practices among university students.

The programme was conducted on 28 Oct 2023 in conjunction with the World Pharmacists Day celebration at Rafflesia College. The programme's objective is to provide exposure and garner interest in the awareness and knowledge of safe medicine usage for university students. Respondents participated in five booths related to the awareness and knowledge of the safe use of medicines. The booths include topics of managing your medicine, medicine adherence, medicine used in children, 5R use of medicines and adverse effects of medicine. At the end of the activities, participants were requested to answer a survey on their pre- and post-knowledge to reflect their understanding of the safe use of medicines. A total of 2512 participants responded. Generally, the participants' responses showed an increase from pre- to post-on most items of awareness and knowledge of the safe use of medicines. The details of the survey will be published in a journal later.

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EMPOWERING SCHOLARLY PUBLISHING AT FACULTY OF PHARMACY UiTM WITH THE WRITE2GETHER INITIATIVE



The Faculty of Pharmacy at UiTM has successfully concluded a series of Write2Gether workshops which took place on the 21st of August, the 13th of September, and the 6th of October 2023. These workshops were organised as part of the faculty's strategic initiative named PROLIFIC (PROMoting impactful pubLLications From academicS) with the primary objective of cultivating a scholarly culture of publishing research papers among the esteemed faculty's lecturers.

The Write2Gether workshops were conducted with the purpose of augmenting the number of high-impact publications authored by the esteemed lecturers. The faculty firmly believes that by actively encouraging its lecturers to engage in more frequent publishing endeavours, it can significantly contribute to the advancement of pharmaceutical sciences, particularly in the field of pharmacy and pharmacology, and further enhance the esteemed reputation of the Faculty of Pharmacy at UiTM as a premier institution in this field. Additionally, a key objective of these workshops was to foster an increase in the number of corresponding authors among the faculty's lecturers.

A total of thirty-three lecturers actively participated in the workshop series, benefiting from the guidance and expertise of thirteen highly experienced mentors. During the workshops, the participants received one-on-one mentoring to enhance the quality of their manuscript. The workshops provided an opportunity for the lecturers to learn about various aspects of academic publishing, including how to write effectively for academic journals, comprehending the intricacies of the peer review process, and ethical considerations in publishing.





The sessions were interactive, allowing participants to share their experiences and learn from each other. The response from the participants was overwhelmingly positive. Many expressed that they found the workshops informative and beneficial for their professional development. They also appreciated the opportunity to network with their colleagues and

discuss common challenges and strategies in academic publishing.

In conclusion, the Write2Gether workshops have been successful in achieving their objectives. The Faculty of Pharmacy holds unwavering confidence that this initiative will yield a significant upsurge in the quantity of high-impact publications authored by its esteemed lecturers, thereby fortifying its standing as a preeminent institution in the field of pharmaceutical sciences. Demonstrating its steadfast commitment to cultivating a vibrant publishing culture, the faculty intends to sustain the provision of these workshops in the foreseeable future. By doing so, it aims to nurture a continuous cycle of scholarly excellence, empowering its faculty members



to make enduring contributions to the advancement of pharmaceutical knowledge and solidify their position as frontrunners in the academic landscape.

**Mdm. Nik Ateerah Rasheeda Mohd Rocky, Dr Aisyah Hasyila Jahidin,
Dr. Gurmeet Kaur Surindar Singh**

Faculty of Pharmacy, UiTM

A Visit from Fakultas Farmasi &
Sains Universitas Muhammadiyah
Prof. Dr. Hamka, Indonesia

Fostering Stronger Collaborative Ties

The Faculty of Pharmacy, Universiti Teknologi MARA (UiTM) Puncak Alam, warmly received a delegation from Fakultas Farmasi and Sains Universitas Muhammadiyah, Prof. Dr. Hamka (UHAMKA), Indonesia, on October 24, 2023. This visit marked a significant milestone in the renewal of the Memorandum of Understanding (MoU) between the two institutions, focusing on academic, research, and cultural exchange. The visit not only reaffirmed the commitment to academic cooperation but also emphasised the shared vision of advancing pharmaceutical education and research.



The faculty members and representatives of UiTM warmly welcomed the delegation from Fakultas Farmasi and Sains Universitas Muhammadiyah, Prof. Dr. Hamka, Indonesia. Dr. apt. Fith Khaira Nursal, the Deputy Dean of Academics; Mr. Kriana Efendi, the Deputy Dean of Student Affairs; and Ms. Yudi Srifiana, a senior lecturer, represented the UHAMKA delegates. Upon their arrival at the Faculty of Pharmacy, Puncak Alam Campus, Fakultas Farmasi, and Sains Universitas Muhammadiyah, Prof. Dr. Hamka, Indonesia delegation were warmly received by Dr. Norkasih Ibrahim, Deputy Dean of Industry, Community, and Alumni Network (ICAN), and Dr. Khuriah Abdul Hamid, creating a welcoming atmosphere for their visit.

The visit commenced with a productive 2-hour collaboration meeting held during lunch, which centred around exploring potential collaborative activities for the upcoming year of 2024. The discussions revolved around areas such as staff and student mobility, collaborative research initiatives, co-supervision of postgraduate research, and the possibility of joint publications. Following the meeting, the distinguished delegates had the opportunity to meet and exchange pleasantries with Professor Dato' Dr. Abu Bakar Abdul Majeed, the esteemed Dean of the Faculty of Pharmacy UiTM. The following day, a detailed discussion took place regarding research opportunities for potential postgraduate candidates. This discussion showcased the commitment of both faculties to promote academic excellence and nurture the growth of aspiring researchers. The visit concluded with a tour of UiTM's state-of-the-art facilities and laboratories, providing the delegates with a comprehensive understanding of the faculty's resources. This immersive experience demonstrated UiTM's dedication to providing a welcoming learning environment and sparked ideas for future collaborative projects.

