

PHARMACYCONNECT

NEWSLETTER



November 2020

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DEAN'S MESSAGE



Associate Professor Dr. Mogana Sundari Rajagopal, Dean

2020 has introduced the nations of the world to lockdowns, social distancing and compulsory mask-wearing which were unknown in most parts of the world. Today these actions have become part of our daily routine. The pandemic has harmed the most vulnerable, pushing many into uncertainty and poverty. There were also noteworthy trends that emerged this year in the pharmaceutical sector that are likely to continue into 2021 and beyond. Public trust and reliance on pharmacists are growing.

For several years now, the pharmacy profession has been ranked among the highest for honesty and ethics. In a more recent poll, the results of which were released in January, pharmacists were again at the top of the list. That is one of the many reasons why it is not surprising to see more consumers or patients relying upon their pharmacists as a go-to source for medicine, drugs, supplements, herbal and even personal care information.

Pharmacists are positioning themselves to become hubs of consumer healthcare. Consumers are embracing this shift as it is driving a higher satisfaction index for wellness-oriented services.

Pharmacies are considered "essential businesses" that are permitted to remain open when states issued business closure and stay-at-home orders, as consumers rushed to stock up on a wide range of supplies. This movement has seen more consultation with pharmacists via online services and various extended services like telepharmacy that revolutionised conventional face-to-face meetings resulting in greater comfort and privacy for the patients. Pharmacists played a key role during the pandemic, engaging directly with the community, providing care for patients with chronic diseases that have been neglected by mainstream healthcare system due to the pandemic. They have also been working in hospital pharmacies and providing pharmaceutical care to COVID-19 patients.

For pharmacists worldwide, trends and developments from 2020 are transforming the industry, revolutionising pharmaceutical care with the obvious inclusion of technology. Let us as citizens of this planet take this moment to value humanity and brotherhood for a better future. Sayonara to 2020 and Hello 2021 from the Faculty of Pharmaceutical Sciences (FPS) as we carry with us a strong inspiration and commitment to transform our students into 'Future Pharmacists' in one of the world's oldest professions.

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Editorial Team:

- Assistant Professor Dr Anand Gaurav
- Osama Helweh



PHARMACYCONNECT newsletter is a bimonthly publication of the Faculty of Pharmaceutical Sciences (FPS), UCSI University, Kuala Lumpur.

STAFF ACHIEVEMENT: ITEX AWARDS 2020

FPS is proud to have won 2 silver medals at the International Invention, Innovation & Technology Exhibition (ITEX), an annual exhibition that provides a platform for innovators to showcase their newest products and inventions from the region and internationally. FPS researchers won the medals for their inventions created under the medical and health category as well as the beauty, fitness and sports category.

The first silver medal won by the Faculty was spear-headed by FPS dean, Associate Professor Dr Mogana Sundari Rajagopal with co-researchers Dr Sasikala Chinnappan, Dr Ashok Kumar Janakiraman, Dr Muhammad Junaid Farrukh, Por Choo Shiuan and two students, Tan Lee Fang and Yap Vi Lien. The award in the category of beauty, fitness and sports was for an innovative cosmeceutical product called TomaClear, a new natural bioactive loaded microsphere anti-pigment cream containing *Solanum lycopersicum* or commonly known as tomato. By incorporating tomato seed oil into the novel formulation of microspheres, the problems with conventional formulations may be solved with improved effectiveness, minimal irritation and stability while maximising the potential benefits of tomato. Also, other ingredients like all-

antoin, hyaluronic acid and panthenol have been added into the cream to confer additional benefits such as moisturisation, skin protection and regeneration. Additionally, TomaClear is packaged using recyclable materials and does not contain hazardous substances.

The second silver medal awarded to the Faculty for an invention under the medical, health category was spear-headed by Associate Professor Dr Palanirajan Vijayaraj Kumar and titled Kollicoat MAE 100P Coated Capsules to Deliver the Cyclodextrin-Everolimus Inclusive Complex to Treat Colorectal Cancer. Dr Vijay's team members included the Faculty's first PhD scholar, Dr Marwan Maki and Associate Professor Dr Shiau-Chuen Cheah from the Faculty of Medicine and Health Sciences. Two external members of the team were Professor Dr Abu Baker Bin Abdul Majeed from Universiti Teknologi Mara and Dr Omer Bayazeid from Hacettepe University, Turkey.