Dr. Norkasih Ibrahim, Dr. Gurmeet Kaur Surindar Singh

Faculty of Pharmacy, UiTM

UiTM-UNPAK PROGRAMME

Bridging Cultures and Fostering Sustainable Community Development with International Community Service UiTM-UNPAK programme

In an era of global interconnectivity, the International Community Service UiTM-UNPAK programme stands as an example of unity in diversity and a commitment to the well-being of communities, with a focus on Desa Pagelaran, Indonesia. This programme is a testament to the power of international collaboration, orchestrated by Universitas Pakuan (UNPAK), Bogor, and supported by the Faculty of Pharmacy, Universiti Teknologi MARA (UiTM), Puncak Alam Campus, Malaysia. Together, they have created a platform for students from different cultural backgrounds to come together and work towards a common goal.



The programme unfolded over several days, encompassing a diverse array of activities that aimed to forge connections between students from different cultural backgrounds. Beyond the goal of promoting cross-cultural cooperation, the programme's core objectives included a strong commitment to the welfare and needs of Desa Pagelaran's residents. The students' hands-on involvement in various projects was a testament to their dedication. One notable undertaking involved the creation of candied nutmeg (*Myristica fragrans*), a process that transformed the aromatic nutmeg fruit into delectable sweets. Alongside this, they crafted a health drink using organic ingredients such as ginger, honey, and lemongrass. These projects, rooted in the ingenious utilisation of natural resources, showcased the students' creativity and resourcefulness.

The programme's impact extended beyond mere product creation. The students assumed the role of educators, offering detailed explanations of the health benefits inherent in the beverages they crafted. Their efforts were instrumental in ensuring that the residents of Desa Pagelaran recognised the positive effects that can result from the consumption of these drinks, thereby increasing awareness of the importance of a healthy diet. Moreover, the students did not stop at sharing knowledge; they also taught the local community how to replicate these beverages at home. Through comprehensive guidance on ingredient selection, preparation techniques, and proper storage, they empowered the villagers to generate additional income for themselves.

The ripple effect of this initiative reverberated through the local economy. Village residents, now well-versed in producing organic beverages, found new avenues to market their products. The residents' newly acquired skills drove this economic growth, which benefited both individuals and the region. On a larger scale, the programme's emphasis on organic ingredients in beverage production held the potential to transform the pharmaceutical industry. By encouraging the use of natural resources, the programme unlocked opportunities for the development of innovative products and the enhancement of existing ones, thus benefiting the industry at large.

In conclusion, the International Community Service UiTM-UNPAK programme illustrates the boundless potential of cross-cultural collaboration and community service. It serves as a beacon of unity, cultural exchange, and skill development, with the added significance of being a collaborative effort between Universitas Pakuan and the UiTM Faculty of Pharmacy. As it continues to evolve and fulfil its mission, the programme is positioned to make an even greater impact in the future, fostering sustainable development and leaving an indelible mark on the Desa Pagelaran community and beyond.



Mr. Muhammad 'Izzuddin Zamery
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A Global Confluence of Educational Innovation

On November 8th and 9th, 2023, the Universiti Pendidikan Sultan Idris (UPSI) hosted the much-anticipated International Education Innovation Expo 2023 or also known as Edu@Innovate, which highlights innovations related to educational research. This event garnered a diverse gathering of participants from various countries including Japan, Indonesia, and China, and a total of 10 contingents were selected to represent Universiti Teknologi MARA (UiTM) this time around. This includes one team from the Faculty of Pharmacy, led by Dr. Hisyam bin Abdul Hamid.

This esteemed event, encompassing four distinct categories - Academics, Professionals and Industry Players, School Teachers (secondary and primary), Higher Institution Graduate Students, and Higher Institution Postgraduate Students - served as a melting pot of innovative ideas and collaborative ventures in education. By highlighting 10 clusters which are: Pedagogy and Curriculum, Assessment and Evaluation, Educational Organisation and Leadership, Early Childhood Learning, Learning in Higher Education, Adult, Community, and Professional Learning, Learner Diversity and Identities, Technologies in Learning, Literacies Learning and Science, Mathematics and Technology Learning, this event managed to attract more than 300 groups participating in the competition.

However, amidst the vast number of competitors, Dr. Hisyam's team, representing the Faculty of Pharmacy UiTM stood tall among the Academics, Professionals, and Industry Players category with their product called STEMina: The Banana Soft Pith Fiber-Based Chocolate Cookies, Dr. Hisyam's team, representing the Faculty of Pharmacy UiTM, With the support from the team members, Dr. Noreen Husain, Dr. Khuriah Abdul Hamid, Dr. Nadia Jalaludin, Dr. Maziana Mahamood and Cik Suhaidah Mohd Jofry, the team managed to capture the judges' attention thus clinching the Silver Award.



What sets this project apart is its unique, marketable product that transcends age, gender, and race. By adding banana soft pith as an ingredient for the cookies, it provided the dietary fibre needed, while still maintaining the good taste of a chocolate chip cookie. This product has already been awarded Gold Award at the Faculty of Pharmacy's Invention, Innovation and Design (PHARM-IIDEx) competition in 2022 as well as at the UiTM's Invention, Innovation and Design Exposition in 2022 which is a testament to its immense marketable potential.

In a nutshell, Edu@Innovate 2023 is not just an event but it acts as a testament to the collective dedication towards advancing education through innovation. It was a great pleasure for the team to be representing UiTM at such an esteemed event.

Dr. Nadia Jalaludin
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Telepharmacy Internship Training to Empower Future Pharmacists and Healthcare Professionals

The Faculty of Pharmacy, Universiti Teknologi MARA (UiTM), organised a telepharmacy internship training session on the 16th and 23rd of October 2023. This programme held at the Telepharmacy Laboratory at Level 4, FF3 Building, UiTM Puncak Alam, facilitated by six clinical pharmacy lecturers, offered an unparalleled learning experience for 79 students from both pharmacy and allied health sciences at San Pedro College (SPC), Davao, Philippines.



The internship was enriched with hands-on experiences, allowing students to engage in telepharmacy practices under the guidance and mentorship of seven clinical instructors from SPC. Students actively participated in simulated patient interviews via teleconferencing. They skillfully navigated through taking medical and medication histories, both of which are essential aspects of pharmaceutical care.

The clinical pharmacy lecturers assumed the roles of patients and prescribers during this internship. This simulation provided students with a real-life scenario where they interacted with 'patients' and formulated recommendations for 'prescribers.' Following the history-taking process, the students collaborated within their groups to identify pharmaceutical care issues and propose suitable recommendations for the 'patients.'

The collaborative and interdisciplinary nature of this training not only provided an insight into the intricacies of telepharmacy but also emphasised the importance of teamwork in healthcare. Students had the opportunity to appreciate the challenges posed by telepharmacy, understand its complexities, and recognise the potential benefits it offers in extending healthcare services to a wider population.



The feedback received from the participants resonated with their deep appreciation for the training, emphasising their satisfaction in collaborating with diverse interdisciplinary groups and gaining valuable hands-on experience in telepharmacy. This innovative programme not only expands the aspiring pharmacists and healthcare professionals' knowledge base but also fortifies their grasp on the critical responsibilities they will undertake in their future roles. The impact of this immersive experience is set to shape a new generation of highly skilled and knowledgeable healthcare professionals, ready to navigate the complexities of the modern healthcare landscape. This experience serves as a crucial steppingstone in cultivating a cohort of skilled, knowledgeable, and adaptable healthcare professionals, empowering them to adeptly navigate the intricacies of modern healthcare systems.

This internship has laid the groundwork for future collaborative undertakings. The dedication and passion displayed by both the students and faculty reflect a shared commitment to advancing education and practical experiences in the field of healthcare. With great enthusiasm, we eagerly anticipate the myriad of possibilities that await us and are truly excited about the potential for future collaborations between our esteemed institutions.



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STEAM AND INNOVATION FAIR (STEMIF) AT SMK RAWANG

On September 6–7, 2023, the Faculty of Pharmacy, UiTM Puncak Alam had once again participated in the STEAM and INNOVATION FAIR (STEMIF) at Sekolah Menengah Kebangsaan (SMK) Rawang, Selangor. The national-level programme, held at the school's Dewan Angsana was organised by the Office of Industry, Community, and Alumni Network (ICAN), UiTM with collaboration from the school's management and personnel. The programme also received participation from other UiTM strategic partners and faculties, such as the Faculty of Health Sciences and College of Engineering, as well as agencies and private entities such as Majlis Rekabentuk Malaysia, PERKESO, al-Ikhsan Sports Sdn. Bhd., Shah Alam-based NextGen Makers Robotic Academy, and many others. The fair was held with the aim of nurturing interest in science, technology, engineering, arts, and mathematics (STEAM) subjects, developing critical thinking skills, promoting creativity, and encouraging future enrollment in the STEAM field. It also provided unique opportunities for interactive learning among students through arranged programmes such as career talks, science workshops, high-tech product showcases, and fun competitions.

One of the faculty's delegations was a team led by Mdm. Nor Zaleha Ishak and comprised of staff from the Department of Pharmaceutics. The team set up a Do-It-Yourself (DIY) soap-making booth, which allows visitors to make their own customised soap in a more practical and safer environment by excluding the need for hazardous materials. The activity also stimulates participants' creativity through experimenting with different fragrances and colours for their custom-made soaps. The team created an engaging and entertaining experience by challenging the visitors with spontaneous quizzes to provoke their curiosity and thinking skills, such as measures to expedite the melting of soap base bars and proper ways of handling laboratory glassware. Similarly, the team received many questions on the relationship of the booth's activity with the Faculty of Pharmacy, to which the team gladly explained the invention of pharmaceutical products and consumer safety.



Another faculty's delegation, MAKERLAB UiTM, led by Dr. Siti Azma Jusof, exhibited their 3-D modelling printer during the fair. Assisted with the help of postgraduate students and interns from other universities, the booth showcased printed products designed by UiTM students and personnel previously attached to the lab. The booth's visitors were briefed on the process of 3D printing, from sketching and designing using its software to producing the final construct. In addition, the faculty was also represented by the Deputy Dean for Academic Affairs, Dr. Mohd Shahezwan Abd Wahab, who delivered an illuminating career talk to the students and attendees alike. Dr. Shahezwan delivered an engaging and enthusiastic talk, aiming to inspire the students to pursue pharmacy as their future career. He shared insights on the distinctions between doctors' and pharmacists' job scopes, study paths to follow, and potential job opportunities as a registered pharmacist.

The two-day programme concluded with a closing ceremony at the school's assembly hall. It was also attended by Professor Dr. Muhammad Hussain Ismail, the Director of UiTM's ICAN, among other guests who delivered a speech on the importance of STEAM fields before the ceremony proceeded to the certificate- and prize-giving session. The programme was a success, given the overwhelming participation of attendees who visited the faculty's booths. Collectively, the delegates achieved their objectives of making the faculty more visible to the public as well as supporting the university's and national agenda to promote interest in STEAM among students.

Mr. Ahmad Assakir Ahmad Shukri, Mdm. Nor Zaleha Ishak
Faculty of Pharmacy, UiTM

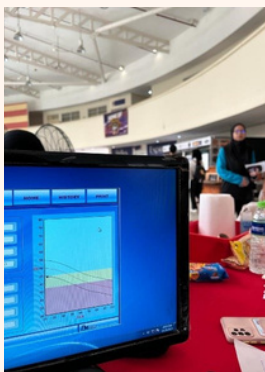
WORLD PHARMACISTS DAY 2023: PHARMACY STRENGTHENING HEALTH SYSTEMS

The Faculty of Pharmacy, UiTM Puncak Alam hosted the World Pharmacists Day 2023 on the 28th of October 2023. The event was a remarkable achievement, meticulously coordinated and executed by our dedicated students, under the capable leadership of Ms. Intan Rynn Zulaikha. This event brought together students from different faculties for a day filled with informative talks, interactive sessions, and health screenings. The event that was conducted at Rafflesia Student Complex offered a range of activities designed to promote health awareness and educate the community about the role of pharmacists in healthcare.