"Winning these awards certainly gave our team a moral boost. Acknowledgement of the group's efforts and individual achievements will keep us motivated to further develop similar formulations in the future on a larger scale", said the winners.

WEBINAR SERIES ON RESEARCH AND PRACTICE



The Department of Praxis, Industry, and Community Engagement (PICE) of FPS will organise a webinar series on research and practice. The webinar series will focus on the recent trends and advancements in research and development and the importance of commercialisation.

The webinar series will start with an informative talk on the topic "Regulating the Use of Animals in Research" by Professor Dr Goh Yong Meng, Department of Veterinary Preclinical Sciences, Faculty of Veterinary Medicine, Universiti Putra Malaysia cum Deputy Director, Research Management Centre, Universiti Putra Malaysia. The second talk will be on the exciting topic of "Importance of Secondary Metabolites as Ecological Chemicals and Lead Pharmaceuticals" by Professor Dr Charles Santharaju Vairappan from Laboratory of Natural Products Chemistry, Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah.

This will be followed by another interesting talk on the topic "Pharmacovigilance from the Industry Perspective" by Christine Chandran, Neuro-Linguistic Programming Practitioner.

Many more exciting topics like regulatory affairs will also be covered in this webinar series.

	<p>Invention title: Kollicoat MAE 100P Coated Capsules to Deliver the Cyclodextrin-Everolimus Inclusive Complex to Treat Colorectal Cancer</p> <p>Category: Medical, Health</p> <p>Principal Investigator: Associate Professor Dr Palanirajan Vijayaraj Kumar (Faculty of Pharmaceutical Sciences, UCSI)</p> <p>Team members:</p> <ul style="list-style-type: none"> - Assistant Professor Dr Cheah Shiau Chuen (Faculty of Medicine and Health Sciences, UCSI) - Dr Marwan Abdelmohammed Abdelkarim Maki (Faculty of Pharmaceutical Sciences, UCSI) - Professor Dr Abu Bakar Bin Abdul Majeed (Universiti Teknologi Mara) - Dr Omer Bayazeid (Hacettepe University, Turkey)
	<p>Invention title: TomaClear: A New Natural Bioactive Loaded Microsphere Anti-Pigment Cream</p> <p>Category: Beauty, Fitness, Sports</p> <p>Principal Investigator: Associate Professor Dr Mogana Sundari Rajagopal (Faculty of Pharmaceutical Sciences, UCSI)</p> <p>Team members:</p> <ul style="list-style-type: none"> - Assistant Professor Dr Sasikala Chinnappan (Faculty of Pharmaceutical Sciences, UCSI) - Assistant Professor Dr Ashok Kumar Janakiraman (Faculty of Pharmaceutical Sciences, UCSI) - Dr Muhammad Junaid Farrukh (Faculty of Pharmaceutical Sciences, UCSI) - Por Choo Shiuan (Faculty of Pharmaceutical Sciences, UCSI) - Tan Lee Fang - Yap Vi Lien

STUDENT ACHIEVEMENT: MPS - DUOPHARMA BIOTECH GOLD MEDAL AWARD 2019



Leo He Yuan, a BPharm (Hons) graduate with First-Class Honours has been awarded the Malaysian Pharmaceutical Society (MPS) - Duopharma Biotech Gold Medal Award 2019. This award is presented annually by CCM Duopharma and the MPS to top final year pharmacy students in Malaysia who are nominated by their universities for exceptional academic performance and co-curricular activities.

Leo, currently doing her Provisionally Registered Pharmacist (PRP) training at Institut Jantung Negara (IJN) was surprised but grateful that she was selected. "This national recognition is invaluable and will motivate me to work harder to achieve greater success in my career as well as improving the well-being of the community," said Leo.