The day began with an energetic start as participants gathered at the complex for a fitness session led by a renowned coach, famous for his signature "Pound with Hasif" session. This invigorating workout set the tone for the day, promoting the importance of physical fitness as an integral part of a healthy lifestyle. Afterwards, participants quenched their thirst by enjoying ice pops made with real fruit, sponsored by Pops Malaya.

Throughout the day, attendees had the opportunity to participate in health screenings at various stations, which included blood pressure, blood sugar level, body mass index (BMI), body fat and muscle composition, and bone mass density. These stations also emphasized the crucial role of pharmacists in preventive care whereby it increases the public's awareness about their health parameters. Although most of the attendees are youth, these health screening stations gave them insight into parameters that they can occasionally monitor. It is also hoped that this information and awareness can be shared to their family members and relatives in the future.



The "Know Your Medicine" booth was a standout feature of the event, serving as an educational hub that covered various essential aspects of medication. It included sections on proper medication handling, considerations for paediatric medication use, safe drug practices, managing adverse effects, and medication compliance. An engaging "Antibiotic Combat Game" was incorporated to raise awareness about antibiotic use and antimicrobial resistance. This comprehensive exhibit not only enhanced attendees' understanding of pharmaceuticals but also empowered them to make informed healthcare decisions, underscoring the Faculty of Pharmacy's commitment to promoting health awareness and knowledge within the community.

During the midday session, the event hosted insightful presentations by esteemed speakers, each focusing on crucial healthcare topics. A representative from Jardin Pharma, Mr. Johary delivered an enlightening talk titled "Merdeka Dari Ekzema," shedding light on dermatological conditions and their effective management. Mr. Tiong Chi Kai, representing GT Health Pharmacy, provided valuable insights in his presentation, "Mental Health: You Shouldn't Fight Alone," emphasizing the importance of mental health support. Additionally, Dr. Faiz Othman, a distinguished lecturer from the Faculty of Pharmacy, explored various aspects of pharmacy practice, further enriching the audience's understanding of this vital profession. The event concluded with a prize presentation for the speakers who shared their expertise and insights with the audience. Attendees also had the chance to participate in a lucky draw sponsored by Jardin Pharma, adding an element of excitement to the day.



This event not only celebrated the global contributions of pharmacists but also empowered individuals to take control of their health and make informed decisions about medication. It served as a testament to the dedication of the Faculty of Pharmacy at UiTM Puncak Alam to promoting health and knowledge in the community. World Pharmacists Day 2023 was a day well spent, fostering a healthier and more informed society.

Mdm. Saliha Azlan, Mdm. Farhana Fakhira Ismail

Faculty of Pharmacy, UiTM

State-of-the-Art Facilities:

Exploring the Clinical Pharmacy Laboratories

Clinical Pharmacy is a discipline concerning the roles of pharmacists in healthcare settings. In Malaysia, the roles of pharmacists have changed significantly since the past decades when pharmacists used to only be involved in medication preparations and management (procurement, storage, and stock management). Nowadays, medication preparations are becoming a more specialized service which includes extemporaneous compounding, parenteral nutrition preparations, cytotoxic drug reconstitution, and in some centres, preparation of radiopharmaceuticals for patient use.

The roles of pharmacists in the country have also expanded towards patient-centered care with the introduction of the pharmaceutical care concept in which pharmacists play an active role in determining pharmacotherapy management for a patient. This also includes the identification of pharmacotherapy-related problems and recommendations for clinical interventions based on patients' needs.

The Department of Clinical Pharmacy, since its inception, has been dedicated to educating students with the modern concept of pharmacy practice that encompasses both hospital and community settings. With members of the department well-trained in various institutions worldwide and some are practicing in several establishments, this further adds to the unique experience for learning and up-to-date application in the field.

Laboratories under the Department of Clinical Pharmacy are located at Level 4, FF3 Building. The labs provide well-maintained equipment and facilities mostly for teaching and learning purposes for undergraduates, postgraduates, and other government and private organizations.

LABORATORY EQUIPMENT AND FACILITIES

BIOEQUIVALENT RESEARCH LAB:

Bioequivalent Research Lab functions as a teaching and learning lab, as well as a research lab for postgraduate students. The course involved in the teaching and learning activities is PHC633 Clinical Pharmacokinetics and PHP711 Personalised Medicine : Clinical Pharmacokinetics & Pharmacogenomics.



Drug Monitoring System,
Cobas Integra 400

This lab is well-equipped with the Drug Monitoring System, Cobas Integra 400. This lab focuses mainly on:

1. Pharmacokinetic: Bioequivalence, bioavailability and pharmacodynamics studies
2. Drugs & biochemistry test

CLINICAL SIMULATION LAB:



Human Patient Simulator, SimMan 3G

Clinical Simulation Lab functions as a teaching and learning lab. It is designed to mimic the real environment and situation of a hospital ward. The courses associated with this lab are PHC670 Hospital Pharmacy and PHC635 Introduction to Clinical Pharmacy. The lab is also used for final-year students (in-house training).

This lab consists of a Human Simulation, SimMan 3G equipment, which is a high-end equipment that can be used to simulate a real situation in a hospital. This provides an immersive learning experience for students, allowing them to practice and develop their clinical skills.

The SimMan® 3G simulator is a durable patient simulator, and currently, there are 2 simulators in the faculty: SimMan® 3G and SimBaby™. Purchased in 2011, the SimMan® 3G is linked to the Laerdal Learning Application (LLEAP) software to enhance the training session where we can operate SimMan® 3G on the fly or use pre-programmed scenarios. Scenario-based training with SimMan® 3G is an ideal solution for addressing the need to pinpoint areas of personal growth and the importance of team-wide skills like communication, behaviour management, and leadership. Besides Human Simulator, SimMan 3G, this lab also has a medical ventilator machine.

STERILE LAB

Sterile Lab functions as a teaching and learning lab. The courses associated with this lab are PHC673 Hospital Pharmacy and PHC635 Introduction to Clinical Pharmacy. The lab is also used to train final-year students (in-house training).