Congratulations to yet another one of our shining stars. We hope that the award will empower Leo to undertake a lifelong commitment to helping patients and society at large to lead healthier lives.

DID YOU KNOW?

Benjamin Franklin was a pharmacist, while Agatha Christie was a pharmacy technician.

STAFF SPOTLIGHT: OMOTAYO FATOKUN



Dr Fatokun joined UCSI University in 2007 and has been actively involved in teaching, research, and academic administration. Prior to his appointment as the Head of the Clinical Pharmacy Department in December 2020, he served as the Faculty Chair for Examination from 2016-2020.

Dr Fatokun is an active researcher. His research areas include pharmaceutical health services and policy, pharmacoepidemiology and drug safety. He has published several articles in high-impact journals, including Lancet, Lancet Oncology, and Bulletin of the World Health Organization. Over the years, he has successfully supervised several postgraduate students to completion of their degrees. Dr Fatokun is currently undertaking a research on drug prescribing patterns in obstetrics and gynaecology in a national hospital using the WHO prescribing indicators

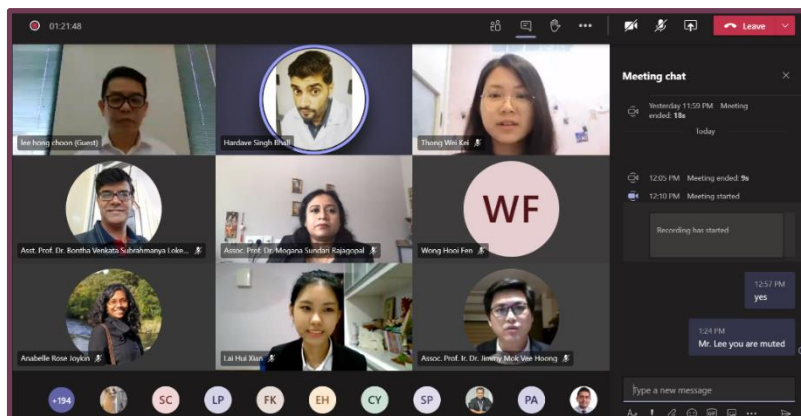
Dr Omotayo Fatokun is an Assistant Professor and the Head of the Clinical Pharmacy Department at FPS. He is a registered pharmacist with a Master of Pharmacy in Clinical Pharmacy. He completed his PhD in Pharmaceutical Policy from Universiti Sains Malaysia in 2014.

BOOK PRIZE AWARDS @ FPS

Recognising the academic excellence of Pharmacy students, the FPS 2020 Book Prize Awards Ceremony took place virtually on 15 October 2020. FPS was thrilled to announce that six pharmacy students were chosen to receive a cash prize worth RM1000, sponsored by renowned local and multinational pharmaceutical companies, including Xepa-Soul Pattinson, Medispec, Caring Pharmacy, Big Pharmacy, and Pahang Pharmacy.

Congratulations to the awardees, Thong Wei Kei (Year 4), Lai Hui Xian (Year 4), Khoo Jia Wei (Year 3), Yap Vi Lien (Year 3), Lee Sue Kei (Year 2), and Jessica Yon Ai Lyn (Year 1) for their amazing achievements!

The awards introduced in 2017 are a great recognition for FPS, specifically of the students by the pharmaceutical companies, and provide enormous motivation to the students to strive for further academic accomplishments.



STUDENTS NURSING HOME VISITATION

Studies and extra-curricular activities are the mainstay of a pharmacy student during their university life. However, other activities such as community outreach are equally important to instil the social responsibility among students, preparing them for their role as a pharmacist in the future. Through community projects, students can develop awareness and responsibilities towards the communities.

As part of their learning process for the PP492 Geriatric Pharmacy course, Year 4 students of Bachelor of Pharmacy (Hons) visited the St. Mary Nursing Home, Kuala Lumpur. During the visit, several activities and entertaining performances were also conducted by the students.