There is a section in this lab that is designed to mimic the real setting of a sterile room in a hospital. This lab focuses mainly on sterile procedure, aseptic technique, and preparation of total parenteral nutrition (TPN). This lab is well-equipped with Cytotoxic Dispensing Isolator and Laminar Flow.



Cytotoxic Dispensing Isolator

Mr. Fairos Abdul Hamid
Faculty of Pharmacy, UiTM

Exploring Laboratory Operations: A Comprehensive Guide

Modul Kenali Makmal Anda (MoKMA23) was held on 11 October 2023 at MPG 1 - 6 involving 213 semester one and 175 semester five pharmacy students. The main purpose of this module was to expose students to laboratory regulations, health, and safety such as general laboratory safety, disposal and waste material, how to handle material and chemicals, emergency equipment and safety tools, and personal protection equipment (PPE).

This program also emphasizes on the operation of the basic laboratory equipment such as glass apparatus, hot plate, water bath, micropipette channel, glass pipette, pH meter, laminar flow, and biological safety cabinet. This module serves as a preparation for the Final Year Project course for the 5th-semester students in the upcoming semester.

Animal handling ethics was also introduced to ensure that students are aware of the Animal Welfare Act, rules, and good practices during practical classes or research activities.

The students gained invaluable knowledge from laboratory staff with extensive experience in science. The students expressed their satisfaction and gratitude for the knowledge sharing.

This platform enables the achievement of its objective of producing students who are well-informed, proficient, and skillful, thereby affording them the chance for progression. This is in accordance with the philosophy of the Faculty of Pharmacy, "Every individual is capable of attaining excellence through the transfer of knowledge and assimilation of moral values to become a professional graduate capable of developing knowledge, self, society and nation".

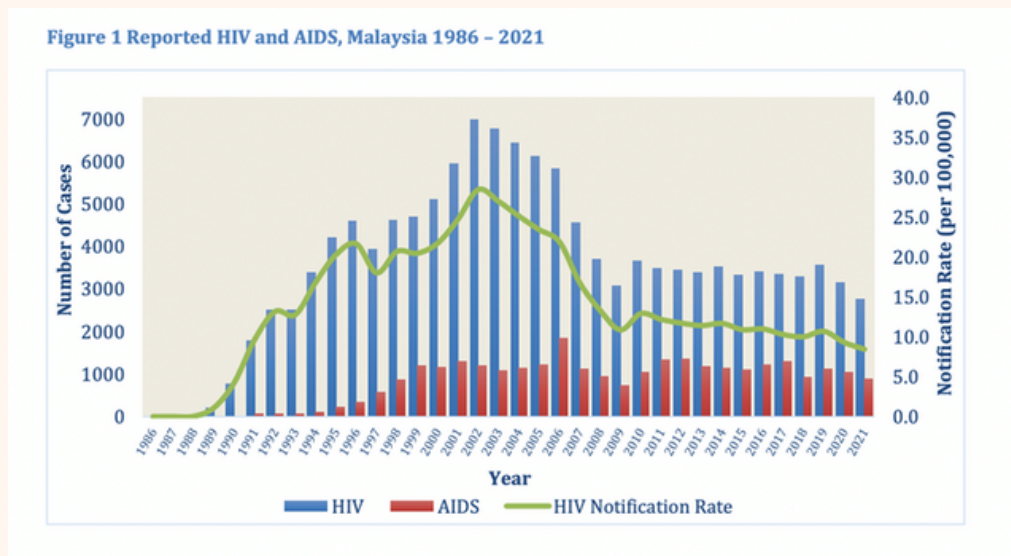


Mdm. Norhayati Mohd Zain
Faculty of Pharmacy, UiTM

WORLD AIDS DAY 2023

The human immunodeficiency virus or HIV infection, the precursor to acquired immunodeficiency syndrome (AIDS), remains a major global public health menace. According to the United Nations Secretary General António Guterres, despite a reduction by 70% the number of deaths attributed to the syndrome, AIDS still 'takes a life every minute'.

In Malaysia, since the virus was first detected in 1986 till 2021 the number of people living with HIV (PLHIV) was 81,942. From this number 67,822 (83%) were aware of their status and had been notified through the national surveillance system (Figure 1).



As of December 2021, 66% of the reported PLHIV were on antiretroviral treatment (ART). Greater availability and accessibility of ART to all PLHIVs and better patient compliance had contributed to steady decline in AIDS mortality from 12.27 per 100,000 population in 2010 to 4.82 per 100,000 population in 2021. With this positive development, HIV is expected to transition from an epidemic to an endemic in many countries. In this situation, the public health approach needs to be modified to an integrated health system response, and to involve the community more actively. Hence, World AIDS Day 2023 is aptly themed 'Let Communities Lead'.

Let the public take the lead in our effort to trigger the HIV-AIDS endgame.

- Assefa, Y. & Gilks, C.F. (2020) Ending the epidemic of HIV/AIDS by 2030: Will there be an endgame to HIV, or an endemic HIV requiring an integrated health systems response in many countries? *International Journal of Infectious Diseases*, 100, 273-277.
- <https://www.unaids.org/en/resources/presscentre/pressreleaseandstatementarchive/2023/november/2023-wad-unsg-message>
- <https://www.mckinsey.com/industries/public-sector/our-insights/pandemic-to-endemic-where-do-us-public-health-systems-go-from-here>
- https://www.moh.gov.my/moh/resources/Penerbitan/Laporan/Umum/MYS_country_report_2021.pdf

Prof. Dato' Dr. Abu Bakar Abdul Majeed
Brain Research Laboratory
Faculty of Pharmacy

ADVANTAGES AND DISADVANTAGES OF KEEPING PETS

In Malaysia, pet ownership has increased over the last 2 decades. Keeping pets is encouraged in schools during early education. The choice of companion pet is made by the public. Among the different breeds kept as companion pets, the most common in Malaysia are dogs and cats.