Conversation and counselling were performed under supervision of lecturers in the nursing home. Sharing of life and experiences of the geriatric patients with the students helped the students to understand them better.



Geriatric patients need care and love the most from their family members. Geriatric patients are commonly prescribed with multiple medications for their health conditions. The risks of polypharmacy, untreated indications and duplication of treatment are relatively higher in geriatric patients.

The students took the opportunity to perform review of the medications given to the patient at the nursing home. Medication review is the key role of the pharmacists in hospitals, helping them to optimise the treatment and minimise the medication-related problems.

NEW FULL RESEARCH POSTGRADUATE PROGRAMME @ FPS

FPS has launched its new Master of Science (MSc) (Pharmaceutical Sciences) programme. The salient features of this programme are as follow:

- Full research mode postgraduate programme
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ALUMNI SPEAK : MOHAMMAD KHODARI



I completed my Master of Clinical Pharmacy Practice from FPS in 2020. My stint at FPS as a postgraduate student brought a profound change in my understanding of clinical pharmacy and research.

I consider myself lucky since I got to be practically involved in two types of observation studies i.e., Case reports and Cross-Sectional studies.

The initial exposure to research came from theoretical subjects like research methodology, evidence-based medicine, as well as biostatistics and research design.

Then came the clerkship at Hospital Kuala Lumpur where I received the first real opportunity to clerk patients' cases from different wards. One of the cases that I clerked was a rare side effect for Carbimazole, a medication used to treat hyperthyroidism. My lecturer and supervisor, Assistant Professor Dr Khaled Alakhali sparked the curiosity in me to work on this case report and publish it. He also guided me to write the case report and communicate with journals to publish it, which indeed occurred later.

My research project helped me to gain further insights into research and I acquired many new skills such as data collection, analysis, interpretation, writing thesis and presentation of my research work.

All the above was a huge challenge with my modest experience in research, nevertheless it was achieved by hard work and the intellectual direction of my supervisors; Assistant Professor Dr Khaled Alakhali, Associate Professor Dr Mogana Sundari Rajagopal and Mr Ahsan Baig.

My experience at FPS provided me with a solid platform for further research in future!

JOURNAL CLUB @ FPS

UPCOMING JOURNAL CLUB RESEARCH SHARING SESSION

29 JANUARY 2021 (Friday) 3.30PM

DEVELOPMENT AND CHARACTERISATION OF GOLD NANOCARRIER FOR TAMOXIFEN DELIVERY

Sponsor: Yahia Kahlous
Programme: Master of Science in Pharmaceutical Technology
Platform: Microsoft Teams
Team code: badm727
Meeting link: [CLICK HERE](#)

FPS has been regularly organising the monthly journal club. The main objective of the journal club is to foster the research culture among students and staff in the faculty. It is also a platform for researchers and students to develop skills in critical appraisal, an essential part of being a competent researcher.

The FPS journal club allows academic debate and networking between colleagues of varying research specialisation. The monthly journal club covers a wide range of topics, from fundamental research to clinical trials. The presenter also highlights new findings from their research and literature.

The research interaction that takes place during the journal club encourages the researchers to read and appraise publication critically, improve the debating skills, demonstrate leadership skills, as well as aid peer mentorship.

FPS had successfully conducted numerous journal clubs presented by senior researchers, as well as postgraduate and undergraduate research students.

These sessions have helped train the research students to become more familiar with the advanced literature in their new field of study.

The upcoming journal club will include a presentation by Yahia Kahlous, a student of Master of Science Pharmaceutical Technology programme, with the topic "Development and Characterisation of Gold Nanocarrier for Tamoxifen Delivery".

There are many more interesting journal club sessions coming up in 2021, we promise to keep you updated about the same!

DID YOU KNOW?

Listerine® was named after Joseph Lister who spread the word about using antiseptics in hospitals.

HIGH IMPACT PUBLICATIONS @ FPS

scientific reports

OPEN Cyclodextrin inclusion complex inhibits circulating galectin-3 and FGF-7 and affects the reproductive integrity and mobility of Caco-2 cells

Manwan Abdelmohammed Abdelkarim Makki¹, Shiao-Chuen Cheah¹, Omer Bayazeid¹ & Palanirajan Vijayaraj Kumar^{2,3}

Galectin-3 (Gal-3) is a carbohydrate-binding protein, that promotes angiogenesis through mediating angiogenic growth factors such as vascular endothelial growth factor (VEGF) and fibroblast growth factor (FGF). There is strong evidence confirming FGF involvement in tumor growth and progression by disrupting cell proliferation and angiogenesis. In this study, we investigated the effect of β-cyclodextrin overexpressing FGF-7 inclusion complex (Complex) on Caco-2 cell migration, cell motility and colony formation. In addition, we examined the inhibitory effect of the Complex on the circulating proteins, Gal-3 and FGF-7. Swiss Target Prediction concluded that Gal-3 and FGF are possible targets for β-CD. Results of the chemotaxis cell migration assay on Caco-2 cell line revealed that the Complex has higher reduction in cell migration (70.3%) compared to everolimus (EV) alone (6%), which is possibly due to the synergistic effect of these molecules when used as a combined treatment. Moreover, the Complex significantly decreased the cell motility in cell scratch assay, less than 10% recovery compared to the control which has ~40% recovery. The Complex inhibited colony formation by ~79% compared to the control. Moreover, the Complex has the ability to inhibit Gal-3 with minimum inhibitory concentration of 23.44 and 4.2 for β-CD and EV, respectively. Additionally, β-CD and β-CD-EV were able to bind to FGF-7 and decrease the level of FGF-7 more than 50% in cell supernatant. This confirms Swiss Target Prediction result that predicted β-CD could target FGF-7. These findings advance the understanding of the biological effects of the Complex which reduced cell migration, cell motility and colony formation and it is possibly due to inhibiting circulating proteins such as Gal-3 and FGF-7.

One of the most common cancer in the United States is colorectal cancer (CRC). About 20% of patients which are newly diagnosed with CRC found to have metastatic disease. Moreover, around 30% of early stage CRC patients develop metastatic disease. Blood supply is crucial for tumor growth, solid tumor cannot spread more than 2 mm³ in diameter (100-300 cells) without blood circulation. Nevertheless, through angiogenesis tumor have

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<https://doi.org/10.1186/s12882-020-02008-9>

BMC Nephrology

RESEARCH ARTICLE **Open Access**

The chronic kidney disease perception scale (CKDPS): development and construct validation

Hanyatt Anwar^{1*}, Shamsul Athar Shah¹, Abdul Halm Abdul Gabar¹ and Mohd Izham Mahmood²

Abstract
Background: Chronic kidney disease has become a major health problem around the world. It displays no symptoms until the later stages. Therefore, its early detection is crucial, and a suitable intervention is necessary to halt its development. The aim of this study was to develop and validate a recently formulated Chronic Kidney Disease Perception Scale (CKDPS) for diabetic patients based on Social Psychology, and their perceptions based on the Health Belief Model (HBM).
Methods: The newly developed CKDPS instrument was tested on 300 patients with diabetic mellitus in a cross-sectional study. The number of domains, model fit index, construct validity, and internal consistency of this instrument were determined using exploratory (EFA) and confirmatory factor analysis (CFA).
Results: The EFA yielded nine domains: illness identity, timeline motivation, medical practice and co-operation for Social Psychology, and perceived benefit, perceived barriers, perceived susceptibility, perceived severity, and perceived cue to action for HBM. Four items with low factor loading were removed. CFA yielded the following fit indices for Social Psychology: the goodness of fit index (GFI) = 0.938, comparative fit index (CFI) = 0.936, root mean square error of approximation (RMSEA) = 0.055, NCFI = 1.831, normed chi-square (NCS) = 1.831, and the following for HBM: GFI = 0.934, CFI = 0.937, RMSEA = 0.055, NCFI = 1.830. Values of Cronbach's α ranged between 0.760 and 0.909.
Conclusions: The CKDPS includes 61 questions across nine domains, divided under two categories of Social Psychology and HBM. It is also a valid and reliable tool for measuring diabetic patient perception of CKD prevention that can be used in larger studies.
Keywords: Chronic kidney disease perception scale; Factor analysis; Construct validity