Dog breed sizes range from small to large, so the public can choose a dog that suits their lifestyle. Small dogs are usually kept for family companionship in the house. Meanwhile large breed dogs commonly serve as guard dogs to protect their owner's house from thieves and predators such as monitor lizards, snakes, and crows. However, dogs can be fierce, biting others and sometimes even their owners. Thus, owners must be selective when choosing the breed of pet dog.

Cat breeds also range from small to large size, with some breeds being imported while others are bred locally. Special breed cats must be kept in an air-conditioned environment. While cats have a weaker bite force compared to dogs, some cats are quick to hiss, scratch, and bite when disturbed.

ADVANTAGES OF KEEPING COMPANION ANIMALS AS PETS

Owning pets can improve child development by teaching responsibility, empathy and caring for others

Service dogs assist in managing physical disability & long-term diseases e.g., Alzheimer's.



Dogs guard the house and prevent intruders

Pets help decrease blood pressure, cholesterol, and triglyceride levels



Daily dog walking increases your activity levels and reduces likelihood of obesity

Pets provide unconditional love and constant companionship

Pets help reduce feelings of loneliness and depression

Pets are useful in managing Post Traumatic Stress Disorder (PTSD), depression and anxiety

Pets improve mental health by lowering stress and anxiety

Therapy dogs give comfort and support in stressful situations

Medical response dogs detect medical conditions like Postural Tachycardia Syndrome (PoTS) and alert their handlers



Pets boost cognitive function in seniors

DISADVANTAGES OF KEEPING COMPANION ANIMALS AS PETS

HIGH COST FOR PET FOOD, VET BILLS AND GROOMING EQUIPMENT



Edible supplements for coat, joints and gut health come in liquid, pills, or chewable form

AS NO MEDICAL CERTIFICATE IS GIVEN, TAKING TIME OFF WORK IS INCONVENIENT WHEN PETS ARE SICK BECAUSE OWNERS HAVE TO APPLY FOR LEAVE

TIME CONSUMED TO CONSTANTLY CHECK PET'S EYES, EARS, MOUTH, AND CLAWS TO CATCH POTENTIAL HEALTH ISSUES QUICKLY

DOGS AND CATS NEED VARIED DIET WITH SUPPLEMENTS TO MEET THEIR VITAMIN AND MINERAL REQUIREMENTS



DOGS AND CATS CATCH RATS, DANGEROUS SNAKES OR OTHER WILDLIFE WHICH MAY CARRY DISEASE INTO THE HOME (LEPTOSPIROSIS, ENDOPARASITES)

TIME CONSUMED TO TRAIN AND SOCIALISE DOGS

In conclusion, keeping companion animals as pets is an immense commitment but can also be extremely rewarding. Clearly, the advantages outweigh the disadvantages of keeping pets. This is why the choice of adopting a pet should be taken into serious consideration.

INCONVENIENT TO FIND BOARDING SERVICE FOR BIG DOGS WHEN OWNER IS NOT HOME

TIME CONSUMED TO GROOM PETS AND FOR FREQUENT CLEANING DURING SHEDDING SEASON TO MAINTAIN CLEANLINESS OF KENNELS/LITTER BOXES

DANDER, SALIVA AND MOLTED FUR CAN TRIGGER ASTHMA AND ALLERGY RESPONSE

DOGS CHEW AND DESTROY FURNITURE AND SHOES, CATS SCRATCH FURNITURE/ WALLS



DOG PARASITES (ROUNDWORMS, TAPEWORMS, RINGWORM ETC.) AND CAT DISEASES (TOXOPLASMOSIS, CAT SCRATCH FEVER, SCABIES ETC.) CAN SPREAD TO HUMANS IF HYGIENE AND PREVENTIVE MEASURE ARE NOT FOLLOWED.



Assoc. Prof. Dr Vellayan Subramaniam, Iris Loo Shu Ling
Faculty of Pharmacy, UiTM

ALUMNI SERIES:

Roles of Community Pharmacists in Fall Prevention

Falls can result in injuries that often result in hospitalization and mortality. Fall-related injuries can cause long-term impacts on health outcomes and overall quality of life. Addressing health issues stemming from falls can be an expensive endeavor, constituting around 0.85% to 1.5% of a country's total healthcare spending [1].

Falls in older people can be caused by various factors, including poor strength, instability, visual impairment, cognitive decline, and medications. Certain medications, particularly those that impact blood pressure or induce central nervous system (CNS) side effects, can significantly elevate the risk of falls (ROF), particularly in individuals with pre-existing clinical conditions associated with balance and mobility issues.

Fall risk-increasing drugs (FRIDs) refer to a group of medications associated with an increased ROF among older people such as benzodiazepines, antipsychotics, antidepressants, opioids, and sedative antihistamines. A systematic review has reported that the prevalence of FRID use at the time of a fall-related injury among older people ranged from 65% to 93% [2].

Hence, the active involvement of pharmacists in assessing and closely monitoring the use of FRIDs among older people is crucial. They can play a significant role in early identification, continuous monitoring, and interventions to minimize the ROF. This proactive engagement with pharmacists offers opportunities to enhance medication management and reduce the ROF in this population.

In the community setting, community pharmacists have a vital role in reducing the ROF among older people. Serving as primary healthcare contacts, they provide comprehensive medication therapy management and identify those at risk through patient interactions and assessments. Through thorough medication reviews, community pharmacists can identify potentially inappropriate medications (PIMs), including FRIDs. Collaborating with other healthcare providers, they can recommend deprescribing FRIDs, promoting safer medication use, and mitigating the ROF. Additionally, community pharmacists offer consultation and education to older people, raising awareness of medication-related fall risks.

Additionally, community pharmacists should also identify and educate older people with vitamin D deficiencies, emphasizing the importance of daily vitamin D supplementation for bone, muscle, and nerve strength. A previous study found that a daily intake of 800 to 2000 IU of vitamin D could reduce hip fractures by 30% [3]. In addition to promoting vitamin D intake for nutritional enhancement, community pharmacists could also consider advising older people to incorporate sufficient calcium (e.g., milk, yogurt, cheese) and protein-rich foods (e.g., dairy, eggs, oily fish) into their diets. This approach serves to optimize musculoskeletal health and acts as a proactive strategy to prevent falls and fractures.

Low-risk older people should receive education about fall prevention and exercise [4]. Community pharmacists can also advise older people to engage in moderate to high-challenge balance exercises like Tai Chi for at least 2 hours per week, as Tai Chi enhances balance and strength. The effectiveness of well-designed exercises (e.g., group-based Tai Chi) in reducing falls among community-dwelling older people has been well-demonstrated. For older individuals at high risk of falls requiring intensive exercise programs, community pharmacists may consider referring them to qualified professionals such as physiotherapists, exercise physiologists, or trained exercise instructors.

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2. Hart, L. A., Phelan, E. A., Yi, J. Y., Marcum, Z. A., & Gray, S. L. (2020). Use of Fall Risk-Increasing Drugs Around a Fall-Related Injury in Older Adults: A Systematic Review. In *Journal of the American Geriatrics Society* (Vol. 68, Issue 6, pp. 1334–1343). Blackwell Publishing Inc. <https://doi.org/10.1111/jgs.16369>
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Mohd Shah Rezan bin Hamzah, RPh 11171
Graduate of Master in Pharmacy Practice (2022/2023 Intake)
Faculty of Pharmacy, UiTM

CONGRATULATIONS

GERAN PENYELIDIKAN MYRA (GPM) 2023/2 - FASA 1

Principal Investigator	Project title
Madam Zafirah Liyana Abdullah	Unveiling the Critical Pharmacophore of Potential NS3 Protease Inhibitors for Dengue NS3 protease: Integrating In Silico and In Vitro Methods'
Assoc. Prof. Dr. Syed Adnan Ali Shah	"Insights into pyrrolopyridine-based thiazolotriazoles inhibition of α -glucosidase using In vitro STD NMR and OPLS-DA"
Dr. Ruzianisra Mohamed	Elucidation of Peptide Inhibitors against Human BAP1 using In-silico Studies

GERAN SULAM KOMUNITI UiTM CAWANGAN SELANGOR (DUCS-SULAM)

Principal Investigator	Project title
Madam Saliha Azlan	Empowering Diabetes Management During Ramadan in Malaysia With DiabEase, a Mobile App Solution

UPCOMING EVENTS

Safe Medication Disposal Campaign 2023



Anda ada banyak ubat tidak digunakan di rumah?

Ingin tahu cara selamat melupuskannya?

JOM SERTAI KAMI !

Lokasi: Dewan MPKS Saujana Utama, Sg. Buloh
Tarikh: 16 Dis 2023 (Sabtu)
Masa: 9.00pg - 2.30ptg

ACARA-ACARA MENARIK!

- Perkongsian mengenai pengurusan ubat -ubatan di rumah
- Pemeriksaan kesihatan **PERCUMA**
- Pameran kesihatan dan kesedaran pencemaran ubat kepada alam sekitar
- Jualan trak makanan
- Aktiviti kanak-kanak - pembuatan sabun, pencetakan 3D, dan pertandingan mewarna!

Bawa ubat-ubatan yang hendak dilupuskan, dan anda berpeluang memenangi **CABUTAN BERTUAH!**

JALANKAN TANGGUNGJAWAB ANDA. LINDUNGI ALAM SEKITAR.
#TogetherWeSupportSafeMedicationDisposal

Anjuran:     Dengan kerjasama: 

Maklumat lanjut: Dr. Noreen +6011-26740582

Faculty of Pharmacy, UiTM Puncak Alam cordially invites you to our upcoming Safe Medication Disposal Campaign. Details of the program are as follows:



16th December 2023 | 9.00 am - 2.30 pm



Dewan MPKS, Saujana Utama, Sungai Buloh.

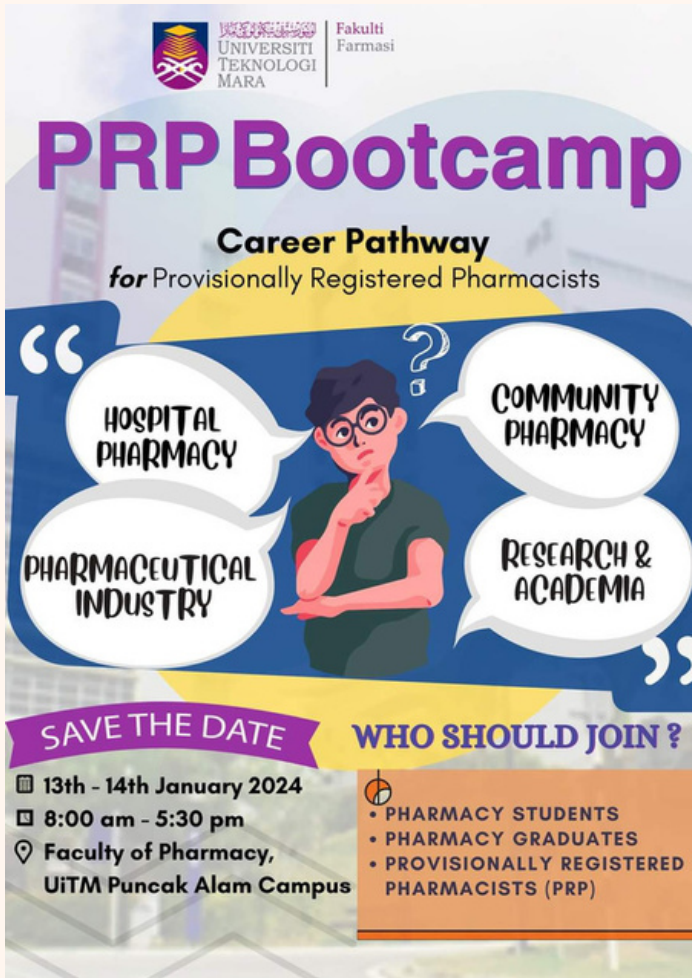
For any enquiries, please contact:



Dr. Noreen (011-26740582)

UPCOMING EVENTS

PRP Bootcamp: Career Pathway for Provisionally Registered Pharmacists



PRP Bootcamp
Career Pathway
for Provisionally Registered Pharmacists

“ HOSPITAL PHARMACY COMMUNITY PHARMACY PHARMACEUTICAL INDUSTRY RESEARCH & ACADEMIA ”

SAVE THE DATE

- 13th - 14th January 2024
- 8:00 am - 5:30 pm
- Faculty of Pharmacy, UiTM Puncak Alam Campus

WHO SHOULD JOIN ?