Background
 Chronic kidney disease (CKD) has become a major health problem affecting different aspects of human life around the world. It is often called a silent killer because it displays no symptoms until the later stages. Therefore, early detection of the disease is crucial, and suitable intervention is necessary to halt or delay its development [1, 2]. CKD, also known as chronic kidney failure, is defined as a gradual kidney function loss over at least 3 months, posing a major health problem in developing countries. It has skyrocketed into a growing epidemic, with over 20

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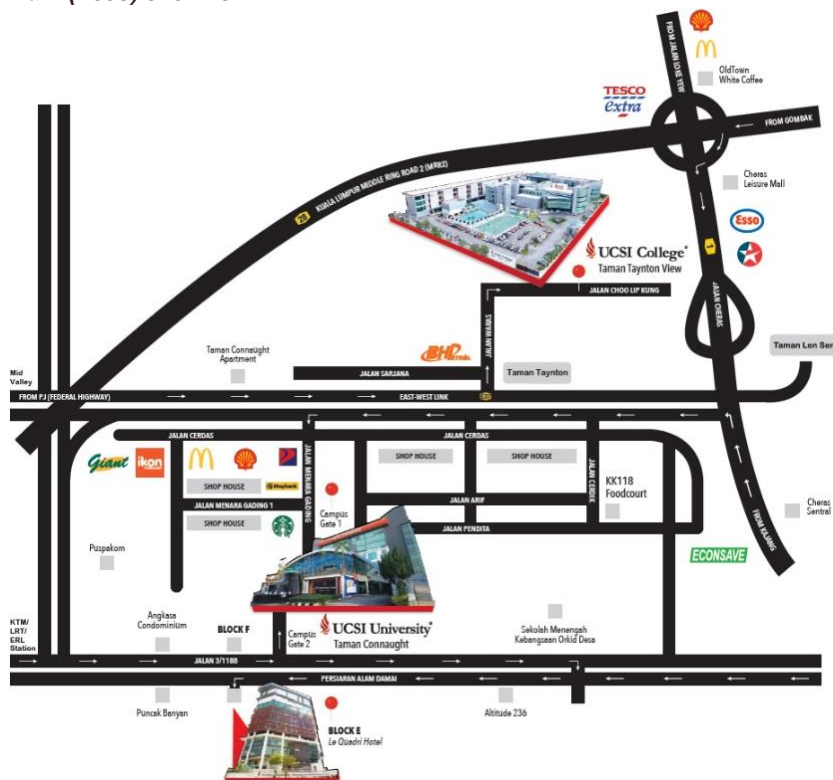
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We are located at:

**Level 10, Block G, UCSI University Kuala Lumpur Campus
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56000 Kuala Lumpur, Malaysia
Phone: (+603) 9101 8880
Fax: (+603) 9102 2614**



Contributors:

- Assistant Professor Dr Ashok Kumar Balaraman
- Assistant Professor Dr Ashok Kumar Janairaman
- Assistant Professor Dr Omotayo Oladuntoye Fatokun
- Hee Mei Qi
- Dr Muhammad Junaid Farrukh
- Por Choo Shiuan
- Assistant Professor Dr Chew Yik Ling
- Assistant Professor Dr Khaled Ahmed Alakhali

UPCOMING EVENTS @ FPS

- Webinar Series: Research and Practice on the topic “Regulating the use of animals in research” by Professor Dr Goh Yong Meng on 25 November 2020 @ Microsoft Teams.
- Webinar Series: Research and Practice on the topic “Importance of Secondary Metabolites as Ecological Chemicals and Lead Pharmaceuticals” by Professor Dr Charles Santharaju Vairappan on 11 December 2020 @ Microsoft Teams.
- Complementary Competency Programme on the topic “Pharmacovigilance from the Industry Perspective” by Christine Chandran @ Microsoft Teams.