- PHARMACY STUDENTS
- PHARMACY GRADUATES
- PROVISIONALLY REGISTERED PHARMACISTS (PRP)



SPEAKERS

- Mindfulness and Emotional Regulation During the Essential Phase of Career**
Cik Amirah Zulaikha Zafrul Azlan, Clinical Psychologist, UiTM
- Research and Academia - Navigating the Future Healthcare Landscape Through Pharmaceutical Sciences**
Prof. Dr. Wong Tin Wui, Senior Lecturer, UiTM
- Hospital Pharmacy - Acquired Skills and Practice**
Pn. Nur Dalila Mohd Ali, Pharmacist, Hospital Sg. Buloh
- Charting your future: Financial Planning**
Pn. Azlinda Makhatar, Public Mutual Berhad
- Community Pharmacy - Career Pathway: PRPship to Ownership**
Pn. En Ni Lim, Pharmacist, Alpro Pharmacy
- Pharmaceutical Industry- Igniting Excellence in Industrial Pharmacy**
En. Mohd Fairuz Khan, Duopharma Biotech Berhad
- Code of Ethics for Pharmacists**
Speaker to be confirmed

REGISTER NOW

PRICE RM135 EARLY BIRD UNTIL 30 NOV 2023
RM150 DATELINE: 25 DEC 2023




CONTACT US
prpbootcamp2023@gmail.com

<https://forms.gle/cZkAXpsejFErFMTY6>

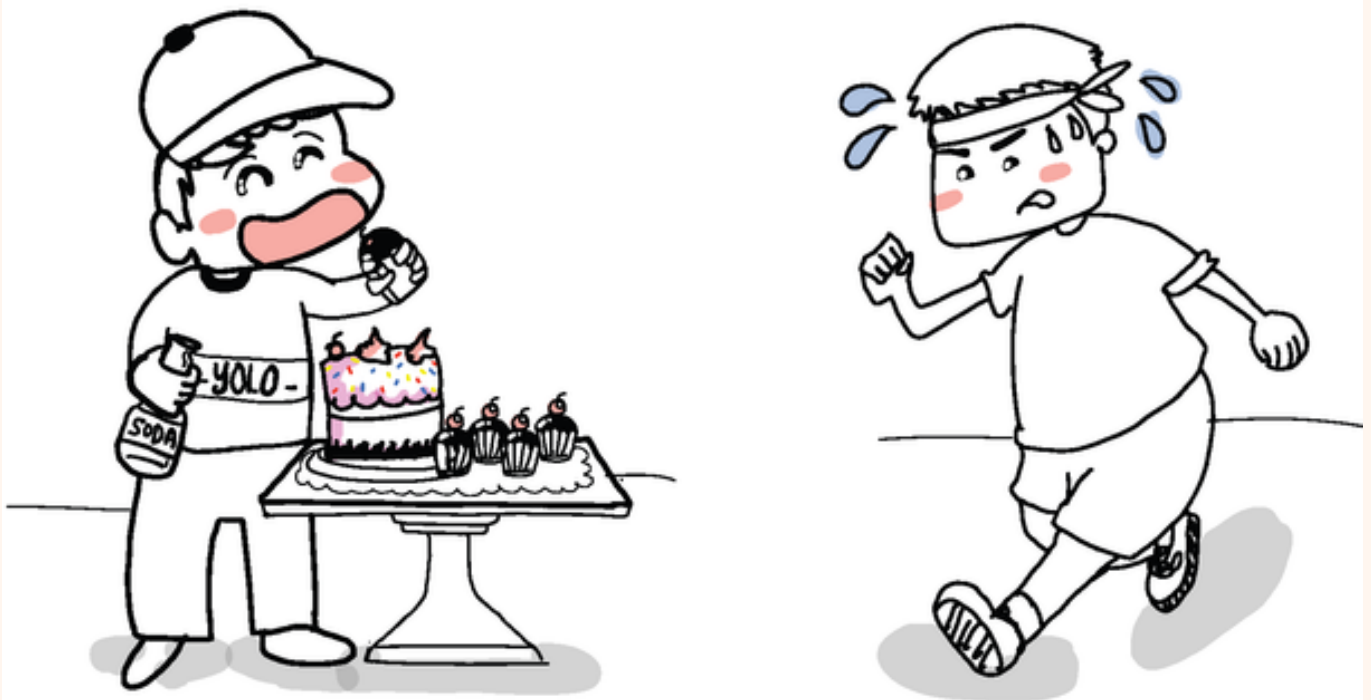
Are you ready to elevate your career and confidently navigate the PRP's path to success? Or are you in a dilemma in choosing which career pathway suits you better?

We are excited to extend an invitation to you for our exclusive Provisionally Registered Pharmacist: Career Navigation Bootcamp, a 2-days program designed to equip you with the skills, insights, and connections needed to thrive in your PRP-ship journey.

Secure your spot today and take the first step towards unlocking your full potential as a provisionally registered pharmacist. Don't miss this opportunity to invest in your career. The details are as follow:

-  13th- 14th January 2023
-  Faculty of Pharmacy, UiTM Puncak Alam Campus
-  Investment in Your Future: RM 135 (Early bird until 30th Nov 2023), RM 150 (Normal Price)

Sweet or Sweat,
Choose your
mood - boosting
groove !



World  Diabetes  Day

Mdm. Nur Sabiha Md. Hussin
Faculty of Pharmacy, UiTM

Issue 11/2023

November 2023

PRESCRIPTION

Latest news and updates from the Faculty of Pharmacy



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